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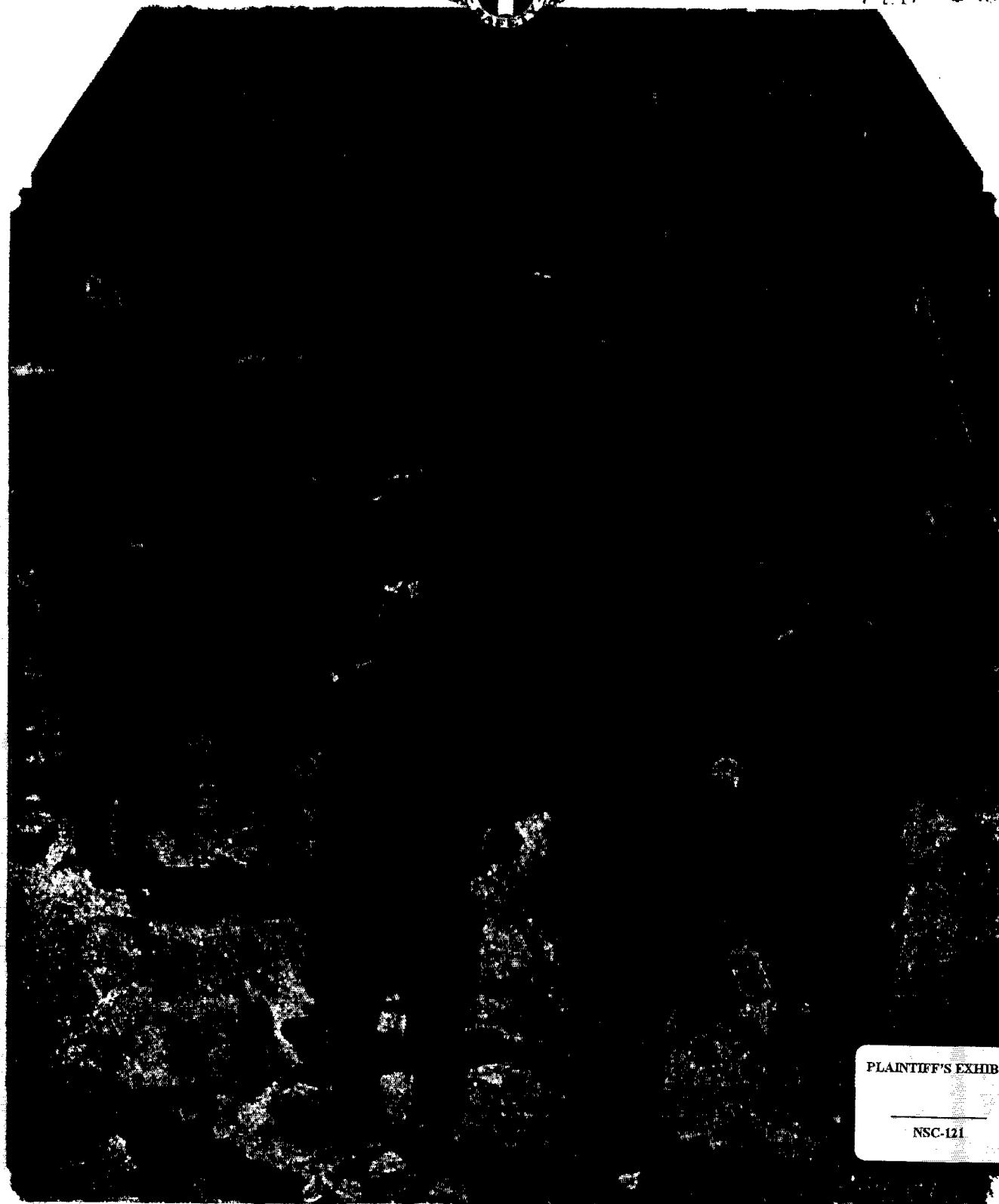
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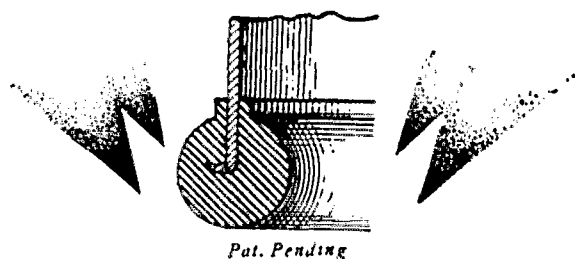


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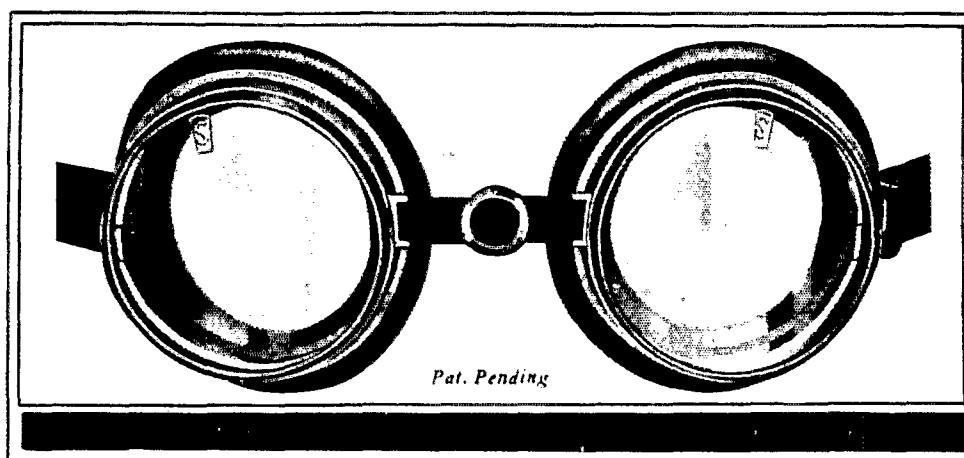
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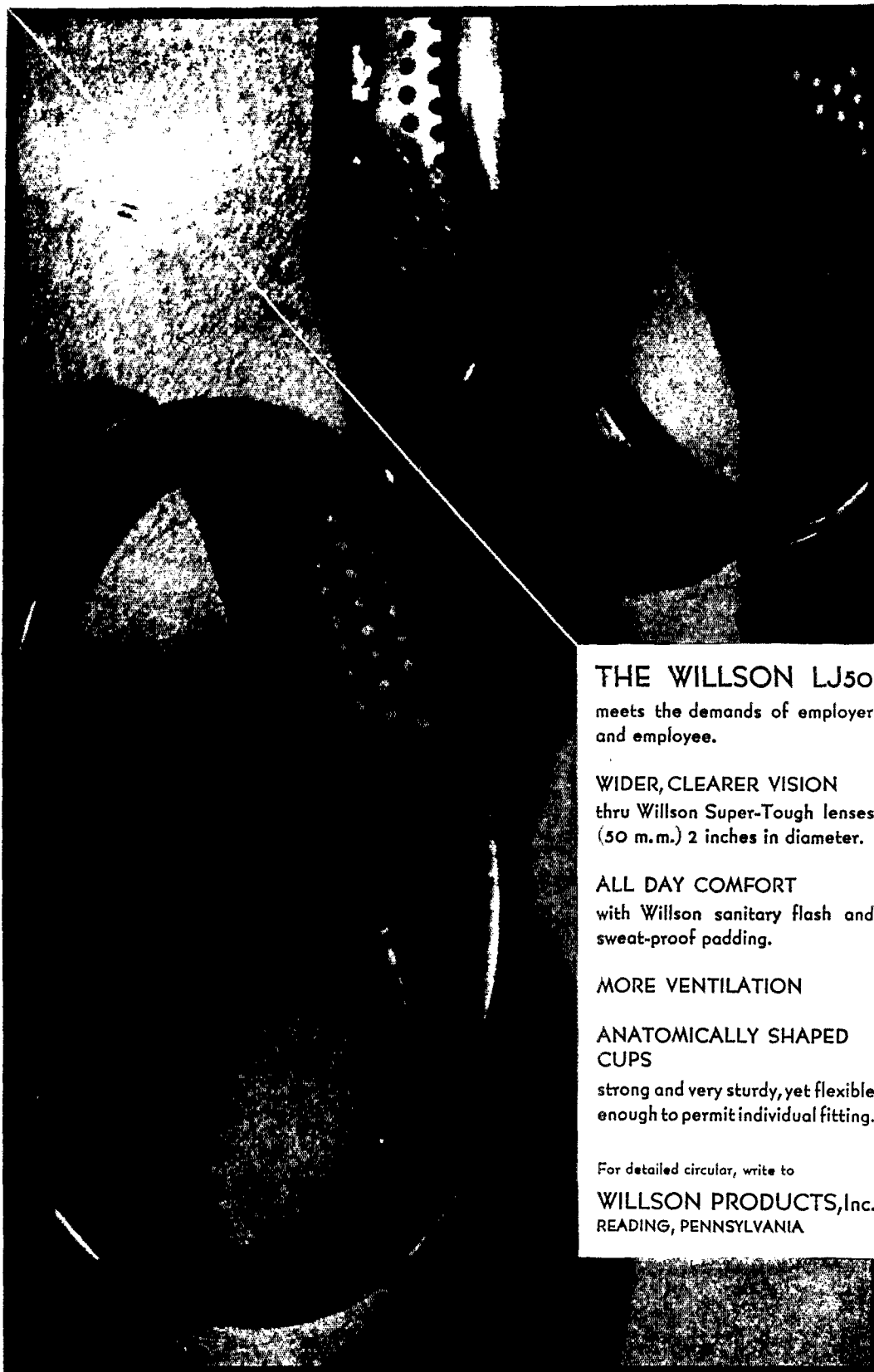
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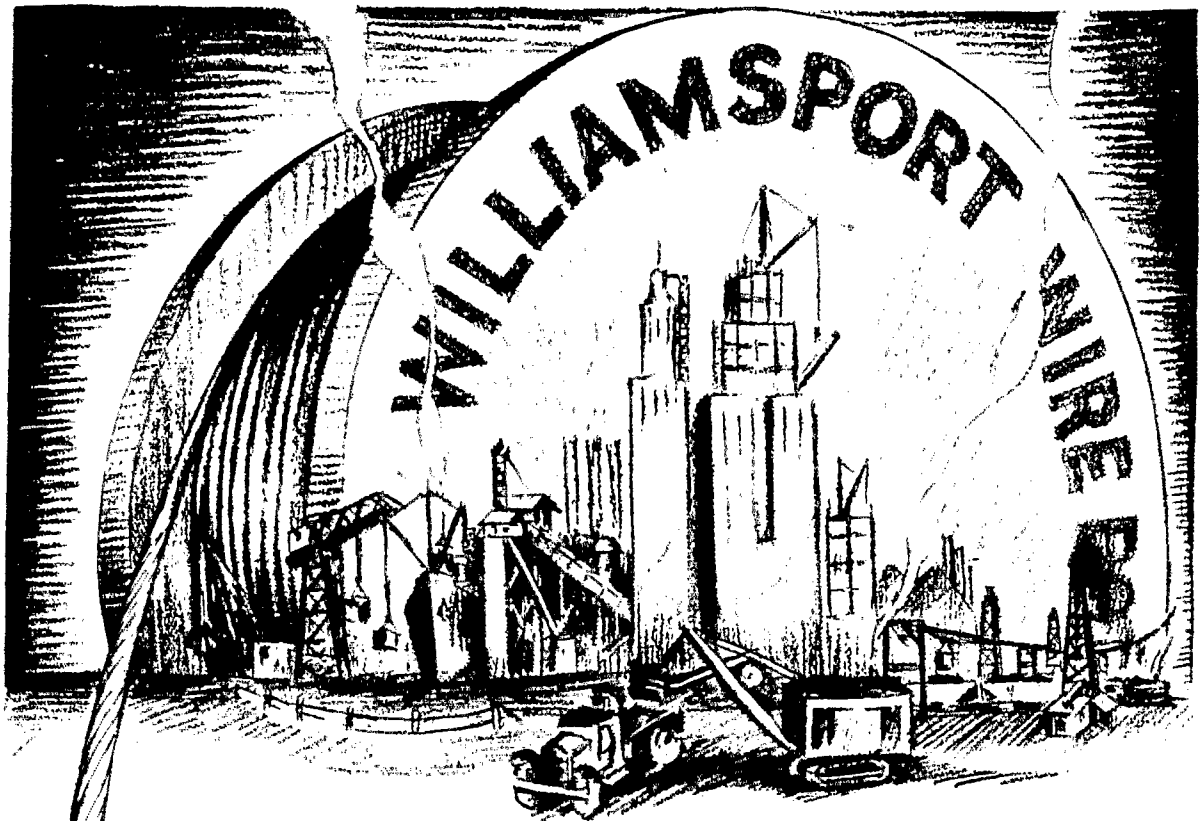
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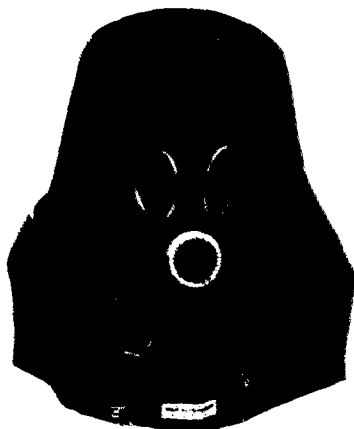
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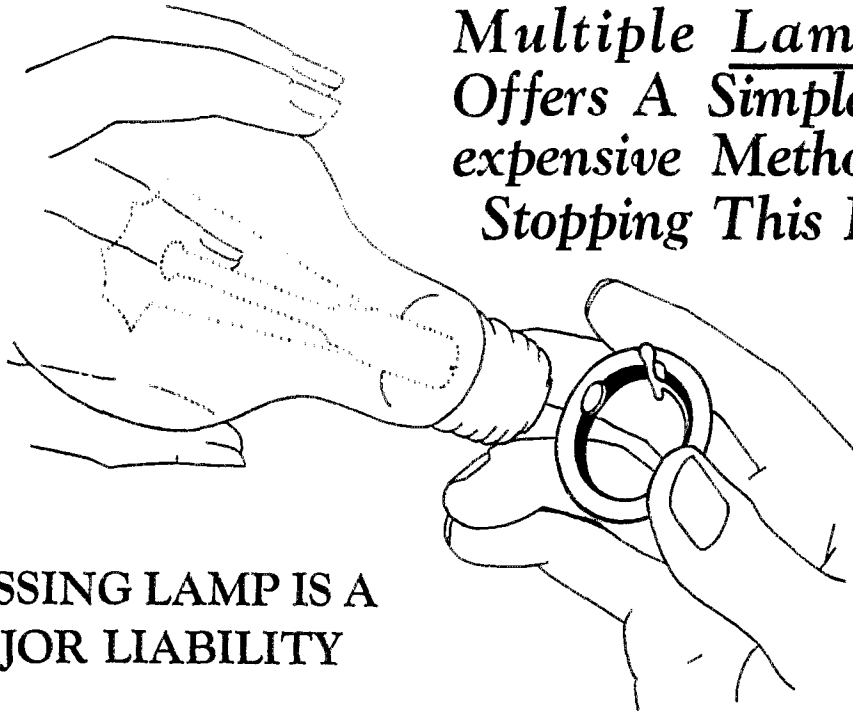
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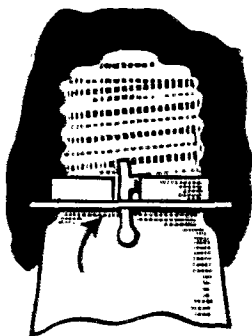


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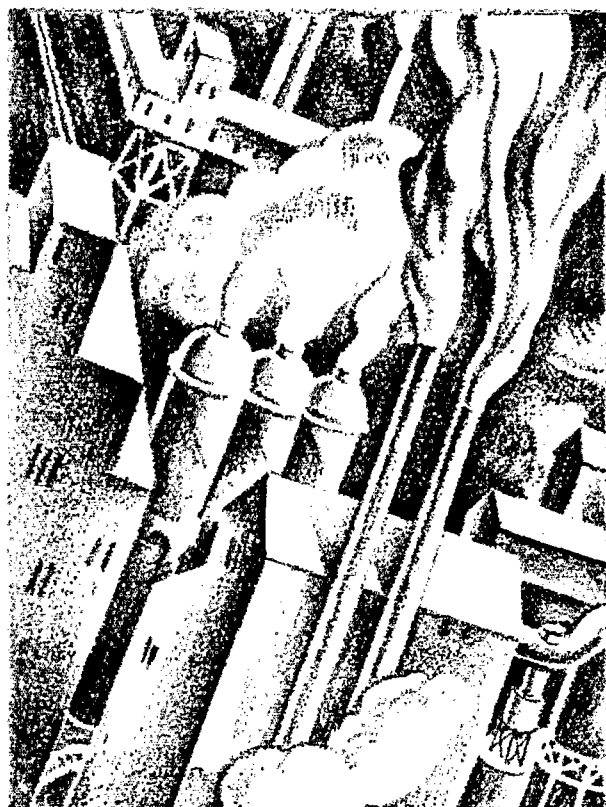
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VOLUME XXI

February, 1930

NUMBER 2

In This Issue

Am I Responsible for Accidents?— <i>Ida M. Tarbell</i>	10
Taking Stock of the Safety Movement— <i>William H. Cameron</i>	11
How Far Can We Go With Through Streets?— <i>J. S. Baker</i>	13
Organizing Factory Traffic— <i>William A. Bechill</i>	15
Motor Vehicle Deaths Mount to 31,500— <i>R. L. Forney</i>	17
Tunnels Separate Children from Traffic— <i>E. B. Lefferts</i>	18
Annual Report of the Treasurer, National Safety Council.....	20
The Supervisors Did It— <i>Carman T. Fish</i>	21
Keeping the Plant Dust Free— <i>R. G. Harker</i>	23
Electricity Can Serve Industry Safely— <i>L. F. Woolston</i>	25
Spanish Publications Extend Safety's Influence— <i>G. M. Briggs</i>	32
Selling Safety to the Man on the Job— <i>Herbert S. O'Brien</i>	34
The Government and Safety— <i>Senator Robert F. Wagner</i>	38
The Costly School of Experience— <i>H. J. Burton</i>	40
Safer Newspaper Delivery Cuts Insurance Costs— <i>Norman R. Hoover</i>	42
Glass—A Hazard or a Safeguard?.....	46
A Simple Remedy for a Common Hazard— <i>Stanley C. Hunter</i>	48
They Welcome the Inspectors.....	52
Do Your Foremen Realize Their Responsibilities?— <i>C. C. Goings</i>	58
Fire Hazards in the Power House— <i>D. G. Will</i>	70

Departments

Editorial	9	Accidental Deaths in the U. S. A	84
The Safety Exchange.....	28	Coming Events	85
Industrial Health	44	The Safety Poster Service.....	89
New Publications	50	New Members, N. S. C.....	96
Personals	62	With the Manufacturer.....	99
The Honor Roll	64	The Buyers' Service.....	102

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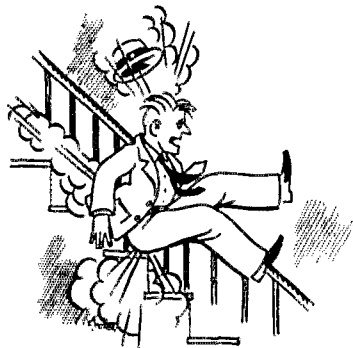
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VOLUME XXI

CHICAGO, ILLINOIS, FEBRUARY, 1930

NUMBER 2

The 1930 Congress City

PITTSBURGH will be the scene of the Nineteenth Annual Safety Congress, and the date will be the week of September 29 to October 3. After considering the resources of several cities for accommodating such an immense gathering the executive committee of the National Safety Council has announced this decision. The choice has been due in part to recognition of the support given to the safety movement by the city's industries and to the genuine cordiality of the invitation extended by representatives of the city's industrial, commercial and civic interests.

Pittsburgh is conveniently located from the standpoint of railroad connection and a survey of the local hotels reveals ample accommodations for out-of-town delegates. While the city lacks some of the conveniences which have made Chicago a popular Congress city, it has the essential facilities for staging a successful congress, and not the least of these is a warm feeling of friendship for the safety movement.

Our Cooperative Structure

COOPERATION in the broadest sense of that much-used word was the principle on which the National Safety Council was founded in 1913. Accident prevention was not entirely new even then. For many years a few progressive companies had been making efforts to remove accident causes, and some state governments had enacted legislation for the protection of the workers. But these efforts were widely scattered and there was no central organization to mold public opinion or to direct investigations of accident causes and remedies. In other words, there was a lack of cooperative effort. To fill that need the National Safety Council was organized.

The headquarters office of the National Safety Council has no experience of its own, yet it has available the experience of thousands of members, yielding a total sum of knowledge which could not be duplicated in even the largest laboratory.

Individuals, corporations, associations and governmental bodies work with the Council in conducting research in accident prevention and in industrial health. Each conducts its studies in a specialized field and the combined results are made available through the Council. If these separate units which comprise the forces of the safety movement were to work independently, their combined influence would be far less than that of their cooperative effort.

More than one thousand individuals are serving on voluntary committees of the National Safety Council. They give their services without remuneration, finding

their chief reward in making the industries, streets and homes safer. The actual value of the time contributed by these volunteer safety workers in one year's time amounts to many thousands of dollars and their service is equivalent to the income from a substantial endowment.

This generous help enables the Council to furnish its services to members at an extremely low cost, and the dollars expended for membership have a large purchasing power. It is the revenue from membership dues, from miscellaneous publications and from advertising that finances the direction of services and the extension of safety work to unorganized fields.

The Council is always glad to be of assistance to non-members but the amount of service it can provide is limited. In fairness to those who are contributing their time and financial support, the major privileges must be restricted to members. The Council is in business to prevent accidents, not to make money, but the bulk of its revenues must be returned to members in service. Missionary work on a large scale can be financed only by gifts made specifically for that purpose.

The Council has no desire to monopolize safety work; it welcomes the participation of other organizations in the movement. There is urgent need for every individual and every organization to put forth the maximum of safety effort.

A Vast Safety Audience

THE second Universal Safety Series, just concluded, has revealed a vast and interested audience for safety messages. Just how many thousands of persons listened in on these weekly broadcasts will never be known but the amount of "fan mail" received by the National Safety Council and the National Broadcasting Company and its associated stations is ample evidence of the popularity of this feature.

So favorably was the first series received by the radio public that the National Broadcasting Company offered its facilities for a second campaign and the number of stations enrolled was exceeded only by a few of the most popular entertainment features on the air.

Among the nationally known speakers of the second series were Jane Addams, Dr. S. Parkes Cadman, and Ida M. Tarbell. Talks were interspersed with human interest playlets dealing with various phases of safety, and thousands of reprints of these broadcasts have been distributed.

The gratifying feature of both the first and second series was the enthusiastic response of the public. Many expressed their appreciation not only of the series but also of the movement for greater safety, and several letters told pathetic stories of homes that had suffered tragic loss through accidents.



Am I Responsible for Accidents?

By IDA M. TARBELL

THERE was a time—not so far back—when accidents were generally classified as “Visitations of the Lord.” Science has corrected most minds on that point. Outside of the people who still believe the world is flat and those who contend that Genesis disproves evolution, accidents are conceded to be the work of human ignorance, carelessness or stupidity.

This is a long stride on the road to safety but a second stride of almost equal importance is developing in the individual a sense of his responsibility, not only to keep himself out of danger but to do nothing that will put others in danger. As things stand now, most of us instinctively deny that we are in any way to blame if we are injured or if we are concerned in an accident where others are injured. The other fellow is always at fault.

Yet analyze almost any of these accidents and you have to admit if you are candid that at least a fraction of the fault usually lies with you.

I am not basing this comment on what I have seen happening to other people but rather on what has happened to me personally.

I was passing through one of those temporary corridors which our city authorities rightly require erected over sidewalks where buildings are being demolished. The corridor was dark. I walked into it without attention to where I was going. There was a hole in the walk—I tripped, fell and broke my wrist.

Who Was to Blame?

How far was I responsible? The city authorities certainly were negligent in leaving a dangerous public walk unlighted. But if my safety sense had been properly developed, I would not have walked absentmindedly into a dark passage. Or, entering, I would have had in mind the possibility of stepping into something or tripping over something. Clearly, I was as much to blame in the matter as those who left the corridor dark and the walk broken.

When you get hurt do you look for sympathy or do you assume your share of the blame? Miss Tarbell, who is famous as an author and student of human affairs, presents some pointed thoughts on personal responsibility. This article was the concluding address of the Second Universal Safety Series sponsored by the National Broadcasting Company and the National Safety Council.

Our news columns are full of examples of accidents like this of mine, due to the fact that the safety sense has not been developed to a point where the victim instinctively sees and avoids danger. Possibly you remember Bobby Leach—a dare-devil who fifteen or twenty years ago thrilled the country with his performances—one of them, perhaps the most spectacular, was going over Niagara Falls in a barrel and coming out alive. But Bobby Leach soon after this, jauntily walking down the street, slipped on a piece of orange peel and had a fall which caused his death.

What was his share in his death? I suppose we will agree that the major responsibility rested on the ill-mannered and inconsiderate person who threw the peel on the sidewalk; but the habit of watching one's step is a primary responsibility of the individual who wants to pass through this world sound of limb and to die a natural death. Bobby Leach did not have it.

One of the greatest safety rules that has ever been devised, if not the greatest, runs: “Show me where an accident can happen and I will show you where an accident will happen.” It has come to be a basic rule—in the safety education which goes on in all our better industrial plants. It has been stressed in some places until a body of men has been built up who almost unconsciously recognize when the ladder which they are to ascend

is properly placed, when the hammer or the wrench that they are using is placed where it may fall on the head of somebody below—responsibility for their own lives and the lives of their fellow workers is an element of daily practice—a factor of their character as workers.

This is, I think, true in practically the whole factory world. Unhappily, in one of our most dangerous industries, that of mining, the recognition of responsibility is not so general. There are well developed methods of making mines safe, but in parts of the country they are still flouted. There are still mine owners in this country who are too selfish or too ignorant to make safety a first consideration; and there are states where the legislatures are so backward, so indifferent to the well being of their own citizenship that they will not force mine owners to equip their mines with every known safety device.

Only a few weeks ago 59 men, most of them heads of families, were killed unnecessarily in an Oklahoma mine—one of the legislatures of the Union, still backward in looking after its people. Who can deny that this legislature as well as the mine owners were not accomplices in this awful murder of useful men?

Irresponsibility at Home

But it is not in industry that we find the largest irresponsibility toward accidents. Curiously enough, it is in the American home. In 1928 there were 24,000 fatal accidents in the homes of this country. Nearly 10,000 were deaths from falls. Reasonable caution would have prevented most of them.

Fire, electricity, benzene, kerosene, gasoline are still handled with ignorant confidence by hundreds of thousands of women. It seems as if we would never learn what a stray spark from an unscreened fireplace may do. One of the most tragic encounters of my life was with a young couple who had gone out for the evening, leaving an unscreened fire in the nursery

(Continued on page 74)



Taking Stock of the Safety Movement

*The Annual Report of the Managing Director,
National Safety Council*

By WILLIAM H. CAMERON

IT IS now eighteen months since I presented a report to the Council membership, because of the change made in our fiscal year. President Reninger's address to the members at the Chicago Congress presented broadly and in detail the activities and accomplishments of the Council during the year. It is unnecessary now to repeat these facts and figures. They will be found in the October issue of the NATIONAL SAFETY NEWS and in the Congress Transactions. It may be of service to you, however, if I review our immediate objectives and the progress of the past 18 months.

Our first question must always be—are we stopping accidents—is there evidence that fewer people are being killed and maimed—is this association effort worth while—what have we to show for our cooperative work?

Automobile accidents have spoiled the record and make it impossible to show statistical progress in accident prevention for the country as a whole. However, our estimates of all the accidents, based on fairly reliable statistics for industrial and street accidents, show that accident control is definite in many industries, railways and communities. The combined totals may be discouraging, but there are many signs of progress. Never before have so many people been studying the safety problem. That is the significant fact about all of our efforts during the past sixteen years. Thousands upon thousands of people are convinced that accidents can be stopped; their experience is convincing others. The virtual elimination of accidents in many places for long periods of time brings conviction that avoidance of accident occurrence and recurrence depends upon a knowledge of causes. What we need now is an intensive application of known measures, together with diligence and ingenuity in devising new remedies and combating new hazards.

The fundamental, all-important question is, "how much do we care?" In spite of our faith in the ultimate control of accidents, we cannot help asking ourselves why progress in accident prevention and in other social and economic reforms is so slow. Why should so relatively few persons have to struggle to convince employers and others that the humane work of preventing accidents is also of tremendous economic importance—that the needless sacrifice of life in our national development is a social loss and an economic waste?

In this age of the airplane, the radio, the automobile and a multitude of other wonderful inventions, it seems inconceivable that the conscience and judgment of our people should fail in the conservation of human life. Surely when the majority of our people understand the causes of accidents and realize the possibilities for their reduction, the present accidental death rate will be cut in two.

It is sometimes stated that the industrial safety problem has been solved. This is far from true. Accidents can occur from so many causes and under such an infinite variety of conditions that we must persist for many years to record our experiences and establish standards of protection. We must also bring about such a conviction of the need for thorough safety education that it will be universally applied and accepted.

Do We Care Enough?

When shall we control fire losses? When shall we have speedy dispensation of justice in the courts? And when shall we stop accidents? The answer is "when we care enough!" Safety progress is so definite and convincing that the task of the Council is plain. All the efforts we could make would not be too much to pay for the saving of a

single life. If the many agencies now convinced that accidents can be prevented will persist in their tasks, the problem will be solved.

The Council has learned many lessons in sixteen years; its members have learned how to work together and to help one another. Numerically the membership is increasing; in fact, this year stands out above all others. The leadership has been strengthened; there are now more willing and active cooperators than ever before in the history of the Council. The income spent in activities is larger than ever before. As an institution, the Council now has as large resources and is making as much concerted effort as any other cooperative society in America. For the sixth time in sixteen years the offices are being moved to larger quarters. The staff has grown; the Council is doing a larger business in a bigger way. Its business problems alone are a large tax on our ingenuity and time.

Leading Public Opinion

A recent enumeration of the Council's activities and publications required six sheets of 8½x11 paper, typed in close lines. These activities are all well organized under the jurisdiction of elected officers and committees. The job of the Council has always been to lead public opinion for safety. Its every action looks toward the education of our one hundred and twenty million population intensively and directly through the membership. The Council is now in communication with every agency that can render a service for safety. It does not conduct activities of its own that can be transferred to other people, but it is the activating, energizing body for national accident prevention. It has assumed the duties of underwriting and backing up the national safety movement. It will never be satisfied until every governmental agency, every club and society, every busi-

ness institution, every social organization recognizes its own potential power to convince people that accidents can be stopped.

I feel that it will be of interest to you if I sketch briefly a few of the new projects and activities undertaken since my last report. The message of safety has reached multitudes of people through every known publicity channel and we must acknowledge with thanks the help and cooperation of the daily press, the trade, technical and other journals, the news syndicates and the thousands of other publicists and radio speakers who have lent their resources to the Council's life saving crusade.

A Vast Audience

Thirty-five associated radio stations cooperated with the National Broadcasting Company in providing the facilities for two series of Universal Safety broadcasts in the United States and abroad. In the first series thirteen addresses were given by men who are leaders in American life to a weekly audience of 20,000,000 people. The second series now in progress alternates addresses with dramatic safety playlets and becomes increasingly popular. It is influencing thousands of people who never before gave a serious thought to safety.

The establishment of five new sections within the Council is intensifying the interest of specialists in safety and sets up facilities to coordinate their efforts. In the Industrial Safety Division, Aeronautical, Refrigeration, and Accident Prevention Equipment Manufacturers Sections are now formally organized and functioning. A new departure has been made in the Public Safety Division with the organization of the Street and Highway Traffic Section and the Statistics Section.

Another progressive step in the development of Council activities is the creation of our Industrial Health Division under the direction of an advisory committee and a vice-president. Two industrial health specialists have been added to the headquarters staff and a series of studies of industrial health problems has been inaugurated through the preparation of the first ten of a special series of pamphlets on such subjects as "Physical Examination," "Lead," "Health Supervision in Industry," and "Dust." Continuous publicity on industrial health problems is secured in the Council's publications through a monthly News-Letter to 900 industrial physicians, through

meetings, special studies, and answers to inquiries of members.

Intensive service to the eastern safety councils and to the members in and around New York City has been continuously provided by the New York Office, established just prior to the New York Congress in 1928. This experiment has proved successful and demonstrates the need for similar offices throughout our industrial centers. We have made progress in reaching the so-called minor industries not yet organized into sections of the National Safety Council through a series of research studies, nine of which have already been published, covering accident problems of these industries. This new project contemplates the completion of one or more safe practices pamphlets for each of approximately 300 industries.

Recently a Spanish edition of the booklet "Shop Safety" was printed and widely distributed among our members in Spanish speaking countries. This was followed by a printing of one of our Petroleum Safe Practices Pamphlets, also in Spanish. For the first time in our history we have reached out in this way to influence directly the workers of other countries.

At the Eighteenth Annual Congress in Chicago last year the first safety talking moving picture ever produced was shown before an audience of 2000 people to demonstrate the possibilities which lie before us in modernizing our educational program.

Membership Has Increased

I have already mentioned a splendid increase in membership. Three field men have been added to the council staff to discuss the council service with employers and to encourage them to accept their responsibility in accident prevention. An animated traveling exhibit to display Council publications and to interpret service privileges has been used extensively at trade association conventions and other gatherings.

And so our many meetings and publications have been continued and improved during the past eighteen months. The Congress Transactions for 1929 have been distributed. A constant effort is being made to improve present organized territorial councils and to start new ones. The engineering and scientific problems are being attacked through committees and specialists; the schools and other teaching bodies are being reached as never before.

Of course, the activities and influence of the Council are limited by

its income. Plans have been made to secure additional money for the expansion of every department for the next ten years. We must have more educational material, a larger staff, and a larger number of devoted members. We need branch offices in every state of the Union. We need trained speakers. We need engineering researches on which to base recommendations for every industry. The psychological causes of accidents also offer a promising field for further research.

We need a division to study and help with legislative promotion; more safety motion pictures; more interpretative material. We need to establish community safety organizations in every community of the country; we need money to carry out our plans for home safety; we need the best brains and influential moral leaders to assist in the struggle to have safety understood and accepted by all those whose lives are likely to be prematurely lost through avoidable accidents.

I have confidence in the attainment of material progress. We want it and we are determined to have it. But is moral progress as certain? A plea for safety is essentially a plea for justice, for fair play, and for the rights of all. Here lies the task of the National Safety Council. We are working to improve living conditions, to prolong life, to make justice triumphant. We must make our new fiscal year of 1930 a better year through a wider understanding of the problem of stopping avoidable accidents.

Legion Post Wins Award for Safety Activity

ACTIVITY in the promotion of safety won for Sarlo-Sharp Post No. 368 of the American Legion at Melrose Park, Ill., the bronze plaque for first place in the Legion's "Hall of Fame" for 1929. This award, which was inaugurated in 1927, is presented annually to the post which is judged to have rendered the greatest service to humanity during the year.

Sarlo-Sharp Post was the first post to place the American Legion road signs along the highways and at railroad crossings in its community. The most notable activity was a state-wide safety poster and slogan contest in which 3,700 schools participated. The details of this contest were described in the NATIONAL SAFETY NEWS for September, 1929.



An example of injudicious selection of a through street which here crosses a more heavily traveled thoroughfare. Drivers on the more heavily traveled street resent being obliged to stop where there is little cross traffic.

How Far Can We Go *with* Through Streets?

By J. S. BAKER

*Engineer, Public Safety Division,
National Safety Council*

Fewer and better through streets are needed in most cities. When poorly selected, marked and enforced, through streets hinder traffic and fail to prevent accidents.

MORE than any other form of traffic control, "through streets" have been seized upon by temporizing administrators to solve traffic problems. There are two reasons for this: first, through streets are deceptively easy to establish; and, second, they are easily manipulated to quiet loud demands for better traffic conditions by pleasing certain people.

To many city governments it seems that giving the right of way to vehicles on "through" streets—or at most requiring vehicles on intersecting streets to slow down or stop—will speed up traffic and reduce accidents; hence, an ordinance is passed naming a long list of arterial highways and giving vehicles on them special privileges. Then the city council turns to other matters, feeling that traffic difficulties have been satisfactorily disposed of. In due time, complaints come in from people who must cross these through streets; it is discovered that places where drivers must stop are so numerous as to make enforcement impossible; and if police records are in good shape, an accident increase is probably shown.

Ultimately the through streets are found to be not such a simple means

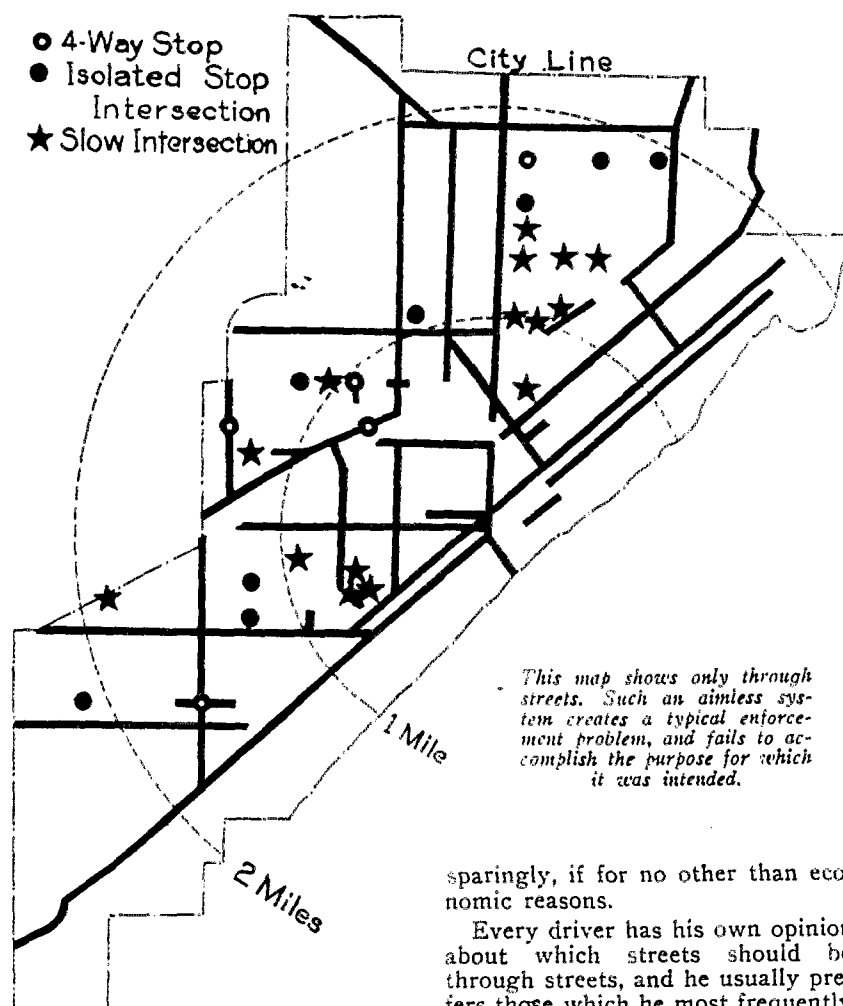
of traffic control. They must be carefully limited and chosen with regard to their relation to each other and to other streets. They must be planned to meet certain specific traffic needs, rather than the wishes of any group of people who want less responsibility for careful driving on the routes they customarily follow.

Nor are through streets the inexpensive means of traffic control that some people believe. To begin with, signs must be erected wherever stops are required, and

such signs must conform to the recommendations for nation-wide uniformity sponsored by the Joint Board of Interstate Highways and the American Engineering Council. They should preferably be illuminated to command attention day or night in competition with a multitude of advertising signs of one kind or another. In a city, this means that the illuminating system must be almost as effective as that used on stop and go signals, and that too much dependence should not be placed on



A through-street system planned for San Antonio, Tex., consisted of a loop about the business district connecting the downtown ends of radial thoroughfares. These few through streets do not penetrate the business district.



automobile headlights or street lights. Good signs cost money; for example, a recently developed neon-tube stop sign is said to cost approximately \$150 installed, and reflecting signs may cost as much as \$50. To the original costs of signs must be added annual charges for illuminating energy, maintenance, and accidental damage. There may also be some cost for pavement markings where they are used to supplement the signs.

Police supervision also costs money. In a city where enforcement is reasonably good, a police official recently stated that the manpower per intersection required for the patrol and enforcement of through streets was the equivalent of two days per year for a motorcycle officer, and two or three more per year for a foot-patrolman. Roughly, on this basis, the cost of enforcement would be \$20 per year per intersection. It is thus clear that if through streets are to be properly established and supervised, they must be used

sparingly, if for no other than economic reasons.

Every driver has his own opinion about which streets should be through streets, and he usually prefers those which he most frequently uses. From a study of through street systems of many cities, one has ample evidence that they were selected on the basis of opinion alone, especially in the smaller mid-western cities. It seems apparent that someone suggested that Main Street be made a through street; someone else named Capital Avenue; a third, State Street, and so on.

There being no objections, these thoroughfares are made through streets and soon the citizens find that the law requires them to stop, in certain sections of the city, at each of three or four, or sometimes even five, consecutive streets. Few drivers will do this, and many soon form the habit of ignoring the stop regulation. The result is an increase rather than a decrease in traffic hazards, for a driver on a through street expects vehicles crossing to stop, and yet the driver on the cross street makes little attempt to do so. An ordinance creating an excessive number of stop intersections makes enforcement impossible.

A careful study of actual records shows that the number of accidents

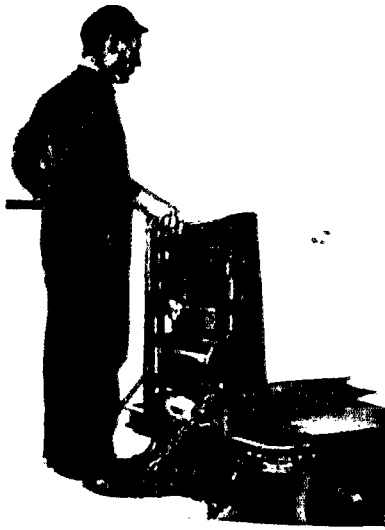
per year on any street is practically unaffected by the establishment of these stop provisions along it. There are fewer collision accidents but more pedestrian accidents. Furthermore, encouraging high speed traffic on through streets or giving vehicles on them a permanent right of way seems to increase accidents. Any material reduction in accidents accompanying the establishment of through streets normally occurs in parallel routes which are relieved of some traffic. Naturally, poorly selected, marked, and enforced through streets will have a less favorable experience than normal, and a sharp increase in accidents might well be expected under such conditions. Likewise, the unusually well planned and supervised through streets probably reduce accidents, even on the through streets themselves.

These difficulties in the application of through streets indicate how far we can go with them. The great majority of cities which now have through streets should make them fewer and better. Cities which have not used this form of traffic control should understand that its adoption will not remove the necessity of studying the city's traffic requirements from the ground up, and of using through streets only where they can successfully accomplish what they are intended to. It is especially important not to carry through streets into business districts where the traffic volume is so great that vehicles in one direction must be stopped to create gaps for the passage of vehicles moving across their path. This is the field of the automatic traffic signal.

Congress Report Used for Safety Handbook

REPORTS of delegates of United Traction Company, Capitol District Transportation Company, Inc., and K. L. W. M., Inc., of Albany, N. Y., who attended the Electric Railway Sessions of the Eighteenth Annual Safety Congress, have printed a vest pocket booklet.

The report classifies the points brought out in the papers and discussions according to the responsibilities of management, supervisors, operators and other employees, and the training of operators. The booklet also contains a message of appreciation of the work of the safety committees signed by E. Murphy, general manager of the affiliated companies.



Traffic in a busy factory duplicates on a smaller scale the conditions of the street. Orderly plant arrangement, careful training of drivers and maintenance of equipment are needed

THE first step in organizing factory traffic at our plant was to re-arrange aisles and roadways in and around the plant, to install the necessary stop lights and stop signs, and to enforce the rules to keep the aisles and roadways clear.

The next step was compiling a rule book. This book was compiled through information received from transportation chiefs, from safety engineers in other plants, and from city and state codes.

After receiving the management's approval of these rules, we called in every person driving on company business. Each man was made to pass an examination by the safety department. If he passed with a good percentage, he was allowed to continue driving. A number of them did not drive again.

Some of them had poor vision and some had other physical handicaps which made them unsafe drivers. A few of the drivers regarded the whole procedure as a lot of red tape. They didn't care whether they knew the rules or not, saying they had driven all their lives, and that the safety department could not teach

Organizing Factory Traffic

By WILLIAM A. BECHILL

Safety Engineer, Chrysler Corporation

them anything new. (They did not drive again for our company.)

These rules are enforced by the safety department, by the plant protection department, and by the safety committee men in each department. Drivers found breaking these rules are brought in and talked to. In most cases that is all the discipline needed, but some are laid off for a week or two; others are discharged—depending on the offense and the attitude of the man.

The most important step in preventing accidents in connection with factory traffic has been in educating the new man. Before going to work every driver must satisfy the safety department that he is a good driver—whether he operates an electric truck, a tractor, a passenger automobile or an automobile truck. If he assures us that he can drive and knows something about a car or a truck, he is given a rule book and asked to study it. When he claims he knows all the rules he is questioned, and if he passes with a good percentage he is put to work. If he does not, he is sent back to the employment office as unfit for driving.

The suggestions for safe operation presented in the following paragraphs are based on the "Chrysler Safety Rules for All Drivers":

Selecting the Driver

First, we must consider the driver's qualifications. Only reliable, temperate men, with good eyesight, hearing and general health are hired for this work. Physical handicaps may mean a serious menace to the lives of the driver and others. Often a man is in a tight place with the truck where aisles are narrow and he must act quickly. If hampered by physical defects he may not be able to do so.

Each driver is charged with the proper care of his equipment and is responsible for any damage to it. We try to make him feel as if the equipment were his own and we spend some time on this point when

he is hired. Next day when he goes out to his foreman he hears it again, and still more attention is given to the subject when the man goes to the garage to get his vehicle.

Speed limits are important. In open aisles or roadways the driver must be able to stop inside of eight feet. In narrow aisles, congested areas, around machinery, or in stock areas, he must be able to stop within three feet. The speed limit inside the plant is ordinarily eight miles an hour, but if conditions make it necessary to slow down to two or three miles, that speed becomes the limit. Around the outside roadway the limit is twelve miles an hour. Most of the trucks are equipped with governors set at twelve miles an hour. Speeding and reckless or careless driving are punishable with a layoff or discharge.

No Passengers Carried

Under no circumstances does anyone ride with the driver. We have a record of several cases where men have been thrown from trucks when the brakes were applied. Men standing on electric trucks sometimes lose their balance and are thrown when a truck turns a corner.

When entering or leaving a door in any building, entering a main aisle or roadway, or rounding a blind corner, the driver must limit his speed to two miles an hour and blow his horn. Stop signs have been erected at many of the doorways in the plant.

The horn must also be sounded when approaching anyone from the rear, and the operator must have his vehicle under control so he can make an emergency stop. This is necessary to prevent rear-end collisions in case the driver ahead should make an emergency stop. Often a pedestrian will dart out into the aisle from between racks and the driver must make a quick stop.

Daily inspection of equipment is vital. At the start of each shift the driver must inspect brakes, steering gear, horn, battery, the gas, water in the car, and lights. That must be done outside of the garage, before the driver enters the plant or goes out on the road. Mechanical defects must be reported at once, and the driver is instructed to refuse to operate the vehicle until repairs are made.

Trucks or tractors must not be operated two abreast, and they must not pass unless one is standing still or going in the opposite direction. In either case the driver must be sure of clearance. Allowing trucks to run two abreast provides a temptation to race and creates the hazard of sideswiping.

Electric power and lift trucks must always be operated with the load in front of the operator, except when he cannot see over the load. Backing is permitted only in turning around or getting out of a "hole." We feel that the man can watch the load better in front of him, and can watch the corners of the rack or skid so that he will not sideswipe anyone standing in the aisle or hit any equipment as he turns a corner.

Dangerous Loads

Carrying loose material on the table of a jitney should be avoided; it should be loaded in boxes, barrels or other containers, or on skids or racks.

Loads are dangerous if:

1. Top-heavy.
2. Projecting.
3. Not held securely.
4. Unequally distributed.

If the driver feels that a load is unsafe, he, and no one else, is the authority. If he refuses to move it, the foreman must pile the material to satisfy the driver.

A high-lift truck should never be operated with a loaded platform elevated. Those who have punch press departments in their plants know that job setters and drivers frequently move dies and other loads with the platforms elevated. Loads are frequently top-heavy and may turn over, or the dies may slide off the platform when the brakes are applied.

Each driver is expected to know the carrying capacity of his truck and to avoid loads that are too heavy for it. We have had little trouble in this respect, however.

When an electric truck is left unattended the control handle should be removed. I remember

one instance several years ago when a laborer took a chance with an electric truck from which the driver had failed to remove the control handle. The man could not control the truck and was pinned between the truck and a packing case and spent four weeks in the hospital.

Operators of gasoline-powered vehicles must keep both hands on the steering wheel, except when shifting gears, so that the vehicle will be under control at all times. Some operators may be expert one-hand drivers at night, but that kind of driving is not tolerated in the plant.

Repairs to vehicles must be made at the garage, not by the driver. Our drivers are not jacks of all trades and they are not expected to make the repairs for which the garages are responsible. Electric truck operators are not permitted to tamper with the control fingers of the truck. That is an electrician's job.

Slippery spots in the plant require careful driving and the driver should slow down when approaching them. I have seen trucks go off the loading dock and skid into machines. No one was hurt in any of these mishaps, but skidding is always dangerous. A truck should never be driven on a wet or slippery ramp.

Before entering an intersection, a driver must come to a full stop and blow his horn. This applies wherever two aisles cross, regardless of whether or not there is a stop light or stop sign. He must slow down and sound his horn before turning corners, and is warned to be particularly careful around machinery and crowded spaces.

A few short blasts of the horn are more effective than a single long blast.

Extra care is required in passages when employees are entering or leaving the plant, during lunch time, or when shifts are changing. At noon or at quitting time, when the plant is working overtime, we send all our trucks to the garage fifteen minutes before the whistle blows. That gives the men fifteen minutes to service the gas tanks on the gasoline trucks, and with electric trucks, time to change the batteries or give them a fairly good charge, as well as allowing time to inspect brakes and other parts of the truck.

Look Before You Back

"Look behind before backing out from under a load" is an important precaution. Many an accident has occurred when an operator has backed into something he wasn't expecting.

Ten feet behind is the minimum safe distance when following another truck. This allows ample space between vehicles when the driver ahead finds it necessary to make a sudden stop.

We are considering putting guards at the rear of all pedals. We have one truck so equipped and it is proving satisfactory. However, I have seen some pedal guards that seemed rather clumsy. If a man were to meet with an accident he might not be able to get away from his truck.

Riding between trucks and trailers is forbidden. In the past several accidents occurred while men were riding on the tongues between vehicles. We have equipped our trailers with riding steps or riding seats, thus eliminating the reason for any man getting between two trailers to ride.

Training New Drivers

One of our most important rules is that permitting only qualified and licensed drivers to operate tractors and trucks. The driver must allow no one to use his truck unless he can show a license. Our garage men will not allow a truck to leave the garage unless the man has a license. In that way we prevent the operation of trucks by die-setters, job-setters, assistant foreman and others who are not qualified. If men can drive and satisfy us that they are capable, we give them licenses to drive.

To maintain a force of qualified drivers we have each department send us two men to be trained. They receive training licenses and are trained by the regular truckers. If a regular trucker is off work, he has an experienced man who knows the shop and stock to put on the truck, thus eliminating the risks of an untrained substitute. It also gives the foreman an opportunity to increase the pay of the man he is breaking in, should he be made a regular truck driver, and it gives an old employee promotion. That is always an incentive to good work.

The problem of factory traffic is not confined to the trucks and their operators. You may blame the drivers, but the pedestrian is the worst offender of all. He will dart out into the aisles, from behind equipment, and from between racks. Every day I hear a number of complaints from employees: "That blankety-blank fool ran right in front of me—he did this, and he did that." When you get right down to the facts, you will find that the trucker was not at fault.

Motor Vehicle Deaths Mount to 31,500 in 1929

Death Rates by Population and by Cars Registered Show Increase Over 1928

By R. L. FORNEY

Statistician, National Safety Council

THE century's third decade closed with a terrific increase in motor vehicle deaths, on the basis of reports which, though incomplete, are sufficient to justify a fairly close estimate.

Data from four sources carefully analyzed by the National Safety Council indicate that there were about 31,500 deaths in 1929 resulting from motor vehicle accidents. The estimate includes all types of accidents where automobiles or motorcycles were involved.

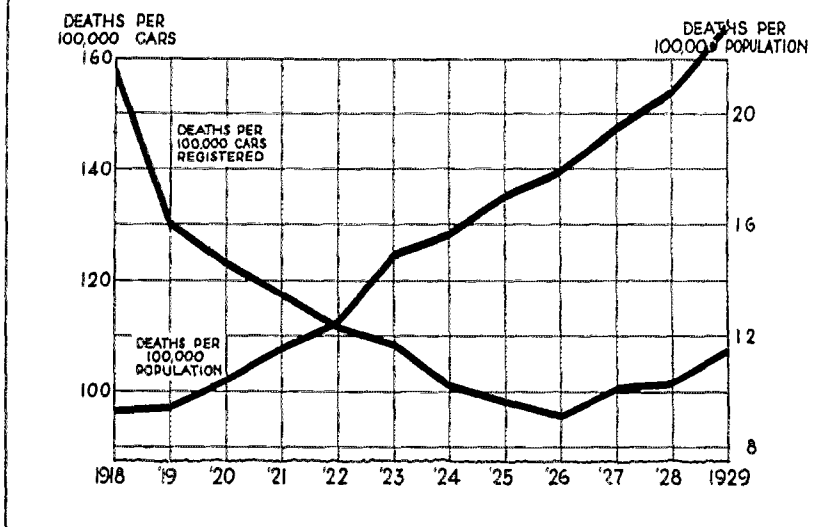
This total represents an increase of approximately 3,500 deaths over 1928 when 27,966 persons lost their lives in motor vehicle accidents. The indicated increase—between 12.5 and 13.0 per cent—is larger than has occurred in any recent year and is in sharp contrast to the 1929 increase of only 8 per cent in registrations of motor vehicles.

Only a small part of the 3,500 increase in deaths for 1929 can be explained by the population increase, which, according to most reliable estimates, amounted to only slightly more than 1 per cent. The death rate per 100,000 population, therefore, increased from 20.8 in 1928 to an estimated 23.2 in 1929, these rates excluding motorcycle accidents and collisions of automobiles with heavier vehicles.

The comparatively small increase in registered automobiles also caused a sharp increase in the death rate on a registration basis. This rate, which decreased from 157.4 deaths per 100,000 cars registered in 1918 to 95.5 in 1926, jumped to 100.2 in 1927, to 101.7 in 1928 and to an estimated 106.6 in 1929. This is the highest rate, on a registration basis, that has been recorded since 1923, when the motor vehicle accident situation became so bad that President Hoover, then Secretary of Commerce, was moved to call the First National Conference on Street and Highway Safety.

The 1929 increase of 3,500 deaths is

AUTOMOBILE FATALITIES IN THE UNITED STATES *Excluding Collisions With Heavier Vehicles*



the largest that has ever been recorded in the United States or any other country. The percentage increase, while greater than in any recent year, is not so large as in the years when the first large increases in motor vehicle production and registration began.

In the short space of 10 years motor vehicle deaths have now increased approximately threefold. In 1919 the grand total was 11,154 and in the first year of the decade, 12,557. In 1919 motor vehicle deaths represented only 15 per cent of all accidental deaths; in 1929 approximately 32 per cent.

The four primary sources of data mentioned above and used in computing the 1929 estimate are:

1. Direct reports to the National Safety Council from registrars of vital statistics in 39 states and the District of Columbia.
2. Reports on the mortality experience among the 18,000,000 policy-holders of the Metropolitan Life Insurance Company.
3. Reports compiled by the United States Census Bureau on motor vehicle deaths in 78 large cities.
4. Monthly reports during 1929 to the

National Safety Council from approximately 100 cities.

Thirty-six states and the District of Columbia recently reported comparable figures for 1928 and 1929, most of them for 11 months in each year, which showed about 11 per cent more deaths in 1929 than in the previous year. These states represented a population of approximately 100,000,000 persons, or over 80 per cent of our entire population.

The 11 per cent increase indicated on these provisional reports is almost certain to be exceeded by the final reports because there is uniformly some delay in the filing of death certificates with the state registrar. Therefore, whereas the 1928 reports submitted were final, the 1929 summaries were in most cases provisional, subject to later increase.

The Metropolitan Life Insurance Company has completed tabulations of experience among its policy holders and reports an increase in motor vehicle deaths of 13.3 per cent in 1929.

(Continued on page 81)



Tunnels Separate Children from Traffic

By E. B. LEFFERTS

Manager, Public Safety Department, Automobile Club of Southern California

ALL heavily traveled street crossings in a city are "grade crossings" in a certain sense. There a very great majority of accidents occur to pedestrians and to motorists. Only by the installation of underground passages or overhead bridges can absolute safety be assured, and this follows no matter how carefully and prayerfully city authorities may work to bring about immunity from casualties at such points through other means. Signals, traffic officers, ordinances, bells, and "what have you" may all be resorted to, but the only certain safe crossing is by tunnel or bridge.

This is peculiarly true as regards school children, and all children using the city street. School children constitute the larger portion of the youth of the cities who traverse the sidewalks and streets, and their numbers converge at the crossings directly in front of the schools. Consequently it is apparent that at these crossings the necessity for protection is most imperative. Here the crowds of youngsters gather. Here the streets are most liable to congestion of little ones and students of older age. And here, therefore, there must be in the future full and ample security universally afforded to the rising generation. It must be taken into consideration that there is a wide difference between the degrees of danger arising in city thoroughfares to adults and to those of an immature age. Children are proverbially heedless and happy-go-lucky in disposition and prone to take risks which a mature person instinctively would avoid. They often are possessed of a spirit of bravado and will dash across a street in front of a moving automobile or truck, exposing themselves to imminent peril. Numerous deaths and serious injuries are attributable to these take-a-chance tactics on the part of children, and in the great majority of such accidents motor drivers are not to blame.

On the other hand ordinarily prudent children may get confused, or

In 1924 Los Angeles built the first tunnel for the protection of school children. To date 46 tunnels have been built and are in constant use.

frightened while crossing a street, and unwittingly walk right into the path of a motor vehicle. The average quality of presence of mind, acquired by the experience and knowledge gained through advancing years, usually is lacking in the juvenile make-up. The little boy or girl who suddenly is placed in a dangerous situation too often is rendered helpless by the danger, and is knocked down and killed or injured where a mature person would have escaped.

While motorists as a rule recognize the handicaps of the young, they may be traveling at a very rapid rate of speed along a street, or be turning a corner swiftly and for these reasons may strike down a child before they know it. School zone precautions are not always observed by the drivers of automobiles, and where visiting motorists are passing through, little or no attention is paid to such warnings. Some help has been given by having the larger children pilot the smaller ones across the streets, or by stationing a traffic officer at the crossing to halt cars until the school children reach a place of safety.

But as attendance at urban schools steadily increased, adding to the number of children crossing and recrossing the streets at points occupied by school buildings, it became obvious that ordinary measures of precaution would not bring about the desired results. It was seen that a permanent and fool-proof structure of some kind must be installed if the situation were to be definitely relieved, the problem solved, and the end attained. Police authorities, the

school boards, and the leading automobile organizations had come to a complete accord as to the remedy, for accidents among the children showed no hopeful diminution.

In the past ten years many thousands of children in the United States between the ages of one and fifteen have lost their lives through automobile accidents. Many of these thousands were school children who were stricken down on the way to or from their studies, a considerable number being killed at or near the crossings adjacent to their particular schools. Thousands of others were injured, a great many seriously. It is a ghastly record of the slaughter of the innocents, and a record which must be reduced by all means and



A group of Los Angeles school children entering one of the tunnels provided for their use.

methods possible. No amount of money is too great if it will bring about a lasting reform.

As far back as 1925, the city of Los Angeles, cooperating with the Automobile Club of Southern California and the school officials of the

city, had taken up and carefully scrutinized the situation and formulated plans for its relief. The initial experiment of constructing school tunnels to meet the emergency was launched in 1924 with the building of the first tunnel. Its eminent fitness for safety purposes was so emphatically demonstrated, that all of these respective cooperating elements joined vigorously in a movement to extend this valuable service.

In 1925 a bond issue of \$350,000 was passed to establish additional tunnels for the school children, and in July, 1926, the first of the new tunnels was completed and opened for use. It was quickly followed by the construction of additional underground passage ways.

It is obvious that the average child of tender years is incapable of cool action and quick mental processes when confronted with imminent peril. Even men and women who have reached what is commonly known as an age of discretion cannot always be depended upon in this respect. At any rate, presence of mind is a plant of slow growth, and the child of from six to twelve years of age usually is helpless when in deadly jeopardy. The record of the dead establishes this without need of argument.

Up to the present time 46 tunnels have been completed and are in constant use. Not only do school children pass to and from school in complete safety, but outside of school hours they may use them when running errands or crossing over the streets at such intersections. They also may be utilized by anyone crossing the streets at those points.



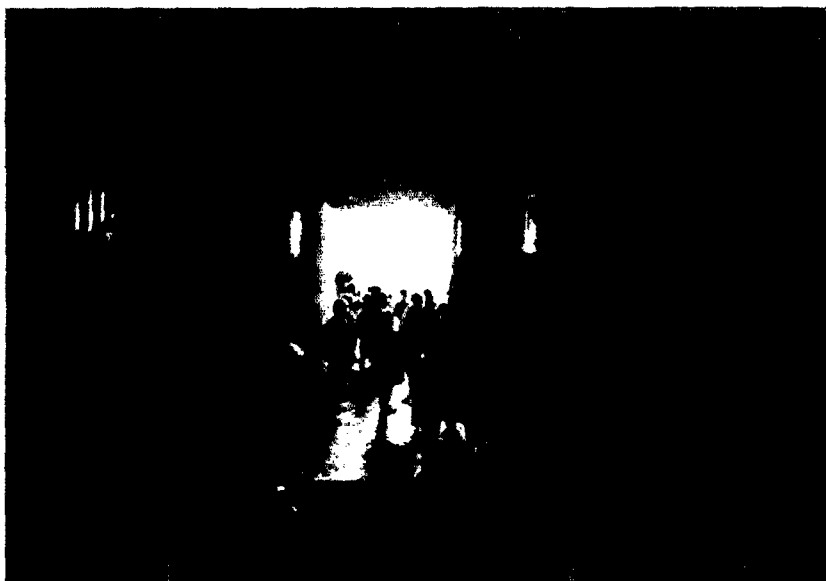
Emerging safely on the opposite side of the street.

The average cost of these tunnels was \$8,000. The cost per tunnel, of course, varied according to the length, which runs from 100 to 300 feet. The safety committees, which have been organized in the city schools by the safety department of the Automobile Club of Southern California with the cooperation of school authorities, render the use of the tunnels practically 100 per cent on the part of the school children. As one of the measures of economy the stationing of traffic officers at these points has been eliminated and also the necessity for the stopping of vehicles at any of the crossings.

The saving incident to the elimination of the stopping of vehicles is difficult to ascertain, but the cost of a traffic officer's time is pos-

sible of correct determination. It easily can be seen, therefore, that the interest on the investment used in constructing a tunnel is far less than the salary of a police officer during the time that he would be stationed at this point. The saving through the elimination of the stopping of automobiles, added to this figure, constitutes a sound economical venture.

It is the duty of cities and city officials, school authorities, and all organizations interested in public safety, to do everything possible to minimize these dangers. It is a responsibility which cannot be shifted, and one which, if met and properly attended to, will avert many a tragedy and give the growing generation a chance to reach manhood and womanhood. It is believed that in time every American city of any size will adopt this method for the preservation of the lives of school children, for, like grade separation at steam and electric railway crossings, it is a positive solution of the problem which admits of no denial.



A safe passageway underneath the city's traffic.

Naming the Accident

A PROTEST against the present method of classifying an accident in which a motorist runs into the side of a train is registered by the *Illinois Central Magazine*. Under such conditions the motorist is reported as having been killed or injured by a train. If he meets death by driving into the side of a house, he is reported as killed in an automobile accident. The editorial urges that such mishaps be called "automobile accidents," rather than any phrase which would imply that the train was the aggressor.

The Supervisors Did It

By CARMAN T. FISH

Every departmental safety inspector at The Corrigan, McKinney Steel Company is a foreman or assistant superintendent. Their consistent efforts have brought a steady reduction in accident frequency

WHEN every supervisor is a safety man, either from personal conviction or through the influence of his fellow supervisors, results are sure to follow. With the Corrigan, McKinney Steel Company organized for safety on this basis, results followed in a steady decrease in accident frequency, a number of long-time departmental safety records, and the winning of second place in the National Safety Council's Iron & Steel Safety Contest for 1929.

The Corrigan, McKinney Steel Company operates blast furnaces, open hearths, mills, a by-products coke plant at Cleveland, Ohio. The average number of employees at the Cleveland plant for 1929 was 2,890.

As in most companies, accident prevention work started with the safeguarding of major physical hazards. In 1917 a limited program was undertaken with limited effect on accident occurrence. In 1925 the work was reorganized with greater attention to the personal side of accident prevention. Dr. R. C. Engel, head of the service department and medical director for the company, organized the accident prevention and medical work of the company on its present basis. Starting with the company as a part-time physician in 1912 and becoming a full-time physician five years later, Dr. Engel was exceptionally well qualified to undertake the work.

After convincing the executives of the soundness of the program and securing their backing, Dr. Engel proceeded with his usual thoroughness to sell the superintendents and foremen and to organize the necessary committees.



The departmental safety inspectors of The Corrigan McKinney Steel Company. Inset: Dr. R. C. Engel, director of the Service Department.

A safety inspector was appointed in each of the 14 departments. Each inspector is either a foreman or an assistant superintendent and thus has considerable authority and some of the qualities of leadership. This group is the backbone of the safety organization in the plant.

A general safety advisory committee, headed by Dr. Engel, consists of the chief engineer and the superintendents of the blast furnaces, coke plant and representing the steel plant. It exercises the usual functions of reviewing and approving the recommendations of the safety inspector's committee.

Departmental meetings are held monthly and it is a standing rule that the superintendent must preside. Each department has its own sub-committees reporting to the superintendent at the monthly meeting and minutes are sent to the service department. The success of these meetings has been due largely to the active leadership of the superintendents.

All recommendations are submitted to the superintendent whose department is involved before any

action is taken. Since the superintendent is held responsible for accidents, all matters affecting his department, guards or changes in methods must receive his approval. After recommendations have been passed by the superintendent and by the advisory committee they are checked by the engineering department and passed on to the vice-president in charge of operations for the final OK, which is invariably forthcoming.

Every week the safety inspectors meet to discuss accident prevention methods and their discussions range from how Bill's foot got under the wheel of a coke buggy to the psychological factors of accidents. Back of all the discussion is an earnest desire to profit from each other's experience and to correct present hazardous conditions and practices. Inspectors may criticize each other's methods and defend themselves energetically, but it is all taken in the right spirit. All safety inspectors have other responsibilities, but in listening to their deliberations one would think that safety was their major job.

"In discussing accidents," said Dr. Engel, "our aim is to get at the underlying causes with a view to preventing future accidents rather than to place the blame. Few accidents are the result of willful negligence, and invariably the actual facts of an accident are a sufficient lesson for a supervisor. Too much zeal in placing the blame may break a good man."

Plant affairs are not the only subjects discussed at these meetings, nor are the discussions limited to industrial safety. Public and home safety and fire prevention at the plant and at home are frequently brought before the group. At one meeting considerable attention was given to a decision of the United States Court of Appeals regarding the rights of pedestrians. Copies of radio talks presented in the Universal Safety Series are distributed among the inspectors and other key men.

Material secured from the National Safety Council and the Cleveland Safety Council also provides topics for discussion. The information gained at these meetings is carried to the men in the plant.

All accidents, minor or serious, are investigated, and near accidents are not overlooked. The departmental safety inspector makes his own investigation, and L. H. Pickrel, Dr. Engel's assistant and safety inspector from the service department, conducts an independent inquiry. All witnesses are interviewed and reports are sent to the president and to the vice-president in charge of operation. Copies are also sent to superintendents.

When a worker is involved in a lost-time accident, the superintendent of the department must report to Vice-president Harrison for a private interview. This helps to fix in each supervisor's mind his own responsibility for accidents and is clear evidence of executive interest. Such an interview is dreaded, not because of severe discipline, but because a superintendent hates to admit that he has failed in one of his major responsibilities.

The seriousness of near accidents has been impressed on all supervisors, and no mishap is dismissed lightly because no one happened to get hurt. Invariably a narrow escape from injury reveals something wrong with men, methods or machines, and the lesson is applied.

Each year a large delegation from the Corrigan, McKinney Steel Company enrolls in the supervisors' course conducted by the Cleveland Safety Council, and at the close of

Racing for a Big Stake



A CHECK for "559 safe, healthy and happy days" is the stake in the race shown in the above picture. This unique race is one of the methods used to maintain interest in the contest between The Eagle-Picher Lead Company's plant at Hillsboro, Ill., and the Hammar Bros. White Lead Com-

pany, an Eagle-Picher subsidiary, at East St. Louis.

The safety rabbit is placed above a sign indicating 558 days without a lost-time accident. Hillsboro's best previous record. Pursuing it are two greyhounds representing the competing plants.

the course graduates are entertained at the graduation banquet by the company. These schools have been the source not only of much practical information on accident prevention methods but also a clearer insight into safety work.

The Medical Service

An important part of the service department's work, and the one from which the other activities have developed, is the medical service. Assisting Dr. Engel are five nurses who take care of the minor first-aid cases. A staff of surgeons, dentists and specialists in the various branches of medicine is employed on a consulting basis. Only emergency cases and those arising out of employment are handled by the company, but employees are always free to ask advice on health topics.

Physical examinations are given to all men on employment and periodic re-examinations are on a voluntary basis. When an employee is off duty for seven days or more, either for accident or illness, he must report to the hospital before returning to work.

Getting injured men back to work as soon as possible is the aim of the medical department. No jobs are made for those suffering from disabilities, but if an employee can fill any regular occupation without aggravating his condition he is allowed to return to work with the doctor's permission. Physiotherapy is employed frequently in shortening the period of disability.

Large numbers of employees have been trained in the prone pressure method of resuscitation. Depart-

mental safety inspectors are trained and they in turn instruct their men under Dr. Engel's supervision. A knowledge of resuscitation is needed particularly around the blast furnaces because of the ever-present hazard of carbon monoxide.

Each year during the past five years has shown a reduction in the accident frequency rate of the previous year. During 1928 the entire plant operated 55 days without a lost-time accident. All departments have established commendable records of clear days, the following being some of the recent accomplishments:

	Av. No. of Employees.	Best Record.
Blast Furnaces	300	449
Main Power Station.....	70	1220*
By-Product Coke	251	637
Electrical	279	292
Laboratory	80	1386*
Mechanical	429	207
Open Hearth	302	401
Rolling Mills	700	309
Order and Shipping.....	101	485*
Yard Labor	192	779*
Office	87	866*
Plant Police	43	4423*
River Dock	55	503

*Record still unbroken.

The accomplishment which has meant most to the company, however, was the winning of second place in the National Safety Council Iron & Steel Safety for 1929. During the first six months of the year the plant operated 4,221,304 man-hours with 11 lost-time accidents, making a frequency rate of 2.606. Photostat copies of the certificate were presented to the departmental safety inspectors whose efforts had played such an important part in winning the award.

Keeping the Plant Dust Free

*Modern Appliances Aid House-
keeping in the Factory as
well as in the Home*

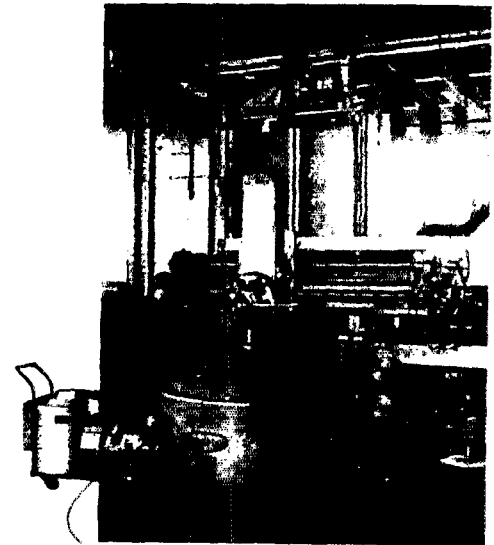
By R. G. HARKER

*Manager of Sales, Invincible Vacuum
Cleaner Manufacturing Company*

GONE are the days when the living room carpet was removed from the floor every spring and hung over the line for its annual beating. The housewife no longer wraps a cloth around her head and proceeds to raise clouds of dust with a broom. Modern methods of cleaning have revolutionized housekeeping methods and eliminated much dusty drudgery. The useful vacuum cleaner with its numerous attachments cleans not only the rugs and carpets, but also furniture, draperies and bare floors. The same useful appliance, built for heavier service, is helping industry to clean house.

Not so many years ago dust and dirt were considered inevitable in industry. Food products factories, it is true, were obliged to maintain high standards of cleanliness, but in the general run of manufacturing operations where dirt would not damage the product, little attention was given to the finer points of cleanliness. Coarse dirt was swept up, but the fine particles of dust remained on the floor or settled on the walls, windows and ceilings.

With the growth of accident prevention work in industry the connection between cleanliness and safety became apparent. In many industries the incentive to cleanli-



Metal chips and shavings are easily removed from machines with a heavy duty vacuum cleaner.

ness was the explosive nature of a large variety of dusts produced by the manufacturing processes which presented a serious hazard. There were, however, many other reasons for increased attention to cleanliness. One of them was the reduced efficiency of plant illumination caused by the accumulation of dust.

Many companies today pride themselves on their "daylight factories." A large part of the wall area is devoted to windows, and skylights are used wherever practicable. Interiors are generally painted white or some tint with a high efficiency for reflecting light. It requires constant effort to keep these interiors and windows clean to provide the maximum amount of light.

More efficient systems of artificial lighting are also being installed and these require careful maintenance if the factory is to get the light it pays for. Illuminating engineers state that even a light film of dust on lamps and reflectors will reduce their efficiency as much as 25 per cent.

The broom, long regarded as a symbol of neatness and order, is now recognized as an inefficient cleaning implement. Dry sweeping removes the heavy, coarse dirt and litter but it also scatters the fine particles of dust in the air where they settle on the walls, windows, ceilings and lighting fixtures to reduce the amount of direct and reflected light. Sprinkling the floors and using sweeping compounds help to keep dust from rising but sweeping will leave considerable dust in



Removing dust from walls and pillars regularly makes the plant lighter and makes repainting less frequent.



Dust is not raised when floors are cleaned by suction.

cracks in the floor, around machines and in corners. Only a strong suction is effective in removing dust from corners that are hard to get at with brush or broom.

The influence of clean surroundings on employees is less easily measured but none the less real. Frequently careless, inefficient employees come from ill-kept homes. Their activities reflect their environment. Employees, however, spend approximately one-half of their waking hours at their place of employment and shop conditions are likely to be reflected in the home.

In promoting standards of industrial cleanliness the vacuum cleaner is filling the same position that it does in the home. From the standpoint of economy, the vacuum cleaner has a decided advantage over brush and broom methods. Fewer men are required and a more thorough job of cleaning can be accomplished in much less time. As with the domestic vacuum cleaner, the numerous attachments make it possible to get at the out of the way corners—around benches and machines, pipes, walls, ceilings, sprinkler heads—places where dust is frequently allowed to accumulate until the periodic housecleanings. The regular removal of dust also means less scrubbing and less frequent repainting.

Dust removal is essential in keeping down fire hazards in many industrial operations. A conspicuous example is the power plant where hundreds of tons of coal may be used in a day. Large quantities of coal dust and dirt accumulate all over the power plant, covering the steam pipe lines, tops of boilers, floors, walls and ceilings. Any agitation of this dust sufficient to fill the air with it creates a serious fire and explosion hazard. Under such conditions sweeping stirs up clouds of dust which settle in places previously gone over.

Dust as a menace to health is universally recognized and installations which remove dust at its source are indispensable in many operations. Exhaust systems, however, do not make general plant cleaning unnecessary, although they lighten the work. Keeping the workrooms as free from dust as possible is one important method of reducing absenteeism through illness.

The influence of clean surroundings on the habits of the workers is often remarkable. In one Ohio paper mill where portable vacuum cleaners are used throughout the plant, an executive expressed the opinion that tobacco chewing during working hours had decreased about 50 per cent. He stated that improved

standards of cleanliness had made the workmen reluctant to spit or throw tobacco on the floors.

"What is cleanliness worth to a plant?" This can be answered by the experience of hundreds of manufacturers who have found that a clean plant actually improved the product, increased production, reduced fire and accident hazards. They have also found that cleaner plants have improved the health and efficiency of the workers.

Button Up Your Overcoat!

By C. O. SAPPINGTON, M. D.

*Director, Industrial Health Division
National Safety Council*

THE fellow who brags about his cold baths is a pest during the winter months to those who shiver in the cold blasts. To some, a cold bath brings a warm, healthful reaction; to others it may be positively dangerous.

Many have the idea that wearing as little clothing as possible is a good way to "toughen" themselves against cold weather. It is true that some people can wear light clothing in winter without discomfort but the idea of any toughening process is entirely wrong.

The body is actually a heating plant stoked with food. Insufficient clothing for the season permits too much heat to escape for bodily comfort and welfare and resistance to colds and other diseases is likely to be weakened rather than strengthened. Comfort is a safe guide in deciding whether to wear long flannels or B. V. D.'s.

Years ago people were afraid of cold air, particularly night air. They slept with rooms sealed tight. Then many went to the other extreme and opened the windows wide, even with strong, cold winds blowing in. Too low a temperature in a sleeping room is not desirable. It should be about ten or fifteen degrees below the temperature of a living room. On a cold night it is sufficient to open the window about two inches to secure ample circulation of air.

Engineers are careful to insulate heating systems to avoid waste of fuel, and the body needs a similar insulation. Cold weather is exhilarating if you are comfortably dressed but if you are numb or chilly your resistance is lowered.

All persons do not require the same amount of clothing so let the other fellow brag about his hardiness. Let comfort be your guide.

Electricity Can Serve Industry

By L. F. WOOLSTON
General Electric Company
St. Louis, Mo.

Safely

Installing approved devices correctly, maintaining them up to standard and training workmen in their safe use will make electrical equipment safe

ELECTRICITY is no longer a mystery to the electrical engineer. Its action and its results can be accurately calculated and definitely predicted by mathematics. It is readily handled and may be easily controlled. It need not be feared but it must be respected.

There are two major divisions of electric currents—one designated as direct and the other as alternating. The direct current simply means that it flows in a direct line or in one direction only. An alternating current periodically alternates or changes its direction of flow and is not a straight line. The number of times it alternates its direction in one second is called its frequency. In this country two commercial frequencies were considered as standard,—one 25 cycles and the other 60 cycles. It should be mentioned, however, that 60 cycles has proved to be better adapted to light and power service, and 25 cycles is, therefore, rapidly disappearing.

Each industrial plant must be considered a problem in itself before the electrical engineer can make any definite recommendations as to the kind of power that should be used and whether it should be generated or purchased from the power company serving that community. In general it is found best to use alternating current and to purchase it. Direct current is used when a special problem is involved which necessitates certain characteristics obtainable only with direct current motors. Experience has shown that as a rule alternating current equipment costs less than direct current and is simpler to operate and easier to maintain.

Before the Madison County (Ill.) Safety Council.



Courtesy U. S. Navy Yards
Unauthorized persons cannot obtain access to this high tension equipment. The enclosure is locked and the key is kept in the electrical department.

Voltage: The selection of the proper voltage to use for distributing electrical energy about the plant depends, of course, on the amount of power involved, the distance it has to be transmitted, and the size and character of the motors to be driven. In plants of moderate size 460 volts, 3 phase, 60 cycle power has been found very satisfactory.

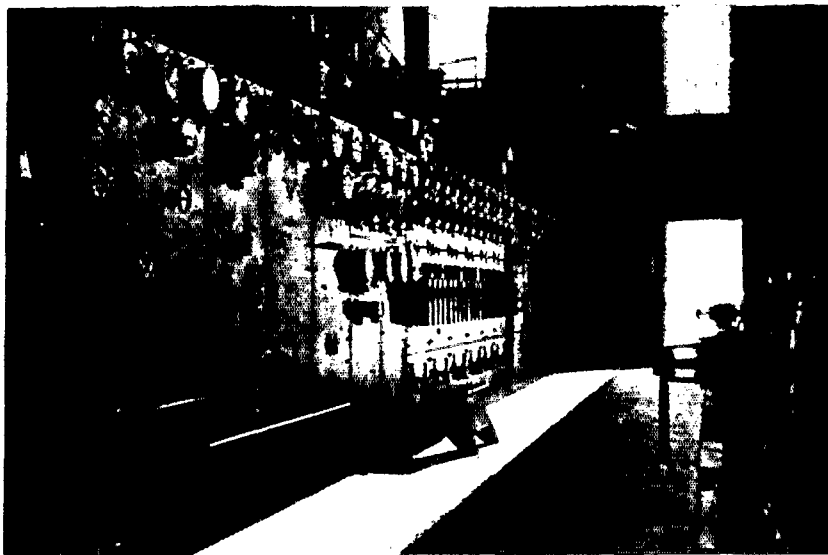
Assuming that power is purchased, it is very unlikely that an industrial plant would be served directly from the central station company's lines at 460 volts. Usually a bank of step-down transformers is required, and whether these transformers are to belong to the user or the power company depends entirely upon the rates contained in the power contract agreement.

Substations: These transformers together with the necessary oil circuit breakers, disconnecting switches, lightning arresters, busses, bus supports and their supporting struc-

tures, constitute what is called a "substation." This may be and usually is composed of all outdoor equipment. If oil insulated transformers are installed indoors they must be placed in a separate fire proof vault constructed in accordance with the Underwriters' special instructions with reference to fire doors, sills, drain to sewer, ventilators, etc.

It is essential that the supporting steel structure of the substation as well as the transformer tanks, oil circuit breaker tanks, disconnecting switch bases and insulator support bases be thoroughly grounded in accordance with the grounding rules of the National Electrical Code. The lightning arrester ground is of particular importance and should be separate from the other grounds and be as short and as free from bends as possible.

One of the most important points to consider in all electrical installations is the interrupting capacity of the oil circuit breaker that is pro-



An example of good housekeeping in the switchroom. Courtesy Electrometallurgical Co.

vided to clear all cases of extreme overload or short circuit conditions. In the case of purchased power the engineers of the central station company will designate the size and kind of breaker that can safely be used at that particular location. In the private plant a breaker that is large enough to carry the normal full load current will, with few exceptions, be large enough to take care of the extreme conditions.

Switchboard: The switchboard should be located indoors in close proximity to the outdoor substation equipment. The number of panels depends, of course, on the number of individual feeder circuits. It is good practice to have a separate circuit to each important department of the plant. Oil circuit breakers with automatic overload protection are recommended for each feeder circuit, but knife switches with fuses may be used under moderate load conditions. A watthour meter to measure the amount of power used by each department has in most cases proved to be a very profitable investment, as the various departments will be more saving of power if records are kept and the cost of power is charged to that department's operating expense.

The supporting framework of the switchboard panels, as well as the tanks of the oil circuit breakers, should be grounded. Instrument, meter, and relay cases are grounded in accordance with code regulations. The secondary wiring of all current and potential transformers should also be grounded in accordance with the wiring diagram furnished by the manufacturer of the board.

The back of the switchboard should be so protected by screens that no unauthorized person would have access to or be permitted to come in contact with it or any of its accessories. Rubber mats, wooden platforms, insulated stools or their equivalent, placed where the operator may stand on them for operating oil circuit breakers or disconnecting switches, give an added factor of safety.

Great care should be exercised that no one is allowed to open the secondary circuit of any current transformer that is connected in an active circuit, as a dangerously high voltage may be built up across these open leads.

Wires and Cables: The wires and cables connecting the substation to the switchboard and from there to the various departments, including the branch circuits to the motors and their control, should all be selected in strict compliance with the National Code. When metallic conduit is used all phase wires of the same circuit must be included in the same conduit in order to avoid excessive voltage drop and even serious heating of the conduit itself. Lead covered cable should be used in all ducts where water or dampness is liable to be present.

Motors: Standard open type general purpose squirrel cage motors may be used in a very large majority of all applications. They may be connected to the driven machine by means of pulleys and belt, gear and pinion, chain and sprocket, or direct drive using either a flexible or solid coupling. Belt speeds should not

exceed 5,500 feet per minute; chain speeds should generally be around 1,500 to 2,000 feet per minute.

Ordinary gears and pinions should not be run over 1,500 to 2,000 feet per minute pitch line velocity. Coupling speeds depend, of course, on the motor revolutions, and the size of coupling is determined by the horsepower to be transmitted at that speed.

Motors are made enclosed, ventilated, totally enclosed, for outdoor service and even for safe operation in gaseous or explosive atmospheres, such as in mines, oil refineries, gasoline stills, gas pumps, etc.

Industrial Control: Having selected the proper motor, it is equally important to provide the best and safest control for each installation. It is needless to say that there is a control available for every motor to give the proper starting and stopping sequence, as well as to protect the motor against abnormal operating conditions, such as low voltage, excessive load current, blown fuse, or any other form of open circuit in the wiring, including troubles inherent in the motor itself.

The best and safest control devices are totally enclosed and are arranged for conduit wiring. Manually operated, semi-automatic or complete automatic may be chosen as desired. Magnetic or complete automatic control makes it possible to locate the push button stations for starting, stopping, reversing, etc., within easy reach of the operator.

Maintenance

To avoid unnecessary troubles with electrical equipment, periodic inspections have been found to be very effective. Certain companies have printed forms listing the apparatus with a series of questions to be answered by a competent inspector after he has made a careful examination. Experience teaches us that many motors are seriously damaged simply because the bearings were allowed to run dry. Others have been burned out due to dust, dirt, oil or similar foreign matter being allowed to accumulate in the windings instead of receiving regular cleanings. The life of motor windings may be appreciably prolonged by keeping them clean and about once a year spraying or brushing them with an approved air drying insulating varnish.

Transformer failures may be prevented by keeping the oil free from moisture, sludge or dirt. About

once or twice a year a sample of oil should be taken from both the top and bottom and carefully examined and tested. If the samples do not appear satisfactory, the oil should be filtered until the standard oil tests are met.

Oil circuit breaker contacts should be examined at least once a year. If any breaker has been opened under unusually severe conditions, it should be examined before being put back in service, or as soon thereafter as possible, to make sure that the contacts are not out of adjustment or need replacing or that the oil is not too highly carbonized and should be replaced.

Insulators should be wiped off occasionally to keep them free from any deposit of soot, dirt, smoke or other matter which may eventually form a creepage path to ground. Bolted connections are liable to work loose, which may mean poor contact surface. This in turn causes excess heating or possibly even arcing with the result that if not caught in time, serious damage may occur.

Safety Regulations

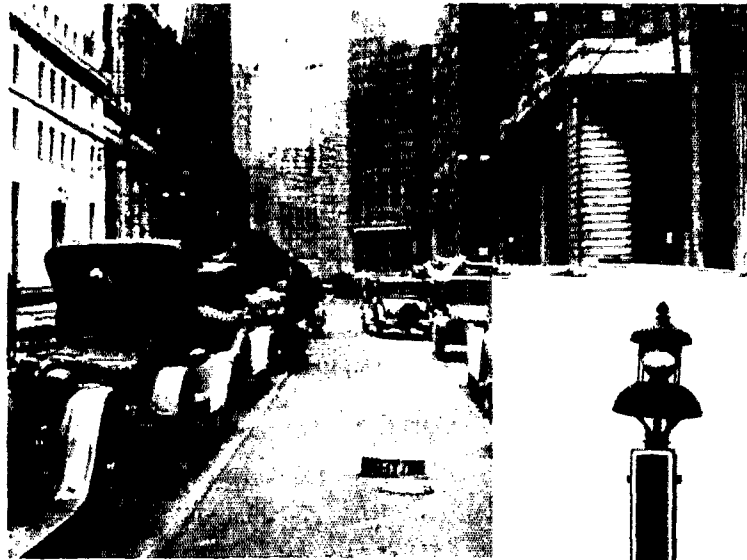
Since statistics show that about 85% of accidents are caused by personal carelessness, it is evident that the surest way to bring about reduction is in educating employees to the fact that personal caution is the greatest safeguard. The following safety regulations are extracted from the printed instructions of one of the large electrical manufacturing companies and their employees are made to understand that their willful violation is considered sufficient cause for immediate dismissal.

Work on or about live equipment or electrical lines must not be undertaken except when absolutely necessary. In such cases no employee shall do work for which he is not properly qualified, except under direct supervision of an experienced or properly qualified person. While doing such work the effect of each act must carefully be considered so as not to endanger themselves or others. They should place themselves in a secure position to avoid slipping, stumbling or moving backwards against live parts.

Loose clothing which may be caught in moving parts, as well as shoes that easily slip upon the type of floor worked upon, should not be worn. Finger rings, watch chains, wrist watches, metallic pencils or any other unnecessary metallic articles, celluloid collars, celluloid or metal cap visors, and similar articles

(Continued on page 55)

Markers Increase Visibility of Safety Zones



Above: Yellow rubber safety zone markers which are being installed at unprotected safety zones in Detroit. Right: Neon signs used to mark protected zones.



AS a starter in an accident reduction campaign, the Traffic Survey Bureau of the Detroit Police Department has recommended the expenditure of \$41,455 for markers that will increase the visibility of protected and unprotected safety zones. These street railway "way stations" are not contributing to street safety for either street car riders or motorists.

On the basis of the fatal, injury and non-injury accident record for 1927 and 1928, the Detroit Police Department installed for test purposes four rectangular red Neon signs at as many protected zones. Six months prior to the installations these zones were involved in three accidents, and during the six months following the installation one accident was recorded.

Similarly, thirteen unprotected zones, or car-stops as they are commonly called, were equipped with rubber markers. These markers had yellow backgrounds with the letters "Safety Zone" outlined in black. For the six months prior to the installation there were six accidents; for the corresponding period afterwards there were no accidents.

From January 1, 1927, to August 31, 1929, a period of two years and eight months, 73 per cent of the ac-

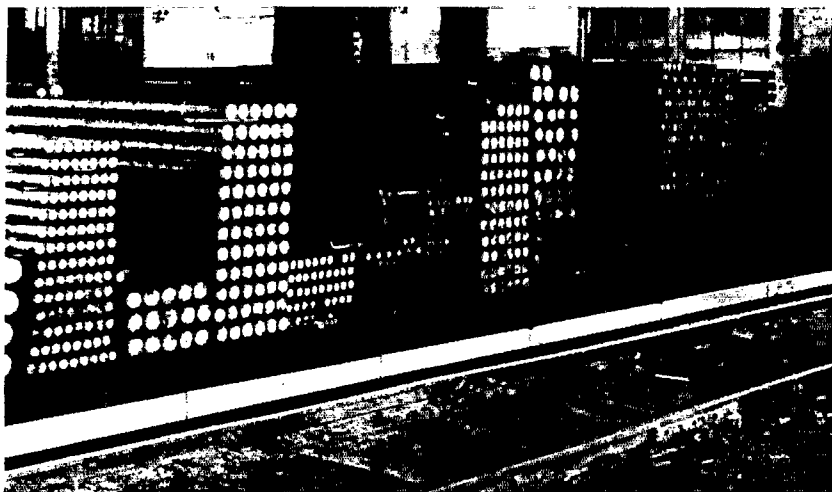
cidents reported occurred during the hours of darkness. This fact, supported by field observations, prompted the recommendation for greater visibility of indicators.

The amount appropriated to reduce accidents at these zones is slightly less than 10 per cent of the estimated cost of such accidents to the city for 1927, 1928 and the first eight months of 1929. Allowing \$5,000 as the cost of a fatality, \$175 for each personal injury, and \$50 for each property damage accident; the total estimated cost for the period was \$446,925. The rubber markers are being installed at 2,350 unprotected zones.

THE SAFETY EXCHANGE

Everybody's Page

The Safety Exchange is a round table in print. It is a medium for the exchange of ideas that have proved helpful in accident prevention. If you have developed some useful device or method, send in a description, with sketch, blueprint or photograph if possible. Comments and criticisms regarding devices described on these pages are invited.



BARS WITH UPTURNED ENDS AID PILING

The accompanying illustration pictures a simple method of stacking round bars in a safe and orderly manner. Notice the rails secured to the concrete floor upon which the piles rest; likewise, note particularly the short sections of flat bar iron with upturned ends placed between each tier to prevent the round bars from rolling. The picture illustrates the bar storage in the plant of the Westinghouse Electric & Manufacturing Company.

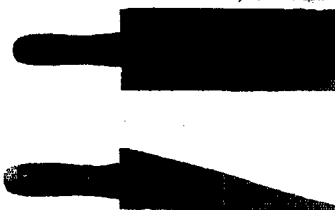
SAFETY SERVICE CAR CARRIES SAFETY EMBLEM

The special safety service cars used by the Humble Oil and Refining Company and the Humble Pipe Line Company, of Houston, Texas, are so labeled that all employees will readily recognize the safety engineer and give him every assistance in emergency cases. The emblem on the car doors is very much like the Universal Safety emblem ex-



cept that it bears the name of the company and "Safety Service Car." Incidentally this mark proclaims to the world that the car is driven by a safety engineer and he in turn sets the example of being a real safety man. In the picture V. S. Hayslip, safety engineer for the company's producing and pipe line department, stands by his coupe.

WOODEN TOOL FOR SEPARATING STEEL PLATES



During inspection of heavy steel plates there is often danger of cuts and other injuries if employees try to lift them without proper tools. This wedge, made of hard wood, is used by the men at the Homestead works of the Carnegie Steel Company during sorting and inspection, thus saving their hands from painful injuries.

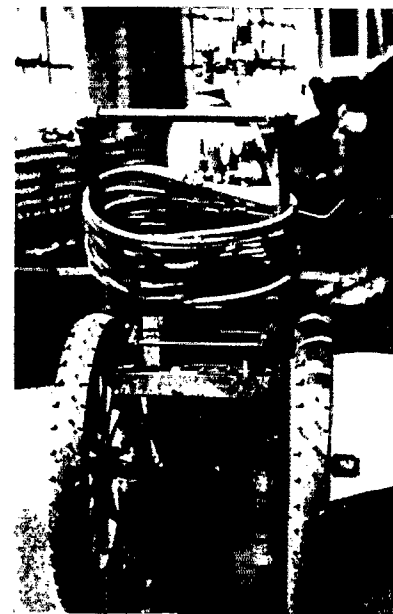
NOVEL METHOD OF RETURNING CAR TO INCLINE

At the plant of the Lawrence Portland Cement Company, Thomaston, Me., an unusual method is employed in pulling a car back on the incline. The car is brought up the incline by a hoist, which pulls it on to the floor above the primary crusher. After the car is dumped, two

counterweights pull the car back, and it is the method of attaching and detaching these counterweights that is of interest. The counterweights are attached to a cable that runs over a sheave and then to a double loop of steel, normally held in place by two short hooks catching in the lower loop. When the car reaches the top of the incline it picks up the loops by two hooks fastened to the car body. As the car runs out on the floor it drags the loops with it, and so pulls up the counterweights. After the car is dumped, the brakes of the hoist are released. The counterweights then draw the car back to the incline, and as the car goes over the incline the loops catch on the double hooks and unhook themselves from the car. The car, a heavy one, is brought up at a lively rate; but the hooking and unhooking of the counterweight loops is smooth and certain. The arrangement requires no attention from the hoist man.—Rock Products.

FIRE EXTINGUISHERS GO WITH WELDING OUTFIT

Welding equipment is frequently used where there may be considerable danger of fire from the torch flame or from the sparks which fly when the cutting or welding is in progress. In this illustration is seen a compact welding outfit equipped with two carbon tetrachloride fire extinguishers. They are not in the way and they are always on the job if needed.



ACCIDENT RECORD LETTERED ON PAVEMENT

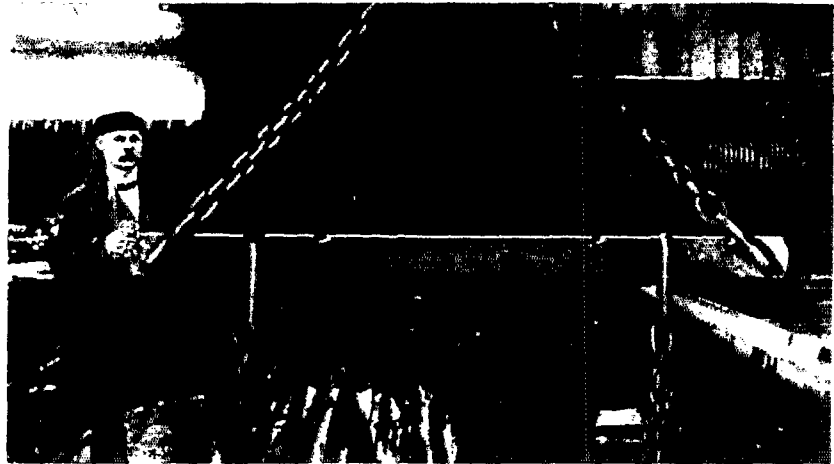
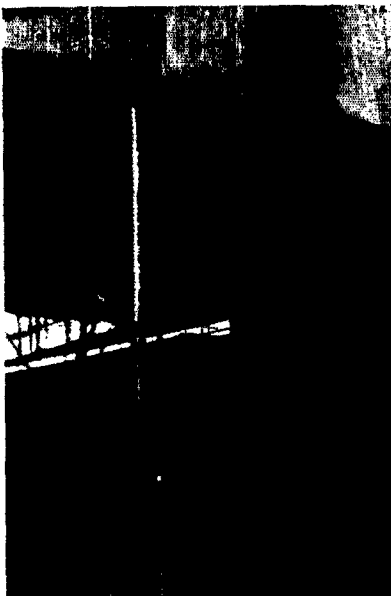
To maintain safety interest among the employees in an effort to beat a best previous no-accident record, one of the things done by the Midvale Company, Nicetown, Pa., was to paint figures on the plant pavements, showing the best previous record at the time the drive was being made. To supplement these pavement signs, other signs showing the current safety record



were posted in conspicuous places and changed each day. Here is a picture showing the big pavement sign, and also, to the left rear, one of the smaller signs displaying the current record.

SIGNAL LIKE A SEMAPHORE GUARDS TRACK

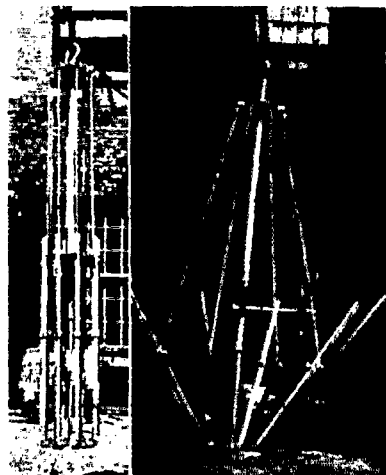
The signal shown in this picture is used by the Laclede Gas Light Company of St. Louis on their coal unloading tracks. This semaphore board is read practically the same as by railroad men. In the upright position it is clear for the train crew to come in and take away the empties or to spot full loads. When the board is in the 45 degree position this indicates that the cars are to be moved, but the train crew must advise the men before coupling. When the board is in the horizontal position, then under no circumstances may the train crew touch any cars on that track.



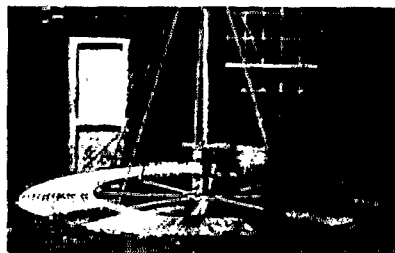
A BOLTLESS AND RIVETLESS SPREADER BEAM

A novelty in a safety sling spreader beam design is shown in the accompanying picture from the Homestead works of the Carnegie Steel Company. No bolts or rivets are required. The lower links of the angle chains are flattened slightly in one place so that they may be slipped into the narrow slots at the ends of the beam. With this arrangement they cannot jump or slip out of place while in use.

THIS SCAFFOLD FOLDS LIKE AN UMBRELLA



The group of pictures accompanying these notes shows a cleverly designed folding scaffold devised by the Champion Fibre Company, Canton, N. C., for the use of repair men while working inside digesters. The pictures, of course, were taken in the open to show proper detail. Note particularly that at the top of the first picture, showing the framework closed, two eyes



are seen. The rope attached to one of these eyes is kept taut and stationary; but the rope attached to the second eye, when relaxed, allows the outer framework to slide down and open out like the ribs of an umbrella. (see second picture.) A central pipe in this framework slides over a stout rod ending in the eye to which the first rope is attached. The third picture shows the scaffold opened out with the circular platform in place.

SLEDGE HAMMER HANDLES ARE CLAMPED ON

What chance has any of these sledge hammer heads of coming loose from the handle? The men who use them in the plant of the Universal Portland Cement Company, Buffington, Ind., can go about their work with full assurance that no one is going to be injured by a flying hammer head. Notice that the wrought iron strap, which is clamped to the handle with two small bolts, runs completely around the hammer head and is welded to it at the sides.

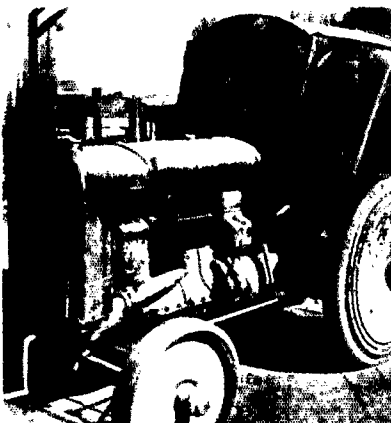




CHIP SCREENS EMPLOYED FOR BENCH WORK

Here is a group of well constructed canvas screens, in the shops of the Universal Portland Cement Company at Buftington, Ind. With such screens, plus goggles on each workman, the bench workers have ample protection against the hazards of flying chips. A simple stout wooden frame holds the canvas and this is suspended from a rigid piece of bar iron bent at the wall into a support.

PROTECTION FOR THE YARD TRACTOR DRIVER



An operator of a yard tractor cannot perform his duties as safely when exposed to extremes of weather as he can when protected. The Laclede Gas Light Company of St. Louis, Mo., provides protection for its operators of Fordson tractors by the construction of cabs with light metal frames and roofs, and with side curtains having celluloid windows of liberal dimensions. It is clear that the operator of the tractor shown in the picture is amply protected against extremely cold weather and flying dust particles on windy days.

PROTECTING WELL DRILL HOLES IN THE QUARRY

Ordinarily the blasting operations of the Consolidated Rock Products Company quarry near Brooksville, Fla., consist of drilling a few churn drill holes at considerable distances back from the high face, springing the holes with a gelatin dynamite, and then shooting the holes with black powder.

This method is very satisfactory as the rock proper is embedded in a matrix of softer limestone and the hole is very stratified and broken so that a fast powder would merely tend to pack the mass instead of shaking it up. However, when shooting "in the solid," as when starting a new bench, holes are spaced on 10 to 12 foot centers, and are similarly loaded and shot. Each hole, after drilling, is plugged with a wooden plug and a neat dam of dirt is built around each one so as to prevent water from rains and seepage from filling them and causing attendant troubles.

SCRAP CAR DOOR HAS SAFETY LATCH

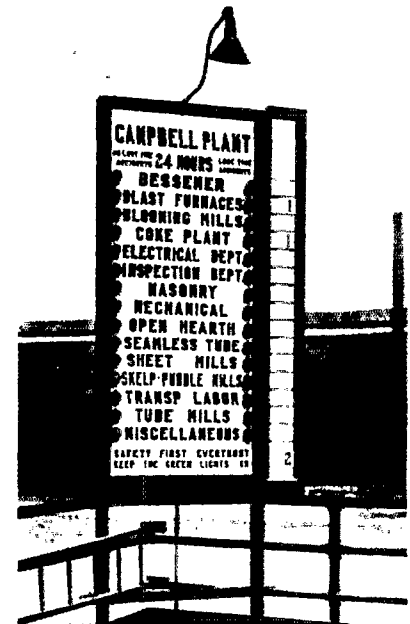
Two men at the plant of the Carpenter Steel Company, Reading, Pa., are responsible for the origin of this scrap car door safety latch. They are Robert Parker and Frank Himmel, in the melting and car repair departments. These trucks weigh about two tons and are subjected to very hard use. The weight of the load plus the strains imposed upon the sides of the cars when hoisted with a crane would often cause the latches to spring open, releasing the side drop doors and allowing the material to fall out. Mr. Parker conceived the idea of using a safety pin in the latch as double protection, and Mr. Himmel



worked out the details of the changes including reinforcement of the car bodies to withstand greater strain. It appears from the illustrations that the safety pin, which is attached to the car with a stout chain, goes through the latch at a slight downward angle so that jarring would tend to keep it in proper position rather than shake it out.

ACCIDENT SCORE BOARD WITH COLORED LIGHTS

A well constructed and practical score board is used by the Youngstown Sheet & Tube Company. Opposite the name of each



department are red and green electric light bulbs and a score card holder. When every department has a clean record all of the green lights are kept burning, but when an accident occurs in one of the departments, the green light for that department is turned off and the red one is turned on. In addition, a card is slipped into the score card rack showing the number of accidents that occurred in the department. A well shaped overhead light gives the board good general illumination.



HIGH HEELS DO NOT CATCH IN THIS FIRE ESCAPE

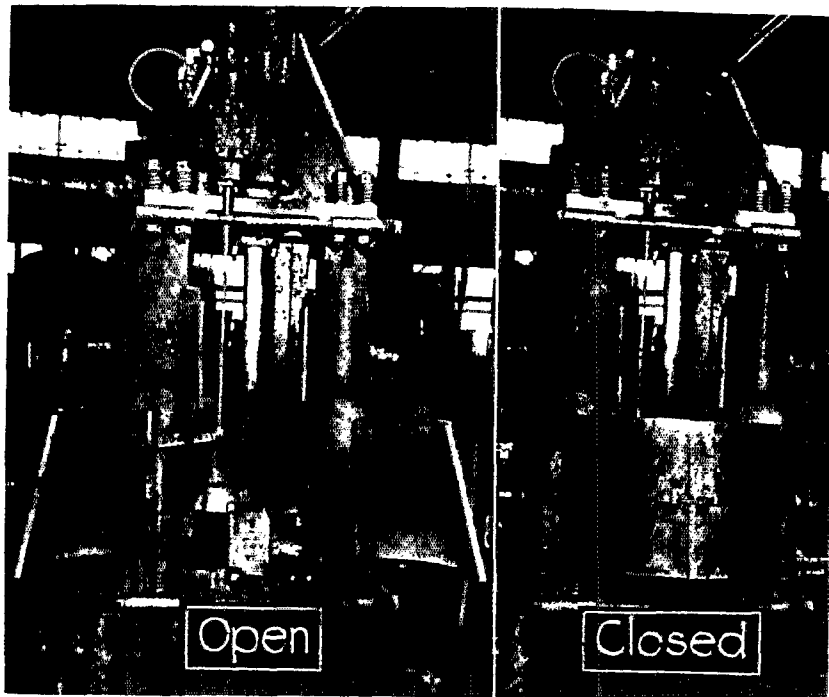
Here is an excellent picture illustrating how the danger of people falling upon a fire escape, and perhaps causing a panic during a fire, may be avoided. Such considerations prompted the Providence Rubber Company to install one-half inch mesh galvanized



wire screen on this fire escape. Such a covering prevents any shoe heel from catching in the grille work.

HANDLING LUMBER IN BULK SAVES LIMBS

This picture illustrates the method employed by the Buckstoft Company, Oshkosh, Wis., in handling large quantities of lumber from the yard storage to the sheds. The lumber, when received, is piled on specially constructed trucks in the yard, and when desired, these are run onto a transfer carriage. This carriage is free to move back and forth on a transverse track between the yard and the sheds. It is pulled or pushed by a tractor to whatever position is necessary. The manner in which the lumber trucks are run off the transfer carriage into the sheds is obvious in the picture.



A SPARK DEFLECTOR FOR THE STEAM HAMMER

On the steam hammer it is a simple matter to construct and install a spark deflector, as shown in the accompanying illustrations; and there is no telling how many injuries from flying scale and from sparks it may prevent. The particular guard shown here was designed and built in the shops of the tractor works of the International Harvester Company.

HEAVY BAGS DUMPED EASILY WITHOUT STRAIN

An ingenious device is used by the Minute Tapioca Company for dumping the contents of heavy bags into bins, thereby reducing the danger of strains and increasing the efficiency of operations. Over the bins is arranged a series of hoist drums which are free to revolve on a line shaft. The shaft is driven by a chain and sprocket, and lever operated clutches enable the drums to be thrown into operation at will. Rope operated ratchet pawls make it possible to hold

drums in any desired position during the process of dumping. Hinged doors are connected to the frames of the bin openings; and it will be noted that each drum is equipped with a rope, terminating in a double hook arrangement. In actual operation, a loaded bag is trucked to one



of the hinged doors and turned over onto it with the open end toward the bin. The drum rope is hooked onto a ring in the door with one hook while the other hook is fastened into the bag to prevent it shifting when the door is raised. When all is set the operator simply throws the clutch of the corresponding drum which raises the door and the bag to a vertical position over the bin, the rope operated ratchet pawl holding it in that position until the contents of the bag have been dropped into the bin. The empty bag is lowered by releasing the ratchet by a pull on the rope.

Spanish Publications Extend Safety's Influence

By G. M. BRIGGS

SAFETY observers are continually running upon striking evidences of the international character of the National Safety Council's influence.

One day it will be excellent reproductions of some of the Council's more outstanding posters, done into the German, Scandinavian, Dutch, or Spanish language. Another day it will be correspondence coming into the Council headquarters from European or perhaps Asiatic countries and discussing important safety matters. Last September it was several foreign delegates, some of whom come half way around the world to attend the Annual Safety Congress. And today it is the official publication in the Spanish language of two of the Council's aids to mankind in accident prevention.

The first of these is the booklet "Shop Safety" which now, in colorful Spanish is entitled "Seguridad en el Taller." The second is the popular Safe Practices Pamphlet issued by the Petroleum Section of the Council as "Safe Sales Truck Driving," and this title has now become "Seguridad en el Manejo de los Camiones Tanques."

More than 100,000 copies of "Shop Safety" were published and distributed by Council member companies to their employees; and it is predicted that the Spanish translation will have a wide circulation both in foreign countries and among member companies employing many Spanish speaking workers. In the short time that the Safe Practices Pamphlet has been published some 20,000 copies have been distributed; and indications are that the Spanish edition will also be very popular.

There is a decided element of romance about the inception and production of each of these Spanish children of the Council. Good books are quite definitely "born" after the crystallization of an idea

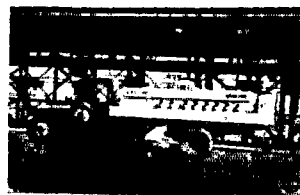


Instrucciones para la Seguridad En El Manejo De Los Camiones Tanques

Entiendo para la seguridad en la práctica. Pamphlet No. 5.
Publicado por la Sección Petrolera, Consejo de Seguridad Nacional.
Calle Ohio No. 106, Ene.,—México

Introducción

El trabajo en el taller es uno de los más peligrosos que se realizan en una industria. La mayoría de los accidentes ocurren en este tipo de trabajo. Por lo tanto, es necesario que los trabajadores estén bien informados sobre las medidas de seguridad que deben tomar para evitar estos accidentes.



Two of the Council's publications which have been published in Spanish to meet the demand for safety literature in Spanish-speaking countries.

that requires nursing and infinite care.

More than a year ago a letter reached the Council headquarters from the general manager of the Cananea Consolidated Copper Company, of Cananea, Sonora, Mexico, asking about the possibility of a Spanish translation of "Shop Safety." He had been attracted by the completeness of the book and its evident ability to interest workers in preventing accidents. He wanted, if possible, to secure 3,000 copies in Spanish, and he generously offered to be responsible for the translation of the book matter.

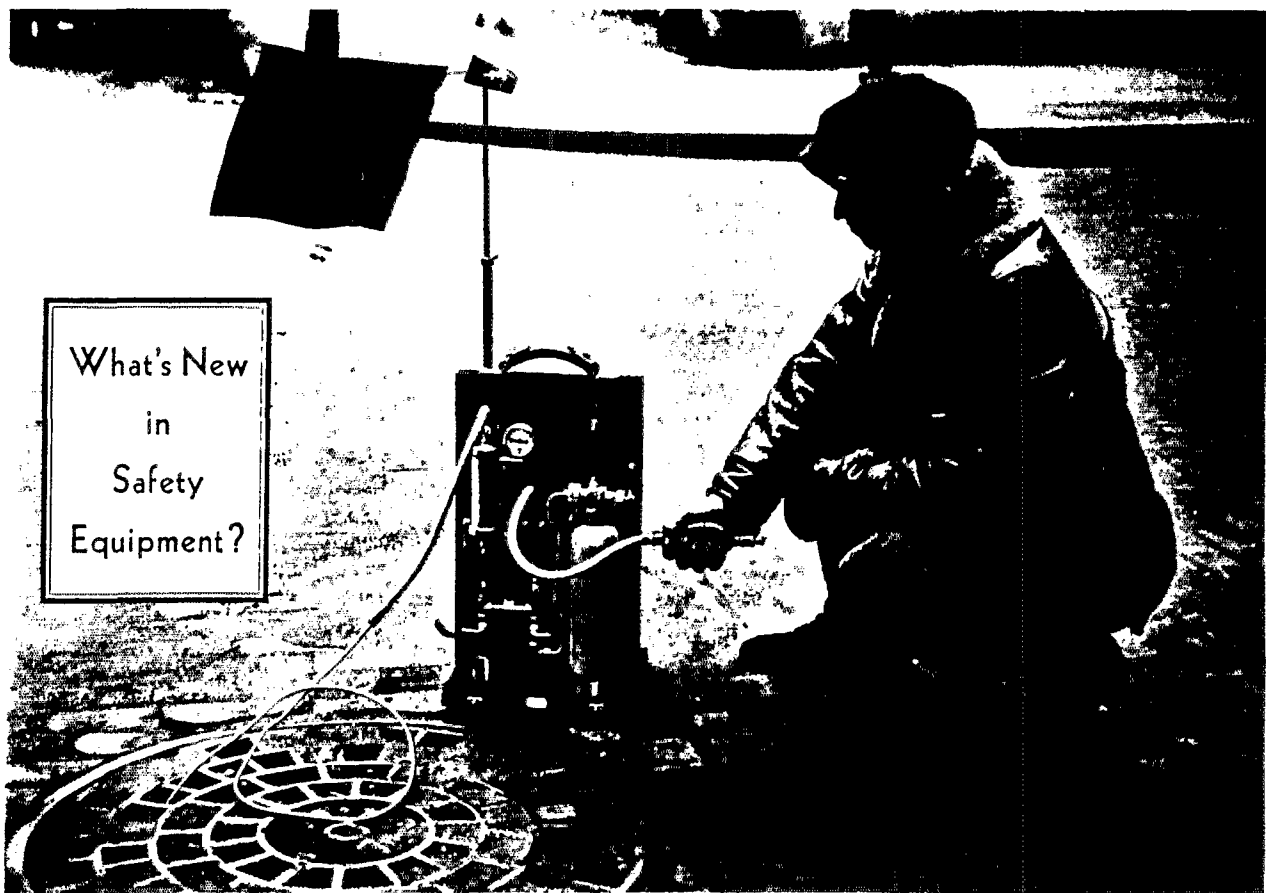
To make the story short, arrangements were quickly made to produce the book in a quantity that might take care of a considerable circulation. It was realized that many company members in the southwest have large numbers of Spanish employees. Both these and perhaps others would probably see the opportunity to secure

valuable safety instruction in the foreign language. And beyond the borders of the United States lay a vast territory in Mexico, Central and South America where such a book might be appreciated by thousands of Spanish employees.

The work of production occupied almost a year. This included the careful translation and checking of the book matter, typesetting, correction, the production of new illustrations in Spanish, and the final publication and distribution. The first edition was 8,000 copies, the second edition 7,000 copies, and during December alone 5,000 copies of the second edition were sold. Everywhere that the book is seen it is admired and found useful.

Safe Practices Pamphlet Petroleum No. 5 has a very similar story to tell, although its Spanish edition was originally planned to travel farther. Let us imagine a day last autumn when an English

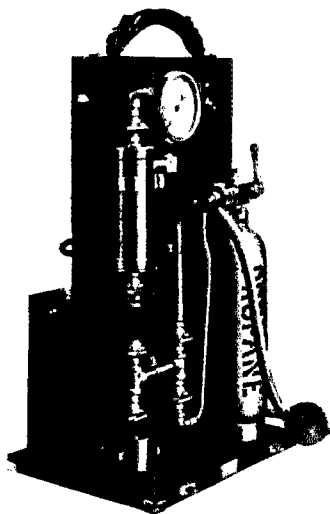
(Continued on page 53)



THE JONES GAS DETECTOR

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Selling Safety to the Man on the Job

By HERBERT S. O'BRIEN

Subdivision Sales Manager, Judson Bradley Company, Detroit, Mich.

EVERY man is a salesman to a greater or less extent. Salesmanship might very well be defined as the ability of one man to change the thinking of another to coincide with his own. It is simply a transfer of a mental image from one mind to another, and acceptance by the second mind.

Instead of injecting a lot of personal ideas or real estate ideas into this article, it may be of greater interest to discuss a survey which has been conducted by Professor Busse and Professor Borden of New York University. They have analyzed 25,000 sales interviews and have arrived at six cardinal principles of salesmanship. These interviews, of course, cover a great variety of business.

I have boiled these six principles down into just a few words each. They are:

1. *Don't try to do all the talking yourself.* Give the man with whom you are talking, to whom you are trying to sell an idea, an opportunity to express himself. Many salesmen spend so much time talking that they do not get the objections, the criticisms or the opinions of the man with whom they are talking. Such salesmen are prominent among those who fail to make the grade.

2. *Don't interrupt.* When we are trying to talk, it is irritating to have someone interrupt us. Even though we may have a red hot rebuttal for the point which he is trying to make, it is best to let him finish that point and get it out of his system. Then we have our opportunity.

A salesman must realize that he is not trying to win a debate; he is trying to make a sale. There is an old adage that a pinch of sugar is worth a pound of gall. Anything that tends to sweeten the thinking of the man with whom we are talking is a step forward in salesmanship.

3. *Avoid an argumentative attitude.* A salesman needs to cultivate an

When you persuade a man to work safely, you've made a sale. If you wish to increase your sales, read Mr. O'Brien's suggestions on safety salesmanship.

earnestness, an honesty, a sincerity of purpose, and a suavity in his speech. The movies have taught us that. We understand through actions, we understand through expressions, even when words are not spoken. The tone of voice in which one speaks to another man has a great deal to do with the impression he makes. If a man remembers to smile, he can call us a pretty nasty name and get away with it.

4. *The first half of the interview should be taken up in inquiring, rather than attacking.* Bring forth the objections that the prospect or the man in the plant may have; encourage him to unload everything in the way of criticism. Get him to use up all his ammunition, so that when you come to the last half of the interview he will have none left to fire at the points you are making.

In handling men we all know that when it is necessary to criticize a man for what he is doing, or suggest new ways of doing it, it is far easier to get him to accept our point if we sweeten the constructive criticism with a compliment.

5. *Restate the gist of any argument that he may present.* This prevents rambling in the interview, and it is usually advisable to restate the point even more forcibly than it has been presented to you. In that way he feels that you are falling on his side; he does not feel that you have failed to make it as strong as it really seems to him.

In selling, I was always glad to call back on a man who had been abrupt with me; who perhaps had been almost

insulting. When you go back the second time he has had time to think, and he is usually honest in his conclusions.

If he was unfair or abrupt, he usually goes to the other extreme next time you call about the same proposition. Sometimes it is wise not to talk too much the first time when the man is in a state of mental turmoil, because, if he does condemn unfairly, he will usually be fair enough to think it over, and when you come back it will be easier to get your point across.

I like to talk with a man who is emphatic, a man who quickly says in a sales interview, "I am not interested." It shows a definite type of mind. Why is he not interested? Simply because he does not understand. If he understood he would be interested. After you have proved your point, that type of mind is just as quick to say "Yes," rather than dilly-dally along in accepting the proposition.

6. *Identify your sales talk with a key issue.* Bring everything down to the principal point, whatever the idea is that you are trying to sell the man on the machine or at the emery wheel or the man who has been careless in running under a crane.

Illustrations are important; words can accomplish only so much. If we say to the man at the emery wheel, "Don't grind without goggles, you may put your eye out," it is not as effective as if we are able to point out a man in the shop who has actually lost an eye.

To the man who is taking a serious risk which might result in him being carried away in an ambulance, if we appeal to him through his family, and point out what it would mean to them if he were taken away or even laid up for several months, the matter is impressed on his mind. Next time he is tempted to take an unnecessary chance, he will think of the picture you have presented.

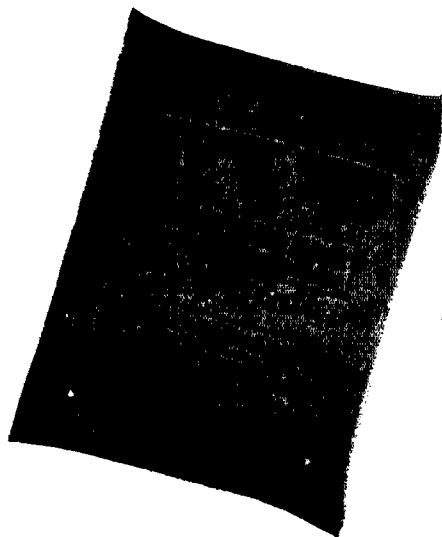
Eighty-seven per cent of our impressions come through the eye and only seven per cent through the ear. If we can paint a verbal picture to the man we are trying to help he will remem-

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ber it far longer than he will through words alone.

Most plants use safety posters which carry a few words and a picture. The picture, even more than the words, tells the story of the chance the man is taking or the correct way to do the job. However, I am not going to discuss posters. My purpose is not to talk about selling safety to the group, but rather to discuss that type of salesmanship where you talk direct, as one man to another.

The Power of Persuasion

The greatest power on earth is the power of persuasion. There is an old adage that you can lead a horse to water but you can't make him drink. You can lead minds to agreement by reason when you cannot compel surrender.

Many salesmen can sell goods, yet when they get home they forget the fundamentals of salesmanship and get into arguments with their wives over trifles, where just a little give-and-take would have made for happiness in the home. We who have children know that if we command the respect of our children it must be through persuasion. We may force a youngster to do things simply because we have the physical power, but there is resentment in that child's mind. A smile and the right sort of persuasion would have accomplished the end, and both of us would have been happy.

And in business, persuasion is the only dominating force among men. There is one thing certain—we cannot persuade unless our case is sound. We must have the facts, we must think honestly, we must sympathize with the opinion of the other man. No matter how clever a salesman may be with words, he will fail if he is dishonest in his statements.

In any kind of selling the appeal must be varied to suit the characteristics of the prospect. The appeal which will work with a married man of 43 is almost useless when applied to the young fellow of 19 in the shop.

It may seem strange to think of the workmen in the shop as your prospects but in sales terminology that is what they are. You are the salesman and the workman is the prospect. You are trying to get into his thinking an idea which you are sure is right. If he accepts it, he is sold, and that means that he won't take the same chance again tomorrow.

The approach needs to be studied carefully. You may go up to a man, grab him by the arm and say "You damn fool, you ought to know better than that; put on those goggles!" Or you may walk up to him and say as an

introduction, "Hello, Joe. Did you see the game last Saturday?" Then follow up with a reference to his family and what an accident would mean to them.

Which is going to have the better effect on the man? You cannot go up and make love to every workman in the shop; that doesn't work. There is a type of man to whom you must talk straight from the shoulder. There is the hard-boiled fellow who may have to be met on his own ground, but still, if you do it honestly, he knows that you are sincere in trying to help him. Even though today he may tell you that this safety stuff is all foolishness, if you get an honest message across to him he should accept it. We are all willing to accept a statement from a man whom we feel is working to help us, and that is the joy in safety work.

No one can tell you how to make the proper approach. You must analyze your man, and then frame the words, the tones and the smile in the way that is going to appeal to him. Play it just like you do a game. Are you going to win, or are you going to lose? Is he a better man than you, or are you a good enough salesman to get your point across? Put it right up to yourself each time.

Positive vs. Negative

The power of good is always predominant over evil. We are prone to use the negative because the glass eye that the safety engineer pulls out of his pocket makes the man think, or at least we think it makes him think more quickly about the seriousness of the mistake he is making. On the other hand, if our prospect is the type of man to whom we can paint the picture of the home, with the children playing in the yard, which is maintained by his weekly income, there is a man to whom the appeal of the positive is far stronger.

Personally, I have one objection to those six principles which I have presented, and that is that there is so much negative thought. In salesmanship, if a person can gradually train himself to eliminate the negatives and to talk the positives, his own thinking will be far happier and the result upon the person with whom he is talking will be more wholesome.

If you can use the positive, it certainly gets the long look off your face. When you pull the glass eye out of your pocket there isn't much you can smile about. And after all, one of the great fundamentals of salesmanship is that it is agreements rather than arguments that get results, and it is the negative thinking that usually leads to arguments.

There is a rather peculiar trend

caused by what might be called the "personal liberty" idea. It makes me say to you, "Well, hell, if I want to face this grinding wheel without goggles, it's my business, isn't it? What do you care?"

When Persuasion Fails

That is a peculiar trait in human nature. The only answer you can give is, "Well, maybe I shouldn't care; if you aren't interested in taking care of yourself, why should I be? On the other hand, you are hired to do certain things. If you don't do your work, you don't stay on the job very long. I'm employed here and my job is to tell you this. I admit that I can't force you to accept it if you don't want to. I can't come up here and force a pair of goggles on you. I can only do my best and then leave it entirely to your own judgment."

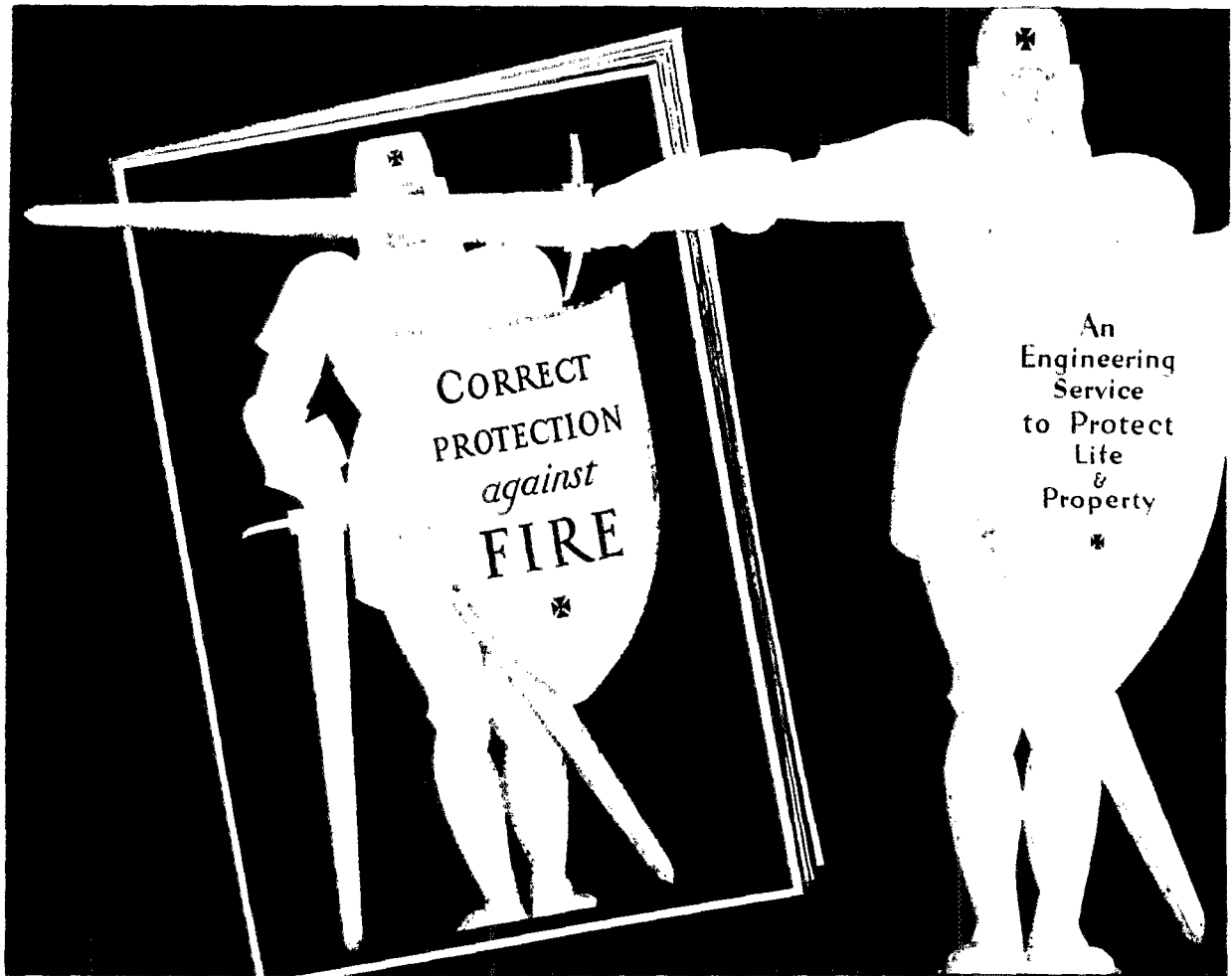
When nothing else will work, we may have to come to force. For a certain type of man that may be the only way to accomplish your purpose. Just say, "Well Bill, I've tried to do this the way I would have wanted somebody to do it for me. Maybe I've failed, and I'm sorry if I have, for that puts me in a bad light, because my job is to help you. Now there is something wrong with me some place, or I'd have been able to make you see that you should wear goggles; or there is something wrong with our whole scheme of things and you are right."

"Now which is right and which is wrong? Either our whole plan of having men wear goggles is wrong or you should have put them on. I have gone about as far as I can go. If you won't put them on, I guess the only thing to do is to get some man on this grinding wheel who will put them on."

Ninety per cent of the sales in a certain line of business are made by salesmen who have come back more than four times. Maybe in selling an idea to the man at the machine it is advisable not to try to put it across completely the first time. Leave a constructive thought with him and drop back tomorrow and ask him his opinion. We all feel complimented when someone asks our opinion.

There is nothing mysterious about salesmanship. The art of salesmanship—or to call it by a simpler name, the power of persuasion, or still simpler, the ability to change the thinking of someone else—will, if rightly directed, make healthier and more productive men in your plants. By utilizing these principles, you and they will be happier in all of your relationships with life.

FIRE — AN INCIDENT OR A DISASTER ?



This booklet is a manual of fire protection information

A copy of the new edition of "Correct Protection Against Fire" will be sent free to any executive interested in safeguarding his business against interruptions by fire.

This booklet describes impartially the various types of fire extinguishing devices, and shows graphically the place of each in a complete fire protection plan.

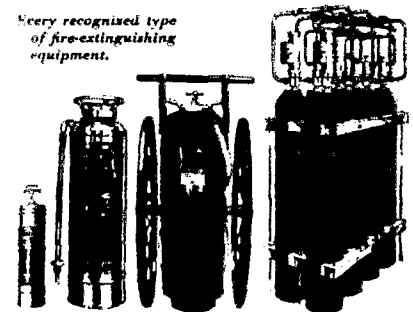
LaFrance and Foamite Service, also described in this booklet, is

ready to cooperate with you at any time. It includes a complete survey of your plant or of your special hazards by trained fire protection engineers, working under your supervision; supplying and advising as to the installation of adequate safeguards; cooperating with you in instructing your employees in the use of this equipment; and if you desire, recharge and maintenance service.

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The Government and Safety

By SENATOR ROBERT F. WAGNER
of New York

FOR the past two decades the doctrine has been preached that the promotion of industrial safety is a function of government. Basically, that doctrine rests on an article of faith—the firm belief that the so-called hazards of industry can be eliminated. Upon this conviction was erected a moral precept: that industry has a right to the labor but not to the lives of those who are employed in it.

In less than a generation both the doctrine and its moral have become the accepted principles of the economic world. Today they seem so compellingly sound that it is difficult to imagine that they have only recently supplanted the cruel notion that each industry had its risks which those who entered it assumed and bore; that if they lost in the gamble and brought misery upon themselves and destitution to those who depended upon them, only the fates were to be blamed.

Those who first rebelled against a belief in the inevitable risks of industrial occupation had little evidence to support their faith. There were no records, no statistics, few observations, and fewer experiments. We did not know how to make industry safe. We did not know what it would cost to make industry safe. We could not measure the influence of those who would refuse to join in the enterprise. The only force which motivated us was the violent reaction against the useless maiming and killing.

Two Specific Remedies

Out of that spirit of rebellion were precipitated two specific remedies which are today coming to be universally applied. The first, workmen's compensation, rests on the proposition that if there be an industrial risk its burden should be distributed by insurance and not permitted to lie where it falls. The second, industrial safety, is devoted to the task of reducing the risk by eliminating the danger.

The safety movement has gone

Abstract of an address before the International Association of Industrial Accident Boards and Commissions.

Safety legislation must continuously reorient itself to the ever changing industrial environment. Law must not hinder progress; progress must not jeopardize life.

far beyond its first stage. It has gradually built up a body of information. It has devised for its use a statistical method. Thousands of safety mechanisms have been contrived and hundreds of salutary statutes have been placed upon the law books of the country. All this, however, is secondary to its true accomplishment, which is hidden in the unrecorded number of lives saved, of accidents prevented, of families shielded from the coming of that terrible day when the breadwinner fails to return.

None can now deny that the faith and the hope upon which we built have been justified beyond the most sanguine expectations. Now, then, is the time to pause to take inventory of our problems, to find our bearings, reset our compass and fix a more distant objective for our journey.

Already many of the laws that have been written legislate against a past which is no more. As such they constitute a barnacle which is possibly harmless but certainly useless. Meanwhile, new industries, new processes, new methods and practices are developing at a pace at which the law has not yet learned to follow. The methods of industrial supervision have been somewhat sluggish. It has not interceded until the price of delay has been paid in broken lives. In this speeding century safety administration must keep pace with the industry it is designed to regulate.

My point is that safety legislation must continuously reorient itself to the new and ever-changing industrial environment in which it is meant to operate. The law must be such as will not hinder industrial

progress; the progress must be such as will not jeopardize life.

Let me cite two instances, each representing a type of change which calls for adjustments in the handling of the safety problem.

When we first started to civilize the factory it was with so-called big business that we had to contend. The opposition was organized against what was termed the intrusion of government into the private management of business. Now, however, our concern is no longer with the large enterprise. Large-scale business has definitely mastered the lesson that industrial safety and health pay in terms of increased production, in terms of waste elimination, in terms of fewer sleepless and fretful nights for employer and employee alike. Corporate industry has come to realize that the same energy and application which are devoted to the improvement of production and the increase of dividends must likewise be devoted to the promotion of safety. In innumerable cases the large plants have gone far beyond the minimum requirements of law.

A New Kind of Resistance

The legislator or industrial commissioner is now confronted with a new kind of resistance to the safety program. It is indifference of the small-plant operator who combines within himself the functions of owner, financier, production director, and sales manager. He literally has no time to think of safety. He can not devote to it the constant thought and diligence which it demands. Payment of an insurance premium, in his case, serves only to eliminate the apprehension of possible legal liability.

Comparisons recently made between the small and the large plant have shown that the former is the more serious offender against the safety code. To be specific, in machine-tool factories it was shown that one large plant had an accident frequency of 12.8, whereas 11 small plants together employing as many

(Continued on page 76)

75,000 MORE WORKERS NOW READING THE "SAFE WORKER"



IN December of 1928, when the "Safe Worker" was less than a year old, 124,600 copies were being read. In December of this year over 200,000 copies of the issue were distributed by 743 companies.

The tremendous increase in circulation during 1929 is a tribute to the effectiveness of this twenty month old *employees safety house organ*.

Arrange to add the "Safe Worker" to your 1930 campaign. It will not fail to prove to be an effective aid in promoting safe practices throughout your plant.



NATIONAL SAFETY COUNCIL
108 East Ohio Street
Chicago



The Costly School of Experience

*Its Tuition Fees Are High and We Frequently
Fail to Apply the Lessons*

By H. J. BURTON

Consumers Power Company, Jackson, Mich.

IF ALL the personal injuries reported occurred in one department or district, something very definite would be done to apply the lessons learned.

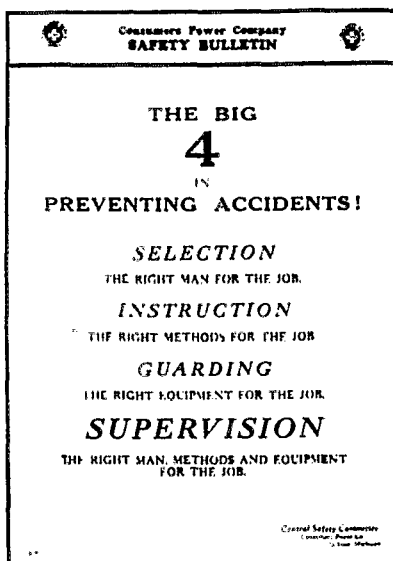
Our records show that we do not always apply the lessons learned. We fail to profit by our own experience or by the experiences of others. We have learned that physical or mechanical safeguards will prevent 20 per cent of the accidents which now occur and that the other 80 per cent can be prevented or lessened by instruction or education. Eighty per cent pertain entirely to the human element. Eighty per cent are definitely the fault of some one—the injured, a fellow worker, or the supervisor.

What are we doing about the 20 per cent, those which pertain to physical safeguards? Do you know of a place anywhere which in your opinion should be guarded? If so, guard it. If unable to do so, report it to the foreman or superintendent as soon as possible.

We all know that, after some serious accident which involves personal injury, safeguards are installed. Sometimes a similar accident has to occur a second time before a guard is installed. These are not chance statements, but facts based upon accident records.

Do you know of an unguarded belt or gear? Do you know of a buzz saw, an elevator, or a manhole which needs guarding? What do you know of the condition of your fences, barriers, ladders? How are the brakes on your trucks and automobiles? Is the steering gear O. K.? Automobile accidents increase year by year. Are we who have charge of this equipment applying the lessons learned?

A man told me a few weeks ago that the service department employees in one of our districts were good when it came to having safety meetings and practicing the prone pressure method of resuscitation, but they let the trucks go out with faulty brakes. If we are going to prevent the 20 per cent of accidents due to lack of guards, or faults in physical equipment, we have got to apply the lessons without waiting for another accident.



The Travelers Insurance Company has made a very complete study of accidents. As a result of their study of tens of thousands of accidents, they have established what they call their 1-29-300 ratio. They have figures to prove that for every accident involving serious personal injury or death, there are 29 similar accidents involving slight or minor injury and 300 similar accidents or breakdowns in which nobody is hurt.

How many times have we said, "It was lucky nobody was there when that happened," or "We are lucky it was no worse." What else do we do besides giving vent to these expressions? In the one case involving serious personal injury we investigate and find the cause and apply the remedy. In the 29 or 300 cases, we may or may not do anything of a constructive nature.

Experience is a dear teacher. It often takes disaster to make us apply the lessons learned. After a big disaster at sea, the marine code is checked up, wireless, life boats, life belts, fire drills are considered and all concerned are vigilant and on their toes. It is always safer to travel after a big railroad wreck.

After a big fire or explosion like

that at the Cleveland Clinic, the question of proper storage of films is considered and the code rules regarding such storage are enforced. The dangers of handling and storing such things have long been recognized. The insurance companies and fire underwriters have covered such things in the various codes years ago. The Cleveland disaster was a case of not applying the lessons learned.

It has been said that all great disasters are blessings in disguise, because better things and conditions are a result. This is not true unless we apply the lessons learned. Unless we apply the lessons learned from our accidents and personal injuries, they have happened in vain.

What about the 80 per cent of the personal injuries which pertain entirely to the human element? What lessons do we fail to apply in these cases? What are the fundamental causes of these accidents?

1. *Class of work beyond physical or mental condition of injured.* We admit after the accident "He was not the man for the job. He had no business to be where he was. He was sluggish. He was excitable. He had a violent temper."

We forget that some phase of our work is highly technical. The work requires skill, knowledge and ability. It requires poise. Too late we learn the man did not know.

Health and the physical condition of employees have an important bearing upon the accident record.

2. *Lack of proper instructions.* This is the second fundamental cause. Sometimes the injured man has received no instructions. Sometimes the instructions are given but no attempt is made to enforce them. Sometimes the instructions are incomplete. Sometimes the instructions are erroneous, out of date, or obsolete. The superintendent, foreman, or the immediate superior of the injured is primarily to blame for lack of proper instructions.

3. *Method pursued not suitable for work.* This is often due to inexperience, lack of skill, ignorance or poor judgment. Over 50 per cent of our

(Continued on page 88)

TORRIDAIRE HOT PADS RECEIVE

WORLD-WIDE ENDORSEMENTS

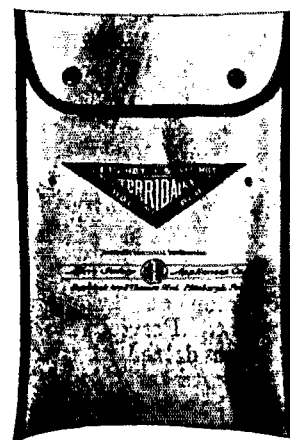


Illustration Shows Torridaire Hot Pad with New Wool Cover, Size 9"x6"x1"

Officially Approved by Accident Prevention Committee of American Gas Association Used by Byrd Antarctic, Graf-Zeppelin and Wilkins-Hearst Expeditions, First Aid Stations, Hospitals, Schools, Athletic Teams and Industrial Plants Generally. Recommended by Safety Engineers throughout the Nation as Exceedingly Valuable First Aid Equipment

Because THE TORRIDAIRE HOT PAD provides Instant Heat, Anywhere and Any time and Is Totally Independent of Gas, Electricity or Hot Water.

*The Ideal Pad
for Personal Use
In Any Emergency*



Instant Heat Anywhere

PROVIDES HEAT IN TWO MINUTES TIME

THE TORRIDAIRE HOT PAD consists of a canvas bag containing a harmless mineral compound and to this you add two tablespoons full of water. Upon shaking the bag for one to two minutes, heat is generated due to the oxidation of the mineral compound in the presence of moisture. The bag is then slipped into the cover and is ready to use. Next to the patient, under blankets, the pad will retain heat for 8 to 10 hours at a time without further attention.

To cool the TORRIDAIRE HOT PAD, simply remove the canvas bag from the cover and lay aside. Every TORRIDAIRE HOT PAD is guaranteed to give 80 hours of heating service. It may be used intermittently over an indefinite period until it has given a total of at least 80 hours of service.

CHOICE OF WOOL OR RUBBER COVER

TORRIDAIRE HOT PADS are furnished with either Wool or Rubber Covers. When the life of the mineral compound is exhausted, a New Recharge may be purchased. Bulletin No. 30 gives complete details.

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Gentlemen: Enclosed please find \$_____ for which send me postpaid TORRIDAIRE HOT PADS as indicated below:	
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Safer Newspaper Delivery Cuts Insurance Costs

By NORMAN R. HOOVER

Circulation Manager, The New York World

MANY organizations employing fleets of motor trucks and horse-drawn vehicles become aware of the possibilities of reducing insurance expense and increasing efficiency of bulk delivery only after some individual in the organization takes a specific interest in the matter. That, at least, was the experience of the Press Publishing Company of New York City, publishers of *The World* and *Evening World*.

Prior to 1926 the company had no organization for accident prevention and took little interest in the matter. Like Topsy, the accidents "just grewed," and their costs began to reach serious proportions.

Motor and horse-drawn delivery of newspapers printed by the Press Publishing Company is under the supervision of the circulation department. Previous to 1926 there had been delegated to one man in the department, along with other duties, the job of giving what attention he could to the investigation of accidents. His chief duty was to look after the company's interests.

Frequently when there were more accidents than this man could investigate in one day, many claims were allowed to go by default, and damages were paid when an investiga-

tion might have reverted them to the claimant. Many cases which could have been adjusted by an investigator were referred to the company lawyers who settled as best they could, usually to the disadvantage of the company. Almost invariably the defense was perfunctory or entirely lacking.

In 1926 we began to give closer attention to the entire subject of accidents in the delivery of our output, and the writer took charge of the work. One man was appointed to give his entire time to accident investigation and accident prevention. With the cooperation of our insurance carrier, periodical meetings for drivers were started and safety lectures were given. These have been continued and have helped in making a marked improvement in our accident rate. At times we have given cash prizes for the best monthly records and these have also helped to maintain interest.

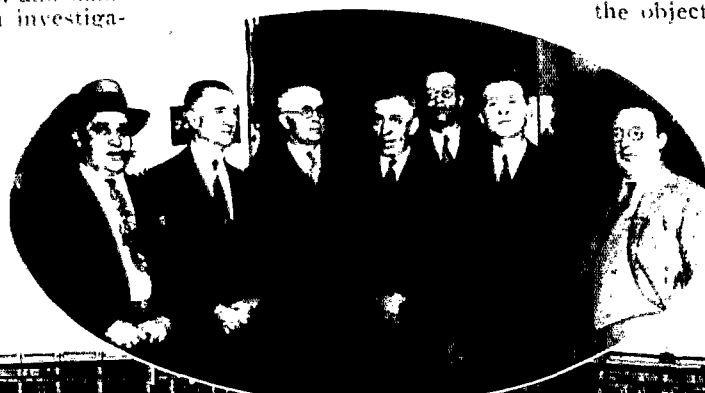
The Press Publishing Company operates 49 trucks for the delivery of morning and Sunday editions, and 71 for the delivery of evening editions. Personal injury accidents are covered by the insurance carrier and property damage cases are settled direct by the company. Sub-

stantial reductions have been made in both types of accidents. Settlements for 1929 were less than half of those for any previous year.

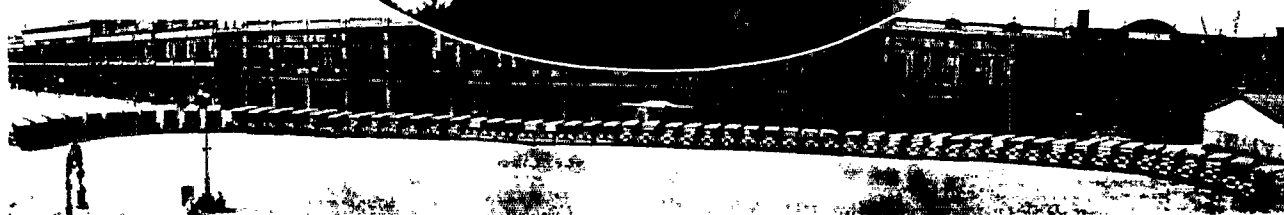
This progress in accident prevention has been reflected in the reduction of our personal property injury insurance premium. The premium for 1929 was \$13,204 less than the premium for 1926, notwithstanding the fact that we now carry a \$50-100,000 coverage as against a \$25-50,000 policy in 1926. Our 1929 insurance credit was 41 per cent, which, our insurance agent claims, is the largest commercial credit he has yet seen. In 1928 our credit was 23 per cent, indicating a further substantial improvement during the past year.

A little more than one year ago the Press Publishing Company took a membership in the National Safety Council. I am convinced that the knowledge of this has had a marked effect on our men. They are conscious of the fact that each of them is banded with thousands of other drivers in a common effort to make the streets of Greater New York safer. National Safety Council posters and other aids to maintaining interest in safety are constantly before them as reminders of the objective of fewer accidents.

Getting the morning, evening and Sunday editions on the newsstands without accidents is the aim of this group of fleet operators of the New York World.



Below are the trucks which serve the Greater New York area.





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To build for this new age, the Bell System in 1929 expended more than 550 million dollars. These millions were used to add new plant and further improve service. Hundreds of new buildings, millions of miles of wire, chiefly in cable, eight hundred thousand new telephones—these were some of the items in the year's program of

construction. At the same time, better records were made for speed and accuracy in service.

This American development of instantaneous communication, of fast, far-reaching speech, belongs not to the few, but to the many.

It is the aim of the Bell System to permit each personality to express itself without regard to distance.

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INDUSTRIAL HEALTH

A Non-Technical Symposium for Physicians and Laymen

By C. O. SAPPINGTON, M. D., DR. P. H.

Director, Industrial Health Division, National Safety Council

Work and Health

IN a recent analysis* entitled "The Job and the Life Span," Dr. Louis I. Dublin has made some very interesting observations.

"The work a man does, conditions under which his work is done, and the wages he receives for doing it, determine in great measure, for him and those dependent upon him, the circumstances of his life, the house he lives in, the clothes he wears, the food he eats, and his recreation."

One of the most important factors, therefore, in determining the state of any person's health and the span of his life is his occupation.

Although the relationship between occupations and the length of life and the state of health is not a definite and simple one, a cause and effect, unfortunately it still holds true that hard work and poor pay often go together.

Economic pressure is often sufficiently strong to keep men on the job after common sense and sane medical judgment have suggested a vacation. It is, therefore, not always possible to say how much sickness and death occurring among wage earners is due to their occupation and how much results from other conditions, some of which may in themselves be directly related to the work.

Professional workers are not exposed to specific occupational hazards, such as accidents from dangerous machinery and unsafe processes, inhalation of harmful dusts of various types; absorption of poisons; the necessity for working in excessively hot, cold, or humid places; and the strain which heavy kinds of labor produce.

According to Dublin the most important hazard from the standpoint of number of men directly exposed to it is the *industrial accident*. There are probably twenty-four thousand deaths and three million accidents annually, which are serious enough to cause loss of time from work among the forty-five million occupied persons in the country. Computing the loss of future working life due to fatal accidents and to accidents which cause permanent disability (and adding the actual days lost because of temporary disability) we find that there are three hundred million days of labor lost to American industry each year. This is the equivalent to the full-time labor of a million men working a whole year.

What Has Been Accomplished?

Dublin feels that in spite of much admirably organized accident prevention work, the situation is still very unsatisfactory in our country. Underground coal miners, for instance, have a death rate from accidents of almost ten times that of clerks and men in other non-hazardous occupations. Coal miners have a mortality about twice the general average and their expectation of life at

twenty is curtailed as much as ten years. In England, on the other hand, miners working in deeper mines have much lower accident rates.

Excessive accident rates are also found among certain types of workers, such as electric power and light linemen, structural iron workers, bridge builders, railroad brakemen, hull construction workers, and riggers in shipbuilding trades, as well as among sailors, and marine workers and factory workers handling explosives. Finally, there is a group composed of divers, steeplejacks, building wreckers and aviators, whose accident hazard is so great that the life insurance companies will either not accept them at all, or rate them at higher premium costs.

In following the safety movement in America, much money and time has been spent in fostering programs in industrial plants. The railroad companies probably show the best results. For instance, in 1889 one railroad employee in every 357 was killed in the course of his work. In 1927 the figure had dropped to one in every 1,136. In the iron and steel industries there has been a decline of over 62 per cent in the accident frequency rate and 52 per cent in the severity rate between the years 1910 and 1925.

Especially to be noted are the records of the United States Steel Corporation, a pioneer in accident prevention work. The company has reported that 58,553 employees were saved from serious injury in the period of 1912 to 1928 inclusive, by safeguarding various hazardous processes. This computation was based on the frequency of accidents involving death, permanent disability or temporary disability lasting over thirty-five days.

"Our statistics indicate that gains have been made, but also that the hazards of industry have been increasing as the result of changing methods and more widespread use of machinery. Machine processes are more and more supplanting hand methods; the automobile is replacing the horse-drawn vehicle; building operations are conducted on a far larger and more daring scale; chemical substitutes are replacing wool, cotton and silk. Perhaps the best thing we can say is that the accident record would have been far worse because of the additional hazards of industry had it not been for the timely development of the safety movement in a number of our leading industries."

Other Hazards

Dust is next in importance after accidents as a cause of occupational disability and death.

The principal harmful substance is free silica. Exposed to this hazard are many metal miners, ore mill workers, granite and slate quarriers, granite cutters, hard-rock drillers, and sandblasters. The highest mortality rate and the greatest shortening of life are found in those occupations, where there is combined liability to accidents and

exposure to hard-stone dust. Mortality in such occupations runs over three times the average.

Certain dusts on the other hand may have a protective effect on various individuals. This is suggested by the peculiar condition found in all parts of the world among coal miners, who have a death rate from tuberculosis lower than that for occupied males generally. Similar conditions are found among cement mill workers. Although it has not yet been definitely established, it has been suggested that lime dust, like coal dust, exerts some protective influence against the development of tuberculosis.

The third of the principal occupational hazards is the *absorption of poisons*, such as lead, mercury, phosphorus, brass, arsenic, benzol, carbon monoxide, and other substances extensively used in industry. We might also add exposure to X-ray and radium. Unfortunately we do not have even an approximation of the extent of industrial poisoning in the United States because the symptoms of occupational disease are frequently so obscure that practitioners are often unable to detect them. Many cases, therefore, are not reported in spite of the fact that the laws of a number of states require it.

There are some specific facts which we do have, however. The effects of chronic lead poisoning are apparent in the high mortality of painters, from various diseases. The mortality of brass founders from diseases of the digestive system, tuberculosis and pneumonia is also suggestive.

The harmful effects of *exposure to excessive heat and the sudden variations in temperature* is the fourth great occupational hazard.

This exposure is found among those who labor in iron and steel mills, foundries, and pottery and glass factories, in engine and boiler rooms, and in the stoke-holes of steamers. These persons are subject to respiratory diseases of various kinds, the death rate from pneumonia being extremely high.

The fifth occupational hazard is *fatigue*.

In a recent study of 22,000 iron and steel workers in England, covering a period of over six years, it was found that all men engaged on hot and heavy work had a greater sickness rate than those working in ordinary temperatures; the more strenuous the work the greater the sickness frequency.

Conclusions

It is heartening to note that many employers have begun to realize that it is to their advantage to cut down sickness and disability among their employees, whether it is occupational in origin or not.

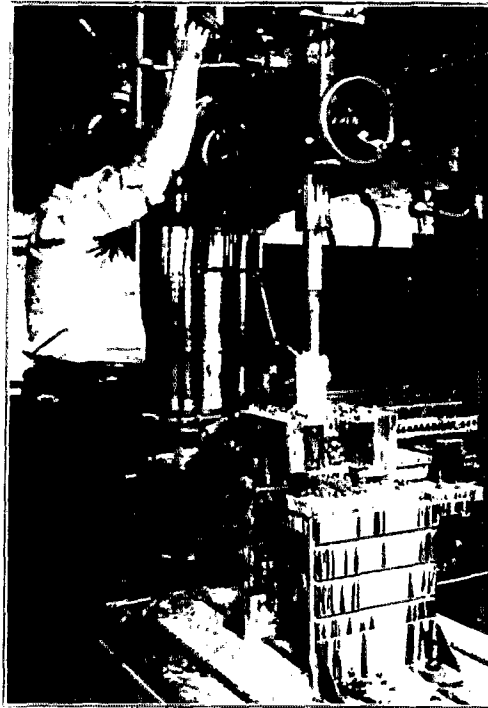
American workmen are also displaying widespread interest in all matters pertaining to health. They are more alive to hazards of occupation than are workers in other lands.

There is every reason to believe that the prosperity of the American worker will continue and that health activities in industry will be extended. Such standards will result in further reduction of mortality and sickness.

*Dublin, Louis I., "The Job and the Life Span," Harper's Magazine, January, 1930.

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Glass—A Hazard or a Safeguard?

*Non-shatterable Glass Is Adding to Safety in Automobile Travel
and in Many Industrial Operations*

CLASS has always been a problem for safety engineers because it has been the cause of many serious and costly accidents. Certain industries are more affected than others but few escape paying toll on accidents caused by broken glass—accidents which could have been prevented had some type of non-shatterable glass been used. Only during the last several years has there been much agitation for a glass which, when broken, would not shower jagged, cutting pieces in all directions.

The appalling number of accidents in automobiles have brought this question to a head. Eighty per cent of the cars operating today are closed and, as some one aptly phrased it, are "glass boxes on wheels." It has been estimated that the majority of injuries to occupants of automobiles involved in accidents are caused by flying pieces of jagged glass broken either by being struck directly or by shock. It can readily be seen that a glass which would not shatter would be a valuable safety device for the automobile public.

Two years ago only one automobile manufacturer was using safety glass as standard equipment, while at the time of writing 15 manufacturers include non-shatterable glass as standard equipment. It is safe to say that in a short while every automobile will leave the factory with complete glass protection. Common sense dictates such a step and public opinion will demand it.

The idea of sandwiching between two sheets of glass an elastic, transparent substance of a celluloid nature is not new; in fact, the original patent has expired. During the war considerable safety glass of this nature was manufactured for use in gas masks and other places where the hazard of flying glass was great. But the product then manufactured was far below present standards, chiefly on account of the impossibility of seaming satisfactory plastic, or center membrane, and crude laminating processes. After the war, interest in safety glass dwindled until the popularity of the closed car and the frequency of accidents again furnished an incentive for research; this research to provide a means for

the manufacture of a durable and superior quality laminated glass which would satisfy the present high standards set by present day purchasers. Gradually each problem was worked out until it was considered that a safety glass could be produced which would last at least the life of an automobile—from five to seven years.

The modern laminated glass factory must be kept scrupulously clean because the absence of dirt plays an important part in its manufacture. All operators, both men and women, who come in contact with the glass and the plastic material before laminating, wear white uniforms, white cotton gloves, and white hats. Such care is not for effect but to remove any possibility of dirt and grease coming between the two plates of glass before laminating. A few plates a day rejected on account of dirt would soon cost more than the uniforms and the laundry bills.

Details of Manufacture

As explained before, safety glass is made up of two pieces of glass (either plate glass or window glass) with a piece of plastic sandwiched between. This must undergo four rigorous inspections before it is accepted as satisfactory. Slight surface digs, scratches, etc., are removed and it is wiped perfectly clean of all dust or lint which might have collected on it. The glass going into the finished product is also submitted to severe examinations because the use of two pieces of glass doubles the number of defects in the finished product. The glass sandwich must have no more defects in it than one sheet of regular plate glass of glazing quality.

If, as in automobile glass, it is furnished cut to pattern, two pieces of glass are cut for each piece of safety glass being made. These are sent down to the assembly room together and placed side by side on moving rubber belts. Here women operators scrub the face of the glass with pumice as it passes by them. This pumice is brushed and sucked off as the belt progresses. The glass then proceeds through the spraying room where automatic spray guns deposit a thin film of cement on each plate.

From there it passes into a room where operators place a sheet of plastic, already cut to size, on top of one plate and place the second plate on top of it in the form of a sandwich with the cement covered sides next to the plastic. The sandwich is then taped together and placed in a rubber bag which is made air tight by means of clamps.

The air remaining in the bag is removed through a one-way valve by means of a vacuum line and it is then placed in a rack with others similarly prepared. The rack is placed in a large boiler-like affair which is closed and into which is pumped heated water. The racks are so constructed as to allow the water to circulate freely around the bag. As the pressure and heat are increased, the glass and pyralin inside the bags are cemented into a solid piece. The water exerts an even pressure over the whole of the glass, thus assuring perfect lamination. After approximately thirty minutes of this heat and pressure the racks are removed, the glass taken from the bags, and the safety glass is ready to be used.

The principle of laminated glass is simple. Glass by itself is a brittle and fragile substance. By introducing an elastic and tough membrane through its center, the brittleness is overcome. While laminated glass will crack, it will not fall apart because each piece of glass is held firmly in place by the center layer of plastic which has, through heat and pressure, become in effect a part of the glass itself.

Making Transportation Safer

Laminated glass plays a major role in the safety campaign of bus, taxi and street railways operating companies, because injuries caused by flying glass are common to people using these means of transportation. A certain large transportation company in Pennsylvania changed the regular glass in their 350 taxicabs to shatter-proof glass, at a cost of some \$8,000. Six months after the change one of the officials of this company stated that during that short time the glass had already paid for itself by eliminating suits for

(Continued on page 83)



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A Simple Remedy for a Common Hazard

By STANLEY C. HUNTER

Maintenance Counsellor

PLANT executives who are concerned about worn concrete or steel stairways in their factories may eliminate many danger spots by the use of a good grade of emulsified asphalt. This substance is marketed by several manufacturers under their own trade names.

As ordinary asphalt is not considered an ideal non-slip surface, it should be explained that emulsified asphalt is quite different from the ordinary variety. The emulsified material can be readily mixed with water and then used with sharp sand and Portland cement in the proportions of three parts sand, one part cement and two parts emulsified asphalt that has been diluted with one part clean water. Such a mortar will set in 36 hours so that it may be trucked over with heavy loads; it will remain resilient, quiet to truck over and easy to stand on. Because it has no solvents and has such a high content of sharp sand, such a mortar will not soften in hot weather.

The fact that this mortar contains

60 per cent sharp sand assures a wearing surface that will not become slippery. Insurance underwriters approve this mortar over wood floors in paint spray booths and in motion picture projection rooms. No better evidence of ability to resist fire could be presented. Furthermore, since this material is applied cold instead of hot (as is the case with ordinary asphalt), it is much easier and safer to handle.

When concrete steps become worn so that they slope toward the front edge, a very dangerous condition when steps are wet or slippery, they may be returned to their original contour, without chipping or cutting away the old concrete, by applying a thin resurface of emulsified asphalt mortar. This resurface will not become slippery, will be more comfortable under foot than either steel or concrete.

Many industrial plants where concrete steps are in use have metal plates at the front of each step to prevent the edges from wearing away. These metal strips become smooth and the concrete surface back of them wears hollow under heavy traffic. Such a condition is extremely hazardous, especially where women wearing high heeled shoes are employed. An emulsified asphalt mortar properly applied will remove such danger spots.

Where metal treads have been set in the surface of concrete steps, trouble is often encountered due to these treads wearing smooth. They also become slippery under damp conditions, as in packing and cold storage plants. The proper treatment is to remove the worn metal treads and fill in depressions with the mortar.

One of the accompanying pictures shows a metal fire escape at a public school in St. Paul, Minn., where the steps are metal channels filled with concrete. As the concrete soon separated from the metal support, water and frost made these steps dangerous. The picture shows these steps after the damaged concrete had been removed and the remaining concrete resurfaced with emulsified asphalt mortar. The mortar bonds with metal, preventing any moisture getting between the "fill" and the channel, and this resurface therefore



Resurfacing worn metal and concrete fire escape steps at a public school in St. Paul, Minn., with an emulsified asphalt mortar has reduced a hazard.



A half-inch resurface of emulsified asphalt mortar provides a truckway in the mechanical storeroom of Armour & Co. at South St. Paul, Minn. A safer surface has been provided and noise reduced.

should outlast the metal frame work.

Where men work on wood floors often littered with saw dust, shavings and other matter, emulsified asphalt can be used to prevent slipping into the dangerous machines. The proper application consists in nailing strips of hardwood, three-quarters of an inch thick, at a suitable distance from machines. These strips should be beveled on outer edge to prevent tripping. Inside the enclosure thus made about the various machines, apply a cap-sheet, nail metal lath to the floor, and then apply a three-quarter inch coat of emulsified asphalt mortar. This material will not become slippery, and it will be comfortable to stand on. It is waterproof and is a non-conductor of electricity.

Another picture shown here gives a view of the main entrance to the mechanical storeroom at Armour and Company, South St. Paul, Minn. Heavy loads are continually trucked in and out of this room six days a week. When originally paved it was thought that brick was the only type of flooring that would wear well under such heavy traffic. Iron wheel trucking on such a floor became so noisy that it was difficult and uncomfortable to perform the clerical duties required in such a room. The five foot aisle of emulsified asphalt now applied one half inch thick where the heaviest trucking is done, has eliminated troublesome noise and has made trucking easier and safer.

Can Fire in a Spray Booth Tie-up Your Production?



Lux blankets fire with a harmless gas—without damaging sprayed parts and without leaving a mess to be cleaned up.

ARE you equipped to snuff out fire at its first flash—so the men can go right back to work again? Can you kill fire without saturating the finishing room with water and chemicals—so there is no delay for clean-up?

Snuff out a spray booth fire with the Lux Extinguisher and all delay ends there. For the Lux Extinguisher differs in important particulars from other devices.

Instead of using a liquid extinguishing agent, Lux blankets the flames with a harmless but fire-killing gas. Lux does no damage to equipment and sprayed parts. It leaves no moisture or mess to be cleaned up. After Lux has been used, your finishing room is left in the same condition as before—ready for work again.

Lux smothers a lacquer, enamel or varnish fire in 30 seconds. It penetrates in a cloud up the hood of the spray booth and around obstructions, killing fire that a liquid could not reach. Whether the blower is on or off, Lux means instant death to the flames.

In your finishing rooms, Lux Extinguishers will assure uninterrupted production and save needless damage in case of fire. A request will bring complete details of Lux without obligation.

Walter Kidde & Company, Inc.
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LUX FIRE EXTINGUISHING EQUIPMENT

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*If further information is desired concerning any of the entries on this page,
the Librarian will be pleased to assist inquirers.*

MEDICINE: ITS CONTRIBUTION TO CIVILIZATION

Vedder, Edward B., A.M., M.D., D.Sc., F.A.C.S. *Medicine, Its Contribution to Civilization.* Published by The Williams & Wilkins Company, Baltimore, Md., 1929. Price, \$5.00.

COLONEL VEDDER, who is one of the best known of the medical officers in the Army, has presented the industrialist with a volume the significance of which is rather far-reaching. He has endeavored to popularize the study of preventive medicine, always a difficult task, and he has succeeded admirably.

The author has set about very cautiously to outline the reasons for the existence of disease in the human economy and tells his philosophy in non-technical phrases. He has even gone so far as to inlay a stratum of human interest in his discussion.

Writing from the standpoint of a dispassionate bystander, Colonel Vedder teaches in very simple and concise phrases the truths regarding preventive medicine and shows more or less conclusively that the individual himself is more or less responsible for his own physical weaknesses and deteriorations.

When the individual has failed to protect himself from all the insidious onslaughts of the various microorganisms, miasms and what-not that seem to exist merely to exterminate the human being, then Vedder wants educated and knowing medicine called in to build up the broken-down resistances of the sufferer.

That medicine has been one of the chief contributors to civilization has been long known. It might be safe to say that without a fair degree of health, a nation cannot exist. Vedder goes a step farther and intimates that some utopia is just around the corner for the nation that refuses to accept illness and disease as essential components of life and sets about correcting its own hereditary, environmental and other weaknesses.

Colonel Vedder writes in detail about most of the best known infectious diseases and in very elementary language describes quite satisfactorily the causes, pathology, prevention and importance of the conditions.

Diet and nutrition are very fairly handled and the author always stabilizes his remarks by unusually readable statistics. The writer has not much use for the various fads in health that chronically upset the American routine. He believes that the well selected, easily digested diet is the one criterion on which the individual can base a normal, healthy life.

With so much erroneous propaganda being circulated among the people regarding the glands of the body, it is not strange that Colonel Vedder should "take a shot" at all such misinformation and give some succinct and interesting true stories about the glands.

In his discussion of the future for progressive medicine, Vedder waxes almost lyric in his praise for what the sanitarians, the industrial medics and the preventionists have done to clean up sore spots in the world's medical geography.

In the future for prevention of cancer and heart disease, Vedder makes no particular additions to what we have already been taught. He stresses the value of early diagnosis, immediate treatment under proper authority and a cheerful hopeful outlook.

All in all, the volume is worthy of the attention of all laymen who are interested in preventing disease and who want a short, clean cut description of what is already known and what can be expected of the medical progress of the future.

It is a kindly volume, full of easily digestible facts that, while stirring no one to fanaticism, cause the reader to ponder.

—V. D. Marbaker, M. D.

BOOKS AND PAMPHLETS

Accident Statistics:

Great Britain, Ministry of Transport. Report on street accidents to children in Greater London. Published by H. M. Stationery Office, Adastral House, Kingsway, London W.C. 2, England, 1929. 22p. Price 25 cents. (Pamphlet.)

Great Britain Ministry of Transport. Second report on street accidents in Greater London. Published by H. M. Stationery Office, Adastral House, Kingsway, London W.C. 2, England, 1929. 30p. Price 25 cents. (Pamphlet.)

Gas Masks:

Industrial gas masks abroad. Published by U. S. Bureau of Mines, Washington, D. C., 1929. 13p. Free. (Information circular No. 6206.)

Labor Statistics:

U. S. Bureau of Labor Statistics. Handbook of labor statistics, 1929 ed. Published by the U. S. Government Printing Office, Washington, D. C., 1929. 914p. Price \$1.00. (Bulletin 491.) (Pamphlet.)

Leather Industry:

Retail Credit Co., Atlanta, Ga. Artificial leather. Published by the Retail Credit Co., Atlanta, Ga., 1929. 5p. Free. (Industry report.)

Mines and Mining:

U. S. Bureau of Mines, Drilling and blasting in metal mine drifts and crosscuts. Published by the U. S. Government Print-

ing Office, Washington, D. C., 1929. 170p. Price 40 cents. (Bulletin 311.) (Pamphlet.)

Methods of some progressive mining companies in placing responsibility for mine accidents. Published by U. S. Bureau of Mines, Washington, D. C., 1929. 11p. Free. (Information circular No. 6211.)

Morbidity:

U. S. Public Health Service, Sickness among industrial employees during the first 4 months of 1929. Published by the U. S. Government Printing Office. 4p. Free. (Reprint No. 1316 from Public Health Reports, Sept. 13, 1929.) (Pamphlet.)

Standards:

National Bureau of Casualty and Surety Underwriters, Handbook of industrial safety standards, 1929 ed. Published by the National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York City. 120p. (Pamphlet.)

PERIODICAL ARTICLES

Chemical Industry:

Burke, W. J. Health hazards and accidents in the chemical industries. In *Safety Engineering*, December, 1929, p. 318-322.

Coal Storage:

Safeguarding the coal pile. In *Factory and Industrial Management*, January, 1930, p. 101.

Construction Industry:

The safety program on a New York skyscraper. Definite safety measures on Lincoln Building cut frequency and severity rates. In *The American Contractor*, December 14, 1929, p. 17-20.

Electrical Equipment:

Richardson, A. N. Installation of transformers. In *Bureau of Safety, Safety Bulletin*, December, 1929, p. 5-7.

Employees' Publications:

Millar, J. H. Your plant publication—how much will it cost? In *Factory and Industrial Management*, January, 1930, p. 67-68.

Fire Prevention and Protection:

Fire prevention and protection as applied to hospitals. In *Safety Engineering*, December, 1929, p. 300-306.

Foran, E. Checkmating the fire hazards of the rubber industry. In *The Modern Fire Chief*, November-December, 1929, p. 7-9.

Oil soaked floors make big losses. In *Fire Engineering*, December 25, 1929, p. 1171-1172.

Handling Materials:

Handling ties with safety. In *Louisville and Nashville Employees' Magazine*, December, 1929, p. 42, 46.

Mines and Mining:

Foremanship training proves good foundation for safety. In *Coal Age*, December, 1929, p. 725-728.

Occupational Diseases:

Obetz, W. E. Occupational diseases and industrial accidents. In *Safety Engineering*, December, 1929, p. 315-316.

Refrigeration:

McGinley, C. A. Refrigeration hazards and precautions. In *Fire Engineering*, December 11, 1929, p. 1125-1126, 1143-1144.

Safety Organization:

Butler, J. S. Making the small plant safe. In *Safety Engineering*, December, 1929, p. 285-286.

Saw Guards:

Safety helps make coffins. In *Factory and Industrial Management*, January, 1930, p. 103.

INDEX TO VOLUME XX

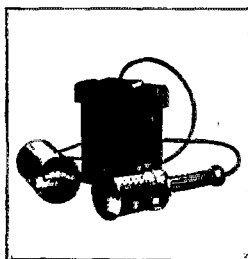
THE index to Volume XX of the *National Safety News* (July to December, 1929) has been printed and copies will be sent to members of the National Safety Council on request. The index forms a twelve-page pamphlet of the same page size as the magazine and may be bound with the volume in permanent form. The index is recommended to all members as a handy reference guide in finding information on the various subjects published in the *News* from month to month.



To Detect Flammable Gases

ACCURATE detection of flammable gases and vapors . . . immediate determination of unsafe concentrations . . . The Union Carbide Company—UCC—Combustible Gas Indicator provides these added safeguards against avoidable accidents.

This new device is simple to operate and is thoroughly dependable. Readings are made direct from the atmosphere being tested. Sampling, with the attendant possibility of dilution and delay for laboratory analysis, is eliminated.



Industrial chemists and safety engineers will find the UCC Combustible Gas Indicator an indispensable means of protecting life and property and of facilitating work. It is self contained, portable and scientifically correct.

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DAVIS Fire Blanket

A Fire Can't Burn without Air
SMOTHER IT!



A swing of the arm to grasp the catch-rope and to start the body twirling.



Wrapped and Saved

The blanket is automatically detached from the roller to permit an escape from a danger zone if necessary. Blanket is high enough to cover head if necessary.

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275 Eighth St., San Francisco, Cal.

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Company

Address

NS-2

They Welcome Inspectors

*The Conroy-Prugh Glass Company Applies the Knowledge
Gained and Celebrates a No-Accident Year*

GENERAL accusations against small plants as a class for their lack of interest in safety are unquestionably true. National statistics leave little doubt as to safety conditions in the majority of plants but generalizations do not give credit to the many small plants which are carrying on accident prevention work conscientiously and effectively. These plants have demonstrated that safety work is largely a matter of executive interest and supervisory action, and that the size of the unit is of secondary importance.

Many of these plants have shown an earnest desire to cooperate with the insurance safety engineers and state inspectors and from these sources have obtained the inspirational and practical help to put the program across.

The Conroy-Prugh Glass Company, of Pittsburgh, Pa., recently completed a year and six days without a lost-time accident, covering 373,000 man-hours of extremely hazardous manufacturing operations. For several years the accident experience of the company had been disastrous and the management was convinced that accident prevention would be profitable, if possible.

The company employs an average of 150 workers and the operations consist of the manufacture of toilet and framed mirrors, wood and metal frames, mirror plates, polished plate, as well as the sale and installation of window and plate glass.

After the management became convinced that organized effort would reduce accidents a program of activities was adopted. The safety program is conducted through the central safety committee which consists of the foreman, or forelady, and one or two workers from each department. Meetings are held during the noon hour on the first Thursday of each month. A lunch is served for which those who attend pay a nominal sum. Regular weekly inspections of the entire plant are made and recommendations receive prompt attention and action. Every accident, no matter how trivial, is thoroughly investigated by the department supervisor and a complete report is presented to the committee.

Departmental records are maintained, and such items as lost-time, doctors' bills, cost of first aid supplies, etc., are charged against each department. Every month each departmental bulletin board is given a rating which is announced at the monthly meeting. Accident records and costs, together with the bulletin board ratings are used to determine the departmental standings on a competitive basis. Banners are awarded to winning departments and these are a source of pride to the winners.

Each new employee at the time of entrance receives a card of welcome carrying an appropriate message from the safety committee. He is introduced to members of the committee. Before going to work he is shown the



Safety problems at the Conroy-Prugh Glass Company are settled at the luncheon table. All employees are invited to meet with the safety committee at the monthly meetings.

When writing advertisers, please mention NATIONAL SAFETY NEWS

first aid room and instructed to report all injuries, however slight, for treatment. He is also invited to attend the luncheon meetings of the safety committee. An auditorium in the public school is occasionally obtained for special meetings to which all employees are invited to bring guests.

A cordial welcome always awaits the state and insurance inspectors. The management regards them as friends and appreciates their calling attention to any hazards that have been overlooked.

There is a minimum of complicated records and detail work in the safety program. The results are dependent almost entirely upon executive interest and supervisory responsibility. The management's genuine appreciation of safety work and its results was expressed by Charles P. Wuertenberger, superintendent of the company in a letter to H. H. Richardson, chief safety engineer for the Standard Accident Insurance Company, as follows: "It seems to us that your selling us the idea of safety first was the greatest accomplishment of your inspectors."

Spanish Publications Extend Safety's Influence

(Continued from page 32)

copy of this pamphlet arrived in the office of the Caribbean Petroleum Company, at Caracas, Venezuela, South America, and W. T. S. Doyle, the general manager, began to peruse it. He at once saw that the information and pictures so plainly displayed in this pamphlet ought to be as valuable to the company's employees in Venezuela as they undoubtedly were in the United States.

Motor vehicle driving and all traffic problems are even more difficult in Venezuelan cities than in the United States. The narrow streets, turning square corners and with limited space at intersections, were originally planned for horse-drawn vehicles, and this space is further restricted to provide shade from the adjoining buildings. The street saturation point is about reached. This has obliged municipalities to limit maximum loads of trucks, and truck widths to a comparatively narrow over-all.

There is also, especially in the mountainous parts of Venezuela, too much fast and reckless driving. It is a common ambition to take everything on high gear, the shifting of gears being considered a reflection on either the vehicle or the driver, or both. Always keeping to the right is a rule not observed by many. The fact that



He can't use his hands *because* he hurt his foot - -

Off the job a day or two—perhaps a week or two—merely because his buddy dropped a hammer on his toe. Meantime an idle machine—work delayed and interrupted—lost time and lost money for the man and the company.

"Star Brand" Safety Shoes are made to prevent just such minor foot injuries. The safety box-toe is, in principle, like reinforced concrete. Lying between the full vamp and the outer cap is a metal mesh reinforcement vulcanized between layers of strong "tarfelt," which furnishes extra protection

for the toes against blows from falling objects and cuts from sharp edges. Light in weight, they are comfortable to wear.

"Star Brand" Safety Shoes are sold by responsible dealers in almost every industrial center. Names gladly furnished on request.



ROBERTS, JOHNSON & RAND

Branch of International Shoe Co.

St. Louis

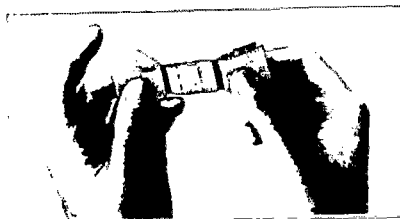


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SAFETY SHOES

ARE BETTER"

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Remove crinoline face cloth



Place pad over cut and fasten adhesive



The finished bandage—no loose ends

BAND-AID

The Handy Adhesive Bandage

BAND-AID is a very efficient "emergency first-aid" bandage for small cuts or bad scratches. BAND-AID never ravel, never gets in the way and never makes an unsightly dressing.

It works Neatly and Quickly EVERY TIME!

Packed 100 strips in carton. Send for a good working sample of BAND-AID. It is free.

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more accidents do not occur is only accounted for by the native ability of Venezuelan drivers who boast an unusual coordination of mind and muscle that is more or less a national characteristic.

These factors show what fertile ground there is in Venezuela for the sowing of seed such as is contained in "Safe Sales Truck Driving." In fairness it should be said that Venezuelan government officials make every effort to correct the unsound practices; many of those who are guilty commit traffic errors through ignorance. Safe practices therefore can be made more prevalent by a continuous educational program.

All this was familiar to the executives of the Caribbean Petroleum Company, both in their Caracas offices and in New York City, the home headquarters. An inquiry to the National Safety Council as to the possibility of securing copies of the Safe Practices Pamphlet in Spanish was quickly followed by satisfactory correspondence. Again the inquirer readily assumed the duty of having a Spanish translation prepared. It was made in Caracas under the direction of W. T. S. Doyle, and the pamphlets were hurried into circulation.

The Caribbean Petroleum Company is placing a copy of the Spanish edition in the hands of everyone of its sales employees in Venezuela. Moreover, orders have already come from several other petroleum distributing companies who will make similar distribution.

Hanna Mines Show Results of Safety Effort

SAFETY records in the bituminous coal mines of the M. A. Hanna Co., Cleveland, show the result of steadily increasing efforts toward accident prevention. Although production in 1929 greatly exceeded that of 1928, only two fatal accidents occurred as compared with six in the preceding year.

This reduction follows a concentrated effort of the Hanna company to promote safety and eliminate lost time accidents. New safety organizations were formed in all the Hanna controlled mines early in 1929. The four mines of the Wheeling & Lake Erie Coal Mining Company and the Rose mine of the Massillon Coal Mining Company went through 1929 with an almost perfect record. Other mines also achieved marked improvement over previous years.

The average for all mines in the state of Ohio over the past seven years is 300,000 tons of coal per fatal accident. The record of the Hanna company in the past year more than doubled that production. This has been reflected in management also with 1929 accident cost being less than half that of the previous year.



The Exchange Building,
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A.W. Quist Co.,
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Features of Safety

In this enterprising Northwest metropolis no building will serve its tenants more efficiently. Halsey Taylor fountains have been installed because of their features of safety, assuring maximum sanitation and convenience in a building.

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DRINKING FOUNTAINS



Automatic Stream Control

A practical and exclusive feature that keeps stream at correct drinking height at any pressure.



No. 618

Heavy vitreous china receptor: Steel tubing standard and cast-iron open base for connections, a b o v e floor line. Gray finish. Two-stream projector, automatic stream control. One of many desirable types for industry!

• •

Write

for illustrated catalog showing complete Halsey Taylor line.

Electricity Can Serve Industry Safely

(Continued from page 27)

should be avoided. Sleeves should be kept down.

Suitable eye protectors should be worn by men working where an electric arc may accidentally be drawn which might flash the eyes. Approved safety goggles should always be worn to prevent eye injury by flying particles when chiseling concrete, brick or stone for the supports of wiring devices or electrical apparatus.

Rubber gloves should be used only in special cases and care must be taken to see that they are in good condition. Approved safety belts or other adequate protection to prevent falling when working in elevated places should be used, and of course such devices should be periodically inspected.

Circuits: All voltages should be considered dangerous. A number of cases are on record where contact with 110 volts has proved fatal. Do not approach live circuits closer than the following distances unless the live parts are adequately guarded by approved metal shields which are grounded:

750 to 2,500 volts.....	1 foot
2,500 to 10,000 volts.....	2 feet
10,000 to 50,000 volts.....	3 feet

Higher voltages are usually not encountered in industrial substations, but it may be of interest to note that the safe distance for two millions volts is 45 feet.

As already stated, circuits should be made dead whenever possible before any work on them is begun. The man to do the work should personally see that both the circuit breaker and the disconnecting switch are open. If the construction of the switch permits, it should be padlocked in the open position. If locking in the open position is impossible, the workman responsible for having it opened should place on the switch operating mechanism a tag bearing his own name with the statement that it must not be reclosed until the tag is removed. If it becomes necessary for the person who tagged the switch to leave before the job is completed, he should go with his successor to the switch mechanism, remove his own tag and see that the new man puts on his properly signed tag and assumes responsibility from then on.

An additional safeguard for circuits above 750 volts that are being worked on is to short circuit and



A HOLCOMB GARMENT FOR EVERY NEED

WORKMEN objected to wearing safe clothing several years ago, but now they are anxious to be provided with complete safety equipment. This is because safe clothing has proved itself absolutely essential in lessening personal injury.

Holcomb Safety Garments are made to protect all parts of the body, as shown in the illustration. Gloves, mittens, leggings, spats, sleeves, aprons, helmets, and complete safety outfits—made of asbestos, chrome leather, or fireproofed duck—may be obtained from our complete stock.

Write for details!

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1438 W. 9th St. Cleveland, Ohio, U.S.A.

ground the wires at a point between the source of power and where the men are working. The importance of seeing that such a connection is removed before the switch is re-closed, is, of course, self evident. Dead circuits should be treated as if they were alive, as that develops a cautious nature and may sometimes prevent an accident caused by another person's error.

Operation: Do not handle over 750 volts on hand operated air break switches.

Do not open D. C. power circuits with knife switches; use circuit breakers.

Do not open disconnecting switches when they are carrying load nor use them to complete a circuit. Use the circuit breakers.

On circuits above 750 volts, do not operate any disconnecting switches, knife switches, lever switches, etc., by hand, but use the poles especially provided for that purpose. For switches up to and including 15,000 volts, use the 4-foot pole and above 15,000 volts to 50,000 volts, use the 8-foot pole.

Switches should be left wide open when in the open position and fully closed when in the closed position.

Switches should not be closed in a hesitating manner nor by tapping blades against contacts to see if the power is on, but should be closed in a firm, positive manner, using sufficient force to make full contact of blades. No switch should be closed without full knowledge of the condition of the circuit.

Fuses must not be pulled or replaced unless the line switch is first opened. In circuits where line switches are not provided, a fuse puller should be used. Fuses and cutouts should not be handled with the bare hands.

Do not allow oil cans, tools, dusters or wiping cloths to catch in moving parts of machines. In passing any switchboard or machine in operation, do not touch it unnecessarily nor allow metal tools or other metal objects to touch the apparatus or its connections.

Do not use iron or tin oil cans or any steel or iron tools near field magnets when the machine is in operation.

Do not touch nor remove brushes from the holders of machines while their power or voltage is on.

Do not stand, sit on, nor pass through belts whether at rest or in motion.

Do not use any kind of measuring rule near live circuits.



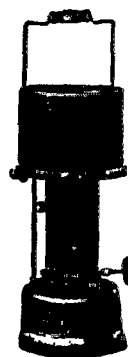
HEATS UP FAST

"You bet I like 'em," said Joe, when our camera-man snapped him taking the temperature, "and what's more they heat up fast and don't blow out in the coldest, windiest weather." It doesn't matter whether the job calls for a No. 53 or a heavy-duty BIG BRUTE, the result's the same when you

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The same safety features—used by over 250 utility companies throughout the country. Designed for safe, efficient operation! Brazen steel, double check valve, all connections brazed.

Do not use a metal case flash-light around a machine that is in service.

Do not operate any electrical switch without the proper authority.

Grounding

Frames of generators, motors, transformers, starting boxes, switch boxes, etc., must be substantially grounded.

Ground wires on portable electric tools must be connected.

The insulation on a wire should not be trusted for protection from shock, as it may have deteriorated from age or exposure.

Any circuit may be grounded either intentionally or due to accident. It is essential, therefore, that the workman on live wires or apparatus properly insulate his body by means of a dry plank, wooden platform or similar means. This precaution is especially important when working in damp places.

Fires

Electrical fires may be successfully combated by means of sand or using fire extinguishers filled with carbon tetrachloride or carbon dioxide. Water should not be used except as a last resort and only then when one is sure that all power has been cut off.

Soda and acid type extinguishers, or foam type extinguishers should not be used for electrical fires, as the material is a good conductor of electricity.

Conclusion

The Rules and Regulations as contained in the National Electrical Code have been adopted for the express purpose of making electrical installations safe not only in industry, but in the home, in the office, in the stores, in the pleasure resorts or in any place man finds it to his advantage to use electricity for light, heat, power or recreation purposes.

The safety provided by their regulation is three fold:

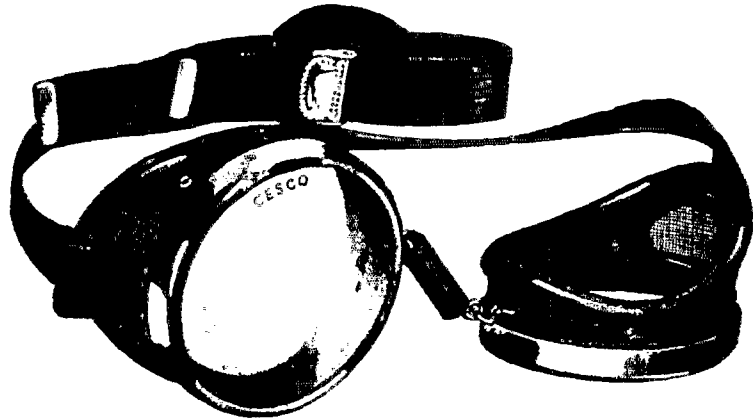
1. Protection to the electrical apparatus itself.
2. Protection from fire hazard,
3. Protection of life.

This article may be summarized by four short but very important statements:

1. Purchase only approved devices,
2. Install them in the approved manner,
3. Maintain them up to the standard,
4. Teach the workman to use his head before he uses his hands.

A strict compliance with these four points will make electricity safe for use in industry.

IRONCLAD



PEER OF INDUSTRIAL GOGGLES



IRONCLADS are new—correctly new—in design, material and appearance. A newness which embodies an array of features seldom found in one industrial goggle.

IRONCLAD cups are moulded of a new material and will comfortably fit the contour of the face. The side-screens—interchanging of lenses—chain nose-bridge—and headbands—all combine to make IRONCLAD goggles what they are.

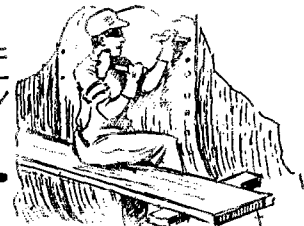
Far above the class of "just another goggle," IRONCLADS are worthy of your investigation.

We'll be glad to do our best to convince you by submitting sample pairs for inspection and trial in your own plant.

Manufactured by

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Do Your Foremen Realize Their Responsibilities?

By C. C. GOINGS

Safety Engineer, Louisville Gas and Electric Company



Security Even in Winter

Out in the open country—in the teeth of a blizzard whipped by below zero winds—lines down—service interrupted—call the Lineman! Here's a job for skill and nerve—a tough job at best, doubly tough under these conditions—of course, the Lineman cannot afford to use any equipment but the best. That's why his pliers and belt—lag wrenches and climbers—twisters and come alongs carry the name Klein.

A national campaign for Safety for Linemen is being conducted by Mathias Klein & Sons to assist in selling the idea of safety to Linemen.

Distributed through jobbers

Four pamphlets of interest to you if you are a lineman or responsible for the safety of linemen. Check the ones you want.

- ☐ Safety for the Pole Climber
- ☐ Specifications on Linemen's Belts and Safety Straps
- ☐ The Safety Factor on Linemen's Leather Goods
- ☐ Pocket Tool Guide

Mathias KLEIN & Sons
Established 1887 Chicago, U.S.A.
3200 BELMONT AVE., CHICAGO

In educating foremen the first great problem is to convince them of the responsibilities. They should be made to realize what the answer must be to the following questions: "Will I be held responsible in case of an accident?" "What can I do to prevent accidents?" "Is a poor excuse or the placing of the blame on some other person or upon faulty equipment enough to satisfy my own conscience?"

No greater impression can be made upon a foreman than to create an imaginary picture of one of his best men maimed and crippled, and then show him the numerous ways that he could have prevented it. His answer may be that the equipment he has is second or third class, and if his employer does not care, why should he. Here lies the safety engineer's great problem and opportunity and he must act promptly.

The foreman's complaints and suggestions, if he has just grounds for them, should be acted upon immediately by recommending a better grade of material or an improvement in the methods used. If successful one more foreman is immediately listed in the cause of safety and he can be convinced of a number of ways he can prevent accidents.

Additional suggestions will be forthcoming from the foreman and his men as soon as they know that the management is interested in their safety and well being. The greatest possible error is to ignore these suggestions. They must always be given consideration. If the ideas are good, they should be adopted by the company; if not, everything possible should be done to show the author where his idea is not practicable.

One or two hours a week spent in actual contact with the men in regular meetings is educational and creates a fraternal feeling and influence that spurs them on to such a degree of vigilance that accidents are materially reduced. Safety clubs or other organizations may provide the opportunity. Regular safety meetings held monthly are also of immeasurable value.

The idea of accident prevention does not always meet with success

the first time it is proposed. I have known foremen who scoffed at the idea until they had an accident and the opportunity came to convince them of the various ways they could have prevented it. The results are they fall in line with the other foremen and try to make amends for the time they have lost.

Having enlisted a foreman in the safety movement, the next problem is to obtain subject material for discussion. Among different subjects, some of the important ones are as follows:

A complete analysis of accidents occurring over a given period and showing them the general trend. For instance, lack of concentration is a cause for a number of accidents and provides excellent material for discussion, using past accidents as a concrete example.

Models of dangerous conditions and open discussions upon the way to remedy these.

A detailed explanation of some accident occurring in his gang by some foreman. This will cause a general discussion by the men, if they are encouraged.

And last but not least the training of foremen and their crews in first aid to the injured.

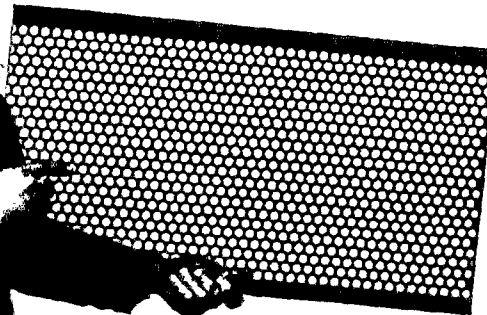
To quote one of our foremen, "No one knows the anguish or feeling of a foreman, when he stands by his fellowman as he travels into that land from which there is no return, knowing that something could be done if he only knew how."

Detroit Fleet Supervisors Organize for Safety

FLEET supervisors of Detroit have been organized in a division of the Detroit Industrial Safety Council which is similar in its organization to the council's Engineering Division. The following officers have been elected by the Fleet Supervisor's Division: Chairman—I. L. Gilbert, Michigan Bell Telephone Company; First Vice-chairman—E. D. Doane, Department of Street Railways; Second Vice-chairman—J. E. Dobbs, Detroit City Service Company; Third Vice-chairman—C. F. Buckley, Union Indemnity Company

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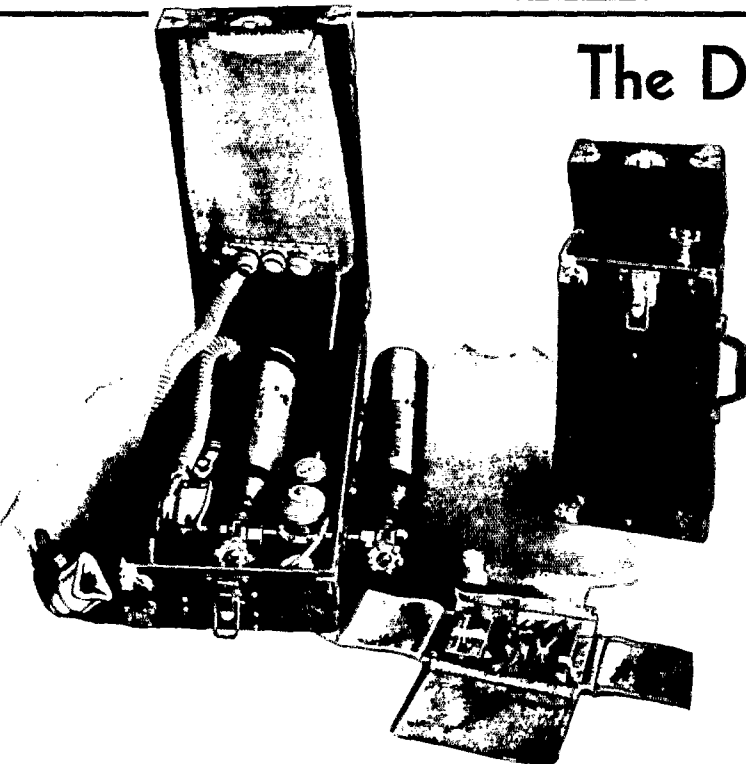
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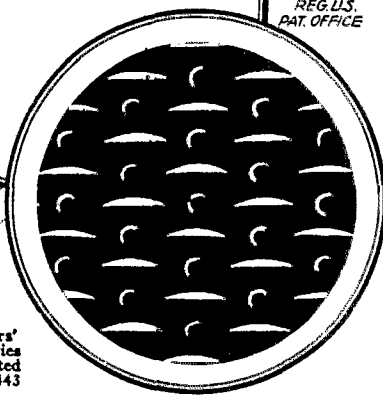
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Harrisburg, Penna.

REG. U.S. PAT. OFFICE

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A Screw Conveyor's Warning

WHILE in my infancy, I am harmless. Just a round hollow tube, but as time rolls on and I get my twisted coat of arms around me, I become more dangerous.

I am hooked to that mighty power known as electricity and it is then while this supreme power has me in its clutches that I become real dangerous and dishonest.

If you give me a finger, I will take an arm. If you give me a foot, I will take a leg or even a life.

Therefore, I say "Beware" and by chance if I am to be looked over, I beg you to free me from that mighty power by the means provided. Then will I insure your safety. Otherwise, I can not.

When I have been inspected and am ready for duty, be sure you give me all that belongs to me, which is a covering over every inch of my body. See that it is well fastened, too.

If you will comply with my few requests, you may hook me up in high and I can insure SAFETY to one and all.

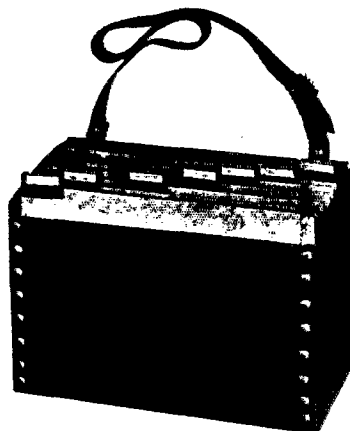
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"The Marquette Poet."

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No. 1240

Constructed of the best 5-oz. smooth black cowhide with steel rods at top to hold shape. Reinforced bottom—with studs, adjustable, padded shoulder strap.

Size 15 inches long; 10 inches high; 8 inches wide.

Price with eight dividers\$18.00 each, list
Additional dividers with label holders\$.40 each, list

A STRONG, durable carrier for distributing mail, or other literature, between departments in office, store or factory. Stock bag has eight dividers—with label holder on each to designate departments or officials. Additional dividers may be added by simply removing rods in bottom of bag and adding desired number of dividers.

Rods are screwed into metal plate at front inside of bag—a few turns will detach them, and they are readily replaced.

The CLEVELAND LEATHER GOODS CO.
26-28 Noble Court, N. W. DEPT. D Cleveland, Ohio

Award Safety Trophies to Cement Plants

TROPHIES awarded to the winning cement mills in a four-month no-accident campaign were presented at the Annual meeting of the Nazareth Division of the Lehigh Valley Safety Council on December 23. The winners were Hercules Cement Corporation, Nazareth Cement Company and Lone Star Cement Company.

The meeting was held in compliance with the regulations of the Pennsylvania Department of Labor and Industry which specify that all industrial plants employing more than 150 men must hold two mass meetings of employees each year. Cooperating with the cement companies in the meeting were the Nazareth Public Schools and the Nazareth Chamber of Commerce. The trophies were presented by Morris Fortuin, general manager of the Pennsylvania - Dixie Cement Corporation and past president of the Lehigh Valley Safety Council. Safety talks, a talking motion picture, and other entertainment features comprised the remainder of the program.

Permanent Ladders or Portable Ladders?

PORTABLE ladders have their place in the factory equipment but too often they are used where a permanent ladder would be safer and more efficient, according to an article in a recent issue of *The Michigan Mutual Shop Man*, published by the Michigan Mutual Liability Company, Detroit, Mich.

There are many overhead places in a factory where stairways are not practicable and perhaps unnecessary, and some kind of ladder is needed to reach them. Included in this category are motor platforms, switchboard platforms, stock storage decks, crane landings, etc.

To reach these places, we can use the fixed ladder, either rigid or telescopic, the rolling step-ladder or the portable ladder. The latter is the most common type in industry. Permanent ladders are not used more because it is believed that they will be in the way.

While a portable ladder may be available at all times, it is not economical to use it for permanent stagings which must be visited regularly, frequently, and often hurriedly. The time consumed in going after a portable ladder will often pay for a fixed ladder in a year's time. What is more important, says the *Shop Man*, the portable ladder is one of the big accident producers of industry, and the fixed ladder, if properly designed, is a good safety device.

The telescoping fixed ladder has many of the advantages of the portable ladder, it takes up no floor space, and is always ready to use. One type of fixed ladder described by the *Shop Man* consists of an ordinary wooden factory ladder mounted between a pair of short verticle channel irons forming a part of the platform railing. The ladder is free to slide up and down between the two channels but it cannot be removed. Ordinarily it is latched up 6¼ feet above the floor, giving ample clearance underneath but within easy reach. When unhooked, the ladder drops to the floor ready for ascending. After descending, the ladder is pushed up until the latch catches.

Another variation, but not so good, is hinging an ordinary ladder at the upper end and counterweighting the lower end so that it will come to rest at 6¼ feet above the floor like the lower section of an outside fire escape.

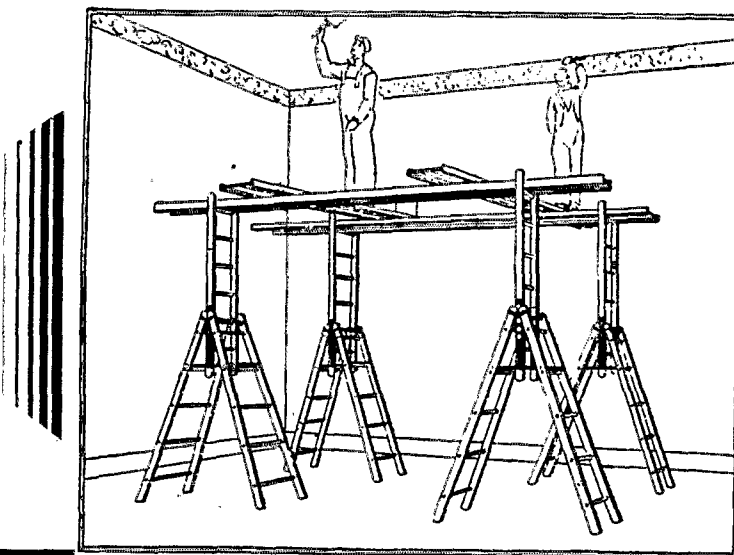
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THE FAMOUS PYRENE 1 QUART
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A Fire Fighting Unit for Every Hazard

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They make better work easier because of the adjustable feature,—give correct headroom where working levels vary,—automatically lock at every level.

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Safe Ladders and Scaffolding for Every Purpose

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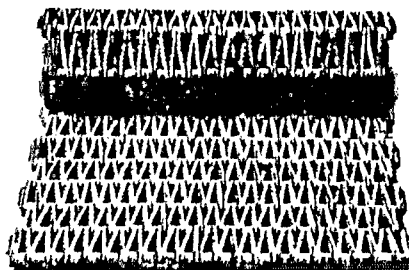
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Durable Safety Mats not only provide an insurance against accidents—lessen danger of slipping—but provide a footing so comfortable as to materially increase efficiency.

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PERSONALS



Hubner Studio

Dr. Norval D. Marbaker has joined the headquarters staff of the National Safety Council as assistant director of the Industrial Health Division. Dr. Marbaker is a graduate of the Boston University School of Medicine and

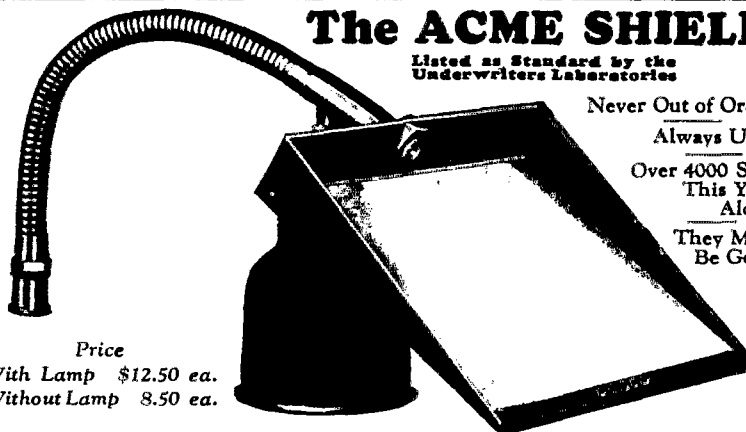
has taken post-graduate work in England, France and Italy. He has had a wide experience in private practice and industrial medicine. During the war he organized hospital paper work for the New York Shipbuilding Corporation at Camden, N. J. Later he was assistant physician for the Ebensburg Coal Company. He has also been ship's surgeon for the United Fruit Company, during which time he conducted an extensive study of tropical diseases, and served as examining physician for the Pittsburgh Plate Glass Company at Ford City, Pa. Dr. Marbaker has also contributed frequent articles to *Scribner's* and the *Ladies' Home Journal*.

Jay E. Hilborn has resigned as personnel manager for the Square D Company, Detroit, Mich., to join the sales force of Abbott Laboratories, Inc., in the Pittsburgh territory. Mr. Hilborn has also resigned as chairman of the Engineering Division of the Detroit Industrial Safety Council and has been succeeded by Gordon C. Graham, safety engineer for the Detroit Public Schools. N. J. Tackabury, The Murray Corporation, becomes first vice-chairman, and Nils Juell, Michigan Steel Corporation, second vice-chairman. William A. Bechill, Chrysler Corporation, has been elected third vice-chairman.

Will J. French has been reappointed as a member of the California Industrial Accident Commission and as State Director of Industrial Relations in the governor's cabinet. Mr. French was first appointed in 1911 to the newly formed commission and returned to the service of the state about two years

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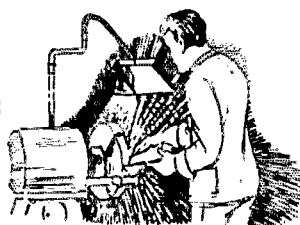
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ago under Governor Young's administration. In announcing the re-appointment, Governor Young pointed to the reduction of industrial fatalities during this period. As compared with 763 fatalities for 1926-27, there were 625 for the last fiscal year, or a reduction of 138.

Walter S. Paine has been promoted to be manager of the engineering and inspection department of the Aetna Life Insurance Company and affiliated Companies, and Stanley F. Withe has been advanced to manager of the companies' publicity department. These promotions have been made to fill the vacancy left by the death of David Van Schaack. Mr. Paine has been with the Aetna Companies for 15 years and has been research engineer of the inspection department for the past nine years. He organized the research division and the special risk division of the liability department. Mr. Paine has been prominent in the activities of the National Safety Council, having served as chairman of the Engineering Section and as a member of numerous research committees. He is a member of the elevator and cable research committees of the American Society of Mechanical Engineers and of a number of technical committees of the American Standards Association.

Mr. Withe, who will be in charge of advertising and publicity activities, has been with the Aetna Companies since 1920 as assistant director of publicity.

J. P. McGrath, secretary-treasurer of the Georgia Manufacturers' Association, has been elected president of the Atlanta Safety Council for 1930. Other officers elected are: Senior Vice-president—F. E. Shumate, Georgia Power Company; Vice-president, Public Safety—Richard Dean, Southern Bell Telephone & Telegraph Company; Vice-president, Traffic—C. C. Whitaker, chairman, Mayor's Traffic Committee; Vice-president, Home and Education—J. A. Wells, superintendent of schools; Vice-president, Industry—Wilshire Riley, Atlantic Ice & Coal Company.

John D. Shuart, treasurer, Springfield Glazed Paper Company, has been reelected president of the Springfield Safety Council. Other officers for the current year are: Vice-presidents—F. M. Kinney, Insurance; E. J. Ruxton, Adams & Ruxton Construction Company; L. J. Scott, United Electric Light Company; Treasurer—H. S. Kaplinger, Third National Bank & Trust Company; Assistant Treasurer—H. A. Sears, Third National Bank & Trust Company.

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THE Columbus Bolt Works, Columbus, Ohio, gets a cleaner plant and saves \$1,140 a year by using an "INVINCIBLE" Industrial Cleaner in machine rooms, storage and shipping rooms, offices, etc. The strong suction of the "INVINCIBLE" readily handles the heavy, somewhat greasy dust.

Cleans Concrete and Creosoted Wood Floors

The "INVINCIBLE," operated by one man, cleans on alternate days the packing and storage departments, containing 12,000 sq. ft. of concrete floors apiece. It also cleans daily the shipping room's creosoted wood floor, 6,000 sq. ft. of concrete floors.

in the machine and finishing rooms, and 3 factory offices. Frequently removes dust from windows, ledges, etc.

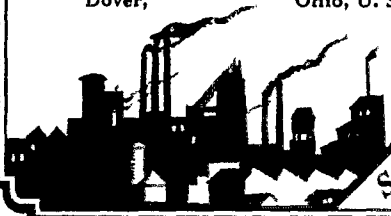
Saves One Man and Cleans More Thoroughly

By saving one man, the "INVINCIBLE" repays its cost every 6 months. Its portability makes it easy to operate where floors are congested with material, and to move between floors and buildings. Faster, more thorough, and cheaper than hand sweeping.

What Is Your Cleaning Problem?

There are "INVINCIBLE" Industrial Cleaners for every application. What is your cleaning problem? Write us today.

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Enclose your order card and describe your cleaning problem to the nearest branch office of the company.

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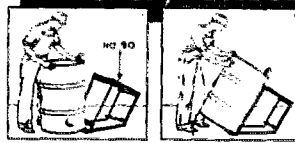
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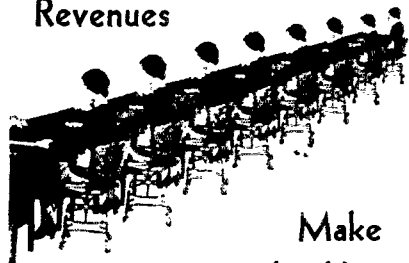
ONE man raises drums or barrels to draining position with the BARL DRAIN STAND. Easily moved with Ball Bearing Casters. Strong, All-Steel Welded construction. Model No. 91 handles straight side or huge drums and wooden barrels. Equipped with Top Rollers for side bung draining. Price, \$10.00. Model 90, no top rollers, for straight side drums only. Price, \$8.50. If you handle drums or barrels take advantage of this SPECIAL OFFER. Order 1 to 3 STANDS. Use them 30 days. No obligation to keep them unless you want to. They must make good or you send them back. Write for them today. Just mention on "30 Days' Free Trial." Thousands now in use.



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You spare no time, labor or expense in selecting, setting-up and servicing your mechanical units. But do you do the same for that finest of instruments — the Human Body? Even today you will still find in some plants this greatest of machines, functioning with practically no thought as to its proper postural alignment.

Yet top production — profits — must first wait upon correct seating — and ANGLE STEEL POSTURE CHAIRS provide this vitally-necessary first step. Comfortable, energetic and alert workers produce the greatest of dividends in increased productivity, cut costs and eliminated errors.

Let us send a Seating Expert to advise you on your posture chair needs. No obligation, except ours.

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Revolving Chair

Height Adjustment: 17 to 22 inches by hand wheel under seat. Seat: Rolled front, genuine leather over curled hair. Backward and forward sliding adjustment. Back Rest: Wing nut adjustment up and down, tilting to desired angle. Form fitting. Padded genuine leather. Finish: Seat and back rest, choice of green, black, brown, tan, red and blue. Steel Parts: Standard, olive green enamel or choice of mahogany brown (not grained) mahogany red (plain) and black. Casters: 2-inch diameter steel or Baco swivel type. Gliders optional.



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THE HONOR ROLL

Details of No-Accident records in excess of 50,000 man-days, or 200 working days, are invited for publication in this department. Records may be for an entire plant or for a department. Special reporting forms furnished on request.

Bethlehem Steel Co.

The Railroad and Transportation Departments of the Cambria Branch of the Bethlehem Steel Co., Johnstown, Pa., on December 31, 1929, completed a no-accident record of 178 days. The average number of employees was 835, the man-days of exposure, 148,630. The record was broken by a brakeman who fractured his ankle, catching it under the footboard when a locomotive was derailed.

The active interest of the superintendent and workmen in prevention of accidents and intense competition with other departments were chiefly instrumental in establishing an unbroken record of 373 working days, or 160,017 man-days, in the Coke and By-Product Department of the Cambria Plant. The average number of employees was 429. No other department in the plant has yet operated a full year without a lost-time accident.

Consolidated Gas Co.

The Elizabeth Street Branch of the Customers Service Department of the Consolidated Gas Co. of New York completed on December 31, 1929, two years, 8½ months of continuous operation without a lost-time accident. An average of 213 men were employed, working 837,089 man-hours during that time. Up to the present writing, the record is intact.

Duquesne Light Co.

A period of 333 working days without a lost-time accident has been established by the Manchester Shops of the Duquesne Light Co., Pittsburgh, Pa., and unbroken up to the date of reporting, December 27, 1929. The average number of employees is 65, the total man-days, 21,645. The inter-divisional accident prevention contests of the Duquesne Light Co. were incentives in establishing this record. A trophy, known as the F. R. Phillips Accident Prevention Trophy, is given to the winning division, and individual members of the winning division receive prizes.

Kaiser Paving Co.

The Kaiser Paving Co., with headquarters in Oakland, Calif., operated its Gravel Plant at Livermore, Calif., during 1929 without a lost-time accident. There was an average of 35 men employed during this time, and a total of 84,000 man-hours of exposure. The safety work has been directed by J. J. Rosedale, consulting engineer, San Francisco, who, besides making inspections and having safeguards installed, carried on an extensive campaign among the men.

Lake Superior District Power Co.

The Ashland District of the Lake Superior Power Co., Ashland, Wis., has operated 657 days without a lost-time accident. The average number of employees is 118; the total man-days, 77,526. The desire of every employee in the Ashland District to eliminate accidents has been largely responsible for this record, begun December 16, 1927, and unbroken up to the day of reporting, January 3, 1930.

Meadow River Lumber Co.

On May 8, 1929, the 59 employees of the Saw Mill and Dimension Mill Departments of the Meadow River Lumber Co., Rainelle, W. Va., completed 545 working days without a lost-time accident. On that date a man was struck with a piece of lumber. Posters and constant work with the foremen made possible this record.

Midwest Box Co.

The Charleston and Fairmont Divisions of the Midwest Box Co., affiliated with the Container Corporation of America, have completed the calendar year of 1929 without incurring a lost-time accident. The Charleston Division employs 86 men, the Fairmont, 60. During 1929 they worked 236,093 and 139,891 man-hours respectively. Both divisions are engaged in corrugated box manufacturing.

Public Service Co. of New Hampshire.

All departments of the Public Service Co. of New Hampshire, Nashua, N. H., cooperated in establishing a no-accident record of 250 days, or 23,000 man-days, broken on December 13, 1929, when a man fell on a slippery coke pile and caught his hand in a sprocket conveyor. The plant employs an average of 92 men. Organized safety work, backed by strong managerial support, made this record possible.

The electric department of the Nashua District has not had a lost-time accident since November 17, 1927, and only two lost-time accidents since December 31, 1924, when the company began keeping accident records. The average number of electrical employees is 35.

Shell Petroleum Corporation

The production department of the Comar Oil Co., located in the Tonkawa District of the Shell Petroleum Corporation, has gone 365 days, or 88,000 man-days, without a lost-time accident. During the period of exposure 250 men were employed. The company attributes its year of safety to an earnest desire to reduce cost both to itself and to its employees. The record was unbroken at the time of reporting.

Standard Oil Company of Calif.

The entire Pipe Line Department of the Kern River Division of the Standard Oil Company of California, at Bakersfield, Calif., participated in a record of 700 days without a reportable accident. This is equal to 98,000 man-days of exposure. The record was established on December 1 and unbroken at the time of reporting. The Pipe Line Division employs 140 full-time workers. Monthly safety meetings, splendid interest in first aid training, and full investigation of all accidents have been responsible in a large measure for this record, which betters all previous departmental records.

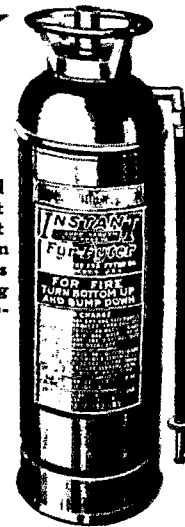
The Labor Department of the Richmond Refinery, Richmond, Calif., employing an average of 235 full-time employees, reports

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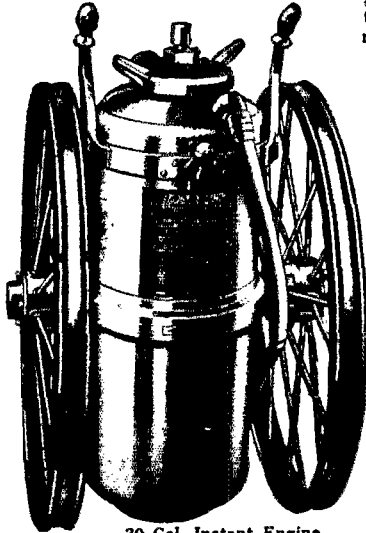
REMARKABLE EFFICIENCY IN THE "INSTANT" LINE (ANTI-FREEZE)

You can extinguish more classes of fires with the new "Instant" line than with any other hand portable fire fighting device. Under tests at Underwriters' Laboratories, this extinguisher put out in nine seconds a fire which requires from 25 to 35 seconds with other types of extinguishers. It not only extinguishes any kind of a fire in a minimum of time, but does not support combustion afterward. Large industrial plants everywhere have standardized on the "Instant" line. Names gladly furnished upon request. Many fire departments are using the "Instant" extinguishers exclusively in hand portable equipment. Here's why:

1. **ANTI-FREEZE.** Operates efficiently at 40 degrees below zero.
2. **WOOD AND GENERAL FIRES.** Instantly extinguishes wood and general fires formerly calling for Soda-Acid and Foam.
3. **GAS, OIL OR PAINT.** Extinguishes fires in gasoline, oil and paint, kerosene and grease.



1 3/4 Gal. Instant



20 Gal. Instant Engine

Listed by Underwriters' Laboratories. Exclusively a Fyr-Fyter product. Built in three sizes, 1-gallon, 1 3/4-gallon hand portable extinguishers and a one-man operated 20-Gallon Engine.

HAVE YOU SEEN OUR NEW CATALOG?

Your copy of this 25-page catalog contains the latest developments in devices for combating fires. A complete library of information which lists many individual items and many illustrations, including our complete line of machines and recharges. Send for it today.

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A CHAIN MUST BE SAFE



WHEN work is heavy enough for a chain to be employed, a hazard is present—there is danger of the load's dropping unless a safe, reliable chain is used.

The careful selection of raw materials, good workmanship and rigid inspection are three essentials that must be observed in the manufacture of a dependable chain.

Taylor Mesaba Chains



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HAND-ELECTRIC
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WELDED CHAIN

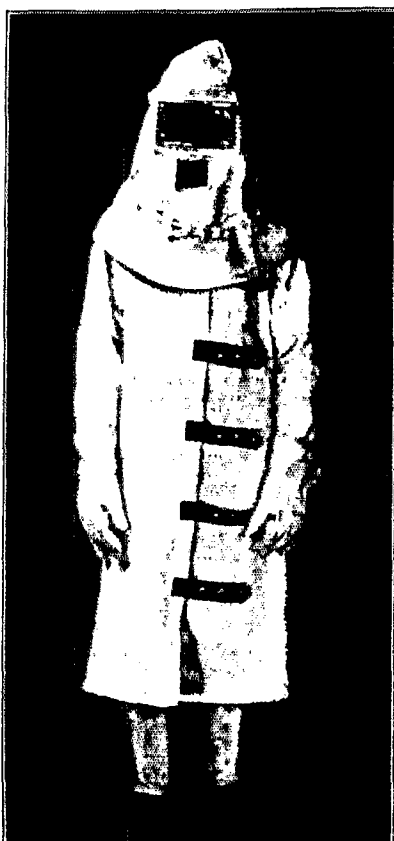


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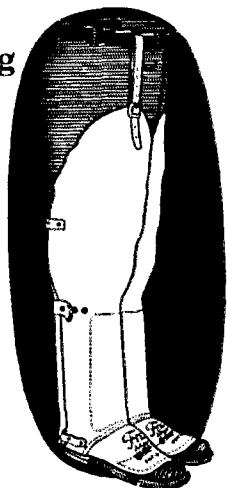


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The Honor Roll—Contd.

a no-accident period of 529 working days, or 124,215 man-days. This period was broken on October 11, 1929, when a man riding on a truck was struck by a locomotive.

Stevens Hotel.

The 83 employees of the mechanical department of the Stevens Hotel, on December 31, 1929, completed a period of 487 days without a lost-time accident. The Stevens Hotel also reports that the 21 employees in the carpenters and kindred trades have not had an accident since the hotel opened early in 1927.

Tenney, Charles H., & Co.

Three of the organizations under the management of Charles H. Tenney & Co. have recently completed creditable safety records. The Concord Electric Co., Concord, N. H., employing 63 men, operated 315 no-accident days, terminated January 1, 1930. The Eastern Massachusetts Electric Co., Salem, Mass., employs an average of 22 workers. In spite of the company's hazardous operations on high transmission lines, it has had only one lost-time accident during the 15 years it has been in operation, and that was a case of hernia which may or may not have been due to the man's work.

During 1929 the Salem Gas Light Co., Salem, Mass., went eight consecutive months, or 200 working days, without lost time due to accident. Up to January 1, 1930, the Production Department, with 62 employees, completed 367 working days without a reportable accident.

Charles H. Tenney & Co. had under its management during November, 1929, 21 companies, with 3,400 employees working approximately 630,000 man-hours; during that entire period there were but seven lost-time accidents. Fifteen of the companies went through the year without an accident.

Tide Water Oil Co.

The no-accident record of 35 days, or 78,225 man-days, established by the Bayonne Refinery of the Tide Water Oil Co., Bayonne, N. J., came to an end on November 5, 1929, when a crane helper met with injury while at work in a dump car. The estimated number of men contributing to this record was 2,236.

Union Carbide Co.

The Union Carbide Co. awards a bronze tablet to any of its plants completing a full year (1,500,000 labor-hours) without a tabulatable accident. Three plants have recently qualified for the tablet with records unbroken up to the day of reporting. The Kanawha Works of the Electric Metallurgical Co., Glen Ferris, W. Va., has a no-accident record of 365 work-days, or 260,235 man-hours, dating from November 5, 1928, to November 4, 1929. The Kanawha Works hopes to equal or better its last no-accident record of 731 days, terminated November 26, 1926.

The Haynes Stellite Co. has established a splendid record of three years, dating from October 23, 1926, to October 22, 1929. This is equal to 1,526,920 man-hours. The plant is located at Kokomo, Ind., and employs 195 men.

The Fremont Works of the National Carbon Co., with an average of 410 employees, operated from December 21, 1928, to December 20, 1929, a period of 984,815 man-hours, without a lost-time accident. This plant aspires to better its former record of 654 days, completed August 31, 1927.

SAFETY WASH CAN



FOR GASOLINE AND OTHER HAZARDOUS LIQUIDS

THE Protectoseal Wash Can provides a safe, economical means of washing all small mechanical parts. It serves also as a time-saving device, for it is only necessary to give the parts several up and down movements to cleanse them thoroughly. A tilt basket, located in the protective well, provides sufficient drainage.

The cleansing well is formed by a fireproof screen cylinder, which lessens the possibility of interior ignition. If the fluid does ignite, close the lid and the fire is extinguished.

All Protectoseal Cans are made of 24 gauge terne plate, double seamed and soldered.

Write for descriptive catalog.

The Protectoseal Company
226 No. Sheldon Street
Chicago, Ill.

More Life Savers Awarded President's Medal

ONE hundred and seventeen persons—men, women and children—are now the proud owners of "The President's Medal," awarded by the National Safety Council for saving life through application of the prone pressure method of resuscitation. Any person over ten years of age who saves a life by this method and is not eligible for the Insull or McCarter medals or similar awards, is eligible for the Council's medal.

Following are recent awards approved by the Medal Administration Committee of the Council:

Basil I. Williams, a grade school teacher at New Canton, Ill., found Lewis Albert Staff, one of his pupils, in a tree outside the school house in contact with a 6900-volt circuit. After getting the apparently lifeless boy to the ground, Mr. Williams applied the prone pressure method until normal breathing was restored.

Mack Booth, Caretta, W. Va., had just completed a course in first aid when he found his nephew and fellow employee, Jasper Booth, apparently dead from electric shock. Putting into practice his newly acquired knowledge of resuscitation, Mr. Booth was able to revive his relative.

Paul Kirk, Brooklyn, N. Y., owes his life to the efforts of three young men, Harry J. Dadson, James W. Hassett and Thomas S. McKitty. Kirk who had been seized with cramps while swimming, was pulled from the water by the three men who applied resuscitation in turn for an hour and a half before normal breathing was restored. Dadson was awarded the medal and Hassett and McKitty received certificates of meritorious service for aiding in saving Kirk's life.

C. A. Bundick, Charleston, W. Va., revived Worth Wilson, Shawnee Lake, W. Va., from electric shock. Wilson had been leaning against a wire fence when lightning struck both the fence and the electric wires above him.

Harry Goodwin and Leon B. Cox revived John Renner at Oil Field, Ill., when the latter had been overcome by gas while trying to clean out the gas line under his house. Goodwin received The President's Medal, and Cox, who arrived on the scene in time to assist him, was awarded a certificate of meritorious service.

WORKING TO WIN—THE SAFETY TROPHY

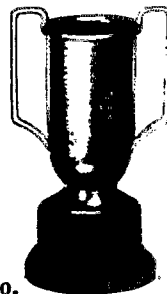
that's what gets the whole hearted co-operation of the men in accident prevention.



**START
THE
NEW
YEAR**

with a spirited contest. Let them win a Trophy or Cup.

Write for Catalog. Original designs and samples submitted.



attention and respect due a Distinguished and Trained Safety Man.

We make Emblem Buttons for every Purpose.

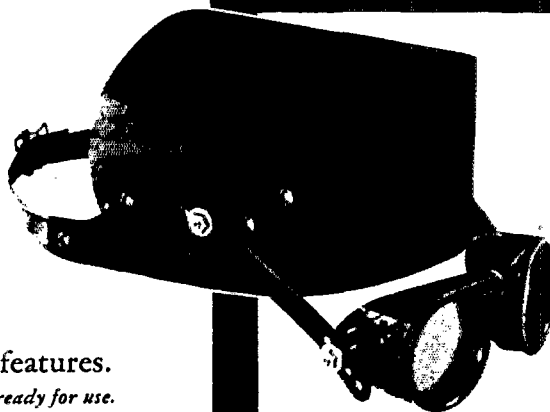


Clarence J. Williams

Williams Jewelry & Mfg. Co.

Display Room 414, Pittsfield Bldg.
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A BETTER SAFETY GOGGLE



Note these features.

Always ready for use.

Never mislaid or lost.

No irritating elastic band.

Non-fogging in ordinary use.

Fit any face comfortably.

*Skeleton
Type*



Helmet Goggles are worn like a cap and fit like a cap. The eye cups are hung by fibre straps and swing up out of the way, or down over the eyes in an instant. They rest lightly on the face without draw or pressure, yet afford full protection. Six adjustments allow for all possible peculiarities of nose, eyes and head. **THEY ARE COMFORTABLE!!**

Put Helmet Goggles to the test yourself. We shall be glad to send a pair for inspection. **CARTER-LOCKARD CO.**

950 So. Flower St., Los Angeles, Calif.

HELMET GOGGLES

Carter-Lockard Co., 950 So. Flower St.,
Los Angeles, California.

Gentlemen:
Send me complete details.

Name

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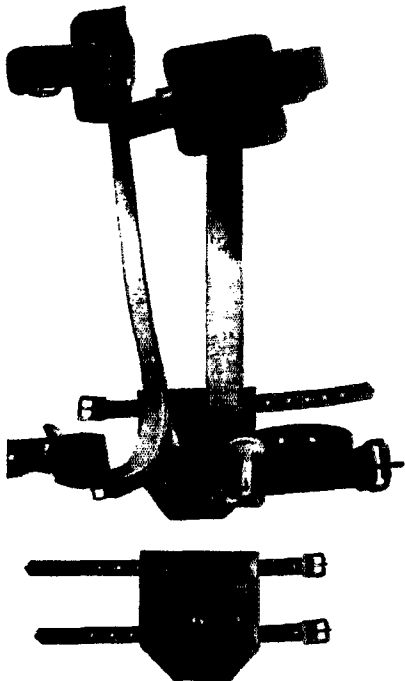
For grinding service ☐ For welding service ☐

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Protects the Linemen
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Costs less than one-half the cost
of regaffing one pair of climbers

OTHER ITEMS FOR LINEMEN'S SAFETY

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Please send Bulletin 1301 describing
Linemen's Safety Equipment.

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Company.....

Address..... NS.3

This Bulletin Board Reflected the Christmas Spirit



THE spirit of Safety and the spirit of Christmas were admirably combined in the above bulletin board display, arranged by foremen of the Rod and Wire Department at the Maryland Plant of the Bethlehem Steel Company at Sparrows Point, Md.

On one side of the center panel of the bulletin board was the familiar figure of Santa Claus, safe and sound. On the other side was a crippled Santa Claus with the inscription, "Could This Santa Claus Be Good to your Kiddies?"

A Check List for the Construction Job

LITTLE details neglected create big hazards which may result in serious accidents. Nowhere is this more evident than on the construction job where men work aloft and heavy objects are hoisted to great heights. This check list was published in a recent issue of *The Builder*, an interesting mimeographed publication issued by Barrett & Hilp, San Francisco. With each item on the list are two squares for checking "yes" or "no," and the warning "Check up on it."

1. Are ladders and stairways safe, all ladders having sound rungs and rails well nailed, with top and foot of ladders securely fastened, with hand hold at top of ladder?

2. Are passage ways and work spaces kept free from rubbish?

3. Do you bend over projecting nails and form wires?

4. Are floor openings around you guarded with railings and toe boards?

5. Are safety goggles needed on the job? Do you wear them when eye protection is needed?

6. Do you obtain first aid promptly for all cuts and scratches and keep wounds protected against infection?

7. Do you know the safe loads for manila rope and steel cable, and the holding power of nails?

8. Can you tell when a scaffold is built safely?

9. Nine times out of ten there is no trick to safety. Common sense, ordinary care and decent regard for the well-being of your fellow workers will prevent most serious accidents. There is room for improvement on every job. Check up on it.

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"I'll Never Again Wear Anything but GRO-CORD Soles!"



"REMEMBER two winters ago when I took that bad spill, Bill? Couldn't walk for three months—arm never has been the same since. Lost all my pay, too. That'll never happen again, believe me!"

"Why not?"

"See these soles? They're GRO-CORDS—there's nothing like them for sure footing. They have non-skid cords in them just like a tire. Far outwear leather, too. I've had this pair eight months and they hardly seem at all worn."

"Any shoe dealer has them. The best sole for our work is the Munson Heavy Duty. The cords go all the way to the edge of the sole. I don't believe you could slip if you tried, when you have these GRO-CORDS on."

GRO-CORD

NON-SKID

SOLES and HEELS

"Cord Tire Wear in Every Pair"



**THE MUNSON
SERVICE SOLE**

A heavy duty sole which is better than anything before offered. This GRO-CORD Sole gives firm footing on all surfaces. Ask your dealer about it.

LIMA CORD SOLE AND HEEL COMPANY • Dept. 2-F, Lima, Ohio

Perks Safety Washers for Grinding Wheels

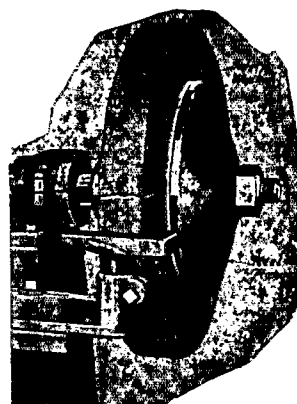
PERKS Safety Washers are steel discs, to which a coat of specially prepared rubber has been firmly vulcanized. When the flange is tightened, the rubber is forced into the depressions in the wheel.

In this manner the stress in the wheel, due to the centrifugal force, is transferred, through the medium of the rubber, to the metal back of the Safety Washer which in turn with the shaft carries the load.

These discs not only hold the wheel firmly if it should break, but they also tend to relieve wheel stresses caused by any unequal flange pressure and thus help prevent breakage.

Send for a Pair on Trial

Made in all sizes up to 30 inches outside diameter. Please give outside flange diameters and arbor sizes.



Patent No. 1,600,064
This wheel was 14" dia. by 1 1/4" wide
and had a continuous run, at 2,250
R. P. M. for 5 hours after being
broken in two pieces.
IT HELD INTACT

STANDARD SAFETY EQUIPMENT CO.

410 North Michigan Avenue, CHICAGO

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NO SCREENS!
NO GRILLS!
NO
PRISON BARS
that obstruct
Clear Vision



New Safety standards demand **FULL VISION** as well as protection for a gauge glass. Bars, grates, or grills that partially hide the boiler gauge glasses are inefficient and unsatisfactory to use.

Only with Kleervus can you get **COMPLETE PROTECTION** plus **FULL** vision for the boiler operator.

From any angle—from any normal distance you can read the water level at a glance—with Kleervus. Inexpensive, easy to install, Kleervus meet every safety requirement. Protect your men—and your good record—by installing Kleervus **NOW**.

The Wright-Austin Co.
 311 West Woodbridge,
 Detroit, Mich.

KLEERVU
 "SNAP-ON" GAUGE GLASS
PROTECTORS

Fire Hazards in the Power House

By D. G. WILL

Chief Electrician, Spy Run Power Plant
 Indiana Service Corp.

SINCE its discovery, electricity has been classed as one of the greatest of fire hazards, and according to records, the fires caused by it stand exceptionally high on the list. A tabulation of the causes of fires in power plants over a certain period showed that approximately 82 per cent was caused by electricity. However, when no definite cause can be found, it is very easy to say a fire originated from some short circuit, overload, faulty insulation, or some other electrical default.

In many cases where the cause has been laid to electricity, if it could be definitely determined, it would be found to be from a misplaced match, cigar or cigaret stub, spontaneous ignition, or some other frequent source of fire. Nevertheless, everyone knows that an electric arc will ignite material. When an arc is drawn, whether or not it will ignite material within its reach depends entirely on the intensity of the heat made by the arc and the material with which it comes in contact.

If a fire is started from some electrical source it must be in one of three ways—electric arc, short circuit, or overheated equipment. The first of these, the electric arc, is by far the hardest to detect and prevent, due to the fact that there is usually no warning before the explosion. It is also the hardest to control. Although it may be extinguished by a fire extinguisher, it may immediately reestablish itself unless the current is shut off. This cannot be said of overheated equipment, but to meet constantly increasing load demands, electrical apparatus very frequently becomes much overloaded, with the result that disturbances have been created, and in some instances fires have resulted.

Crowded conditions are especially out of place in any power house. All equipment should be accessible from all sides to facilitate repairs and maintenance and also to minimize the chance of accident. If well separated, a possible breakdown of one

piece of apparatus will not transfer fire readily to another.

The first emphasis should be placed on fire prevention. Preventing fires may not be as spectacular as fighting fires, but it is much more effective in the long run. In case of an electrical fire, one should always be on the alert, for here we encounter danger from shock, burns and flashed eyes, in addition to the fire itself. A live wire may be exposed, conductors may be overheated, there may be a short circuit or a poor contact. Dangerous equipment should be guarded or enclosed wherever possible. Insulation and adequate grounding are too frequently neglected, and their absence is often the cause of serious accidents or fires. Operators working around electrical apparatus should not wear metal parts on their clothing, and when working electrical apparatus, whether live or dead, should consider it alive.

Keep Equipment Clean

Generators are the most important electrical equipment, and their hazard lies in the possibility of short circuiting and arcing. Short circuits in alternating current machines generally occur at the stator, and in direct current machines in the armature or commutator. The sparks from a rotating armature may be thrown several feet, and for this reason it should be kept free from combustible material. The fanning action of a generator greatly increases the intensity of a fire and due to the fact that the generator is usually enclosed it is hard to control a fire of this nature. This has led to the development of fire extinguishing systems using carbon dioxide, many of which are in use at the present time.

In generators of the turbine type, it is possible for fire to pass through the ducts and thus it is important to clean the ducts and generator frequently in order that combustible material be kept away from the intake or delivery ends of these ducts, otherwise an outside fire may be drawn into the generator, or a fire

Reprinted with slight abbreviations, from the Safety Bulletin of the Bureau of Safety, Inc.

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"No Accidents" are not Luck

Such a record is achieved only after patient effort and careful attention to every detail. However, there is probably no single factor more important in promoting safety than clean floors. Floors that are kept scrupulously clean help to prevent the numerous accidents caused from slipping or stumbling; they also play a significant part in improving employee morale—encouraging workers to be careful and orderly.

FINNELL SYSTEM—the efficient way to clean floors

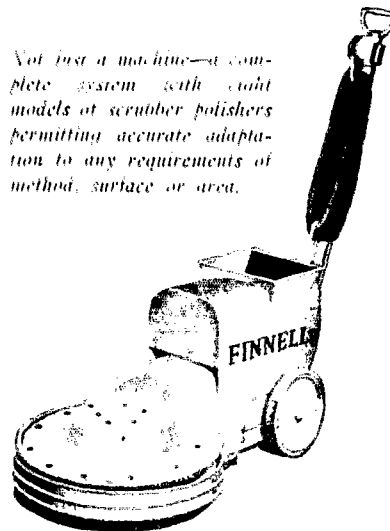
The FINNELL SYSTEM does the work of four men. Not only cheaper but far better than hand methods. The fast moving brushes of the FINNELL Electric Scrubbing Machine dig down beneath the grime and grease, routing every particle of dirt.

The new FINNELL Vacuum Mopper absorbs water from the floor, leaving it practically dry.

A FINNELL representative will be glad to make a survey of your floor space and recommend which of the eight FINNELL models would best serve your needs. Address FINNELL SYSTEM, INC., 1002 East Street, Elkhart, Indiana.

WAXES **FINNELL** SCRUBS
POLISHES ELECTRIC FLOOR MACHINE SANDS

Not just a machine—a complete system with eight models of scrubber polishers permitting accurate adaptation to any requirements of method, surface or area.



GARDTOE—INDUSTRY'S CHOICE



No. 7991

CONSTRUCTED especially for use in steel mills, automotive plants, shops, etc., the GARDTOE "Factory Special" Shoe, No. 7991, has been found to be highly satisfactory for general industrial wear.

This sturdy shoe has the Reinforced Patented Box Toe, Leather Nailed Sole, Leather Heel, and other features responsible for the general use of GARDTOES throughout industry.

Many plants have a GARDTOE department to supply their workmen with this unusual foot protection. There is no better method of lessening lost time from foot injuries.

Send the coupon for detailed information.

CHIPPEWA SHOE MFG. CO.,
Chippewa Falls, Wis.

Gentlemen:

☐ Please send us _____ pairs of No. 7991 GARDTOE shoes size _____ for ten days' free examination.

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Company _____

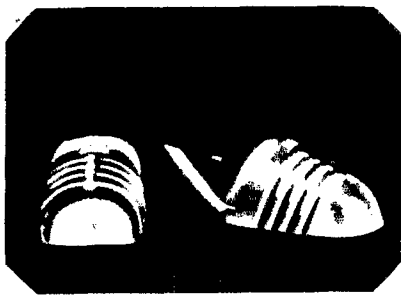
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INDUSTRIAL LEADERS ENDORSE FOOT PROTECTION

Executives in all phases of Industry are constantly urging workmen to protect their feet. They realize its importance in increasing production.

Many plants supply employees with Sankey Guards, for a workman equipped with this sound foot protection is not worried about foot injuries—he keeps his mind on his work.

Industrial executives realize the necessity of keeping a man on his feet and on the job. Sankey Guards will do it.



Send coupon for details

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SAFETY APPLIANCE
COMPANY
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Ellwood Safety Appliance Co.
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Please send us, on memorandum invoice
..... pairs Rigidum.

.....pairs Steel. Sankey Corrugated
Foot Guards. It is understood that these
guards may be returned without obligation
if they fail to meet our requirements.

Company

Address

Your Name

Position

in the generator may ignite any combustible material which may be at the delivery end.

The hazard of oil type switches and circuit breakers is due to the presence of oil which may be thrown from the tanks and ignited by the arc. The oil may be broken down by the high temperature of the arc and the resulting gases cause the oil to foam and overflow, and in some cases it has even been known to explode. The only prevention is to keep the switches themselves in good condition and maintain the proper oil level.

Fuses of the enclosed type only should be used. Open fuse wire should never be placed in any circuit no matter how small the load may be. Disconnecting switches must never be opened under load, and to guard against this, the best rule to follow is to make sure the oil switch is open before opening or closing disconnects. Motors above five horsepower should not be thrown directly on the line, due to the sudden rush of current through the motor.

Locate Transformers Outdoors

Transformers are usually considered reliable and safe, but may be hazardous if neglected, due to the

high voltage feed lines and insulating oil in the cases. This oil has a very high flash point and is difficult to ignite, and usually automatic protection opens the circuit before any fire can occur. However, an arc or short circuit in a transformer has a very high temperature and has been known to ignite the oil, causing it to boil and overflow. Transformers are safer when located outdoors. The ground should slant away so that burning oil will not collect.

Fire extinguishers should be filled and should be in good order. Water, soda acid or foam should not be used on or near energized equipment or lines, as they may conduct enough current to shock the operator. Carbon tetrachloride extinguishers may be used safely on live electrical apparatus.

The power plant is the heart of an industry furnishing the energy which maintains production and service. Fire in a power house will cripple an industry more completely and more readily than any other mishap. Fire prevention, as well as accident prevention, are both humane and economic movements, and should be practiced constantly. When either a fire or an accident does occur, steps should be taken immediately to prevent a recurrence.

They Heeded the Slogan



MOLTEN lead, hydraulic and pneumatic presses, rolling mills, saws, overhead cranes, and heavy castings were unable to cause any lost time among the 50 employees of the Northwest Lead Company, Seattle, Wash., during 1929. They remembered the slogan, "Be Sure and Be Safe," and they were not sorry.

Above are a few of the employees of the company with the score board which recorded their progress month by month. John T. Lund, president of the company, attributes a large share of the credit for the record to the use of appropriate slogans prominently displayed. They helped to maintain interest and were constant reminders to employees.

When writing advertisers, please mention NATIONAL SAFETY NEWS

Put an end to these needless infections from cutting oil

*This powerful, but harmless germicide
prevents infections*

Infections from cutting and coolant oil such as follicle rash, boils, pus-forming sores, skin eruptions—all these come from bacteria and microbes present in the cutting oil. These infections are responsible for lay-offs and absences which in turn curtail production. Mutual aid and corporation insurance rates are needlessly raised.

Merely add 1% of Sylpho-Nathol, the one disinfectant that is active in oil, and these infections are banished. Sylpho-Nathol is inexpensive. While not so well known in the industrial field, it is a tested product and has been used in the New England home and hospital for more than thirty-five years.

Sylpho-Nathol is obtainable in 1, 5 and 10 gallon cans, 30 and 50 gallon barrels.

*Write for a bulletin describing practical test
and ask for free working sample.*

The Sulpho-Naphthol Company
6 Sudbury St., Boston



Sylpho-Nathol

ANTISEPTIC DISINFECTANT GERMICIDE



PIONEER GOGGLES

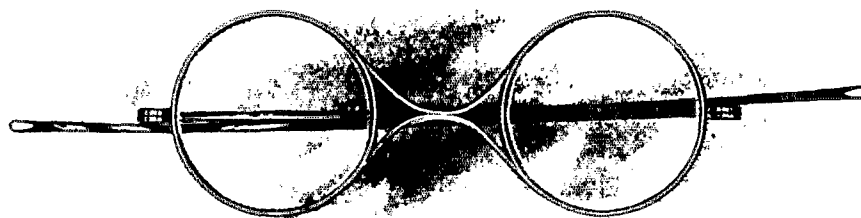
Melter's Goggle

Extra heavy white metal thruout, for Furnace Men.

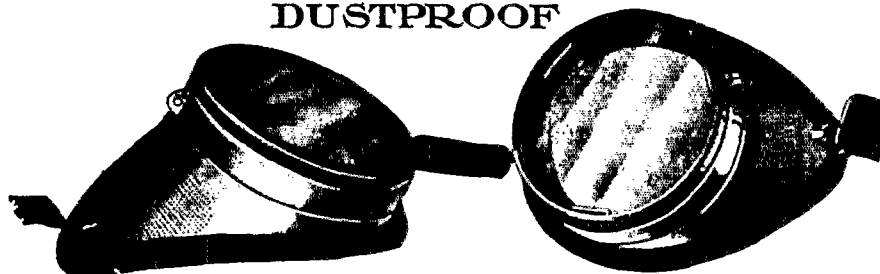
1021 Solid Rounded Cap Joint.

1022 Split Joint.

Furnished with Special Blue lenses.



DUSTPROOF



MODEL "N"

Dustproof Model "N"

Made of aluminum, very light and comfortable. Rubber padded adjustable chain bridge and ventilated eye-shields; elastic headbands. For chippers and all exposed to hazards from flying objects. Fitted with X.L. Industrio or Laminated lenses.

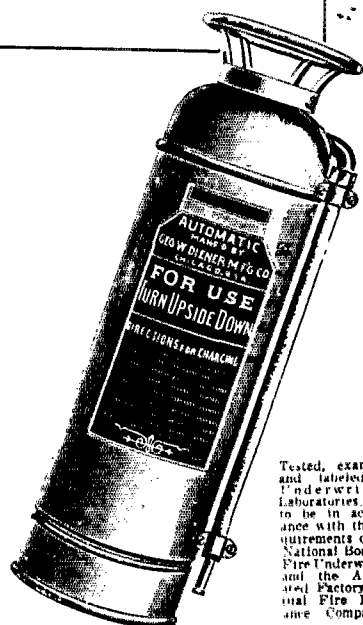
For further particulars write your own jobber.

DUPAUL-CENTRAL OPTICAL COMPANY, INC.

Designers and Manufacturers of Protection Goggles for a Quarter of a Century.

SOUTHBRIDGE, MASSACHUSETTS

for
Free
Burning
Fires!



Tested, examined
and labeled by
Underwriters'
Laboratories, Inc.
to be in accordance
with the requirements
of the National Board
of Fire Underwriters
and the Associated
Factory Mutual
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Companies.

"AUTOMATIC" CHEMICAL FIRE EXTINGUISHER

2 1/2 Gallons, Soda and Acid Type

FOR protection against *free burning* fires in factories, stores, offices, garages, homes and store buildings, the 2 1/2 gallon Soda and Acid Type extinguisher is at all times an added insurance.

An extinguisher of this type used at the start of a fire can easily be more effective than the work of an entire fire department five minutes later.

Manufacturing a complete
line of fire extinguishers,
safety, excelsior and oily
waste cans.
Send for the new 1930
Diener Catalog for prices
and complete information.

**Geo. W. Diener
Mfg. Co.**
408 N. Monticello Ave.
CHICAGO

Complete Fire Equipment Supplies

Am I Responsible for Accidents?

(Continued from page 10)

where their little child slept. They were called home by a blazing house. It was too late to save the little one. All they could plead was that the fire was almost out, that they never dreamed a spark could fly. As long as there is a burning brand a spark may always fly.

The injuries and deaths from flammable substances like gasoline, benzine, kerosene, naphtha, are an old story. Women cannot be persuaded that they are flirting with death when they use one of these substances carelessly. The ignition point in all of them is low. They vaporize readily into highly flammable gases and their explosive energy is tremendous. Everybody knows this, yet in one recent year nearly 800 women lost their lives in the United States through the careless use of these flammables.

A few years ago, I numbered among my acquaintances in this town a charming and promising young girl, the only child of a hardworking carpenter and, of course, his hope for the future. She was cleaning a pair of elbow length kid gloves on her hands and in the kitchen where a gas fire was burning. Her father, knowing the danger, begged her to go into another room. "Oh, father, you are always fussing," she said, "there is no danger." And to prove it the defiant little creature swept her hand over a lighted gas jet.

There was an explosion, and she came out with fingers and arms permanently crippled and a frightful scar on her lovely face. People pitied her—she came to pity herself, yet clearly the responsibility was entirely hers.

Possibly our sense of responsibility would be quickened if in youth we should be sternly taught that we will be held guilty if we are injured—at least until we can prove ourselves innocent. It should be held before us too that we are not the only ones to suffer. This young girl not only crippled herself but she ruined her home. Her defiant gesture in the face of danger caused a train of misery that cannot be calculated.

What we need in order to keep alive our sense of responsibility for our own and others' safety is to remind ourselves continually that some of the most terrible tragedies of our day were caused by careless acts of which we personally are often guilty.

Take the awful Triangle fire when 150 people lost their lives. It came from a cigaret carelessly dropped in

combustible rubbish. There is scarcely a household in the country where there are cigaret smokers in which you will not find wood scarred from a cigaret carelessly laid down—draperies set on fire—waste baskets bursting into flame.

If the matter doesn't go beyond a little damage—doesn't burn the house down or destroy life, it is treated lightly and the smoker continues to drop cigarets without knowing whether the fire is extinguished or not.

You drop a lighted match into the waste basket. So did the man who caused the destruction of the Equitable Life Assurance Society's building in 1912, where six lives were lost and property worth \$2,000,000 was destroyed.

You allow rubbish to accumulate in your yard or cellar. It was a pile of rubbish that caused the Peabody School fire in Peabody, Mass., where 22 children lost their lives.

You light your Christmas tree with burning candles. Out in Oklahoma on Christmas eve, 1924, lighted candles set fire to a Christmas tree and 36 children were burned to death.

You open the hood of your car with a lighted cigaret in your mouth. So did an important gentleman in Chicago not long ago, with the result that there was a terrific explosion which killed him and destroyed valuable property.

You take your hands off the wheel of your car to light a cigaret. So have others—with the result that they and those with them and possibly innocent passers-by were killed.

Each one of us holds life and death in his hands. A thoughtless, irresponsible act and not only we but sometimes scores of others suffer. Let us frankly admit, we who do not and will not correct our careless ways, that if as yet we have caused no great disaster, it is by no virtue of our own that we have escaped but rather by the grace of God.

Veteran Safe Worker Dies From Accident

WHILE on his way to work on the last day of 1929, Ferdinand Baumann, the oldest employee of Mathias Klein & Sons, Chicago, was struck by a street car and killed. Mr. Baumann had been in the service of the company for more than 57 years and during this entire period of service he had never suffered a lost-time accident.



YES—SAFE ON HOT STUFF!

THE only sign that IS safe on electrical equipment is the Stonehouse "Non-Conductor." Made of fibre . . . containing no metal . . . it can be safely placed on electrical equipment and handled when in use. The current cannot go thru it.

Especially designed and constructed for protecting and safeguarding electrical hazards, where metal signs are dangerous. Specify Stonehouse "Non-Conductor" FIBRE Signs for "hot stuff".

 **Stonehouse**
SIGNS, INC.
 STONEHOUSE BLDG. 842 LARIMER ST. DENVER, COLO. U.S.A.

The cost of high production

"Greater production — lower costs" such is the creed of manufacturers today. But with faster production comes less caution with resulting injuries. This is particularly true with a product like metal box strapping. Its sharp rough ends and edges present a constant menace to workmen's hands and arms.

Stanley "Eversafe" Strapping lessens these dangers. Its Round Safety Ends, Round Safety Edges and Smooth Japan Finish do not cut, scratch nor cause infection. Workmen do not have to be as cautious in using this new strapping, consequently greater production is secured without danger of personal injury.

Approved by many large users as well as by Safety Engineers and Leading Liability Insurance Companies. It will pay you to try it. Full description and samples will be sent on request.

THE STANLEY WORKS

Box Strapping Division
New Britain, Conn.

*Faster, Better and Safer Work with
Stanley "Eversafe" Box Strapping*



Patented



**Stanley Eversafe
Round End Cutter**

This ingenious device cuts two
Round Safety Ends at one clip.
A wonderful improvement
over ordinary shears.

The Stanley Works
Box Strapping Division
New Britain, Conn.

Send us full information and samples of
Stanley "Eversafe" Strapping.

SURE-FOOTED WORKERS

*increase
production*



A CME Non-Slip Safety Matting is of the right flexibility to yield gently under the worker's weight, thus reducing the fatigue of standing and permitting more and better work. At the same time it provides reliable foot security—oil, water, or grease cannot remain on the narrow gripping edges. Send for a free sample section, today.

New York state reported 9,532 falls on level surfaces for the fiscal year ending June 30, 1929 resulting in 1 fatal and 49 permanent total disabilities. Compensation totaling millions of dollars was paid out. Protect your plant against this slipping hazard!

ACME STEEL COMPANY
2840 ARCHER AVENUE
CHICAGO

ACME STEEL CO.
2840 Archer Ave., Chicago
Please send me a sample of your Acme Non-Slip Steel Safety Mats.

Name
Address
Company
Position

The Government and Safety

(Continued from page 38)

operatives as the one large plant, had an accident frequency of 34.15. In paper milling one large plant showed an accident frequency of 4.82, while 10 small plants together employing as many as the one large one, had a combined record of 63.18. In automobile manufacturing 11 plants showed a frequency of 36.12, when one large plant had succeeded in reducing its accident frequency to 0.4.

In spite of the apparent trend toward large-scale production, it is nevertheless true that a tremendous portion of our manufacturing is done in plants of moderate size. The problem of the small plant will, therefore, have to be solved if the record of improvement in safety and accident prevention is to be continued.

Another change concerning which industrial legislation and administration must bestir themselves is the increasing importance of chemistry in industry. We have always had some occupational diseases but never before have they come upon us with such plague-like rapidity and variety. The new uses of chemical energy and chemical processes have let loose a flock of new poisons, frequently mysterious in origin and always insidious in attack. In combatting this menace the government must become more alert to the dangers and exhibit greater celerity in forewarning and forearming those who will be exposed to them.

I urge that the government be one step ahead of industry in its acquaintance with industrial chemistry. The government should not wait until it is called to action by some calamity.

We Can Afford to Pause

I do not want to shackle the adventurous spirit of invention, but I believe we are moving forward fast enough to afford the short pause necessary to make certain of safety for the sake of the health and welfare of our working people and the resultant well-being of our entire population.

In the sphere of industrial law-making the states are, of course, the primary jurisdictions. The Federal Government has three divisions concerned with the problems of health and safety—the Bureau of Labor Statistics, the United States Public Health Service, and the Bureau of Mines. Each has to its credit many

major accomplishments. There is one unique service, however, which the Federal Government might have performed but it has failed to take advantage of its opportunity.

I refer to the fact that the Federal Government is in its own right probably the largest employer of labor in the world. Contrary to common belief, the men and women employed are not all engaged in clerical work. Several departments operate plants in which the conditions of work are comparable to those which prevail in private enterprises.

The Army and Navy

The Navy Department employs over 40,000 men in its yards. The war department has similarly over 40,000 employees on its payrolls engaged in industrial pursuits. These agencies of the Federal government had it in their power to teach a mighty lesson in safety by example and to establish a standard to which private industry might aspire. That opportunity the Federal Government has not seized.

There is particular reason for dissatisfaction with the record of the War Department. In 1926 the Navy reported an accident frequency of 17.62 per million hours of exposure. The War Department accident frequency was during the same year 43.82. That is considerably in excess of the average accident frequency for all industry during that year, which was 27.7.

In 1925 the record of the War Department was even worse. Its accident frequency during that year was twice as high as the average for all industries and almost four times the accident frequency reported by the Navy Department.

I am authoritatively advised that the work of the Navy Department and War Department is comparable. Why, then, is there so marked a difference in their records?

Let me name another definite direction in which the Federal Government might usefully have taken the lead. The budget of the Federal Government yearly includes hundreds of millions of dollars for construction. It spends in that manner more than any other single agency. Of all our industries construction reports the greatest relative number of accidents. The Government does not directly act as employer in its construction work. The projects are

PRESTO BANDAGE

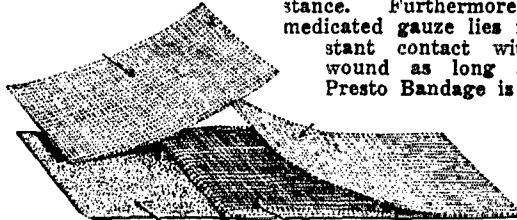
A Complete Dressing for Minor Injuries

PRESTO BANDAGE contains the three essentials in the treatment of small wounds, cuts and scratches.

STERILIZATION: The center gauze pad is treated with a highly efficient antiseptic.

AERATION: Presto bandage is the only combination dressing which allows perfect aeration of the wound.

PROTECTION FROM IMPURITIES: Although the muslin back of the bandage must be ungummed to permit ventilation, this back is so tightly woven that it prevents the entrance of dust or other foreign substance. Furthermore, the medicated gauze lies in constant contact with the wound as long as the Presto Bandage is in use



—lessening the possibility of infection.

PRESTO BANDAGE cuts the cost of FIRST AID by saving—



SHARP & SMITH

65 East Lake St.

Chicago, Ill.

TIME lost in dressing and treating wounds resulting from minor injuries.

TIME spent by nurses and First Aid personnel.

TIME lost from work by employees not injured.

TIME lost by men operating machinery who have been injured.

MATERIAL wasted on dressings.

INTERFERENCE WITH PRODUCTION.

The material used in PRESTO BANDAGE is flexible and assures free movement of any finger if applied on joint.



New Bandage



Old Bandage

General First Aid
Supplies

Men do better work when they have that sense of security which comes from wearing

Toe Saver Shoes



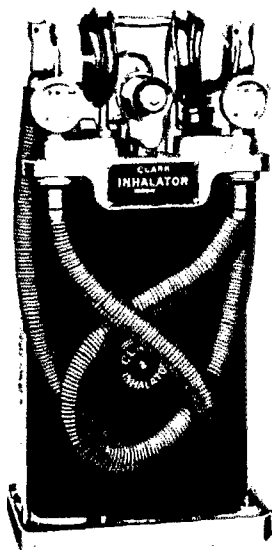
Made and recommended

By

ENDICOTT JOHNSON

Dealers Everywhere

The Clark Oxygen Carbon Dioxide Inhalator



THE Clark Inhalator is particularly well adapted for administering the Seven Percent Treatment, due to the fact that it provides an unlimited flow to the victim and yet wastes no gas whatsoever.

It has been tested and approved by the Committee on Apparatus of the American Gas Association.

Send for Circular

**McDONALD
ENGINEERING
CORPORATION**

**220 Varet Street
Brooklyn, N. Y.**

usually executed under contract. But the Federal Government might have written into these contracts a safety code which would have been a practical piece of instruction to the building industry of the country. That it has failed to do.

In the short history of the safety movement we first passed through a period of emotionalism. At the present time we are in the midst of developing the technique of safety, its rules and mechanics. These have been vital influences in reducing the risk of factory work. We still report, however, 3,000,000 accidents a year, of which 24,000 are fatal. It must be apparent that we can not achieve the final goal of industrial welfare by a mixture of ballyhoo and mechanics alone. The realization is gradually growing upon us

that safety can not be isolated as an individual objective; that it is the product of perfect coordination in industry in all its phases; that it is a necessary aspect of civilized business wherein men respect themselves and respect each other where life is highly regarded, where man is master of the machine and not its servant.

There are thus brought into the scope of those who promote industrial health and safety a host of correlated problems which concern hours of labor, adequacy of wages, satisfactory housing, opportunities for self-expression and self-improvement on the part of the worker. The safety movement must consciously recognize that it both contributes to and is dependent upon the general advance of industrial security.

Spontaneous Ignition a Hazard in Transportation

CHARCOAL is the most hazardous product from the standpoint of spontaneous ignition, according to Charles P. Beistle in a paper presented before a conference on the spontaneous heating and ignition of agricultural and industrial products arranged by the United States Department of Agriculture and the National Fire Protection Association. Mr. Beistle represented the Bureau of Explosives and the Railway Fire Protection Association at this conference.

High explosives are practically exempt from this hazard, Mr. Beistle pointed out. Black powder is not subject to it, and fireworks possess this hazard to a very limited degree. Flammable liquids have definite hazards in transportation but are not liable to spontaneous ignition. A few of the finished products of the chemical industries possess the property of spontaneous heating and ignition.

Notable among these are white phosphorus, metallic sodium and potassium, fused sodium sulphide and calcium phosphide. The fire hazards of these materials are due to their combining directly with either oxygen or moisture at ordinary temperatures. However, actual losses of these materials are almost entirely prevented by air-tight and water-tight containers sturdy enough to remain so under normal conditions of transportation.

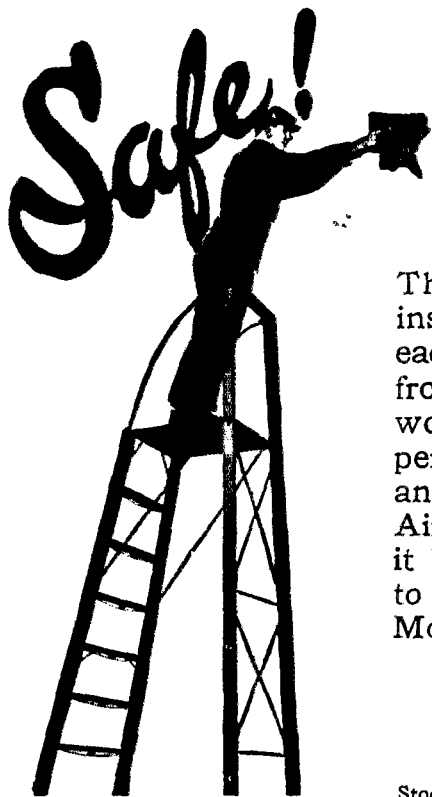
Many of the materials which have proved to be most subject to spontaneous heating and ignition in transit are those which ordinarily are not considered especially hazardous. Mr. Beistle presented the following list of cases of spontaneous ignition in trans-

sit reported between 1910 and 1927, inclusive:

	Fires or Heatings
Charcoal	1009
Alfalfa and Molasses Feeds	207
Rags, oily or wet	64
Tankage, fertilizer	54
Coal, pulverized	50
Oiled or varnished textiles and paper	48
Fish Scrap	40
Distiller grains, dried	40
Iron sponge	34
Rubber Scrap, reclaimed rubber	28
Bran	20
Wool Waste	16
Baled Hay	12
Cotton Waste, oily	8

Charcoal has the property of absorbing many times its volume of oxygen or other gases. The absorption of such a large volume of gas involves the compression of gas into smaller space and hence heat is produced. Charcoal made by the process of burning in pits or kilns is less hazardous than that produced in modern wood distillation plants. Pit-burned charcoal is harder and denser and contains much less volatile matter than charcoal produced by the modern process.

The Interstate Commerce Commission regulations for the transportation of charcoal make definite requirements of the manner of cooling and the amount of air exposure before shipment of charcoal made by the wood distillation process, also different requirements for lump charcoal and for finely divided material such as screenings. These regulations are the result of experience in manufacture and transportation, supplemented when necessary by storage tests made by the manufacturers in cooperation with the Bureau of Explosives.



DAYTON Safety Ladder

(Patented)

PORTABLE SAFETY

The Dayton Safety Ladder is the workman's safety insurance. It stands on its own feet, and makes each workman secure on his. Confidence resulting from using it creates more and better work per man. Its straight back permits close work against walls, and makes all corners accessible. Airplane spruce construction makes it light enough and strong enough to carry to the heaviest work. Moderately priced. Sizes 3 to 16 feet

Type "B"

Dayton Ladder

Smaller, popular-priced, all-purpose ladder of Dayton quality. Seven sizes.

Write Dept. NSN-2 for complete information.

THE DAYTON SAFETY LADDER CO.

121-123 West Third Street, CINCINNATI, OHIO.

Stock carried by Pacific Coast Representatives, Bullard-Davis, Inc., Los Angeles and San Francisco, and by 180 other distributors from coast to coast.

This Free Applicator Bottle of **MERCURO-CHROME** will convince you that it is the logical successor to Tincture of Iodine for First Aid Prophylactic and General Antiseptic Use—

MERCUROCHROME stains as Iodine does, and it is the stain of Mercurochrome, as it is of Iodine, that shows just where and how effectively the germicide has been applied; it fixes the bactericidal agent in the field for a relatively permanent period which prolongs the asepsis or the sterilizing effect, and it provides for demonstrable penetration into the tissues beneath the superficial surfaces. Inasmuch as Mercurochrome is definitely proved an extremely efficient general antiseptic, it is only reasonable to consider it the successor to Iodine in this field, as it is free from the objectionable features of Iodine, for *Mercurochrome does not irritate, burn or injure tissue.*

Sell yourselves first with this free sample:
HYNISON, WESTCOTT & DUNNING
BALTIMORE, MD.



HYNISON, WESTCOTT & DUNNING
Dept. S, Baltimore, Md.

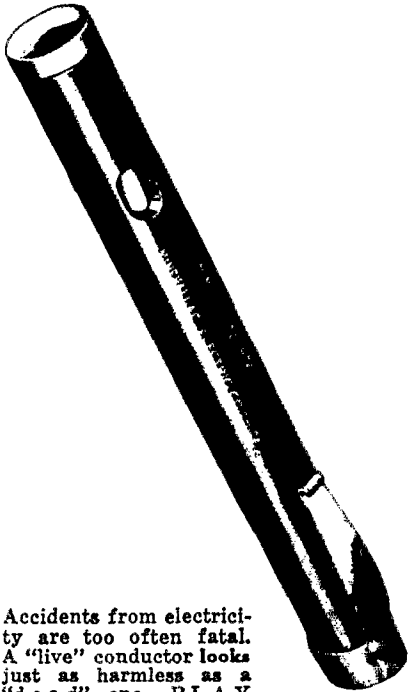
Please send me free Mercurochrome Applicator Bottle for personal use.

Name

Company

Address

INDICATES "LIVE" CIRCUIT WITH SAFETY



Accidents from electricity are too often fatal. A "live" conductor looks just as harmless as a "dead" one. **PLAY SAFE.** Use the Statiscope to determine the actual condition of the electrical circuit.

When placed with the brass cap near a live conductor, a glow will appear in the little window directly over the tube.

Before leaving the factory, each Statiscope is carefully tested for Positive Operation. It is therefore recommended that a periodical test be made by the user on a known live conductor, as rough usage may affect the instrument.

The Statiscope is designed to give indication of Alternating Current potentials of 2300 volts and up. Every industry needs it for the protection of its electrical workers. The instrument is so handy (it can be carried in the breast-pocket) that no electrician can afford to be without it. Send in the attached coupon for complete details.

MINERALLAC ELECTRIC CO.
25 N. Peoria Street, Chicago, Ill.

MINERALLAC ELECTRIC CO.	
25 N. Peoria St., Chicago, Ill.	
Please send us your circular on the Minerallac Statiscope.	
Name	
Company	
Address	

What One Company Thinks of "The Safe Worker"

DURING the past year the Hercules Powder Company has distributed *The Safe Worker* to all employees at its many plants. This little magazine, which is published monthly for industrial workers by the National Safety Council, now has a circulation of 196,000. It contains safety material presented in an entertaining and instructive manner and is used by a large number of member companies. The appreciation expressed by the Hercules Powder Company is typical of that of other companies which order thousands of copies each month.

The Hercules Powder Company has an employees' magazine of outstanding quality, *The Hercules Mixer*, but the pocket-size safety magazine fills a special need in the organization. Following are some of the expressions of appreciation received by the company's Safety and Service Department:

The Safe Worker is the most original booklet of its kind I ever read—it contains its sermon, masked with a jest. And said jest attracts and holds the attention of more workers than would a booklet of sorrow. Such a booklet would be tossed aside as are uninteresting advertisements.

It has a variety, covering many different branches of safety, and its influence in helping make it safe for workers is unlimited.

(Miss) RUTH E. HARRIS,
Hercules Experimental Station,
Kenville, N. J.

In reply to your request for an opinion of *The Safe Worker*, I look forward to its appearance. Such a monthly reminder to "be safe" rather than sorry should, and no doubt will, reduce the number of accidents from all sources.

It is suggested that responsibility for complete distribution be definitely placed upon one person. For the payroll man, *The Safe Worker* would surely reach him if it accompanied one of his semi-monthly wage checks.

DURAIN C. BUTTS,
Hercules Experimental Station,
Kenville, N. J.

I think the little safety book is a grand book and it is read and enjoyed by all the employees.

It is a great reminder, teaches many lessons, and makes one safer to himself and his fellow workers.

M. W. LANCASTER,
Hattiesburg (Miss.) Plant.

I am a faithful reader of *The Safe Worker* and I want to take this opportunity of telling you how much I really enjoy its contents.

I think that *The Safe Worker* is a very safe guide for anyone—man, woman or child. As I am the father of six children it is a necessity for me to be safe on my job in order to keep it, and by following your rules in Safety, it is easier and even a pleasure to work under such safe guidance. Not only are the rules interesting to read, but the little touches of humor make it even more so.

Good luck to all followers of "Safety!"

H. A. MURPHY,
Station B,
Hattiesburg, Miss.

Eyes of Industry



What Are They Worth?

*

Knowing eye conditions in your plant is just *good business*. An eyesight survey gives you the **FACTS**.

Correcting Defective Vision Means

Speed and Safety

Increased Production

Improved Workmanship

Fewer Accidents

Less Material Spoilage

No Eyestrain Headaches

Reduced Fatigue

Minimized Compensation

Claims

*

Our Surveys discover unsafe eyes and improve the defective ones. We give you detailed information on each employe enabling you to properly assign him.

NO INTERFERENCE IN PLANT ROUTINE.

*Hundreds of Satisfied Clients.
Every One A Reference.*

**SEND FOR OUR BOOKLET,
"EYES OF INDUSTRY."**

Eyesight Survey Corporation

A NATIONAL SERVICE

General Offices

**4196 Manchester Avenue
ST. LOUIS**

Motor Vehicle Deaths Mount to 31,500

(Continued from page 17)

This increase is subject to no revision because of delayed reports and, although the total population covered represents only 15 per cent of that in the entire country, past years have shown that experience among the policyholders of this large insurance company is especially reliable.

Current reports collected by the United States Census Bureau cover large cities of 100,000 population or more. Information now available covers the 52 week period ending November 30, 1929, and makes a comparison with a similar 52 week period ending December 1, 1928. This experience, from cities only, shows an increase of approximately 15 per cent in 1929. In past years this change has been a reliable indicator of what was happening in the country as a whole. A classification of the state reports received, however, into those states predominantly urban and those predominantly rural, indicated a somewhat greater increase in the predominantly urban states in 1929.

States and cities reporting currently, month by month, during 1929, to the National Safety Council, have experi-

enced, on the basis of present reports, an increase of only 7 per cent in 1929. This figure is subject, however, to two corrections. In the first place corrections have not yet been received in the majority of instances to take account of deaths occurring after a prompt monthly report was submitted. Receipt of these corrections will undoubtedly affect the 1929 record. In the second place this group of cities and states are those that give special attention to the accident problem and it seems reasonable to believe that the record there would be somewhat better than for the entire country.

Of the four sources of data the last one should undoubtedly be discounted most. Of the remaining three the first source of information covered by far the largest area. As previously indicated, also, the third source of data, from large cities only, may not quite represent country-wide conditions. Giving all three of these sources due weight, an estimated increase of 12.5 to 13 per cent and a total of approximately 31,500 would seem not far from the truth. Partial verification of these figures will be possible in the near future when the various states complete 1929 tabulations.

Redteco

IN THIS DAY OF SPEED

"Give us Something New and
Something Better"

It's the spirit of the times . . . the
voice and urge of PROGRESS.

—See Redteco (the new warning
signal for city use) and Yelteco—
the new signal for highways.

May we send you a folder with all details?

THOS. E. COLLINS & CO.
812 Olive St. St. Louis, Mo.

Yelteco

For City Use

For Highways

Ice Coated Streets Cause Traffic Tieups

KILLED IN CRASH

**GIRL KILLED IN CAR
NEAR ALLEN'S HOME**

Three Others Seriously Hurt
When Motor Skids.

**MANY ACCIDENTS
IN CAMBRIDGE**

by Harold and Elizabeth
Drivers Blamed

Boston Traveler

2 DEAD 17 HURT ON ICY STREET



2 DEAD, 17 INJURED

CITY

**TRUCK SKIDS,
KILLING MAN**

Many Injured by Skidding Autos on
Icy Roads—Several Coasters
Skate in Streets

**10 INJURED, MANY
CARS CRASH AS ICE
COVERS HIGHWAYS**

Budden Drop in Memory from
36 to 22 Makes Streets
and Walks Treacherous.

**TRAFFIC TIED
UP BY ICE ON
STREETS, RAILS**

Slippery Going Handi-
capped Trolleys, Autos,
Walkers

A little sand or cinders would have prevented this. The protection against ice is more important than the removal of snow.

"HANDY SANDY"

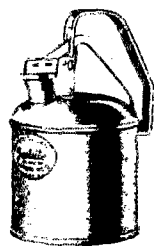
Spreads miles of protection at low costs.

Made in two sizes for use with all types of trucks.

Write for Information:

HIGHWAY SERVICE, Incorporated, 11 North Sixth Street, NEW BEDFORD, MASS.

Lessen Your Insurance Rates



Sizes—1 pint to
5 gallons



Capacity—6, 8, 10,
14 gallons

Prevent Fire and Explosion

How about YOU?—Your plant?—Your employees? Are you taking the fullest safety precautions against fires, explosions, accidents and other danger risks? Are you using modern, convenient, efficient and approved safety appliances to store your waste, gasoline, benzine, kerosene, turpentine, naphtha, alcohol and other hazardous explosives and volatile liquids? Play safe—follow the example of thousands of cautious plant executives—install the latest improved JUSTRITE Safety Appliances TODAY.

Insurance Companies Gladly Lower Rate Premiums

to plants who install approved, up-to-date safety appliances. JUSTRITE Safety Appliances are inspected and labeled by both the Underwriters Laboratories, Inc., and the Associated Factories Mutual Fire Insurance Companies. Protect your plant—your employees—install the latest improved JUSTRITE Safety Devices TODAY. See your dealers or write us for interesting prices and literature.

Justrite

TRADE MARK

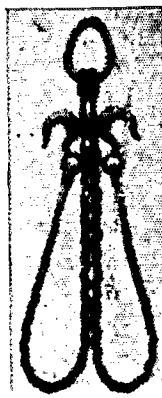
Justrite Mfg. Co. 2087 Southport Avenue
CHICAGO, ILLINOIS

Murray Safety Slings

You'll find a Murray Sling to meet every lifting need, as they are made in any style, capacity or length required for industrial or construction use. Only the best grades of wire rope are used in these slings. They are light, flexible and endless. Will not kink or twist upon themselves.



Pat. Applied For



Patented

Murray Safety Chairs

A steel safety chair for use in all work where suspension of the workman is necessary.

For Riggers, Electricians, Painters, Ship Yards, Sign Erectors, Welders, Tank Builders, Stack Builders, Steeple Jacks, Riveters, Chippers, Window Cleaners, Furnace Liners, etc., the Murray Safety Chair is ideal. It provides a comfortable and safe position for the worker, and does away with all make-shift and dangerous scaffolding.

Write for Folders

MURRAY SAFETY SLING CO., Inc.

Manufacturers and Distributors Safety
Slings and Boatswain Safety Chairs

33 Water St., Pittsburgh, Pa.

A. R. A. Circular Stresses Winter Hazards

WINTER precautions in railroad work, made necessary by the presence of snow and ice, are emphasized in Circular No. 251, issued by the Safety Section, American Railway Association. Prevention of the formation of ice, wherever practicable, is one of the railroad man's duties. Pictures in this circular show the wisdom of sweeping off ice and snow from the footboards of tenders and from grab irons. The man who knocks down icicles from the eaves of a shop or office building may prevent a serious accident.

During the extreme weather of January and February, 1929, several railroads issued instructions forbidding men to mount or dismount from moving engines or cars "during prevailing weather conditions." This point is one of the ten suggested rules in the circular.

Another recommends that trainmen wear short overcoats, as long coats hamper movement. Employees should be warned that when bundled up in heavy clothing, special care must be taken to look out for approaching cars or engines which may not be heard.

Providing ice grippers to be worn on shoes when weather conditions require them is another recommendation. A spell of severe weather is one time when hostlers should be especially careful never to move an engine without first ringing the bell.

Firebrands in the Forest

THERE is another cigaret test beside the blindfold one. It consists in determining how long they will burn by themselves. Six popular brands have been tested by government officials, and all of them were found, once being lit, to burn steadily until reduced to ashes. Some Turkish cigarettes required 30 minutes to burn out.

The research should be noted by all who throw down lighted cigarettes, especially in the forests on outings, motoring and camping trips. These cigarettes are firebrands in a dry spot, where there is flammable grass or other litter. And the menace of destruction that lives in every such live discard is far worse than a smoker's pipe ashes or cigar butt.

Every person who heads for the timber country should heed the warning of this cigaret test. Otherwise he may be the unwitting cause of destructive conflagration.—*Minneapolis Journal*.

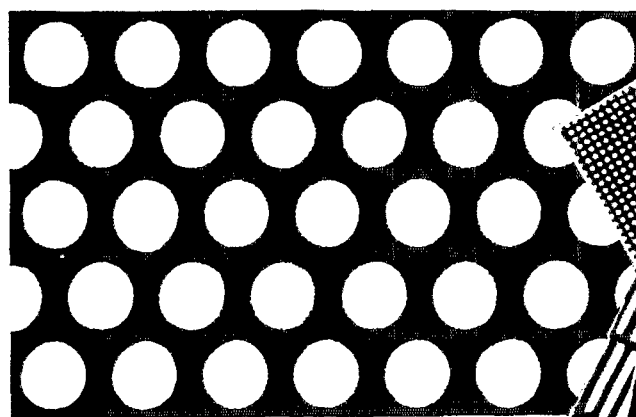
Glass—A Hazard or a Safeguard?

(Continued from page 47)

damages from flying glass. Bus company officials are quickly realizing that the damage suits from one accident would cost more than the cost of equipping their whole fleet with laminated glass. Extreme care has been practiced by most operators in the selection of personnel, busses and taxis are of rugged construction and equipped with the latest safety devices, such as four-wheel brakes, but through either oversight or the practice of false economy, the question of safety glass has been neglected. The chain of safety is no stronger than its weakest link and the glass problem, under many existing conditions, is the most important link.

Non-shatterable glass plays a less obvious, but nevertheless important part, in the program of safety engineers of industries other than those engaged in transportation. New uses for this new glass are being found almost daily. It is being used as guards for bandsaws, grinding machines, polishing machines, rollers' pulpits in steel mills, etc. Every place where the face of the operator must be protected from possible flying fragments and where clearness of vision is essential, means a place where laminated glass can probably be used to advantage. The enterprising safety engineer is going through his plant with the idea of utilizing this comparatively new and extremely valuable safety instrument so as to make it a better and safer place to work for every employee.

Soap Before Soup



(No. 22 gauge steel, 1/4 inch thick—Sheets, 36x120 inches with 1/2-inch holes)

A SAFETY GUARD

must meet numerous demands. Every plant has need for a particular kind of guard.

Erdle Perforated Metal comes to you in sheets—ready to be made into reliable Safety Guards—ready to solve your guard problems. It is easily cleaned, strong, durable, practical and highly economical.

Let us send you detailed information

Erdle Perforating Company
171 York Street Rochester, N. Y.

FUMIGATE YOUR PLANT

DISEASE germs are an enemy to efficient, productive organizations—especially at this time of year. During the winter disease usually keeps men from work, which means less production.

Safti-Fume, the Universal Safe Fumigant, will greatly lessen the possibility of disease in your plant. It penetrates into places where vermin may be hiding—where these harbingers of disease multiply. Safti-Fume drives pests into the open where they die.

Prevent disease—Mail the Coupon!

SAFETY FUMIGANT & CHEMICAL CO. INC.
522 Fifth Avenue
New York, N.Y.
ALSO OFFICES IN
BOSTON BALTIMORE PHILADELPHIA HARRISBURG, PA.



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Safety Fumigant & Chemical Co., Inc.
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Please send me complete details of your service and various products.

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Company
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Position

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Jobbers Offered— Attractive and Profitable Line

THERE are openings in several territories for jobbers for our line of Ampco Non-Sparking Tools—Scrapers, Chisels, Wrenches, Scoop Shovels, etc. The only durable, spark-proof line of tools on the market. Introduced in 1927; sales increase this year 400%; growing fast. Sold to lacquer and paint plants, powder companies, oil refineries, tankers, etc.

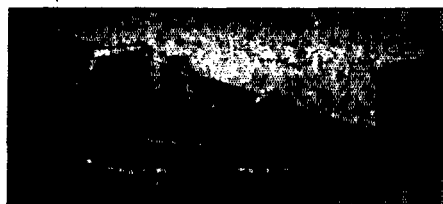
The line is complete from Mallets to Chisels, Pipe Wrenches to Scrapers, Cotton Forks to Pliers, etc. Factory stocks big line. No great outlay required by jobbers. Prompt delivery.

Write for catalog and samples

The American Metal Products Company

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DUST COLLECTORS

**Sand Blast Equipment and Protective
Devices**

**PANGBORN
CORPORATION**

HAGERSTOWN, MARYLAND

ACCIDENTAL DEATHS IN THE UNITED STATES

*Compiled by the Public
Safety Division, National
Safety Council*

December, 1929

MOTOR VEHICLE ACCIDENTS

THE 1929 total of motor vehicle deaths will be several hundred lower than the anticipated maximum on account of an inclement December in a considerable portion of the country. Had the month been one of generally good driving weather, the death total would probably have been even higher than in December, 1928, which was the highest month of that year. Zero weather and record breaking snows in the December just past, however, kept cars off the streets and resulted in more than a 20 per cent decrease over November, 1929, as well as over December, 1928.

While this last month drop will have its effect on the 1929 total, as indicated above, there is insufficient reason to think that the final reports will show materially less than the 31,500 deaths estimated for the year in a detailed article in this issue of the NATIONAL SAFETY NEWS. State wide reports, used as one source of information in arriving at that estimate show a 1929 increase of 11 per cent, principally on 11 month data. The receipt of delayed reports by state registrars of vital statistics, however, is expected to offset the December total that is appreciably less than that of a year ago.

Pedestrian accidents were a greater proportion of the total than usual, such accidents being responsible for 70 per cent of all deaths. It is also of interest that children figured less frequently in these collisions of motor vehicles with pedestrians. Last August, for instance, 38 per cent of those killed in pedestrian accidents were children under 15; in December only 13 per cent were of this age.

Motor Deaths Each Day

The following estimates are based on monthly reports to the National Safety Council by cooperating states and cities. Corrections are made as new information becomes available.

	1928	1929
January	59	60
February	58	67
March	54	65
April	61	74
May	68	75
June	69	85
July	80	94
August	86	112
September	94	101
October	94	110
November	97	111
December	95	81

Honor Roll

Six cities with a population of more than 100,000 have reported that no motor vehicle deaths occurred in December.

Punch Press Operators Are *Safe!!*

WHEN presses are equipped with the Electro Punch Press Guard, which is a combination of two safety factors—the operation of the press by push buttons and an anti-repeat-mechanism which prevents the repeating of the press.

The Electro Punch Press Guard not only protects the operator by keeping his hands away from the danger zone, but also enables him to practically double his production. Operator works in a comfortable sitting position. No fatigue from the one-foot treadle process.

You'll want to know more about this guard. Send in the coupon—no obligation.



Safety Appliance & Machine Co.
904 Donovan Building
Detroit, Michigan

SAFETY APPLIANCE & MACHINE CO.
904 Donovan Bldg., Detroit, Mich.

Gentlemen:
Send me copy of booklet "Taking the Hazard Out of Punch Press Operations."

Name

Company

Address

The Honor Roll—Contd.

Duluth, Minn.; Fort Wayne, Ind.; Lowell, Mass.; New Bedford, Mass.; Waterbury, Conn.; Wilmington, Del.

The following 21 cities of less than 100,000 population also reported perfect records:

Alameda, Calif.; Binghamton, N. Y.; Chelsea, Mass.; Chicopee, Mass.; Decatur, Ill.; Everett, Mass.; Fitchburg, Mass.; Green Bay, Wis.; Kalamazoo, Mich.; Lakewood, Ohio; Lincoln, Nebr.; Malden, Mass.; Moline, Ill.; Pueblo, Colo.; Quincy, Mass.; Racine, Wis.; Salem, Mass.; Shreveport, La.; Wheaton, Ill.; Wilmington, N. C.; Woburn, Mass.

HOME ACCIDENTS

Home fatalities moved upward in December more sharply even than motor vehicle deaths went down. The rise amounted to almost 30 per cent, and can be charged entirely to increases in two principal groups—burns and scalds, and asphyxiation and suffocation.

The result of these contrary movements was to place home fatalities above motor vehicle deaths in December. In 34 cities reporting both the differences amounted to 15 per cent.

Coming Events

Associations featuring safety in their programs are invited to send dates of meetings

March 18, Chicago, Ill.

Eighth Annual Midwest Safety Conference. George G. Traver, manager, Chicago Safety Council, 330 South Wells Street, Chicago.

March 24-25, Kansas City, Mo.

Fourth Annual Central States Safety Congress. F. C. Lynch, manager, Kansas City Safety Council, American Bank Bldg., Kansas City, Mo.

April 15, Newark, N. J.

Sixth Annual Eastern Safety Conference. Fred M. Rosseland, manager, Newark Safety Council, 141 Halsey Street, Newark, N. J.

April 25, Dallas, Tex.

Southwestern States Safety Conference. C. J. Crampton, manager, Dallas Safety Council, Interurban Bldg., Dallas, Tex.

May 6, Madison, Wis.

Rock River Valley Safety Conference. A. E. Gillett, secretary, Association of Commerce, Madison, Wis.

May 27, Erie, Pa.

Northwestern Pennsylvania Safety Conference. S. M. Lippincott, secretary, Erie Safety Council, Commerce Bldg., Erie, Pa.

June 26-27, Duluth, Minn.

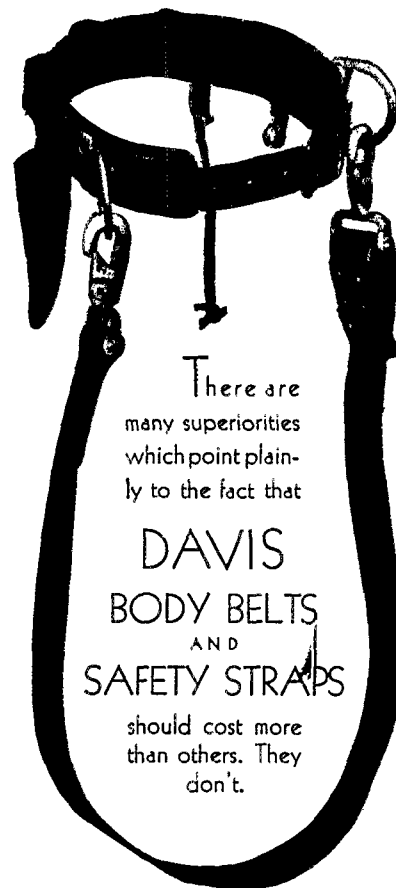
Lake Superior Mining Section, National Safety Council, Twelfth Annual Safety Conference. Secretary, F. S. Crawford, U. S. Bureau of Mines, Sellwood Bldg., Duluth, Minn.

Oct. 27-31, Fort Worth, Tex.

American Public Health Association, Fifty-ninth Annual Meeting. Secretary, Homer N. Calver, 370 Seventh Avenue, New York City.

SAFETY SERVICE

When a man's
Safety Hangs by
a Single Strip of
Leather » » » »



There are
many superiorities
which point plainly
to the fact that

**DAVIS
BODY BELTS
AND
SAFETY STRAPS**

should cost more
than others. They
don't.

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Please send me Bulletin No. 1301
on Linemen's Safety Equipment.

Prompt Medical Attention Prevents Infection

NOTICE
IF YOU ARE INJURED
NO MATTER HOW LITTLE
TELL YOUR FOREMAN
IMMEDIATELY

No. 500N—Size, 12x18 in. Blue Background—White Letters. 18 Gauge Iron.

THIS attractive porcelain enamel sign will help you get results. This sign is being used successfully by many of our customers in preventing losses caused by not reporting injuries.

Deliveries from stock.

PUT THIS PROFITABLE SIGN TO WORK!

Send for Stock Sign Bulletins

INDUSTRIAL PRODUCTS COMPANY

Manufacturers

3729 Old York Road

Philadelphia, Pa.

Diamond Disc



(Pat. Jan. 21, 1919)

Respirator

MORE workmen are acquiring the Diamond Disc Respirator habit, for it is equipped with a sponge in pocket arrangement, which makes it useful when encountering dust fumes and light gases.

The Diamond Disc Respirator is small and compact, and is easily carried in the pocket. Its comfort is another feature that should receive consideration.

Manufactured by

The Hygeia Respirator Co.

308 East 94th St.; New York City

Sold by Safety Supply Houses

FREE Trial Offer!



CHALLENGE SEMI-STEEL BENCH TOP

Try it for 30 days - this ideal and safe Bench Top for Mechanical and Assembly Departments. Size 27x37 inches; 2 inches thick. Shipping weight 275 pounds. Price \$40.00 f. o. b. Money back if not pleased. Many other sizes. Write us today for particulars.

The Challenge Machinery Co.
Top Dept. Grand Haven, Michigan

Atlantic Coast Line Offers Safety Trophies for 1930

TO STIMULATE efforts for greater safety on the Atlantic Coast Line Railroad during 1930 several outstanding trophy awards are to be offered. Lyman Delano, executive vice-president, has authorized a special trophy to the chief division officer on the division making the lowest casualty rate due to personal injuries among employees in the transportation department. He has also authorized an award to the engineer, maintenance of way and to the superintendent, motive power departments producing the lowest casualty rate during 1930 among employees on their respective divisions in these two departments.

This is in line with the elaborate plans

made by the safety department of the railroad, directed by Robert Scott, to make the record of the Atlantic Coast Line an outstanding one for 1930, and establish the lowest casualty rate in the National Safety Contest. A detailed plan of awards and announcements to supervising officers and employees of the railroad are being prepared.

The Atlantic Coast Line has steadily reduced its casualty record from 26.95 per million man-hours in 1923 to 1.99 during the first nine months of 1929.

ASSE Chapter Studies Gas Indicator

THE detection of combustible gases was the principal subject for discussion at the December meeting of the Northern New Jersey Chapter, American Society of Safety Engineers—Engineering Section, National Safety Council. The subject was presented by J. C. Stephenson, engineer of the Union Carbide Sales Company, who described, exhibited and demonstrated the use of the combustible gas indicator. The indicator is a combination of the Wheatstone bridge principle with the miner's safety lamp and its indications are read directly on a small scale so as to meet the requirements of purchasers. For general use, the scale is accompanied by conversion tables for certain types of gases. The demonstration was made with the use of acetone, properly safeguarded. The device has been approved by the Bureau of Mines for use in mines in the detection of methane and by Underwriters Laboratories for use in specific cases.

The members elected E. L. Spence of the Franklin Baker Co., Hoboken, as secretary; E. I. Root of the Celluloid Corp., Newark, as treasurer; and A. J. Van Brunt, Public Service Corp., as honorary member of the Executive Committee of the Chapter. Messrs. Spence and Root succeed Fred M. Rosseland, manager of Newark Safety Council, who resigned because of the pressure of work. Mr. Rosseland will continue, however, to edit the "Chapter Record," and be associated with Hon. John Roach, Deputy Commissioner of Labor on the Public Education Committee of the Chapter.

Gasoline vs. Dynamite

THE ballistic strength of one kilo of gasoline-air mixture is exactly equal to that of one kilo of 60 per cent straight dynamite, says a member of the experimental staff of a large powder company. Since the gasoline-air mixture (theoretical for complete combustion) contains 15.1 pounds of air per pound of gasoline, however, the strength derived per pound of gasoline is 16 times as great as that of one pound of 60 per cent dynamite.

Furthermore, since there are about six pounds of gasoline in a gallon, the ballistic strength of a gallon of gasoline, properly mixed with air, is equivalent to that of 96 pounds of 60 per cent dynamite.

The above comparison, however, is based on ballistic strength only. Because of its exceedingly low loading density and relatively low rate of combustion, the explosion of the vapor mixture could not compare in locally destructive action with that of a dynamite charge. Nevertheless, the actual energy relations are substantially as indicated.

Protection—for profit!

A Mexican mine furnishes Hard Boiled Hats to its men for 50 cents each and replaces damaged hats free.

Hard Boiled Hats cost a little more than 50 cents, but they save a lot more by reducing head accidents.

The Hard Boiled Hat is made by a patented process to give head protection. It is sturdy, a non-conductor of electricity, acid- and water-proof.

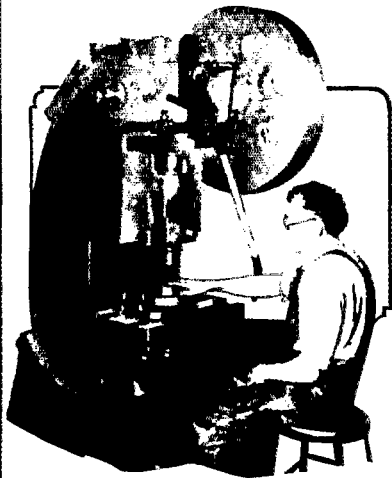
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BULLARD-DAVIS, Inc.

275 4th St., San Francisco, U. S. A.
67 Wall St., New York
Mexican Distributor
Mine & Smelter Supply Co.
El Paso, Tex.



LESSEN YOUR



ACCIDENT WORRIES

The Wiesman Safety Guard for Punch Press Operators—now equipped with a second growth hickory guard arm—will speed-up your production with safety.

Both hands of the operator are protected . . . the guard sweeps the entire length of the Bolster Plate on half the downward stroke of the punch. And returns beyond the center on half the upward stroke.

Write for our 30-day free trial offer. Prove it to yourself.

Wiesman Manufacturing Co.
31 South St. Clair St., Dayton, Ohio

Give Artificial Odor to Natural Gas

RECOGNIZING the hazards of odorless natural gas, the Pacific Gas & Electric Company has issued an official announcement that all natural gas served to its customers will be given a distinctive odor. Special odorizing equipment has already been installed in many areas and similar equipment will be put in at other points as soon as new units in the natural gas system are ready for service.

Before the gas passes into the mains on its way to the consumer it is saturated with an odorant of atomized oil manufactured expressly for the purpose. Three to five gallons of this oil are required for every million cubic feet of gas. The odorant does its work thoroughly but does not affect the quality of the gas and is unnoticeable when the fuel is being burned.

The danger of natural gas was emphasized by a recent fatal accident in Los Angeles. Entering a gas filled room, a young man was unable to detect the gas and struck a match.

CORRESPONDENCE

LOCOMOTIVES AND AUTOS

Dwight, Ill.—I have listened several times to the "Universal Safety Series" and I am writing to tell you how I appreciate them.

I am a locomotive engineer and have handled some of the fastest passenger trains on my road—the Chicago & Alton—and I have had the misfortune to demolish several automobiles and I have seen several struck by trains on other roads.

It seems to me that the tourist driver is the most careful and I have noted that it is the local drivers who are the most careless at railroad crossings.

The last automobile which was struck by my train was not moving over six miles an hour but the driver was so sure that the train was coming from the other direction that he did not look in the direction from which the train was coming. He went over this crossing from 25 to 30 times a day, so I was told. This illustrates the point that local drivers are the most careless.

I drive an automobile and I use two rules which have been drilled into my mind during 28 years of service on a locomotive:

First, when you are not sure slow down to a speed at which you can stop in half the distance you can see.

Second, keep your eye on the track (or road).

Also, keep your brakes in condition to stop.

I am very glad to say that I have not yet had an accident or caused injury to any person with my automobile.

M. J. McKINNEY.



DISTRIBUTORS

- Fred K. Blanchard, Inc.
Troy, N. Y.
- Carey Machinery & Supply Co.
Baltimore, Md.
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Kansas City, Mo.
- Industrial Products Co.
Philadelphia, Pa.
- The E. A. Kinsey Co.
Cincinnati, Ohio
- Martin Safety Company, Inc.
Toledo, Ohio
- The C. S. Mersick & Co.
New Haven, Conn.
- Protective Equipment Inc.
Chicago, Ill.
- Safety First Supply Co.
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- Sligo Iron Store Company
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SAFETY SERVICE

By placing your orders with a Wheeler Distributor you are assured of the advantages of close personal contact. Patronize them.

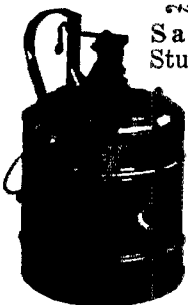
F. H. Wheeler Mfg. Co.
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FOR GASOLINE AND OTHER HAZARDOUS LIQUIDS

Swabbing
Can —
Reservoir
tank sup-
plies
liquid as
needed. A
safe and
efficient
means of



moistening swabs and sponges. In case of ignition fire automatically goes out when moisture on top of screen burns away.



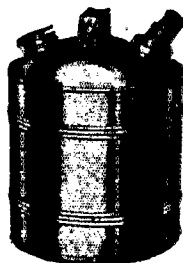
Safety Can —

Sturdy construction throughout. Heavy cast spout. Shock rim base of 1/4 steel protects lower seams. Leaks practically impossible.

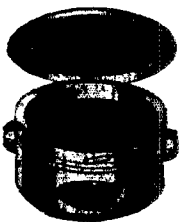
Double cylinder screen in base of spout serves as flame

baffle. Fire is prevented entering can. Safety present whether cap is on or off.

Service Can — Adapted to rapid filling and pouring. Full sized nozzle fits fill opening. Screen flame baffle in fill and pour



openings. Protection with cap on or off. Cap stops leakage—provides seal and pressure relief.



Bench Can — Efficient and economical for moistening swabs and cleaning small parts.

Pressure on screen causes liquid to percolate thru. In case of ignition fire automatically goes out when moisture on top of screen burns away.

Mail Coupon Today for Catalog

The Protectoseal Co.,

226 N. Sheldon St. Chicago, Ill.

THE PROTECTOSEAL COMPANY,
226 North Sheldon St., Chicago, Ill.
Please send us your catalog "Safety Devices for Hazardous Liquids."

Name

Address

The Costly School of Experience

(Continued from page 40)

accidents happen to new men on the job. Labor turnover is a factor to be considered here.

4. *Rules and instructions not observed.* Rules are sometimes not observed, due to disobedience, interference by others, fooling, willfulness, intemperance. Proper discipline is the answer.

5. *Mechanical manner of doing work.* Lack of concentration, inattention, attention distracted, "nobody home," too much stock market, the day after the night before. When accidents due to this cause occur everybody says, "I just knew it was going to happen, I saw it coming. I wish I had put him on the other job that day." These sayings are some of the shadows which are cast before the coming event or the accident. Let us heed them before the accident.

6. *Too much haste.* Chance taking, short cuts and unsafe practices.

We can sum up the accidents pertaining entirely to the human element as follows:

1. Selection
2. Instruction
3. Supervision

Make a note about selection, instruction and supervision. Are you selecting? Are you instructing? Are you supervising? Do you know the repeater, that is, the man who has two, three, four, five, and six accidents each year? Do you know the foreman under whose supervision the majority of your accidents occur?

I read somewhere the following:

"When we're up, we're up,
When we're down, we're down,
When we're only half up,
We're neither up nor down."

When we have a good accident record "We're up," we feel good and have nothing to worry about. When we have a "half-way" record, it's average and we do not do much about it. We're neither up nor down. But when we have a bad record we're down and our fighting blood is up and we will do something about it.

Let us not forget the lessons we have learned about accidents. Otherwise, they will have occurred in vain. Profit by the experiences of others. Apply the safeguards and safe practices.

Bull Dog Safety Shoes

Made on a special high last, giving 1 1/4 inch clearance under the safety box toe, are really comfortable. No trouble from the box toe rubbing the wearer's foot.

For real comfort, combined with high quality and long wear, they have no equal.

If you are having any trouble with Safety Shoes — try Bull Dogs.

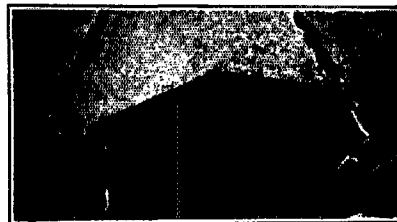
Prices and descriptive folder upon request.

J. D. MacLAURY

Distributor

3030 Euclid Avenue
CLEVELAND, OHIO

They Can't Let Go



Because—

THE very weight of the boiler plate makes the grip more secure.

Never Slip Safety Clamps will not skid or slide along the plate. Made in two types for horizontal or vertical lifting. Either clamp may be used for work at an inclination with no possibility of slipping to jeopardize the safety of the workers underneath.

The ordinary hook or sliding chain makes perfect balance almost impossible and there is considerable danger in hoisting with such equipment.

Never Slip Safety Clamps are easily attached and removed. Cannot slip.

WRITE FOR DETAILS

Never Slip Safety Clamp Co.

51 East 42nd St., New York

SAFETY POSTER SERVICE



New Use for Old Posters

WITH a few old posters having bright colors on them, a pair of shears, a pot of paste, and a large piece of cardboard or wallboard, one is fully equipped to prepare a good looking background for the safety bulletin board.

With this equipment, all that is necessary is to cut out patches of color from the posters, piece them together in cut-out puzzle fashion and paste them onto the cardboard or wallboard thus making an all-over multi-color, design with a modernistic touch.

Try it.

The New Poster Catalog

THE history of the safety poster in the nation's industrial life is fairly well visualized in the new poster catalog which has just been published by the National Safety Council. The new booklet, nearly twice as large as any previous edition, contains close to a hundred pages of poster reproductions. It is a complete illustrated index to the most effective posters produced since the organization of the National Safety Council and might well be entitled: "The Best Posters of All Time."

Poster effectiveness does not dim with age. If the lesson is there and it is presented in forceful style, the message lives on. Reprints are still being made of punchy posters that were printed years ago. The combination of the new with the best of the old, in the new catalog, makes it a most interesting as well as a most practical booklet for those who select the monthly posters for plant bulletin boards.

A feature of the catalog is the wide variety of miniatures shown. The grouping is ably done in handy-reference fashion so that the selection can be made easily and quickly. In short, the catalog meets the requirements of every industrial, school, and public safety bulletin board program.

The selection of old posters for reproduction was based on several things, such as the quantity record, the need for covering as many different

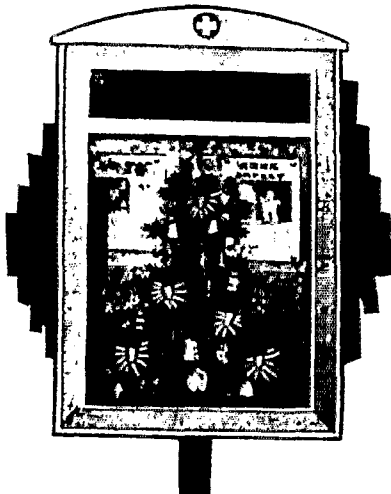
industrial, public safety and industrial health subjects as possible, availability, due to condition of the older plates, and the analysis of recent demands for certain types and certain standards.

This newest publication is most attractive in design and layout. It has been prepared as a special service to Council members and will undoubtedly be extremely helpful in scheduling and carrying out definite and improved bulletin board work in the plants.

The catalogs will be mailed in the immediate future. Be on the lookout for your copy. If it does not reach you in due time, write for it.

Did Your Board Look Like This at Christmas?

WE just can't help publishing a photograph sent in by Mr. Keller of the White Star Refining Company at Wood River, Ill. It shows how a little effort will make the plant bulletin board the "show window of the safety movement." Can you imagine yourself walking by, and not paying any attention to, a bulletin board decorated with a miniature Christmas tree, fully lighted, together with appropriate greetings, a bright three



color safety poster and all this against an attractive background?

Such a display gives the bulletin board a sparkle—puts life into it—and sets it apart from its surroundings as something different and well worth looking at.

There are hundreds of ways of making a display attractive and it's a fair bet that this board of the White Star Refining Company looks good, not only at Christmas time but also during the other 364 days of the year.

There is no limit to the good a pictorial safety message can do if people will but look at it. The art of making it attract their attention is as simple as ABC if one will but use a little imagination and ingenuity.

Poster Output Increased

THE Poster Division of the National Safety Council is growing by leaps and bounds. Recent increases in facilities and capacity for art and photographic work now make it possible to enlarge the output in response to widespread demands for wider variety in the monthly issues.

In the past 41 different designs have been printed each month. With the additional help it is now possible to design and print 47 different posters each month throughout the year. The greater variety will be welcome news to our members.

This means that during 1930 the Council will edit and design 564 separate and distinct posters. The aggregate quantities printed will run close to 2,850,000 copies.

The schedule of large and small posters has been slightly readjusted, decreasing the totals of the large poster issues in favor of a considerable increase in the number of smaller size.

The new plan will give greater opportunity for a needed specialization that will touch on pertinent problems of certain industries. A fair proportion of additional issues will be designed with this idea in mind. The change will also be welcomed by those who prefer to use the small posters as more of these will be available from now on.

POSTERS *for* MARCH

Make your selection from these pages

ON THIS and succeeding pages are shown small single color reproductions of forty-one posters prepared for distribution during the current month. All of these posters will be available to members during the ensuing 90 days in any desired quantity.

Under the terms of membership each active industrial member is

privileged to order a certain number of posters during the year without extra charge. This yearly allotment is based upon the number of employees. It provides for 300 poster units for each \$25 of membership dues. A 9 by 12 poster counts as one unit, and a large two-color poster as four units. The following table shows the complete schedule of dues with allotments of poster units:

Employees	Dues	New	Units
1 to 50	\$ 12.50	1	150
51 to 150	25.00	1	300
151 to 600	50.00	2	600
601 to 1,200	75.00	3	900
1,201 to 2,000	100.00	4	1,200
2,001 to 3,000	125.00	5	1,500
3,001 to 5,000	150.00	6	1,800
5,000 to 10,000	200.00	8	2,400
10,000 or more	250.00	10	3,000

Extra posters will be supplied at cost, under either of these plans:

Plan 1. The member authorizes us to bill him for \$5 for which we establish a credit of 300 poster units to be ordered as needed.

Plan 2. The member authorizes us to bill him for each separate shipment of excess posters at the following prices:

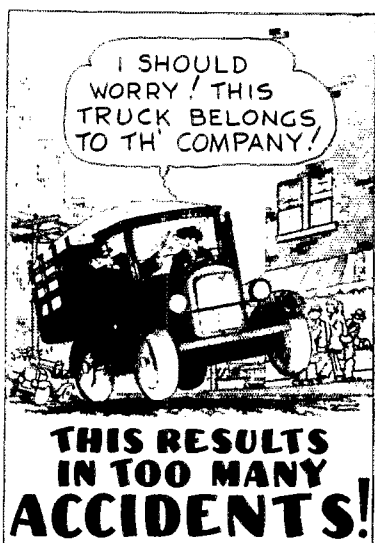
	Small	Large
First 100	\$4.00	\$6.00
Additional quantities, each	.01	.04

We recommend that members review the miniature illustrations each month, select the posters they

desire and place their order, using our special form, which will be sent on request.

Poster Catalogue

In addition to 47 posters published each month, we have selected 783 posters issued in past years and which have proved so popular that they are carried in stock. Ask for our 1930 Poster Catalogue.



2680-B 17x23 inches 4 units



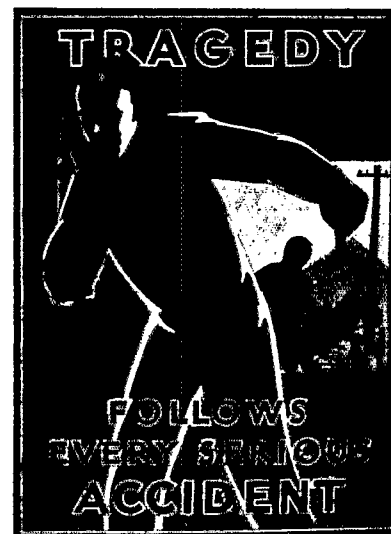
2676-B 17x23 inches (Three colors) 4 units

**IN A
CIGARET
IT'S TASTE
IN
YOUR LIFE
IT'S
SAFETY**

2678-B 17x23 inches 4 units



2722-B 17x23 inches 4 units
2723-C 25x38 inches 8 units



2677-B 17x23 inches 4 units

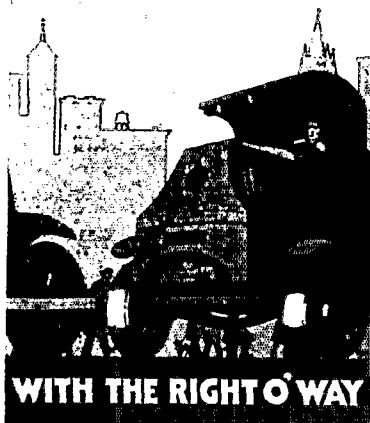
Electrotypes may be purchased from the National Safety Council for \$2 each

EYES FRONT

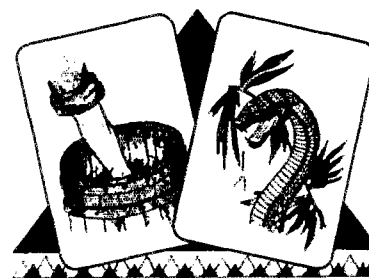


2681-B 17x23 inches 4 units

BE FAIR!



2679-B 17x23 inches 4 units



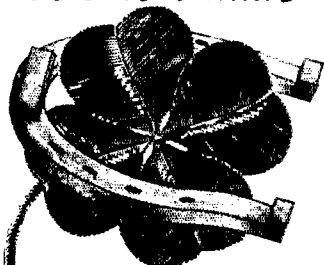
TWO OF A KIND

WITHOUT FANGS
Both Are Harmless

2683 9x12 inches (Three Colors) 1 unit

BEING CAREFUL

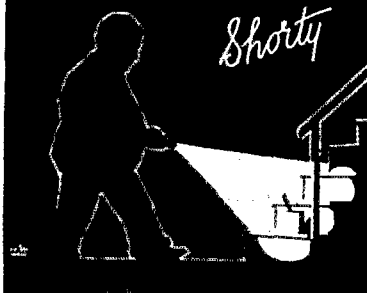
is better than



(MAYBE)
BEING LUCKY

2687 9x12 inches 1 unit

A SECOND OF CARELESSNESS MAY DESTROY A LIFETIME OF CAREFULNESS



2685 9x12 inches 1 unit

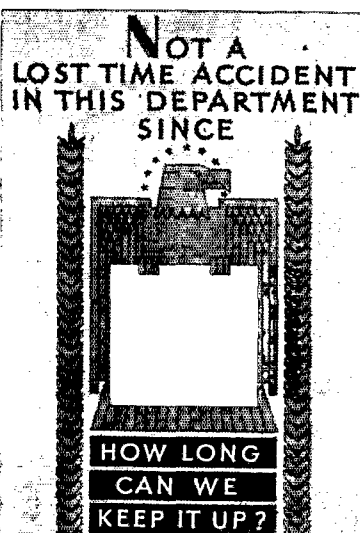
DON'T FORGET



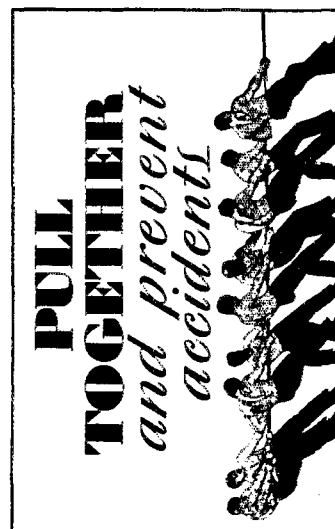
2684 9x12 inches (Three Colors) 1 unit



2690-D 12x18 inches 2 units



2686 9x12 inches 1 unit

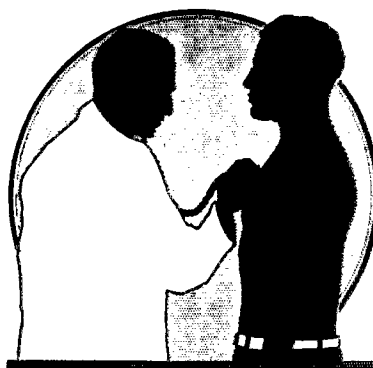


2682-D 12x18 inches 2 units



**It takes 65 muscles
to make a frown and
10 to make a smile
WHY FROWN?**

2689 9x12 inches 1 unit



**AN ANNUAL
EXAMINATION
WILL HELP YOU
KEEP FIT**

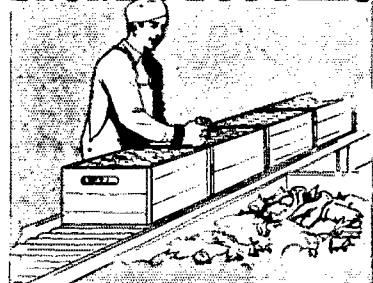
2688 9x12 inches 1 unit



**LEARN HOW TO USE
FIRE EXTINGUISHERS**

2695 9x12 inches 1 unit

**THROW OUT
ALL
BROKEN BOTTLES**



**PROTECT YOURSELF
AND OTHERS**

2691 9x12 inches 1 unit

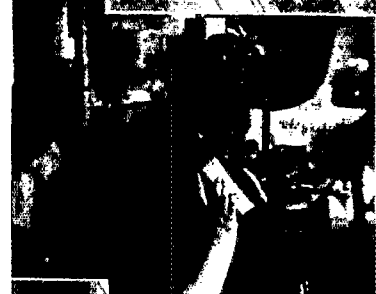
**STATIC
ELECTRICITY**



**BE CAREFUL
EVERYWHERE FOR
DANGER OF
EXPLOSION**

2694 9x12 inches 1 unit

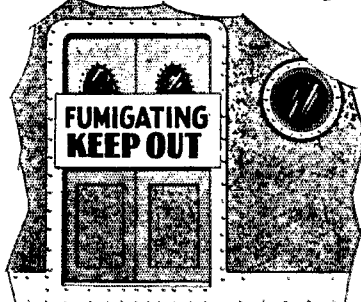
**USE ALL THE GUARDS
ALL THE TIME**



**You need
your fingers**

2693 9x12 inches 1 unit

PLACED



**WHERE IT CAN'T
BE OVERLOOKED**

2692 9x12 inches 1 unit

IF -the sling should
slip or
-the fall should
part or
-the winch should
reverse ~

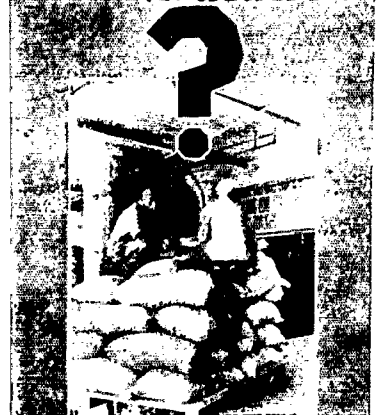
NUF SED



STAY OUT FROM UNDER

2709 9x12 inches 1 unit

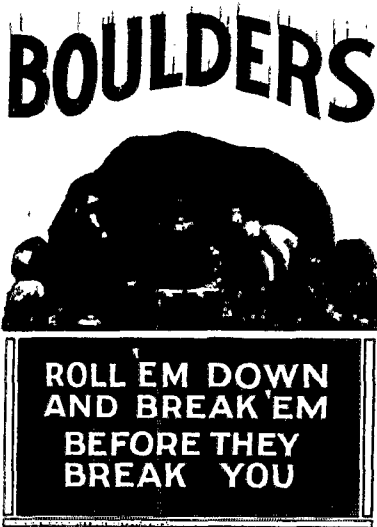
**What if they lose
their balance**



2703 9x12 inches 1 unit



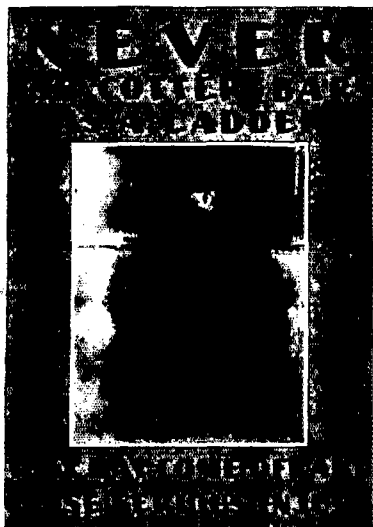
2707 9x12 inches 1 unit



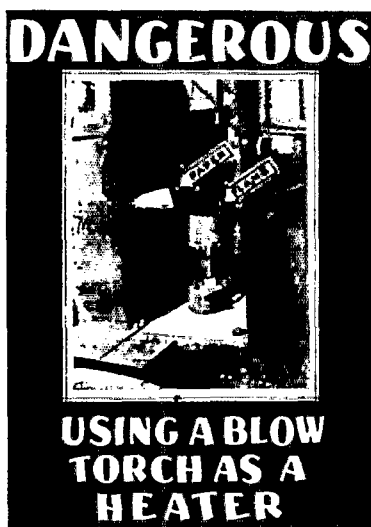
2708 9x12 inches 1 unit



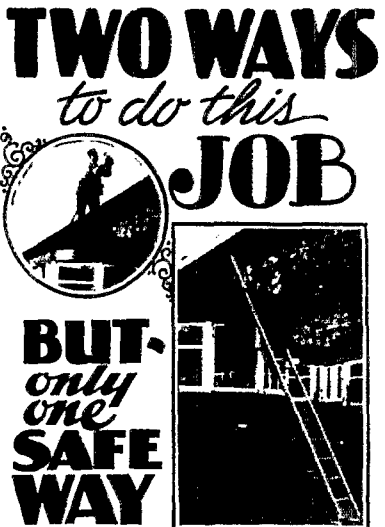
2717 9x12 inches 1 unit



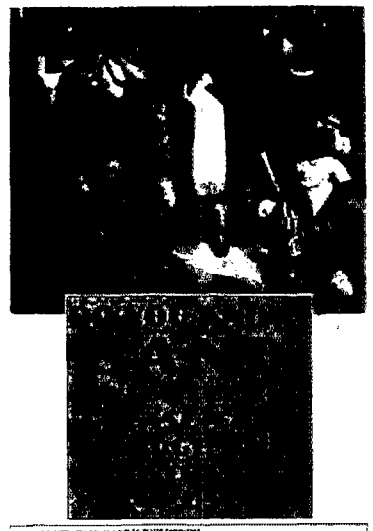
2715 9x12 inches 1 unit



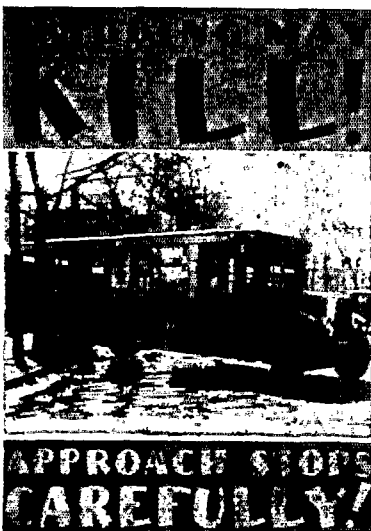
2716 9x12 inches 1 unit



2701 9x12 inches 1 unit



2702 9x12 inches 1 unit



2697 9x12 inches 1 unit



2698 9x12 inches 1 unit

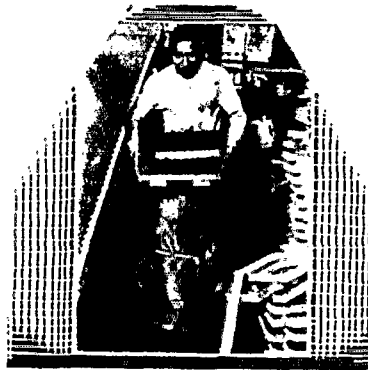
CURIOSITY

KILLED the CAT
It can also injure Your Eyes



**DONT WATCH
ELECTRIC WELDERS**

2706 9x12 inches 1 unit

**GOOD PILING**

*would have
prevented this*

2704 9x12 inches 1 unit

**THE QUENCHING
CAR MAY HIT THE
MAN**

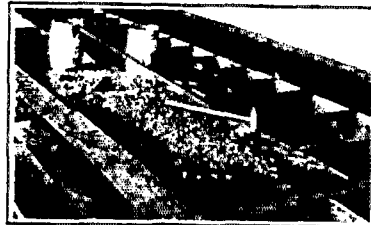


**WHO DUCKS
AROUND THE CORNER
GUIDE**

2705 9x12 inches 1 unit



2696 9x12 inches 1 unit



**THINK OF THE
FELLOWS BELOW**



2699 9x12 inches 1 unit



2700 9x12 inches 1 unit



**A FUNNY STORY
OUT OF PLACE
OFTEN ENDS IN
TRAGEDY**

2720 9x12 inches 1 unit

**KEEP YOUR
DISTANCE!**



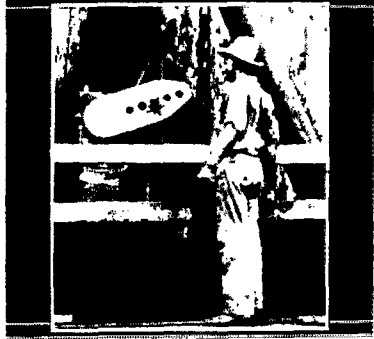
**WHEN WORKING
WITH SHARP
TOOLS**

2710 9x12 inches 1 unit

**Sharp Men
Keep
Sharp Hooks**



2721 9x12 inches 1 unit

IN THE CLEAR

**THE CRANK
WONT CRUSH
HIM**

2712 9x12 inches 1 unit

BAD GOOD

**FOR SAFETY
ALWAYS
CUT AWAY
FROM BODY**

2718 9x12 inches 1 unit



2719 9x12 inches 1 unit

**SMOTHER
IT!**

**IT CANT BURN
WITHOUT AIR**

2711 9x12 inches 1 unit

Look Out!

**Better Stand Clear
While Putting
On Shackle**

2714 9x12 inches 1 unit



2713 9x12 inches 1 unit

Safety Needs a Literal Interpretation

By **EARL J. REEDER**
*Supervising Engineer, National
Safety Council*

WE have an unfortunate habit of speaking in superlatives in this country. In temporary enthusiasm we describe a recent scene as "the most wonderful thing" we have ever observed. After an exasperating experience we say that "if it ever happens again" we will take some drastic action—perhaps punish severely. However, when the enthusiasm or exasperation cools, the superlative statement is dropped and our action becomes quite rational.

Recognizing this we frequently discount the spoken or written word as a superlative and put our own interpretation upon what it means. Too frequently drivers of vehicles interpret "Stop" as "Slow Down" or exercise an assumed license in interpretation and add a few words to make it read "Stop if you can't get through without it." Or "Danger—Keep out" is interpreted to mean "Danger—Use your own judgment about keeping out."

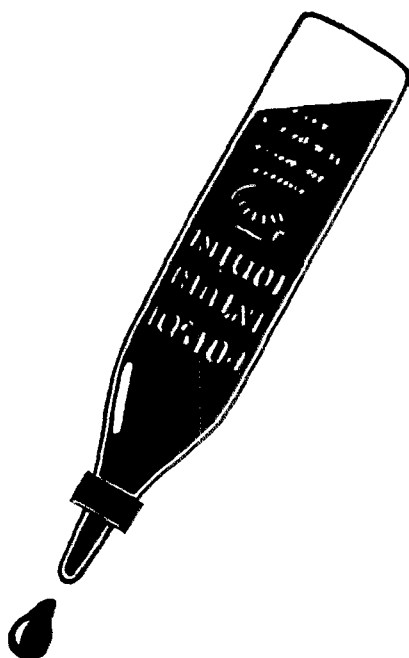
Safety has no place for superlatives or for interpretations with reservations. It must speak an exact language. The general public must learn that it does speak an exact language.

The "Stop" sign and the "Keep Out" sign, as examples, belong only where safety requires a literal interpretation of them. Regulations of any kind for the promotion of safety should be promulgated only where they are required for safety so that observers will know that they are not to be discounted.

The safety movement should be kept in simple, direct terms, so far as that is possible, avoiding the restriction or regulation that is superfluous or questionable, and then see that it is understood to the extent that makes intelligent observance possible. It is then, and only then, that the regulation or restriction—whether upon the street or in the shop—can be effectively enforced.

Literal interpretation is one of the biggest needs of the safety movement. This is particularly true today when violations of stop signs, signals, and regulations are so common in traffic upon the streets. First, see that the regulation or restriction is reasonable—substantiated by facts—and then see that enforcement is required.

SAF-T-TOP



FIRST AID APPLICATOR

SAF-T-TOP filled with Mercurochrome or Iodine feeds like a fountain pen, direct from a sanitary glass tip on the bottle.

APPLY direct to the injured part without fuss or smear. One hand is sufficient to open and use the bottle.

FIRST Aid men everywhere are recommending it for use, in and away from the plant. It is packed in a wooden case.

ECONOMICAL—one bottle will draw a line quarter of an inch wide and ten feet long. No evaporation or waste.

Write for a Sample

**ROBERT A.
BERNHARD
MFG. CHEMIST
153 ANDERSON AVE.
ROCHESTER N.Y.**

NEW MEMBERS National Safety Council

December 12, 1929—January 10, 1930

Alabama United Ice Co., Mobile, Ala.
Alberta Wood Preserving Co., Ltd., Calgary, Alberta, Can.
American Legion, Topeka, Kans.
American Powder Co., Maynard, Mass.
Barber-Colman Co., Rockford, Ill.
Beaumont Chamber of Commerce, Beaumont, Tex.
Benjamin, Howard B., Kokomo, Ind.
Benz Kid Co., Lynn, Mass.
Bluff City Delivery Co., Memphis, Tenn.
Bonbons Candiac (Canada), Ltd., Quebec, Can.
Briggs Manufacturing Co., Detroit, Mich.
Cap. F. Bourland Ice Co., Fort Smith, Ark.
Carter-Lockhard Co., Los Angeles, Calif.
Chicago Rubber Clothing Co., Racine, Wis.
City of Morgantown, Morgantown, W. Va.
City of Norfolk, Norfolk, Va.
Codo Manufacturing Co., Coraopolis, Pa.
Columbian Steel Tank Co., Kansas City, Mo.
Columbus Chamber of Commerce, Columbus, Ohio.
Commonwealth of Massachusetts, The, Boston, Mass.
Consolidated Coppermines Corp., Kimberly, Nev.
Duncan Foundry & Machine Works, Inc., Alton, Ill.
Edison Electric Appliance Co., Inc., Chicago, Ill.
El Dorado Refining Co., The, El Dorado, Kans.
Fischer Bed Spring Co., Pittsburgh, Pa.
Fletcher, H. E., Co., W. Chelmsford, Mass.
Formen's Club of New Haven, New Haven, Conn.
Frano Intressenters Aktiebolag, Kramfors, Sweden.
General Box Co., Detroit, Mich.
Goodyear Cotton Mills, Inc., Goodyear, Conn.
Harbor Department, Long Beach, Calif.
Institute of Scrap Iron & Steel, Inc., New York City.
Ironrite Ironer Co., Detroit, Mich.
Louisiana Ice & Coal Co., New Orleans, La.
Louisiana Power & Light Co., Algiers, La.
Mallory Coal Co., Huntington, W. Va.
Mason City Safety Council, Mason City, Ia.
McLaurin-Jones Co., Ware, Mass.
Miller Co., The, Meriden, Conn.
Milwaukee Vocational School, Milwaukee, Wis.
Motor Products Corp., Detroit, Mich.
Moulton Ladder Co., Philadelphia, Pa.
Municipal Court-Traffic Divn., Minneapolis, Minn.
Nazareth Chamber of Commerce, Nazareth, Pa.
O'Neill, Charles, Maple Shade, N. J.
Pal-Waukee Airport, Inc., Mt. Prospect, Ill.
Police Dept., Chicago, Ill.
Pullman Free School of Manual Training, Chicago, Ill.
Rubber Service Laboratories Co., Nitro, W. Va.
San Francisco Mines of Mexico, Ltd., Chihuahua, Mexico.
Southern United Ice Co., Jackson, Miss.
State School of Science Library, Wahpeton, N. D.

Risk-free cleaning

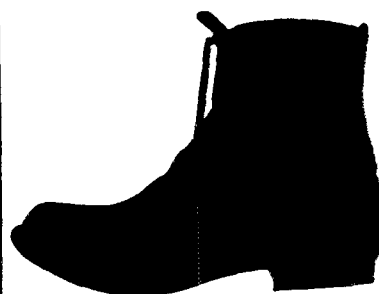
DO not expose workers to the danger of fire and explosion ever present with the use of kerosene, gasoline and other inflammable materials for cleaning work. Use non-explosive, non-inflammable Oakite materials for every production, process, and maintenance cleaning task and you will eliminate a needless risk.

Oakite cleaning is SAFE in every respect. It removes the grease and oil that invite fire. It will not injure workers' hands or clothing; is safe in storage and in use. Furthermore, it effects amazing economies in time and effort wherever there is cleaning to be done. Write for full information. Or let our nearest Service Man call. No obligation in either case.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada

Manufactured only by
OAKITE PRODUCTS, INC.
14D Thames Street, New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods



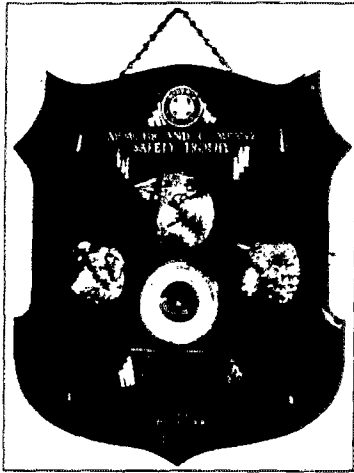
RECOMMENDED

Linemen are constantly in need of protection—especially foot protection. During these winter months, which make the lineman's job doubly hazardous, Marshall's Linemen's Shoes serve as an excellent protection—not only against high voltage, but against frozen or wet feet.

We heartily recommend Marshall's Linemen's Shoes.

Write for complete details.

Linemen Protector Co.
2009 Penobscot Bldg.
Detroit, Mich.



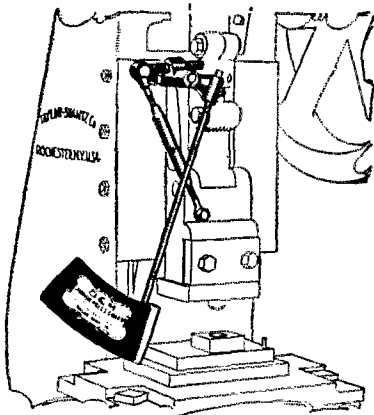
THE SPIRIT OF FRIENDLY RIVALRY

Employees in your plant, instilled with the spirit of friendly rivalry, are bound to work more safely and efficiently if a safety contest plan is introduced.

Individual Safety Awards, or an award for the winning unit, department, or team are an incentive for safer practices. Your employees are human—and it's human nature to want to be a winner.

An inquiry will bring you complete details.

CHAS. A. WINSHIP & CO.
159 No. State Street, Chicago, Ill.



Scarehead Advertising—

Not so pleasant—yet how bring to the attention of the manufacturer using power presses the fact that he can avoid ghastly and demoralizing accidents easily and at little cost!

A D & M Automatic Press Guard actually makes power press accidents practically impossible! There's one for every make, size and stroke of press—simple, easily attached and inexpensive.

Try one for 30 days at our expense. State manufacturer's name, and size and stroke of press and whether left to right or right to left hand swing is desired. D & M Automatic Press Guards can be ordered through your machinery supply house—or direct.

Taylor-Shantz Company
466 St. Paul St. Rochester, N. Y.

Texas Ice & Refrigerating Co., Fort Worth, Tex.
Texas Sugar Refining Co., Texas City, Tex.
Weldit Acetylene Co., Detroit, Mich.
White, S. S., Dental Manufacturing Co., The, Prince Bay, N. Y.
Whitney Materials Co., Duluth, Minn.
Wilcox-Rich Corp., Detroit, Mich.
Wilcox-Rich Corp., Saginaw, Mich.
Wilcox-Rich Corp., Marshall, Mich.
Wilcox-Rich Corp., Battle Creek, Mich.
Wolff Industrial Service, Inc., New York City.

Bus Drivers Subscribe to Safety Creed

IN the newly accelerated safety campaign on the Greyhound Lines of the Motor Transit Management Company, Chicago, each bus driver is now asked to subscribe to a definite creed of safe and courteous action. The wider safety activity of the company has been undertaken under the direction of Marcus A. Dow, past president of the National Safety Council and formerly director of safety for the New York Central Railroad, who has been employed to maintain for the Greyhound Lines the highest possible standard of safe operation.

In addition to the individual instruction in safe driving methods and supervision until the driver is declared thoroughly competent, each man subscribes personally to "The Creed of the Greyhound Driver," covering 12 points, as follows:

1. I realize the responsibility placed with me for the comfort, safety and satisfaction of my passengers.
2. I will see that my passengers are seated comfortably and show by my conduct and every action that I appreciate their patronage. I will strive to see that they start on their journey in a cheerful mood.
3. I will check all baggage and put it where it belongs.
4. I will punch all tickets and thank each passenger.
5. Before starting on a trip I will see that every passenger is ready to go.
6. My personal appearance will be in keeping with the requirements of the company.
7. I will be on the alert with eye and ear for any danger which may lurk around the curve or from a cross-road. I will be especially careful when passing other cars.
8. I will like each of my passengers, for I know they in turn will then like me. I know that courtesy and politeness are a constant part of my day's work.
9. I will make this my most perfect trip. I will constantly be on the alert. I know that haste makes waste and that I cannot be too careful in the operation of my bus.
10. I will keep my bus constantly under control. If late, I will not speed in order to make up time.
11. When I arrive at my destination I will thank each passenger for making the trip.
12. It is my ambition to be considered the company's safest, most efficient and most cheerful salesman of its service.

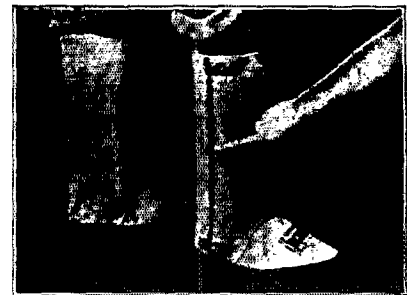
SPECIFY



QUALITY FIRST SAFETY FIRST

APRONS
ARM PROTECTORS
BLANKETS
COATS
GLOVES
HAND PADS
HELMETS
JUMPERS
KNEE PADS
LEGGINGS
LEG-SAFES
MITTENS
OVER-SHOES
PANTS
SLEEVES
SPATS

MADE OF ASBESTOS—LEATHER
OR FIREPROOFED MATERIAL
"MORE SAFETY PER DOLLAR"

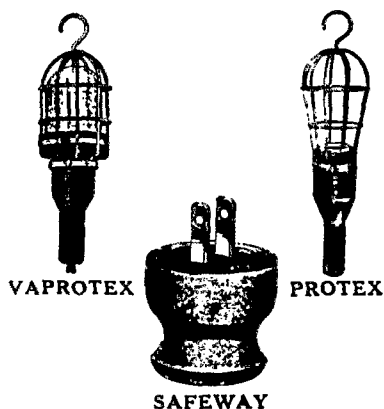


WHEELER LEG-SAFES

Wheeler Leg-Safes (Patent Applied for) combine Safety, Comfort and Service in a NEW and DIFFERENT way. Fully adjustable improved Safety fasteners, permit a snug fit on side, top and bottom, yet allow INSTANT RELEASE from any place along stay. See cut. Request for a trial pair involves NO obligation. Send for YOURS today. New and different.

F. H. WHEELER MFG. CO.
224-230 West Huron Street
CHICAGO . . ILLINOIS

PRōTEX — VAPRōTEX SAFEWAY



THREE safety items which you should not overlook. How many men in your shops have been burned or more dangerously injured thru electricity when using extension lamps? Why not eliminate this hazard on your properties by installing these "SAFETY FIRST" units.

PROTEX rubber handles not only protect the workman but they also act as a shock-absorber for the filament of the lamp bulb.

VAPROTEX vapor-proof lamps will also serve your purpose economically and safely. This unit also has a rubber handle to protect the workman against electric current. It can be dropped and thrown around without creating the hazards caused by arcs or lamp breakage, AND it is vapor-proof, dust-proof, and water-proof.

SAFEWAY rubber covered plugs are safe and unbreakable. A plug half-apart presents a real hazard. SAFEWAY plugs will reduce your maintenance costs and eliminate all hazards.

Send the coupon for details

Daniel Woodhead Company
15 North Jefferson St.
Chicago, Illinois

DANIEL WOODHEAD CO.,
15 North Jefferson St.,
Chicago, Ill.

Please send us complete details of your "SAFETY FIRST" units.

Name

Position

Company

Address

A Good Appearance Helps in Many Ways

I HAVE observed that when my automobile is nicely groomed, I drive it more carefully. I am less inclined to take the bumps at high speed, and I shift the gears accurately to avoid unnecessary grinding. I suspect that I am also a little more thoughtful of the rights of other motorists, acquiring in a subtle way, a better sense of responsibility, because my car is shining.

A bath, a shave, a haircut, clean overalls, a pressed suit—any of these perform the same magic. They add a fraction of an inch to one's stature.

Owners of draft horses discovered that well groomed animals received less abuse because their sleek, spirited appearance commanded more admiration.

By identical psychology, a clean plant, a clean machine, clean tools, and clean working clothes, humble though they be, are respected by workers and any who may come in contact with them.

A worker is known by the place he keeps. It may require a few minutes to make things look neat, but platforms loaded with junk and milk bottles, dirty rags scattered all over a press or machine, scrap paper ankle high, sandwiches and fruit skins in the stairways, add no prestige to a plant, much less to the individual responsible for the mess.

Appearances do count! Let's make a good appearance!—*Cuneo Topics.*

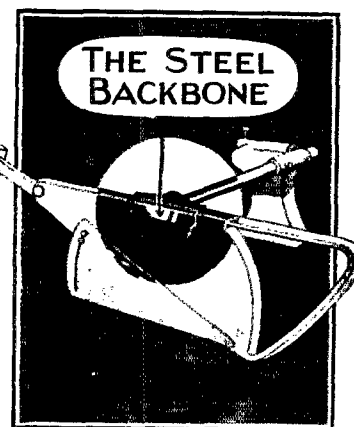
An Omission

IN the list of awards of the President's Medal for 1929, which was published in the January NATIONAL SAFETY NEWS, the name of John Rothfuss, a 17-year old Boy Scout of Sylvania, Ohio, was inadvertently omitted. On May 29, 1929, John rescued a girl from drowning and restored her to consciousness by the prone pressure method of resuscitation. His knowledge of resuscitation was gained at a Boy Scout camp.

Robert M. Bruce, Rochester Telephone Corporation, has been elected chairman of the Rochester, N. Y., Safety Council for the current year. Other officers elected are: First vice-chairman, Fred G. Cheetham, Travelers Insurance Company; Second vice-chairman, W. G. Deaner, Rochester Packing Company; Third vice-chairman, R. C. Hands, Eastman Kodak Company.

Flohr Automatic Saw and Jointer Guards

for Woodworking Machinery



THE STEEL BACKBONE on the Flohr Saw Guard is unquestionably one of the greatest features of construction ever put in a saw guard and affords unusual protection against the most serious accidents in saw operation. The terrific force of the saw in case of a breakage or of a tooth coming out, will tear through any ordinary aluminum hood. This Steel Bar is placed right over the saw so that it is impossible for the saw to injure any operator.

Due to the sturdy and rigid construction, it is the easiest working guard on the market and adjusts itself to the thickness of the lumber. It operates on either tilting or non-tilting saw tables or tilting saw arbor. It is equipped with a splitter and non-kick-back fingers. Vibration is practically eliminated and in all it is the safest ever constructed.

The SUPERIOR SAW GUARDS are made in sizes to fit saws from 6" to 36" in diameter.

Manufactured by

Helios Mfg. Corp.

P. O. Box 487

Buffalo, New York

WITH THE MANUFACTURER

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published

APOLOGY

Through an oversight in compiling the 1930 edition of the "Buyer's Guide of Safety Equipment" the Safety First Supply Company, Brady Building, Pittsburgh, was not listed.

We regret this error exceedingly, as this company has been a consistent advertiser in NATIONAL SAFETY NEWS, using the inside back cover for a number of years. We suggest that you clip this notice and paste it in your copy of "Buyer's Guide of Safety Equipment." Besides being General Dealers in all types of accident prevention equipment, this Company should be especially mentioned under the following headings:

Aprons—all types	tion not Goggles
Arm Protectors	Guards — Machinery
Belts—Linemen & Safety	Hand Leathers
Bulletin Boards	Hand Shields—
Car Blockers	(Eye Protection)
Carboy Inclinator	Helmets
Containers	Hoods—Acid
Explosive Containers	Hospital Equipment
Finger Protectors	Ladders
First Aid Equipment	Ladder Feet
Foot Guards for Shoes	Leggings
Gloves	Masks
Goggles—all types	Mats—Standing
Grinding Wheel	Respirators
—Eye Protec-	Resuscitation
	Equipment
	Shoes & Boots
	—Factory and
	Foundry
	Waste Cans—
	Safety

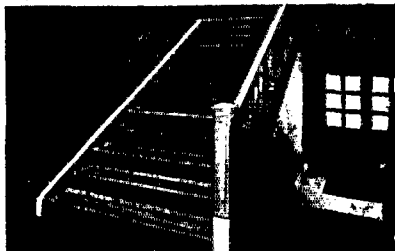
AUTOSTART GRINDERS AND BUFFERS

Autostart grinders and buffers, manufactured by the U. S. Electrical Manufacturing Co., Los Angeles, include the new chip shield, which is said to lessen the danger of injury while operating machines of this type. The grinder embodies asbestos protected windings, anti-friction ball-bearings, cast aluminum rotor, and a motor that is an entirely enclosed power unit.

Another feature of the AutoStart grinders and buffers is their ability to start instantly. The buffer is constructed similarly to the grinder, but is designed for buffing and polishing. The guards are permanently mounted and cover the wheels, yet allow plenty of clearance.

SAFETY TREAD

Wooster Products, Inc., Wooster, Ohio, have developed a new safety tread made



of rolled steel and extruded brass base, designed with corrugated surface of open U-shaped and dove-tail grooves which are filled with abrasive grits to form the anti-slip feature.

The grooved design not only permits the foot to come in contact with only the anti-slip surface, but helps to keep it clean and free from dirt that might cause the foot to slip.

* * *

MUFAFAST SAFETY LIFTING EQUIPMENT

For carrying heavy objects such as gas ranges or other household appliances, the Mufafast Company, Inc., 46 Paris Street, Newark, N. J., have introduced the Mufafast Safety Lifting and Carrying Equipment.



Hooks of the Mufafast device are drop forged and shielded to protect enamel, duco and furniture finishes. The hook suspension is designed to fit base bands of all ranges. In describing this harness arrangement, the manufacturer states Mufafast may be slipped on like a vest.

* * *

REID-WAY WHIRLWIND SANDER

A new sander has been produced by the Reid-Way Company, Cedar Rapids, Iowa. The machine is made of ground,

polished aluminum alloy, with a handle of the same material. The sander drum, which is six inches wide and seven inches in diameter, is held securely in the frame, but is instantly removed if desired.



The vacuum system is a feature of the new whirlwind sander. This new system permits the sander to be kept clean without using a high-speed noisy vacuum fan. By means of fan blades on both ends of the sanding drum, a strong blast of air is directed into the bag which sucks all dust in with it.

NEWS ITEMS

The Chippewa Shoe Manufacturing Company, Chippewa Falls, Wis., has issued a new catalog, "Reducing Foot Hazards in Industry," showing its complete line of "Gardtoe" safety shoes. Copies of the catalog will be mailed on request.

* * *

Bullard-Davis, Inc., manufacturers and distributors of safety equipment for mines and industry, announces that Mr. A. C. Field has been transferred from the San Francisco office to Salt Lake City to assist Mr. J. L. Coombs.

Along with the transfer of Mr. Field, Bullard-Davis will increase the size of its stock carried in Salt Lake City.

* * *

Statements published on this page are based on the claims of the manufacturer. While the National Safety News cannot guarantee these statements, they are believed to be accurate.

KESTER FLUX-CORE SOLDER

FLUX IN POCKETS SOLDER WIRE

Ready to Use

Needs only Heat

ECONOMY

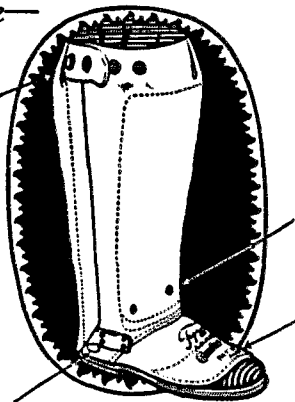
Kester for safe and economical soldering. On numerous jobs, it saves the time and labor ordinarily spent in searching for, handling and applying a dangerous acid flux. In every phase of industrial soldering, use Kester, the modern safety solder with the flux right in the core. Our research and experimental department will gladly analyze your needs and supply a special, safe and profitable solder from our enormous stock of 48,000 cored wire items. This service imposes no obligations; investigate it promptly.

KESTER SOLDER CO.
4206 Wrightwood Ave.
CHICAGO, ILL.
Established 1899
Formerly Chicago Solder Co.

KESTER FLUX-CORE SOLDER

ACID-CORE ROSIN-CORE PASTE-CORE
METAL MENDER RADIO SOLDER

For real Protection use—



No. 500

FRANK Adjustable Comfort LEGGINGS

Used in nearly 1000 foundries and steel mills. The choice of Superintendents and workmen alike because their superior design and high quality guarantee unusual protection under most hazardous conditions.

Write for information and prices.

The Safety Clothing Co.
Manufacturers
3804 Payne Ave. Cleveland, Ohio

Warns Against Illegal Fireworks Displays

THE deaths of four children in a St. Louis fire last year, which originated when a broken electric wire touched off a fire-works display in a five-and-ten cent store, is being cited by Miss Frances Perkins, Industrial Commissioner of New York, in an effort to rouse tradesmen to the need for proper precautions and a careful law observance in advance of the coming July Fourth preparations.

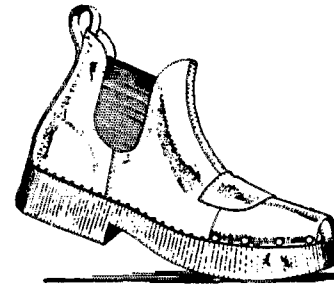
"Investigation proved that this fatal conflagration was due to human carelessness and was therefore preventable," declares the commissioner. "All cities nowadays have ordinances governing the display and sale of fireworks, but such ordinances are more and more openly disregarded. The Fourth seemed actually to become somewhat saner for a time, but now there is a threatened return to the old spirit of carelessness and risk.

"In the St. Louis tragedy, the illegal display of fireworks was not the only condition which did not fully regard the safety of the public and the employees. The store building in which the fire occurred, though constructed of brick and consisting of one story and basement, was not designed for safety in emergencies. This provides another proof that the proposed Mercantile Code of New York State, designed to overcome existing fire hazards, cannot be too speedily adopted.

"Though this store's exits were plentiful, they were not of a kind to be readily available in case of accident. Two front doors, opening to the street, were hung to swing inward; a side door, opening on a courtyard, was also inswinging; and a steel door, opening into a narrow passageway, was kept locked. The outside windows, except one on the street, were six or seven feet above floor level and were covered with iron bars. The stairway to the basement was apparently regarded by some as the best means of escape, since several persons were taken out of the basement through a coal hole, and one of the dead children was found at the stair foot.

"The terrible and unnecessary sacrifice of these children's lives is an object lesson which should rouse all tradesmen to a sense of personal responsibility."

Love, like ignorance of the law, is no excuse for violating traffic ordinances, a Newark, N. J., judge told a one-arm driver upon fining him \$5 for his offense.



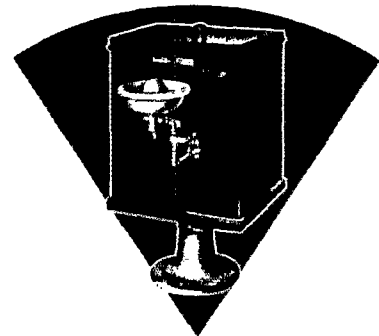
A SAFETY SHOE FOR the FOUNDRY

The Reece Wooden Sole Shoe shown above is designed for use in the foundry and for the moulder. It is made of quality oil grain leather with strong rubber goring in the sides. It may be fitted with an aluminum snug fitting toe cap or our new heavy aluminum toe guard. The thick WOOD SOLES are non-conductive of heat.

Send for details of our complete line.

**Reece Wooden Sole
Shoe Co., Inc.**

Columbus, Nebraska



Provide Better Water!

Give your employees good, clean drinking water. Let them drink from Rundle-Spence fountains—then their thirst will be satisfied sanitarily. It's bound to be because lips cannot touch the R-S Nozzle.

Let us give you complete information covering R-S Sanitary Drinking Fountains, besides our line of bath and Plumbing Fixtures and Supplies.

Rundle-Spence Mfg. Co.
65 Fourth St., Milwaukee, Wis.



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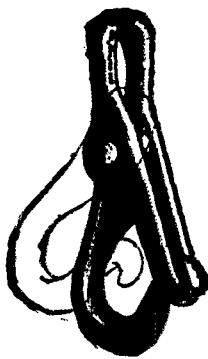
FOOT PROTECTION FOR MOULDERS

Schiff's Safety Shoe for moulders has all the features of the complete Schiff line. Designed especially for use in the foundry, the moulder's shoe may be removed instantly.

The Non-Metallic "Protex" Toe, used exclusively in Schiff shoes, protects the entire toe area from falling objects and hot metal.

Write for samples. Shipment made within 24 hours.

LEON SCHIFF & COMPANY
108 West Lake St., Chicago, Ill.



The O'Kelly Safety Hook

Patented

Locks Automatically
Forms a Link When Closed
Cannot Straighten Out
Quick to Operate
Thousands In Use
Recommended by

Leading Casualty Companies

THE LOAD CAN'T SLIP

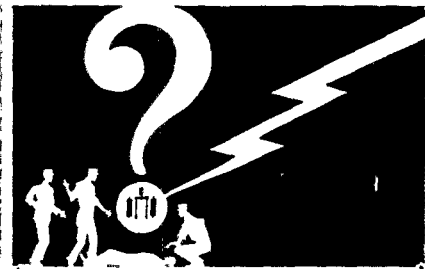
Capacities and General Dimensions

Capacity Tons	Length In.	Width In.	Hook Opening In.	Link Opening In.	Weight Pounds
1	7 1/4	3 1/2	1 1/4	1 1/4	2
2	8 1/4	4	1 3/4	1 3/4	3
3	10	5 1/4	2 1/4	2 1/4	4
6	15 1/4	7 1/4	3 1/4	3 1/4	13
10	18	7 1/4	3 1/4	3 1/4	25
20	23	10 1/4	4	4	55

GREGORY O'KELLY
35 S. Dearborn St., Chicago, Ill.

Index to Advertisers

Abbott Laboratories	8
Acme Steel Co.	76
American Abrasive Metals Co.	7
American-LaFrance & Foamite Corp.	37
American Mason Safety Tread Co.	8
American Metal Products Co.	84
American Optical Co.	104
American Telephone & Telegraph Co.	43
C. G. Armstrong Mfg. Co.	101
Angle Steel Stool Co.	64
Bernhard, Robert A.	96
Bullard-Davis, Inc.	35-52-59-68-85-87
Burroughs-Wellcome & Co. (U. S. A.), Inc.	47
Carter-Lockard Co.	67
Central Iron & Steel Co.	60
Challenge Machinery Co.	86
Chicago Eye Shield Co.	57-62
Chippewa Shoe Mfg. Co.	71
Cleveland Leather Goods Co.	60
Collins, Thos. E. & Co.	81
Dayton Safety Ladder Co.	79
Diener Co., Geo. W.	74
Des Moines Foundry & Machine Co.	63
DuPaul-Central Optical Co.	73
Durable Mat Co.	62
Ellwood Safety Appliance Co.	72
Endicott-Johnson Corp.	77
Erdle Perforating Co.	83
Eyesight Survey Corp.	50
Finnell Systems, Inc.	71
Fyr-Fyter Company	65
Harrington & King Perforating Co.	59
Holios Manufacturing Corp.	88
Highway Service, Inc.	81
Holcomb Safety Garment Co.	55
Hygeia Respirator Co.	86
Hynson, Westcott & Dunning	79
Industrial Products Company	86
International Shoe Co.	53
Invincible Vacuum Cleaner Mfg. Co.	63
Johnson & Johnson	54
Justrite Mfg. Co.	82
Kaester Solder Co.	100
Keystone Lubricating Co.	5
Kidde & Co., Walter	49
Klein & Son, Mathias	56
Lima Cord Sole and Heel Co.	69
Lineman Protector Co.	96
MacLaury, J. D.	88
Mine Safety Appliance Co.	33-41
Mineral Electric Co.	80
Multiple Selling Corp.	4
Murray Safety Sling Co.	82
McDonald Engineering Corp.	78
Never Slip Safety Clamp Co.	58
Oakite Products, Inc.	96
O'Kelly, Gregory	101
Pangborn Corp.	84
Patent Scaffolding Co.	61
Protectoseal Co.	64-68
Pulmoan Safety Equip. Co.	3
Pyrene Manufacturing Co.	61
Reece Wooden Sole Shoe Co.	100
Rundle-Spence Mfg. Co.	100
Safety Appliance & Machine Co.	55
Safety Clothing Co.	66-100
Safety Equipment Service Co.	Back Cover
Safety First Supply Co.	Inside Back Cover
Safety Fumigant & Chemical Co.	83
Schiff & Co., Leon	101
Sharp & Smith	77
Standard Safety Equip. Co.	Inside Front Cover-69
Stanley Works, The	75
Stonehouse Signs, Inc.	75
Sulpho-Naphthol Co.	73
Taylor Chain Co., S. G.	65
Taylor, Halsey W., Co.	54
Taylor-Schantz Co.	97
Thompson Electric Co.	56
Trico Fuse Mfg. Co.	101
Union Carbide Sales Co.	51
Wall Mfg. Supply Co., P	56
West Disinfecting Co.	45
Wheeler Mfg. Co., F. H.	87-97
Wiesman Mfg. Co.	87
Williams Jewelry & Mfg. Co.	67
Williamsport Wire Rope Co.	2
Willson Products, Inc.	1
Winship, Chas. A. & Co.	97
Woodhead, Daniel, Co.	98
Wright-Austin Co.	70



Are You Next?

Not if you use fuse pullers instead of taking chances of pulling fuses with bare hands. It's so easy to avoid shocks, burns, infection, blindness, or possible death, by using



Fuse Pullers

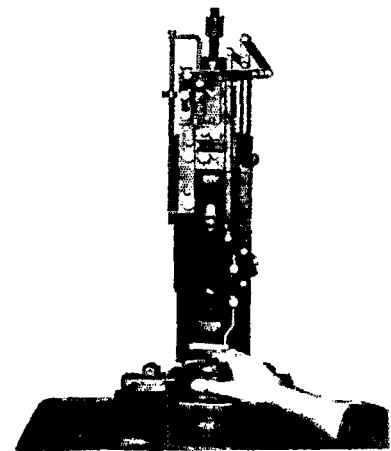


Genuine shock-proof horn fibre—4 sizes

Ask your jobber or write

TRICO FUSE MFG. CO.

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AN INJURY IS MONEY LOST

It isn't just a matter of getting some one to take your injured press operator's place . . . it's a loss in time, production and dollars. With Armstrong's Safe-Lock Guard for foot presses, the ram's downward movement is stopped if an operator's hand or fingers are in its path.

Safe-Lock is not a hindrance to work . . . it is an aid. Operators are not worrying about accidents when this protective guard is used. It is easily attached by any qualified mechanic.

An inquiry is the first step toward protection.

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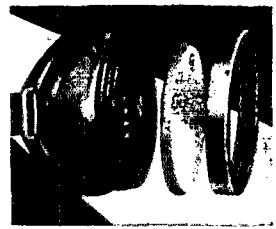
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Patented

GREATER COMFORT...

*light weight, proper fit, wide
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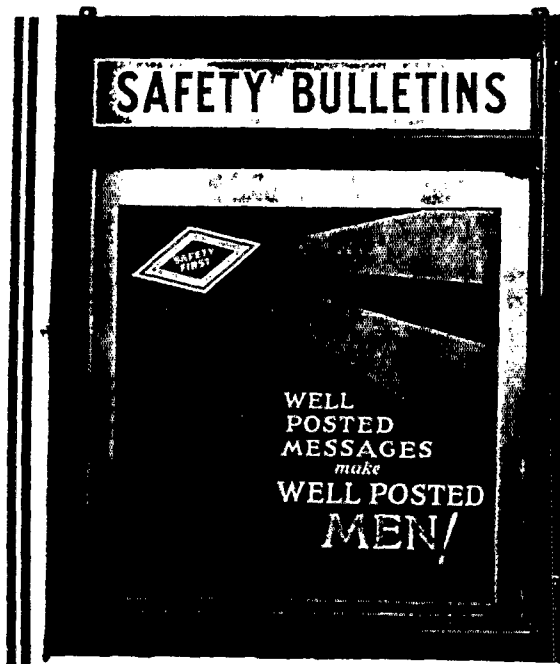
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that make it
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Combined with these outstanding *qualities* is the inbuilt *Diamond quality* that makes these boards render maintenance-free uninterrupted service, year after year. Quality that makes first cost last cost. Quality that leads many plants to consider the boards as capital investment, not as expense.

The number 28 illustrated is 28 x 35 x 4; the 33, another popular model, is similar in design, has a gable roof; special boards are made under the same rigid quality standards to your own specifications. Write for prices.

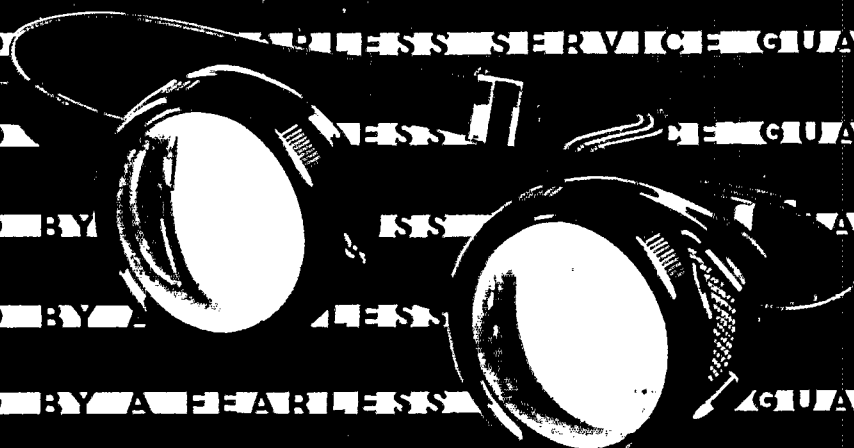
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MANUFACTURERS OF "DIAMOND" SAFETY EQUIPMENT

Brady Building, (Third Avenue and Ross Street)

PITTSBURGH, PA.

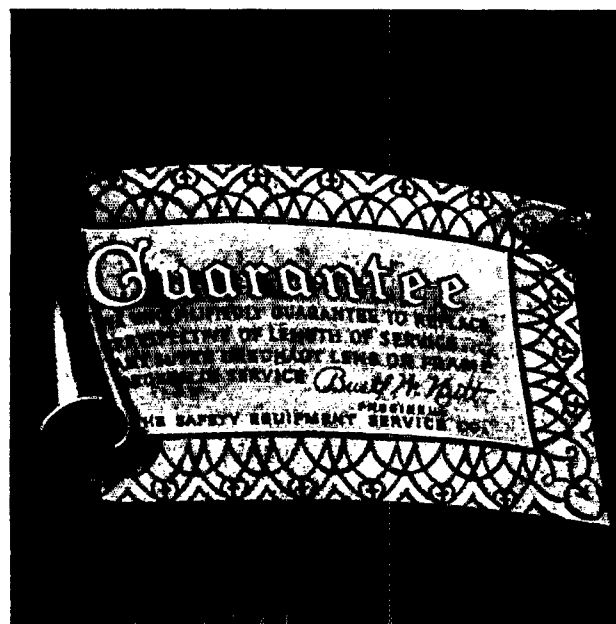
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THE Super-Drednaut Service Guarantee is no luke-warm, half-way Guarantee. It does not come forward timidly, hesitatingly.

In plain, unmistakable terms, it calls the whole goggle-buying public to witness a pledge—a pledge that undertakes to protect every single dollar invested by the buyer in Super-Drednaut Goggles.

The Super-Drednaut Service Guarantee is an expression of our supreme confidence in the superior performance ability of the Super-Drednaut Goggle. And by the same token, it's your guarantee of the greatest value it is possible to secure in a goggle.



A Fair Offer— To Safety Engineers, Plant Superintendents and other responsible executives interested in eye protection we will be glad to send a sample pair of Super-Drednaut Goggles for examination and test under your specific plant conditions.

We invite you to compare the Super-Drednaut with any other goggle on the market for strength, comfort, superior construction and protective qualities. Let your judgment prove our claims.

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