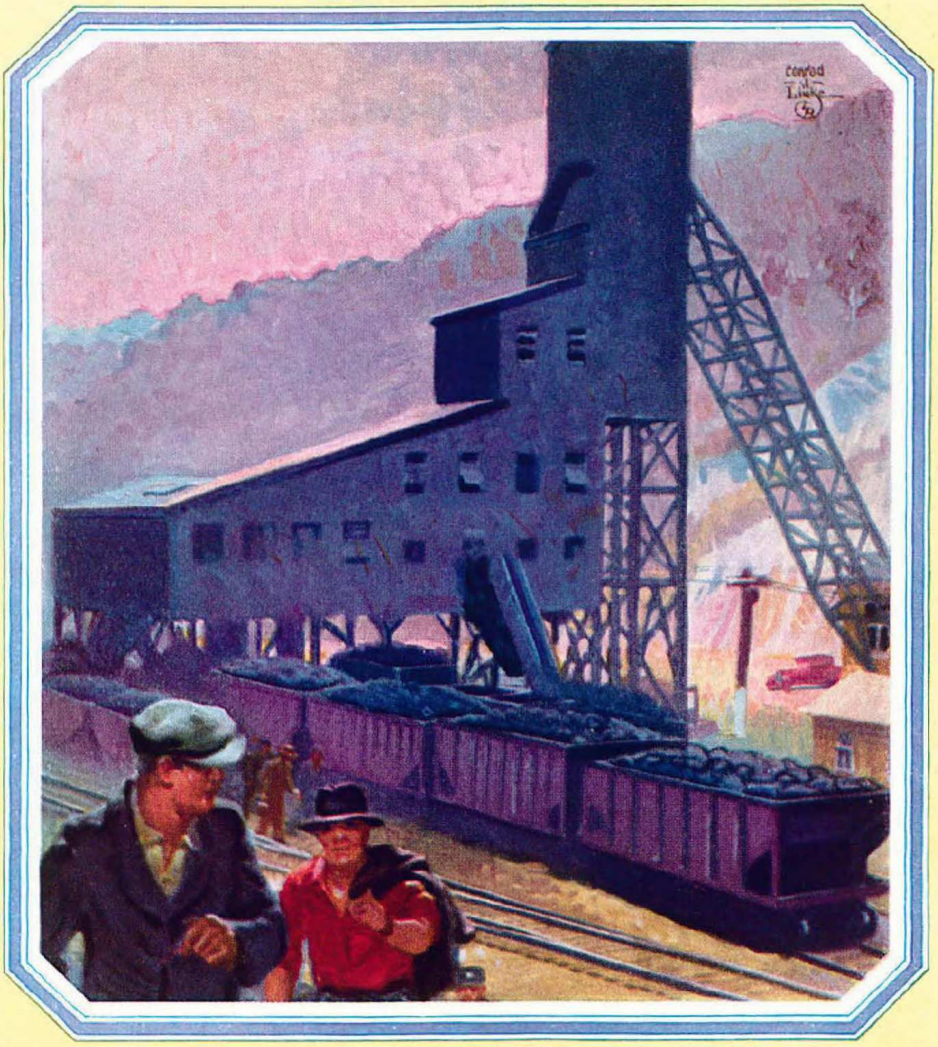
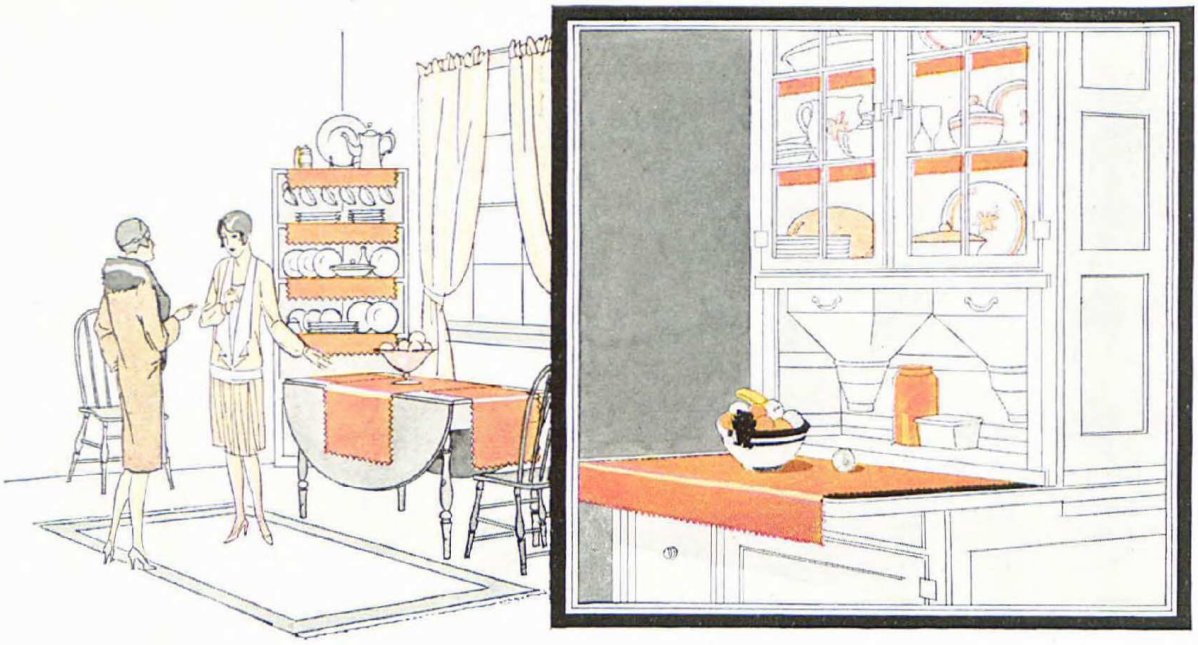
THE DU PONT MAGAZINE



THE COAL MINING INDUSTRY

MARCH 1928

WDT



FABRIKOID

"Color-in-the-kitchen" makes this a new profit-maker

INTO one of the largest New York department stores Du Pont Fabrikoid shelving and throws were introduced. Almost over night they had moved and turned a handsome profit.

Here is a new use for a familiar product, a new profit-maker for a familiar department.

Du Pont Fabrikoid shelving and throws sell themselves on sight. Their distinctive beauty and vivid colors create a new demand and make an instant appeal to the shopper.

They add a touch of light and color to the kitchen and the breakfast room. Their colors hold—do not yellow or fade—and Fabrikoid can be cleaned easily and quickly. It carries the prestige of the du Pont name.

A demand for Du Pont Fabrikoid shelving already exists, and it only remains for you to stock it and cash in on this new demand. This beautiful and durable material sells itself to your customers. Why not secure this new profit-maker for your store?

Send the coupon below for samples and full information.

DU PONT FABRIKOID
REG U.S. PAT. OFF.

FABRIKOID

E. I. DU PONT DE NEMOURS & CO., Inc.
Fabrikoid Division, Newburgh, N. Y.

Please send me samples and full information about the new use for Fabrikoid in the home furnishings departments.

Name _____

Address _____

The DU PONT MAGAZINE

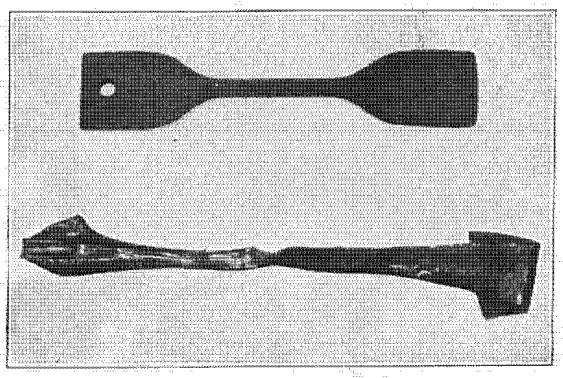
VOL. XXII MARCH, 1928 No. 3

A NEW CHEMICAL DISCOVERY

Neozone is a new product that prevents rubber from rapid deterioration

By E. R. BRIDGWATER

RUBBER was used for waterproof shoes and for balls with which a game was played by natives of South and Central America even before the Spanish and English explorers discovered the New World. It was later used in England for the manufacture of waterproofed raincoats, and several rubber factories were established in New England in the early part of the nineteenth century. However, the coats and boots that were made by these pioneer manufacturers were far from satisfactory because they became soft and sticky in warm weather and hard and brittle in the winter. It remained for Charles Goodyear in 1839 to discover that rubber could be vulcanized by mixing sulfur with it, and heating. This process transforms rubber from a soft, plastic material to a strong, tough, elastic product that has become an indispensable factor in modern life.



These pieces of rubber were originally the same size and shape. The tests to which they were subjected, and the results, are described in the accompanying article

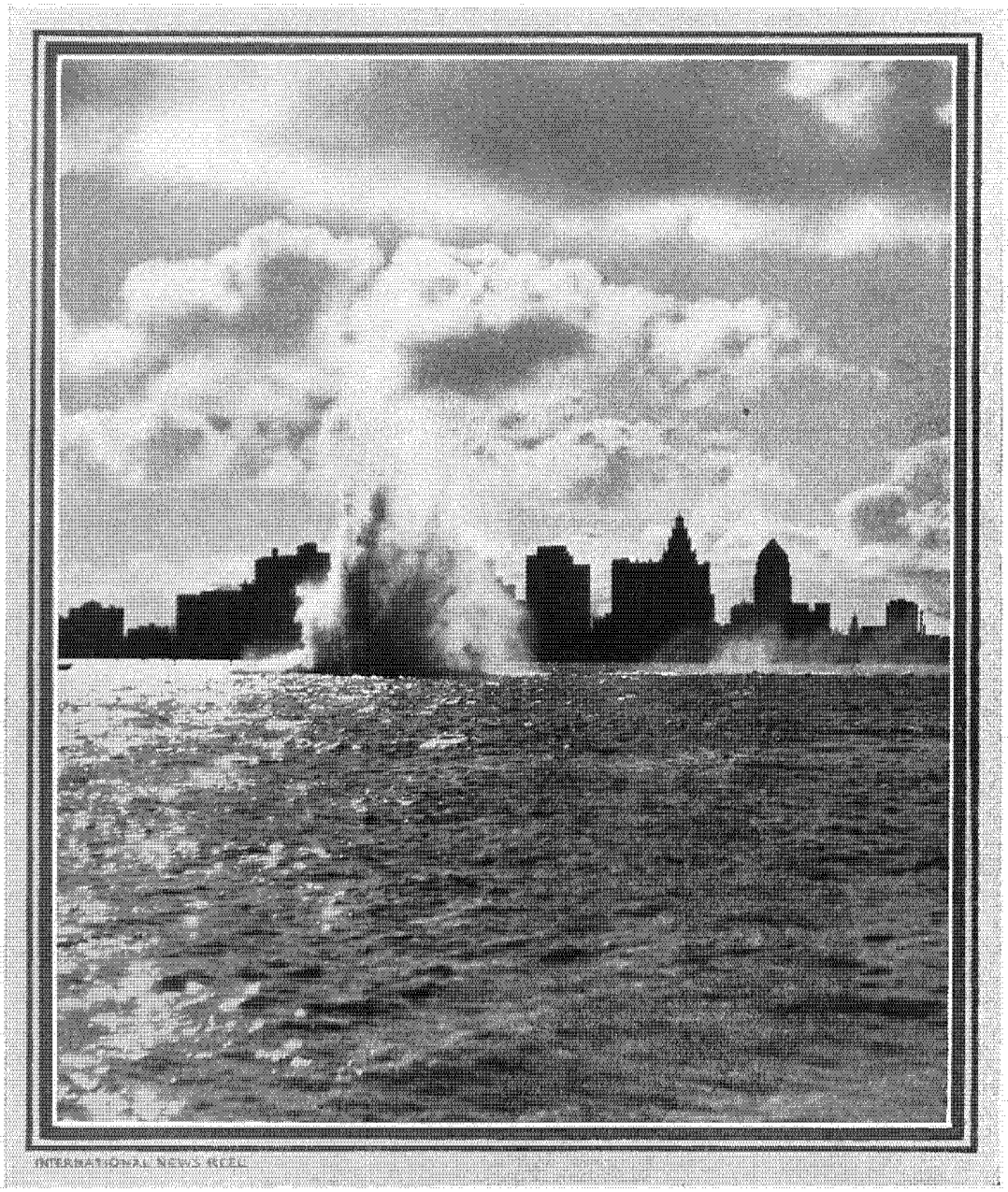
Our huge modern rubber industry could not exist — pneumatic automobile tires could not be made of rubber—if it were not for the process of vulcanization; but this same process is responsible for the most serious shortcoming that rubber possesses. Unvulcanized rubber may be stored for years without undergoing serious deterioration, but soon after it is vulcanized it begins to lose its strength, elasticity and wearing quality. Chemists have found that this deterioration is largely due to oxygen, which the air contains to the extent of 21 per cent; and since this fact became known, a determined effort has been made to find a way of protecting rubber against the action of oxygen.

Among the chemical laboratories that have been working on this problem is the Jackson Laboratory of the du Pont Dyestuffs Department, at Deepwater Point, New Jersey. Research chemists there have recently discovered a chemical known to the trade as Neozone which, when added to rubber prior to vulcanization, retards the action of oxygen on rubber and thus prolongs the useful life of rubber articles to a remarkable degree.

It was formerly quite difficult to determine the effect of adding various chemicals to rubber because it was necessary to store samples for several years in order to find out to what degree the rubber was affected by the oxygen of the air. However, within recent years it has been discovered that the deterioration of rubber by oxygen may be greatly hastened by exposing samples to pure oxygen under a high pressure and simultaneously by applying heat. This operation is carried out in a heavy steel bomb, and by means of this test one can obtain within a few days the information that formerly could be gained only by conducting tests for several years.

The rubber samples in the accompanying illustration show what happens when rubber is subjected to this rigid test. These pieces of rubber were originally of the same size and shape, but they have been tested in an atmosphere of oxygen under a pressure of 300 pounds per square inch and at the same time heated to 158 degrees Fahrenheit. The sample at the bottom was tested under these severe conditions for five days. It has become deformed and

(Continued on page 24)



INTERNATIONAL NEWS REEL

ANOTHER GATEWAY FOR COMMERCE

Citizens of Miami, Florida, celebrated the formal opening of the 27-foot channel and turning basin which will enable ocean-going vessels to carry cargoes to and from this port. In the distance may be seen the skyline of the city in silhouette. It is partly obscured, however, by the last blast which was set off by President Coolidge. When he pressed a button in Washington, thus closing the firing circuit, a column of water rose in the air as the assembled throng cheered. The contract for this port development work was let to the Arundel Corporation and the Clark Dredging Company. Large quantities of explosives were consumed in excavating rock. For the most part the brand used was du Pont 60 per cent straight dynamite. The first large ship to arrive in port was the U. S. Government cutter "Yamacraw"

IN THE NICK OF TIME

A mass of rock on Troy Hill, Pittsburgh, threatened to slide down and cause a disaster, but the danger was averted when the material was blasted away piecemeal

By P. F. Lewis

PITTSBURGH with its numerous high, steep hills constantly faces the menace of earth and rock slides brought on by the erosive action of the elements and the machinery of progress—widening of streets, excavations for large buildings, grading for tunnels and bridge approaches.

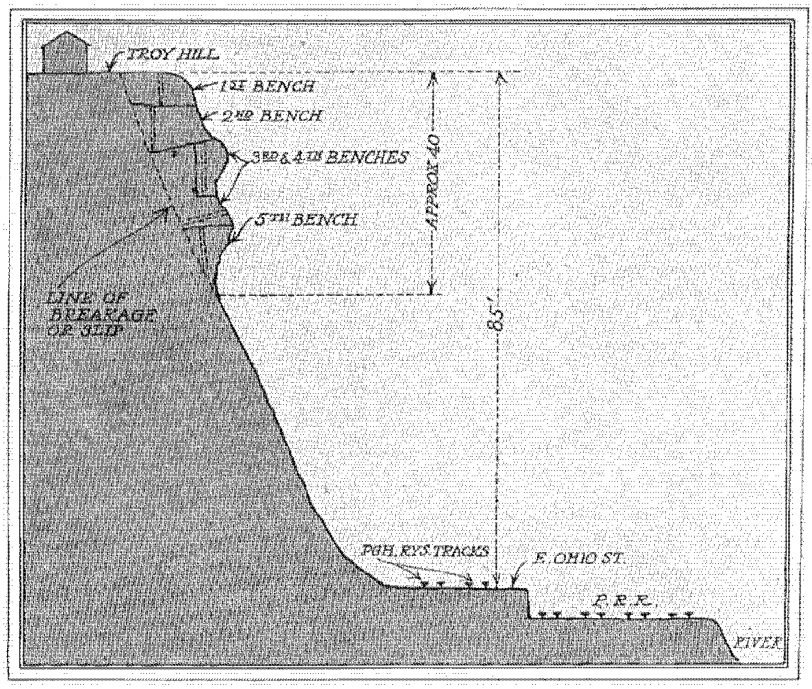
Recently, city railway and railroad officials were confronted with potential disaster when a rock slide developed on the side of Troy Hill overlooking East Ohio Street, involving approximately 1,000 cubic yards of shale rock. This movement took place at a point about eighty feet above East Ohio Street where the hillside is almost perpendicular. Vehicular traffic is extremely heavy at this point and the lines of the Pittsburgh Railways Company are double-tracked. Parallel to the street and railway tracks are numerous freight and passenger tracks of the Conemaugh Division of the Pennsylvania Railroad.

The movement of this vast quantity of rock from such a height with pedestrian, vehicular, railway and railroad traffic unguarded would undoubtedly have stopped all traffic with considerable damage to property and probable loss of life.

Luckily, the movement of this rock was discovered in its incipient stage by the ever-vigilant city department having work of this class under its jurisdiction, and measures were promptly taken to protect life and property. City engineers were somewhat at a loss as to know how to take down this material quickly and under control. They tentatively planned to place a considerable quantity of explosives in the crevice created by the slide and to blast the whole mass into the street below.

This method, if pursued, would undoubtedly have brought down the material involved, but it would also have caused considerable damage to nearby dwellings and would have tied up all traffic for many hours on the street and railroad.

City officials realized what might happen. They recalled reading in The Du Pont Magazine, and other publications, of some of the exploits of du Pont technicians. They promptly called on the Pittsburgh Branch Office of the du Pont Company for representatives to come and look over the situation. A. G. Noble and the writer responded and carefully examined the ground. We suggested the plan of working this material off in small benches, by drilling the rock with a small pneumatic jackhamer, the drillers to be suspended by ropes over the edge of the hill. Holes were carefully laid out and spaced so as to insure the best possible breakage. They were charged in such a proportion to the burden as to assure the complete removal of the bench, at the same time preventing movement into the street of any rocks too large to be readily moved by hand. This would reduce traffic stoppage to a minimum.



The first bench was drilled to a depth of 6 feet on 3-foot centers with a burden of 4 feet; the second was drilled to a depth of 8 feet on 4-foot centers with a burden of 5 feet; the third was drilled to a depth of 10 feet on 6-foot centers with a burden of 7 feet; the fourth, because of the shattered condition of the rock at this point, was drilled from the bottom with four 10-foot snake holes pointing downward on a three-degree angle; the fifth, and last, was drilled to a depth of 10 feet with irregular spacing so as to avoid seams. In addition to the well-defined benches, it was necessary to shoot a few projections so as to keep the mass in balance at all times.

All holes were charged with 40 per cent du Pont Red Cross Extra dynamite in such charges as to yield two tons of rock per pound of explosive. Shooting was done electrically with all holes in each bench wired in series.

(Continued on page 24)



The Crillon Restaurant walls are of a light cream color, finished with troweled plaster. Antique gold Fabrikoid is used on the seats and backs of benches

WHERE SHALL WE DINE?

Restaurant owners sell food—and nowadays something more. The new offering is a really pleasing environment for the patrons of the house

By F. R. Price

EVERYWHERE we can see how art is influencing the sale of commodities. This is especially true when a commodity is linked with a service, as in a hotel, tea room, restaurant, theater, or even an ocean liner.

Admittedly, environment is sold as a service. The first glance at the interior furnishings of a restaurant may not seem important, yet many people go to one rather than to another simply because it is more attractively furnished.

Interior decoration may seem simple to us when we see something that is well done, yet we must recognize the fact that good interiors are conceived by the versatile artist who is clever and ingenious enough to know how to satisfy our taste and appreciation.

With brilliantly daring color—in mural decorations, draperies, upholstery fabrics, floor coverings and furniture—Winold Reiss has solved the decorative problems of the Crillon Restaurant as well as other smart New York restaurants, hotels and apartments. His motifs for design and his understanding of color carry a modernistic note which commands recognition. The furnishing of the Crillon Restaurant is worthy of detailed attention. The stairways leading to the main dining hall are flanked by solid balustrades, the ends of which are finished in strips of wood painted in the predominating colors of the interior—light cream, pale red and gold.

Along the sides of the balustrades are placed several tables with wooden benches, the seats and backs of which are comfortably upholstered in antique gold Fabrikoid.

The walls of the main dining hall are light cream color with a hand-troweled plaster finish. A touch of color is introduced by abstract designs in the modern manner as well as curious fantasies in gold-leaf on a pale red background. Wrought iron is used to complete the decoration of the lighting fixtures in the ceiling.

Fabrikoid is also used very effectively for several individual lamp shades. A narrow fringe of the material, in

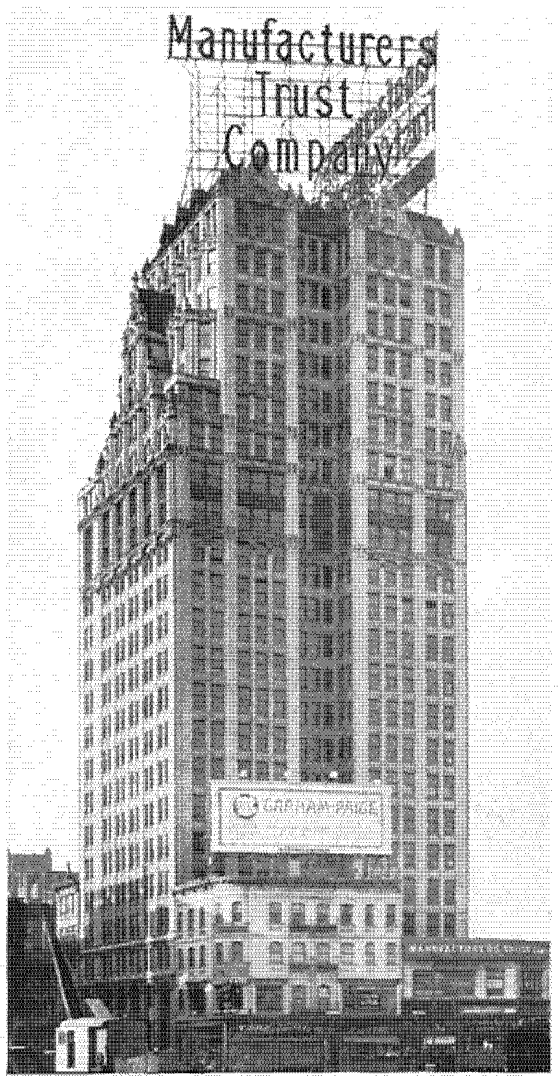
(Continued on page 16)

TESTED BY SUN AND SHOWER

A building superintendent speaks well of Tontine shades which have withstood wear and tear for seven years and still look new

DU PONT TONTINE window shades hang at the windows of hundreds of the country's most imposing buildings. Every day the list of installations grows larger. The unusual durability of Tontine, its extreme resistance to wear, weather and time make it ideal for the shading of office and public buildings, hotels, hospitals and schools. Particularly in large office buildings, where tenants often give window shades rough treatment, Tontine's ruggedness and extremely low maintenance cost have been proved time and again.

The Tontine shades hanging at the windows of the Manufacturers Trust Company Building offer an amazing testimonial of Tontine's wear-resistance. This huge skyscraper towers twenty-four stories above Columbus Circle in the heart of New York City. Its twelve hundred-odd windows face the full force of the elements, for there are no high buildings immediately adjacent to act as a protection against driving rain, snow or the force of the wind. This building, furthermore, marks the starting point of Tontine. It is the pioneer large installation; the shades were hung in 1921—seven years ago.



This building towers above Columbus Circle in an unprotected area; its windows face the full force of the elements

Recently, in an interview with J. G. Wright, manager of real estate for the Manufacturers Trust Company, and W. C. Reeder, superintendent of the building, a representative of the du Pont Company heard the remarkable story of Tontine's installation. Mr. Reeder, who has been in charge of the building since its completion in 1921, had this to say regarding Tontine:

"A very large proportion of the original (Tontine) shades are still in use. I cannot say that we have ever had to replace any because they wore out. The replacements we have made were almost entirely due to injuries caused by unnecessarily rough handling. Most of these shades have been in use for seven years. I think many of them will last years longer. This to me is remarkable, because most other shades with which I have had any experience have worn out in a year or two because of our exposed location. At that rate, during the seven years this building has been in use, it would have been necessary to re-shade it three times, at least.

"Yet most of our original Tontine shades are still in use today. They have cost us next to nothing for upkeep. You can easily estimate the great saving this has meant. Tontine may cost a little more, but I'm glad to pay the difference, for I know that it will be absorbed many times over because of longer life.

"I'm surprised to see the way these shades remain flexible. In my experience, shades almost invariably get brittle in a year or two. Then the trouble begins. The surface starts to break, and you soon have to buy new shades. But I haven't found a single surface crack in the Tontine shades. If anything, they have become more flexible with use. I also expected them to wrinkle after the first rain. Now some of them have been rained on hundreds of times, and you can see that they haven't been hurt at all.

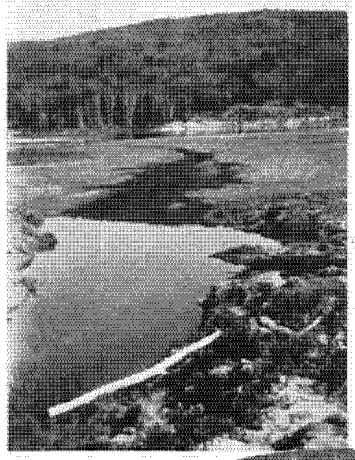
"We've never washed our shades, because they've never showed the dirt. I'm certain that we could do so successfully, because any shade which has been rained on as many times as these shades have can be washed without hurting it. I'm sure of that." (The Tontine shades are a deep green color; they would not soil easily, nor would they show the dirt.) "Taken all-in-all, I do not believe you could find a better, more durable window shade, or one with a lower upkeep cost. I'm convinced that the service these Tontine shades have given in our own building could not be excelled."





Above—One section of the ditch. Note the stony, root-filled bank

Right—The big ditch functioning; it is 8 feet deep and 18 feet wide



RENOVATING A POND FOR NEW TENANTS

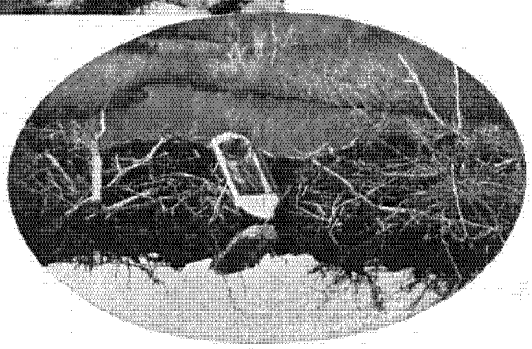
How a muddy, stumpy fish pond in the Adirondacks was drained, cleaned and made ready for restocking with brook trout

By F. T. Ransom

Last spring John B. Burnham, president of the American Game Protective Association, undertook an extensive drainage project on his estate in the Adirondacks, near Keeseville, New York. On the property is Mullen Pond, about one and one-half miles long and three-quarters of a mile wide, representing in part the work of a family of beavers. It was a mud pond inhabited principally by food fish, such as bullheads, suckers and pickerel, and Mr. Burnham resolved to clean it out and restock it with brook trout.

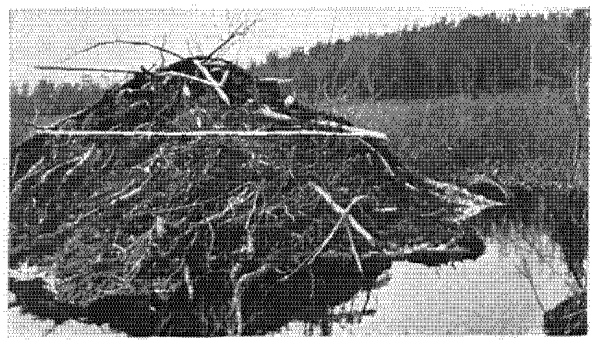
Briefly, he planned to remove the beaver family to an adjoining pond, drain the lake as much as possible by lowering its water level eight feet, clean out thoroughly and burn the stumps, roots and other débris in its mucky bottom, treat with copper sulphate the remaining water body and get rid of undesirable vegetation and fish life, and then build a new cement dam, impound fresh water from nearby springs and restock the pond. Altogether, it was a big undertaking.

Drainage was the big problem, for it involved blasting an

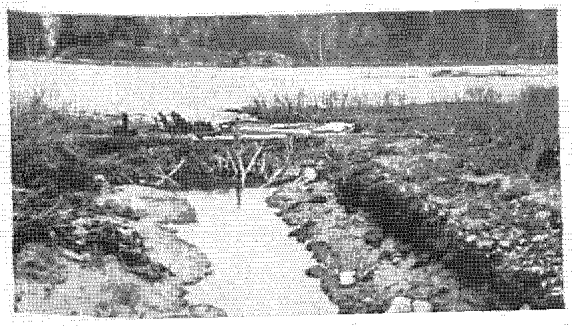


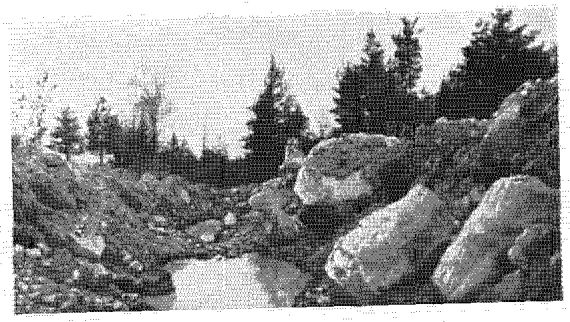
Above—A view of the pond after most of the water had passed out through the ditch in the foreground. The site of the temporary dam is shown at the center of the picture, with the 400-foot channel extending beyond it

Oval—Showing one of the beaver dams which backed up the water in the lake



Left—A beaver house near the dam. The horizontal line near the top shows the water level before the dam was removed. A deep moat completely encircled the house, affording access to it from all sides





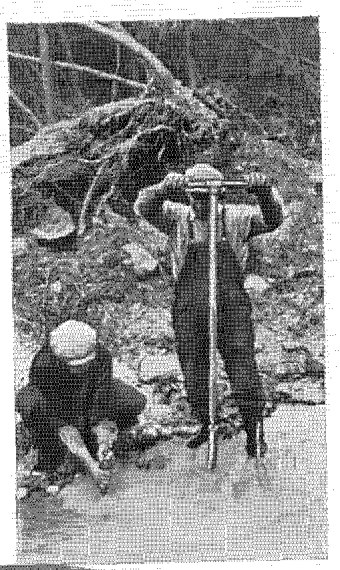
Above—Looking toward the outlet. Note the glacial deposit. Left—The temporary dam built at the outlet of the pond

outlet 4,000 feet long through ground of glacial formation consisting of boulders and stones intermixed with sand and clay. First it was decided to build a temporary dam at the outlet, then blast a small ditch, admit water into it and follow with a big shot which would widen and deepen this ditch, throw out the temporary dam, and project the ditch 400 feet into the bed of the pond. The work was done as follows:

For the initial shot a single row of holes two feet deep and eighteen inches apart was loaded with one stick of 60 per cent straight dynamite to each hole. This shot, set off with caps and fuse, resulted in a small ditch and also loosened the bottom soil so that it became saturated with water, making it easier to punch, load and set off the second shot by the propagated method. The second shot consisted of a single row of holes, similarly spaced and each one loaded with two sticks of 60 per cent Red Cross Extra and one stick of 60 per cent straight dynamite, the latter to insure propagation.

Heavier charges were loaded in the dam. Special equipment was used to load the holes in the channel section, which were spaced eighteen to twenty inches apart. Cut poles ten feet long were obtained from the nearby woods, and four feet from the end of each one were attached two sticks of 60 per cent straight dynamite. Working from a boat, the men shoved these stakes into the muck until the tops were even with the water level. By this method the charges were placed at a uniform depth of four feet.

When this work was completed and everything was in readiness, the workmen retired and the shot was fired. The blast was propagated throughout the entire length of the ditch line, including the dam and the inland section. It was successful in all respects, even though the soil conditions encountered made this ditching operation unusually difficult.



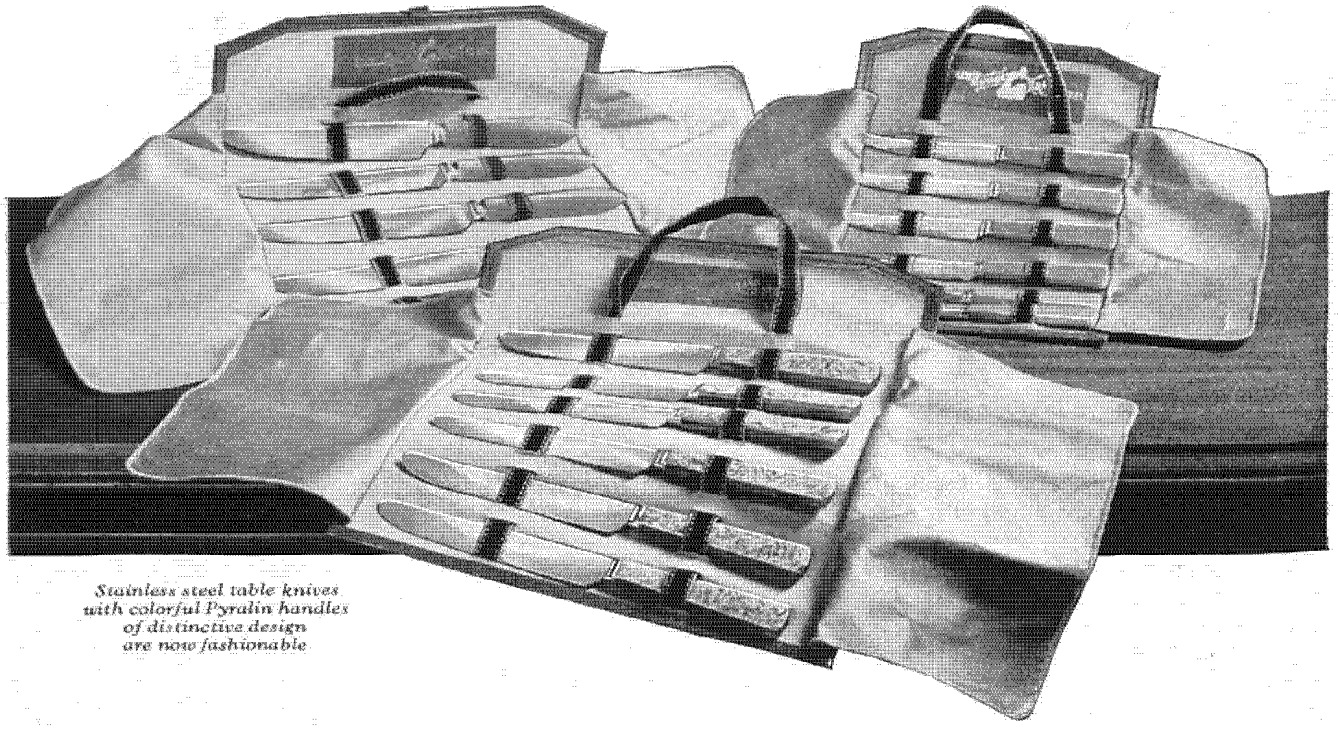


Above—Punching holes in preparation for the big shot. The punch-bar was forced down through a casing which was left in the ground and removed as the dynamite charge was loaded through it



Right—A close-up view showing the result of the big shot. Note the depth and width of the ditch. The soil conditions encountered in this section made the work unusually difficult and laborious

Oval—Getting ready to load holes in the channel section of the ditch line



Stainless steel table knives with colorful Pyralin handles of distinctive design are now fashionable

PYRALIN BEAUTIFIES CUTLERY

How the smartness of Pyralin toiletware, with its wide range of color possibilities, has invaded the cutlery field

By W. H. GAYNOR

THE vogue for colors in every phase of home decoration has introduced brightly colored handles for knives and forks to match glassware, crockery, linens and the various other colorful table appointments now used in the smartest homes.

After a careful survey, the New York Knife Company, of Walden, New York, found the unusual durability and beautiful colors of Pyralin an ideal combination for these handles. In the cutlery this concern is now producing, the smartness of Pyralin toiletware is reproduced for the table. The up-to-date housewife, with her Pyralin toilet set, will quickly recognize its beauty and lasting qualities.

What could be smarter than knives and forks which match or form a pleasing contrast to the predominating color of tiny dining alcoves, with their colorful hangings and gay china? The summer home, the cottage or the more pretentious town house all gain a note of cheerfulness and warmth from these bright tableware handles. Used with the colored glass sets which are so popular, the table immediately becomes alive with cheer and friendliness. Tea room owners have been quick to take advantage of these decorative possibilities.

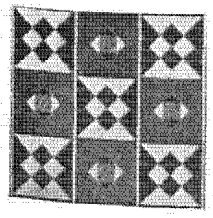
The older type of table cutlery has been entirely refashioned to suit this mode. A stainless steel blade is now inserted in a fine ivory-grained Pyralin handle instead of the old-style handle of white or black.

In the accompanying illustration three of the newer types of knives are shown, each with its gracefully curving blade set in a Pyralin handle of distinctive design. The wide variety of color combinations used for the handles includes green with mottle amber center, blue mottle with red quartz center, and the popular pearl effect produced in what may be described as white or natural pearl. Of course, the Pyralin handles may be washed and rewashed and they will not rust or tarnish.

As gifts for the housewife such sets are useful, attractive and always acceptable.

Pyralin has invaded the home many times during the past year, always adding a note of attractiveness and color wherever it is used. In the instance referred to here, the combination of stainless steel blades and Pyralin handles has resulted not only in a type of cutlery that is unusually beautiful, but these knives are also practical in every way for household use.

The novelty vogues now being introduced in every manufacturing field find Pyralin readily adaptable for colorful, durable and delightfully novel articles. We shall be glad to have you write for further information about this material and its uses to the Du Pont Viscoloid Company, Inc., 330 Fifth Avenue, New York City.

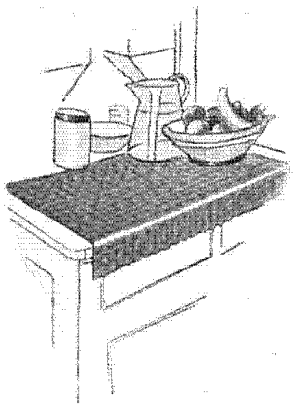


NEW KITCHENS FOR OLD

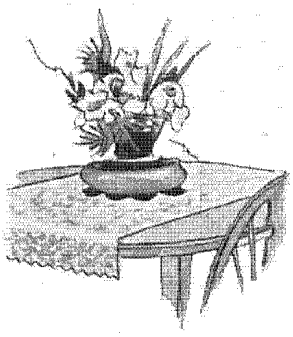


The "workshop of the home" can now be made beautiful through the use of Fabrikoid

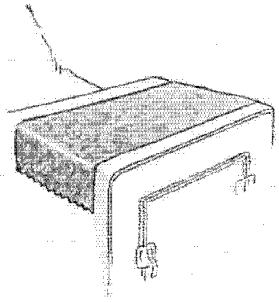
KITCHENS have finally succumbed to the vogue for color. Kitchen cabinets in bright and delightful solid colors make the kitchen a more pleasant place in which to work. Ice-boxes are now completely finished in lovely pastel shades of Duco. Even the handles of pots and pans appear in Duco finish of variegated colors.



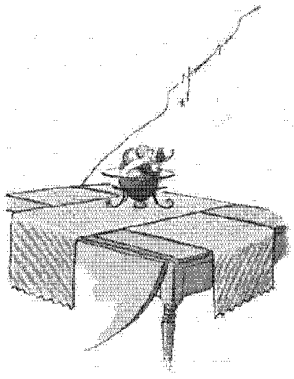
Women have looked for a suitable material from which they could make window drapes, table runners, ice-box throws and closet and cabinet shelving. Du Pont Fabrikoid seems to have been their choice. In the same rich, lovely colors as Duco and finished with substantially the same basic material, Fabrikoid embodies the same washable, waterproof, wear-resisting and permanently beautiful qualities. It is also moth-proof, vermin-proof and mildew-proof, and will not peel or discolor.



Instead of patterns being printed, the designs are permanently embossed in the material. The patterns cannot be removed by repeated washing or scrubbing. Then, too, the unusual cutting of the embossing dies with which these Fabrikoid materials are patterned allows an interesting light refraction upon designs, lending added novelty and attractiveness. The material may be had in lattice, square, petal and conventional patterns in yellow, blue, orange, red, green and white.

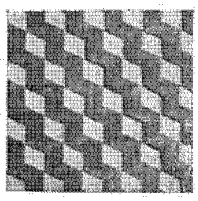


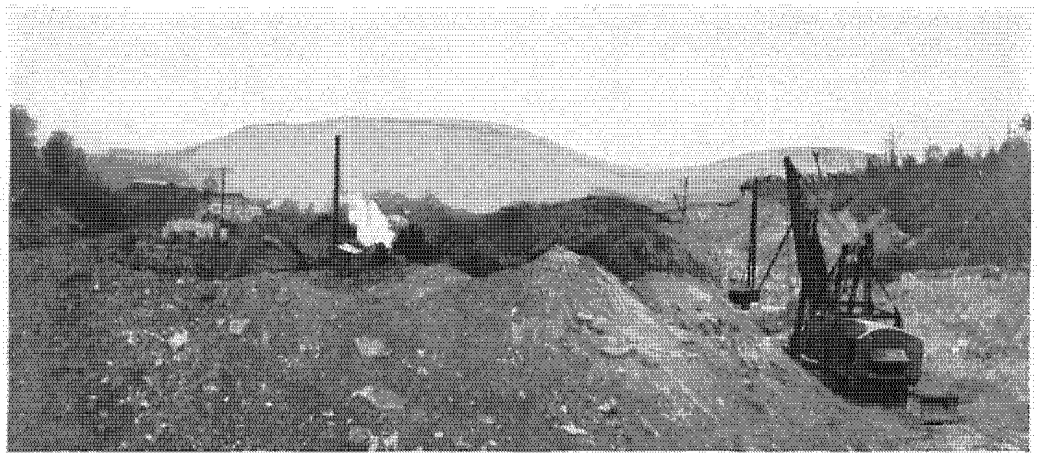
So great has been the demand for this type of material that many housefurnishing and department stores are showing in six different colors and novel grains this attractive Du Pont Fabrikoid shelving in 3-, 5-, 10-, 15- and 18-inch widths, with interesting little edgings as shown in the illustrations. Table runners and ice-box throws, all different sizes, all attractively edged, may also be had. For window drapes, women are buying Fabrikoid by the yard and are running it up on their sewing machines at home.



Dealers desiring information and samples preparatory to stocking Du Pont Fabrikoid may obtain the necessary data by writing to E. I. du Pont de Nemours & Company, Inc., Fabrikoid Division, Newburgh, New York.







Panoramic view of a section of the Waller Brothers stone quarry showing the mill at the left. Note the 300-ton shovel and the amount of overburden in the pit

SOMETHING NEW IN QUARRYING

How dimension stone is obtained by underground mining methods in the only quarry of its kind in Ohio

By A. L. Nixon

THE Waller Brothers quarry, at McDermott, Scioto County, Ohio, is situated in a large basin at the foot of and between three steep hills that rise several hundred feet above the quarry floor. Here dimension stone is produced both summer and winter with the scene merely shifting from the quarry to the adjacent mine.

The stone belongs to the Cuyahoga formation and there are more than fourteen layers of the finest quality of sandstone ranging in depth from one foot to four feet. Between each layer of stone is a horizontal layer of shale varying from one and one-half inches to six inches in depth.

Jackhamer drills are used to cut blocks of the desired size. A channeling machine cuts between the holes and then steel wedges are driven to force the blocks apart. The shale partings provide the horizontal breaks. Quarrying the stone presents no unusual difficulties after the overburden is removed.



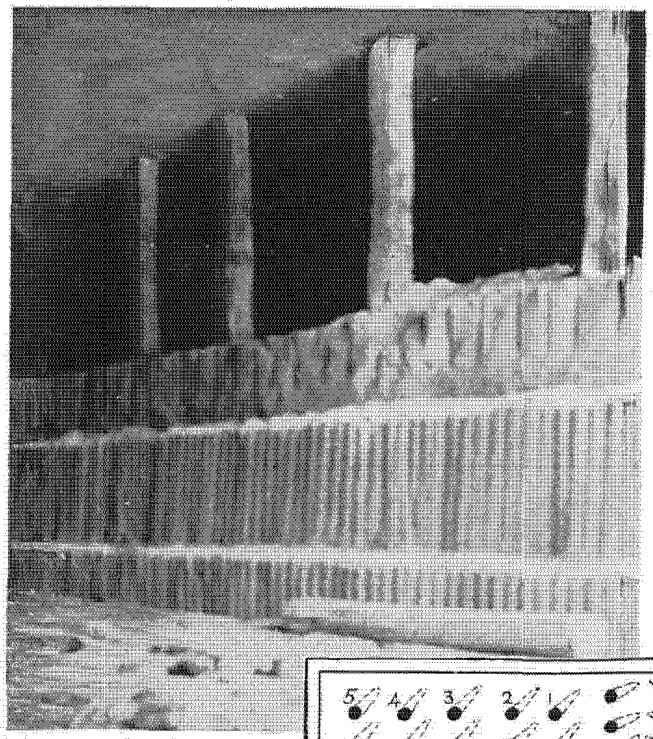
A close-up view of one of the four 70-foot derricks used to handle the dimension stone

Disposal of the overburden is the big problem. The material consists of poor-grade sandstone and hard gravel, which is shot with du Pont 30 per cent gelatin, Cordeau-Bickford fuse being used as the detonating agent. After each shot a 300-ton steam shovel with a six-yard dipper moves up and casts the overburden into the pit from which the stone has been removed. Unfortunately, there is only a limited dump area, and sometimes it becomes necessary to handle the same stripping several times.

When the quarry was first opened at the center of the property the disposal of this material was not troublesome, but as quarrying continued toward the hills the overburden increased until in places it is now sixty feet deep. The shovel can handle it, but where to dump the material is the principal problem.

During the twenty-three years Mr. Waller has been associated with this quarry, he has observed that the further back his quarrymen worked, not only was the overburden greater, but the stone was of much better grade. Considering this and also planning for the future, he conceived the idea of running entries and crosscuts into the hills above the stone and of continuing the quarry operations by mining. He submitted his plan to officials of the State Mining Department but they were unable to give him any data; they had no record of such an operation in the state.

Underground conditions reveal a cap rock of twenty-



Inside the mine showing where shale has been mined out, enabling jackhamers to be used to cut stone. Note the rock layers. The central stratum is 30 inches thick. Three layers have been cut, leaving eleven more to be mined

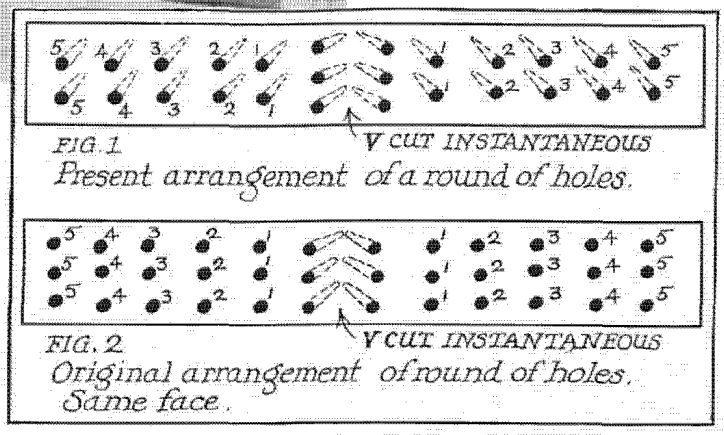


FIG. 1
Present arrangement of a round of holes.

FIG. 2
Original arrangement of round of holes. Same face.

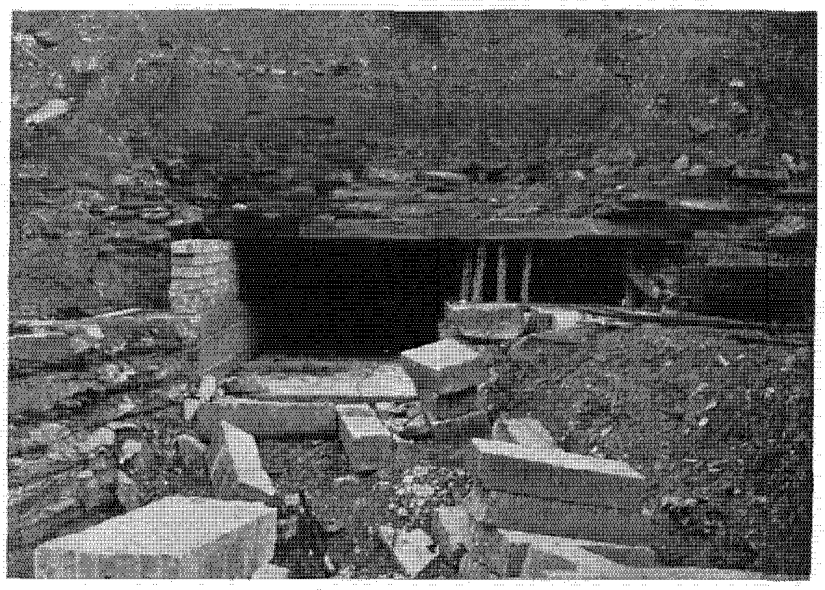
1½ by 8-inch cartridges of du Pont Extra D. After making several changes it was found that by drilling twenty-six holes, as shown in figure 1, and loading only two sticks in each V-cut hole, two sticks in each top side hole, and two and one-half sticks in each bottom side hole, the shots resulted in equally good fragmentation, less damage to the roof and to the stone below. This method saved considerable drilling, dynamite and blasting supplies.

An eight-inch line of du Pont Ventube was used to force fresh air into the mine, thus enabling the men to return to the working face immediately after blasting.

After the shale was removed, a crew of quarrymen with their equipment was moved into the mine. They quarry the stone in the usual manner, while a dragline and hoist pulls the stone blocks to the opening where a derrick loads them on cars for transport to the mill.

Regular equipment has been installed in the mine and the production of dimension stone by mining has in this case been pronounced a success. In winter the stone in the quarry becomes brittle and does not break evenly. On this account quarrying outside is restricted to about nine months. When cold weather sets in the men go inside the mine where frost cannot get to the stone, and they work there all winter. About seventy per cent of the stone from this quarry-mine is converted into high-grade building stone. The remaining thirty per cent is used for foundations, retaining walls, culverts and the like.

An outside view of one of the entries running back under the hill



eight inches. Under this is four feet of clay shale, making it possible to drive two entries in the shale thirty-five feet wide, running parallel to each other and about one hundred feet apart. The crosscuts are driven about every one hundred feet.

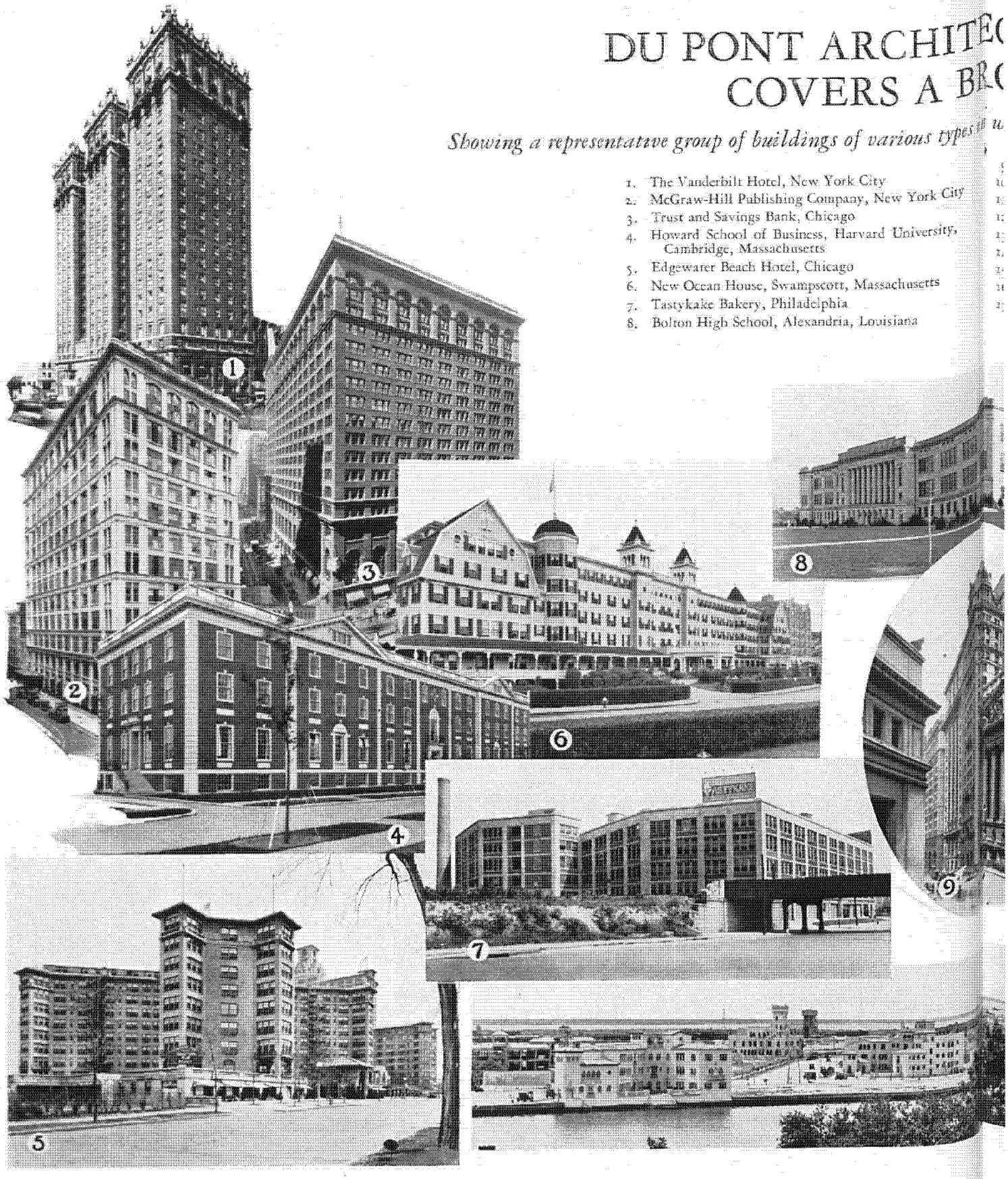
The entire thirty-five by four-foot face is drilled and shot as one round. A six-hole V-cut is drilled at the center and the two rows of holes on each side are made as shown in figure 1. Du Pont No. 6 instantaneous electric blasting caps, with six-foot wires, are used in the V-cut holes, while delay electric igniters, five in all, are used in the others.

At first, thirty-six holes were drilled and loaded with three 1¼ by 8-inch cartridges of 30 per cent gelatin to the hole. See figure 2. This dynamite was replaced with

DU PONT ARCHITE
COVERS A BR

Showing a representative group of buildings of various type

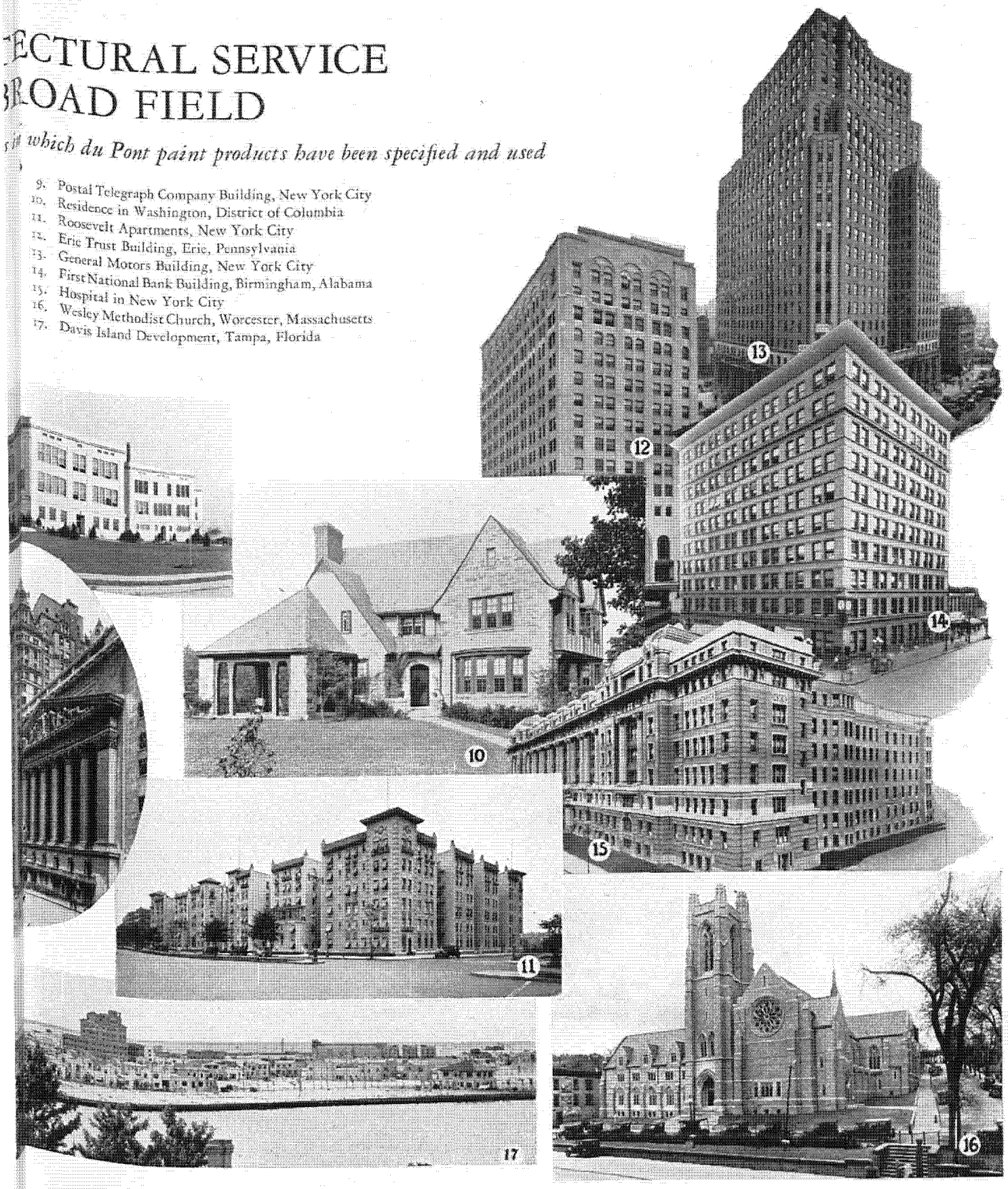
1. The Vanderbilt Hotel, New York City
2. McGraw-Hill Publishing Company, New York City
3. Trust and Savings Bank, Chicago
4. Howard School of Business, Harvard University, Cambridge, Massachusetts
5. Edgewater Beach Hotel, Chicago
6. New Ocean House, Swampscott, Massachusetts
7. Tastykake Bakery, Philadelphia
8. Bolton High School, Alexandria, Louisiana

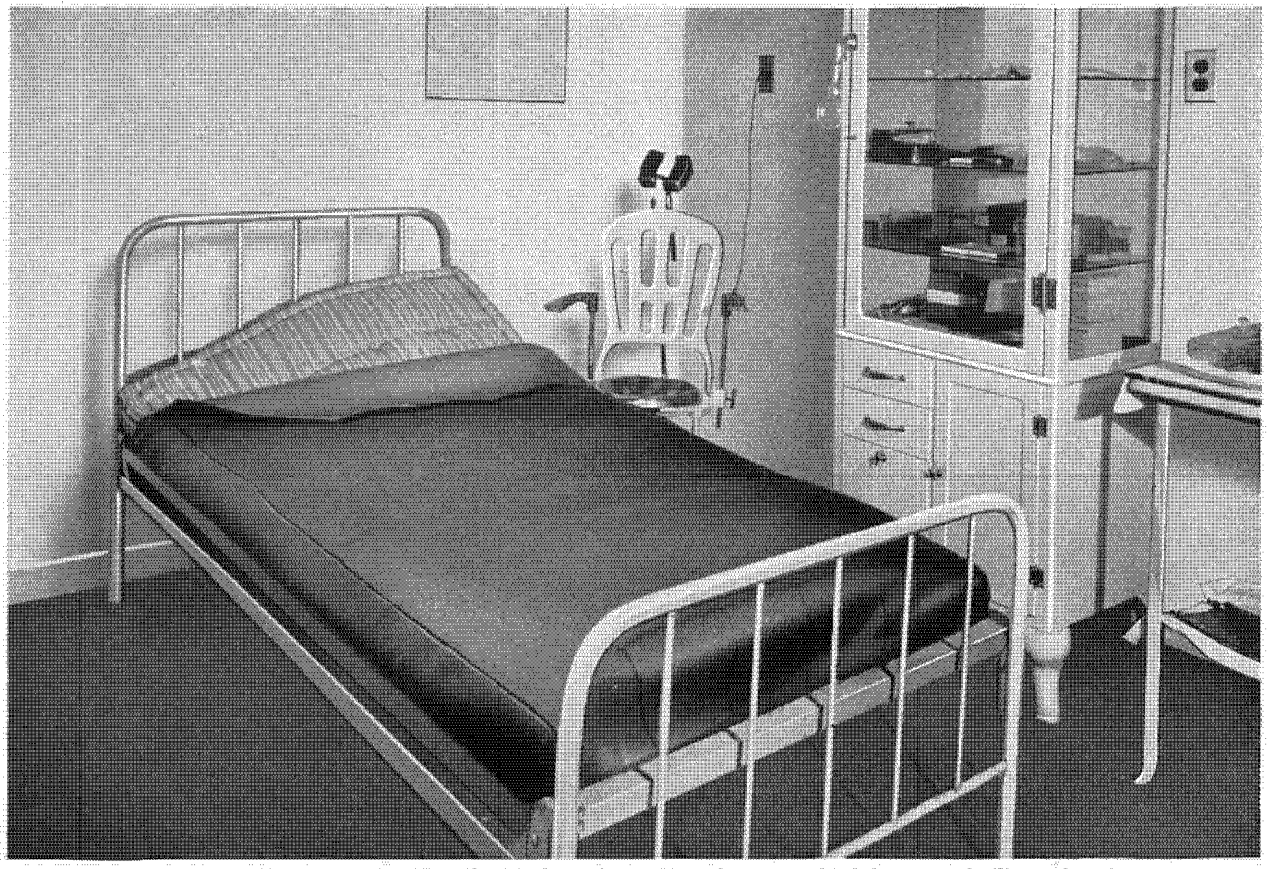


ECTURAL SERVICE
BROAD FIELD

which du Pont paint products have been specified and used

9. Postal Telegraph Company Building, New York City
10. Residence in Washington, District of Columbia
11. Roosevelt Apartments, New York City
12. Erie Trust Building, Erie, Pennsylvania
13. General Motors Building, New York City
14. First National Bank Building, Birmingham, Alabama
15. Hospital in New York City
16. Wesley Methodist Church, Worcester, Massachusetts
17. Davis Island Development, Tampa, Florida





A mattress slip cover made of Fabrikoid is shown here. Note that one end is left open to facilitate changing

PROTECTIVE MATTRESS COVERS

Can you imagine anything more practical than slip covers made of Fabrikoid for use in hospitals and other public institutions?

By R. A. APPLEGATE

DU PONT FABRIKOID appears here in its newest adaptation. This time it takes the form of a mattress slip cover for use on beds in hospitals and institutions which care for insane, nervous and mentally deficient people.

Because of the lack of responsibility of this type of patient and also because of the enormous replacement cost of materials and fixtures with which he comes in contact, it becomes necessary for resident physicians and superintendents, by utilizing every known means, to protect the bedding, clothing and crockery of the institution.

The cost of replacing mattresses is high; this particular item of bedding is expensive. In a large institution it can readily reach alarming proportions. Obviously, the practical way to reduce this expense is to protect the mattress with a long-wearing, comparatively low-priced material.

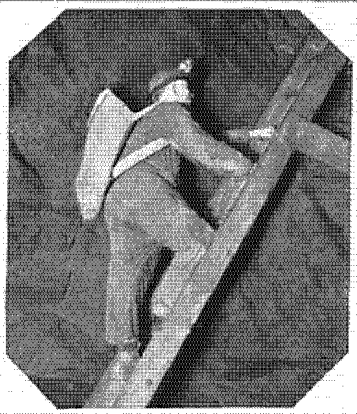
Searching for something which would give satisfaction, a number of leading institutions hit upon and, after exhaustive tests, adopted Du Pont Fabrikoid. This material, which is impervious to water, can also be readily scrubbed without injury. Moreover, it can be sterilized with a five per cent solution of carbolic acid, Dakin solution, or bichloride of mercury solution. Again, it is scuff-proof, and will not chip or peel. These and other attendant advantages make it an ideal material for this purpose.

The particular type of Fabrikoid which is supplied for making mattress slip covers is furnished in one-yard width, which permits of making these covers with ease, without waste and without excessive tailoring. One end of the mattress cover is left open so that it can readily be slipped on and off for cleaning and sterilizing.

To hospital executives who are interested in Fabrikoid for the above-mentioned purpose we shall be glad to send, upon request, enough of this material for making up a mattress slip cover for testing purposes. Address your letter to E. I. du Pont de Nemours & Company, Inc., Fabrikoid Division, Newburgh, New York.



Pouch-type bag; 50-stick capacity



Knapsack-type bag permits freedom of hands in climbing



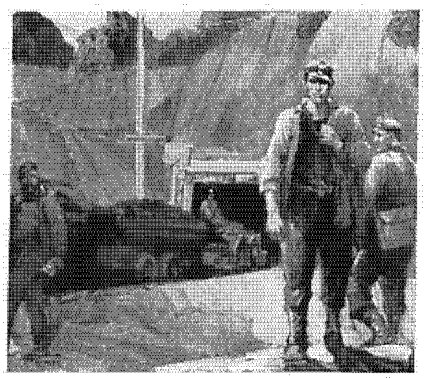
Knapsack-type bag; 125-stick capacity

SERVICEABLE POWDER BAGS

Those made of du Pont Ventube Fabric are especially designed for use in underground workings

THE mining industry today is constantly alert to adopt new devices that will make mines safer and more efficient in operation. This modernization of equipment is being carried out even to the smallest detail, one of the newer steps being the adoption of special bags for carrying high explosives to the working faces.

It is the general practice in many coal and metal mines to store explosives in a central magazine from which sufficient supplies are carried to the various faces for one round of holes or for one shift's work.



In the past these powder bags have been made of untreated canvas or other fabrics which have usually proved unsatisfactory on account of their extremely short life. Dry rot, fungus, acid water, humidity and all similar underground conditions quickly take their toll, and the bags rot and become either useless or dangerous. Should a bag containing explosives tear or come apart in use, it might result in a serious accident.

Mindful of such a possibility, several leading mine operators came to the du Pont Company, some time ago, with the suggestion that we develop a bag that would withstand the destructive action of underground use and the many severe conditions to which such bags are subjected. For years the company has been manufacturing specially treated and coated fabrics for use in the construction of du Pont Ventube, the flexible air duct for auxiliary mine ventilation. This material proved admirably adapted for making bags that would eliminate the deficiencies of the ordinary powder bag and render long service in underground use. The fabric used exclusively in the construction of du Pont powder bags is a strong jute cloth, which is treated and coated with a special rubber compound, making it waterproof and resistant to the destructive agencies previously mentioned. These bags are strongly sewed with a special thread that has also been treated to render the maximum of service and to permit of carrying explosives safely and efficiently.

As the requirements vary in different mines and localities, du Pont powder bags are manufactured in three different types, each adaptable to specific mine conditions. They are supplied in both knapsack and pouch types with capacities ranging from fifty to one hundred and twenty-five sticks. One type has been developed especially for carrying du Pont Pellet Powder. These bags are 8¼ inches long, 9½ inches deep and 3 inches wide, and they are made to accommodate twenty-five sticks, 1⅛ inch in diameter, or fourteen sticks, 1⅜ inch in diameter.

Mine operators who are interested in these accessories should address their inquiries direct to E. I. du Pont de Nemours & Company, Inc., at Fairfield, Connecticut.

The
DU PONT
MAGAZINE

Published and copyrighted by
E. I. DU PONT DE NEMOURS & COMPANY, Inc.
WILMINGTON, DELAWARE
Subscription, $1.00 the year
E. R. MANCHESTER ..... *Editor*
Publishers may reprint, with credit, all articles and illustrations except those carrying special copyright. Electrotypes will, when possible, be furnished on request.

Vol. XXII MARCH, 1928 No. 3

THE COAL MINING INDUSTRY

THIS is written on the 120th anniversary of an experiment that greatly influenced American history. Judge Jesse Fell, of Wilkes-Barre, Pennsylvania, on February 11, 1808, wrote this record on the fly-leaf of a book:

> "Made the experiment of burning the common stone coal of the valley in a grate, in a common fireplace in my house, and find it will answer the purpose of fuel, making a clearer fire at less expense than burning wood in the common way."

Anthracite and bituminous coal deposits were known long before that time. Some coal had been mined and used as an industrial fuel in pre-Revolutionary days. Fell proved its value as a household fuel. Coal production in the United States from 1807—the first year of record—to 1820 was only 15,000 net tons of anthracite and bituminous coal from mines in Pennsylvania and Maryland.

For more than a century coal has been the main source of mechanical energy. The United States produces nearly one-half of the world's supply, and our nation's industrial status today is a reflection of that fact. During 120 years, including 1927, estimated, the combined production of anthracite and bituminous coal in this country has amounted to 18,000,000,000 net tons. Last year the estimated total was 593,920,000 net tons, about seven-eighths of which was bituminous coal.

Du Pont products have figured in the development of this industry practically from the beginning. In the early days black powder was transported overland from the Brandywine Mills to the anthracite field. The first du Pont powder mill built outside the State of Delaware was established to serve the coal trade. In fact, the coal industry and the explosives industry have grown up together. Last year approximately 205,000,000 pounds of explosives were used in our nation's coal mines, and of that total the du Pont Company supplied about 72,000,000 pounds, or 35 per cent.

The du Pont Company serves the coal producers with black powder, permissible explosives, pellet powder, blasting accessories, Ventube, paint and various other products. Appropriately, therefore, the cover illustration this month portrays the tipple of a bituminous coal mine. It symbolizes the industry that has made our present-day civilization possible.

A HELPFUL PAINT MANUAL

THE fifth edition of the book entitled *Principles and Practices of Upkeep Painting* is ready for delivery. This is a complete guide for the plant manager, plant superintendent, or chief engineer to follow in the maintenance of property under his care. It is a 240-page book, bound in Du Pont Fabrikoid, containing a color chart of du Pont paints and varnishes. It is mailed without cost to executives who send their business card or letterhead to E. I. du Pont de Nemours & Co., Inc., Public Ledger Building, Philadelphia, Pa. Extra copies are available at $1.50 each.

WHERE SHALL WE DINE?

(Continued from page 4)

antique gold finish, takes the place of a moulding between the ceiling and the side walls and serves to complete the balance of the color scheme along with the gold cloth draperies and the curtains, which are apricot in color.

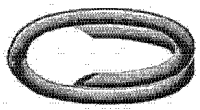
The dark rich tones in the carpets provide a ground for the tables which are painted in pale red. The chairs are white, relieved with gold recessed striping and upholstered in apricot corduroy.

The artist who for the first time learns of Fabrikoid as a material of artistic worth acquires a new respect for it: he can lend new variety and interest to his offerings through its use.

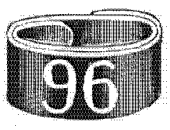
Its very construction makes it inherently practical. It is waterproof, scuffproof, cleanable and long wearing. Fabrikoid may be had in grades, designs and colors appropriate for wall coverings, decorative screens, draperies and furniture coverings. Moreover, it has unlimited possibilities for individual hand decoration through the use of paints, enamels, gold-leaf, inks and other mediums.

POULTRY LEG BANDS

DEVICES of all kinds have been produced to simplify the chicken farmer's daily tasks, and one of the most practical helps is the Pyralin leg band, colored to identify a chicken's age, egg production, and so on.



After experimenting with various materials, the National Poultry Band Company of Newport, Kentucky, selected Pyralin as most suitable for manufacturing these bands. The extreme flexibility of the material makes it particularly adaptable, since the bands can expand as the chickens grow, thus saving time and trouble of changing. Moreover, the large variety of colors available and the sanitary qualities recommend it for this use.



Pyralin bands are easily snapped in place, do not cut the chicken's leg as steel bands do, and can be kept clean with a damp cloth, so that they may be used over and over again. Further information about them may be obtained from the manufacturer.



This is the "Flordellen," built like a parlor car and equipped with all modern conveniences of a home. The body is Duco-finished

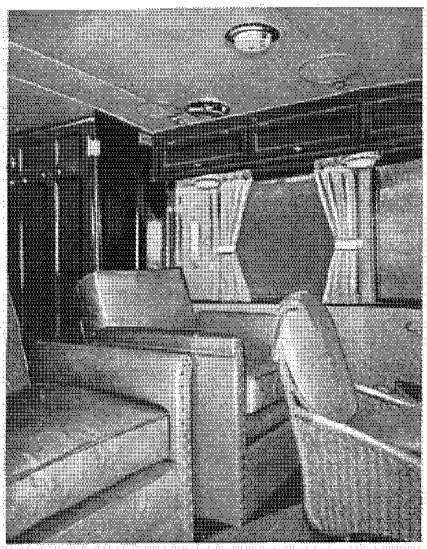
A HOME ON THE HIGHWAY

The "Flordellen" is not merely a modern bus for transportation. It is a completely equipped and furnished house on wheels

THE de luxe traveling home of Leonard S. Whittier, of Elmira, New York, embodies everything for comfort to be found in a house on wheels. Whitfield & Sons, Inc., of Penn Yan, New York, who designed and built the body, incorporated the best principles of modern coach work, and the finished result is all that could be asked for in a private railroad car. The equipment and appointments are notably fine and unusually complete.

The bus chassis has a 200-inch wheel base, with a frame extension to carry the long body, measuring thirty-one feet from tip to tip. A 2,000-watt electric plant furnishes light and power to operate heaters, a Frigidaire, electric stove, an air compressor to force water to the bathroom and kitchenette, power fans, and forced draft ventilators for the kitchen and toilet. An auxiliary six-volt lighting and power circuit for the ventilating system is also installed.

In the owner's salon—it accommodates two people—are found a Pullman bed, wicker chairs, wardrobe, bookcase, built-in radio with inside aerial, spinet desk, lockers, cupboards, and so on. The interior trim is in gray-green leather, with crepe mohair drapes of orange, green and brown stripes. The woodwork is mahogany, dull-rubbed finish. On the left of the aisle, over the wheel house, is the Frigidaire, next the kitchen sink, and an electric water heater. An electric stove, with oven, completes this equipment. The air-compressor and the motor and refrigeration coils are housed under the stove. Across the aisle is the bathroom, complete in all appointments, including a shower. In the driver's compartment are accommodations for two people. Daytime lounging chairs, of special design, are converted into beds at night. The car windows are made of non-shattering glass, and bronze screens with ventilator openings are also installed. The chauffeur's luggage, tent and bedding are carried on the roof with the canoe.

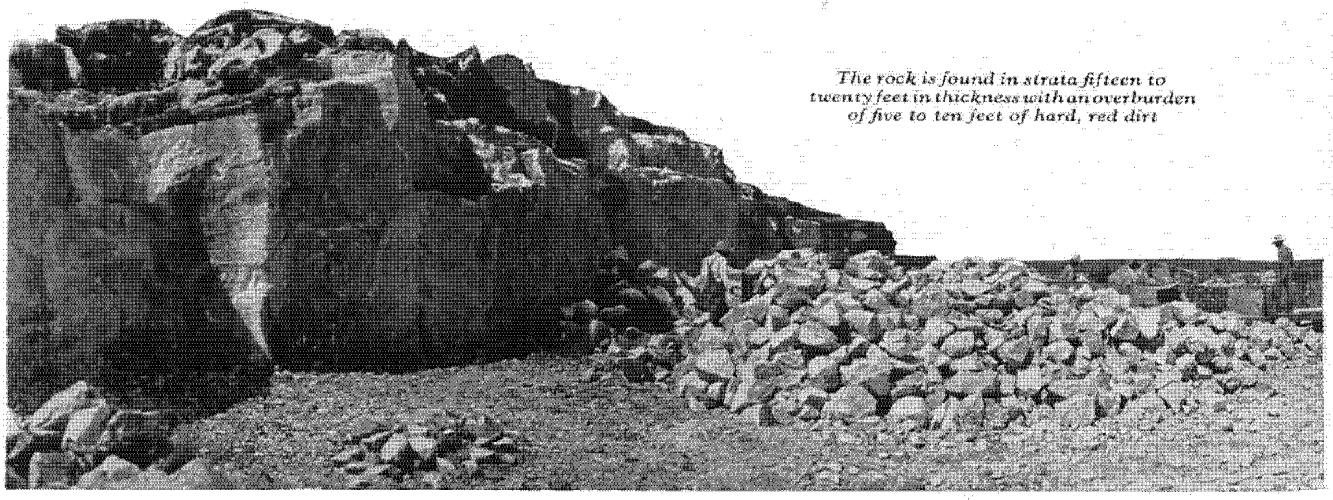


Interior of the forward compartment. Note the comfortable easy chairs

No detail of utility or beauty has been omitted. Marine instruments for weather forecasting, a ship's clock, chart board, cigarette lighters, mirrors, roll-sunshade curtains and a chime whistle are some of the other fittings.

The car body is paneled in aluminum and finished in Duco—lush or como green for the upper part, a Picador cream belt, box elder green panels, with mouldings in light tan, relieved by bronze striping.

An enduring finish on such a vehicle is absolutely essential, since seldom if ever is the coach afforded garage protection while on the road. To meet these all-weather conditions, it is natural that Duco should have been chosen as the finish for the body of this traveling home.



The rock is found in strata fifteen to twenty feet in thickness with an overburden of five to ten feet of hard, red dirt

KEENE'S CEMENT COMES FROM MEDICINE LODGE, KANSAS

Best Brothers, the largest producers of this cement in the United States, have used du Pont explosives in their gypsum quarries for thirty-three years

By F. W. Harper

While Keene's Cement has been widely used in Europe since the process was discovered and patented in 1838 by R. W. Keene, of London, it was not until almost fifty years later that the material was first made in the United States. Keene's Cement is made in fixed kilns so constructed that only the gaseous products of combustion come into contact with the gypsum to be burnt, in order to avoid contamination with the ash of the fuel.

In 1887 two brothers, William C. and Thomas J. Best, who had been in the gypsum business in England, decided to erect a plant for the manufacture of Keene's Cement in this country. At that time there were no gypsum mills west of the Mississippi River, and while a number of deposits in the East were being worked, none of them was of sufficient purity either in color or chemical content for the purpose in view. Acting on information secured from the United States Geological Survey, an investigation was made of the various deposits of gypsum throughout the West. It was found that what is termed the Medicine Lodge* deposit in Kansas offered not only the largest available supply of this rock known in the United States, but also a form of gypsum which was exceptionally free from impurities.

The availability of the deposit was uncertain, for in the early days the rock had to be brought from the top of what is locally known as the Gyp Mills. This involved a seven-mile haul by mule teams over rough and dangerous roads and over bridges that were likely to be missing after each flood. It was a hard struggle for many years to establish this business, on account of manufacturing difficulties, insufficient capital, and the fact that the application of Keene's Cement required more labor and skill on the part of the plasterer than was needed in working with ordinary hard plaster. This was a serious obstacle to its wider use in a country that has experienced such a rapid growth of its cities and such a pressing need for new buildings as we have witnessed in America. The company records show that during its first year of operation the total shipments reached a value of only $404. Not until the concern had been operating for eighteen years did it reach a dividend-paying basis.

Today, after thirty-nine years of continuous operation under the same management and at the same location, the Best Brothers Keene's Cement Company operates three large mills, four quarries, and a private railroad over three miles long. It maintains branch offices in many of the large cities, and manufactures approximately seventy per cent of all the cement of this kind produced in the United States.

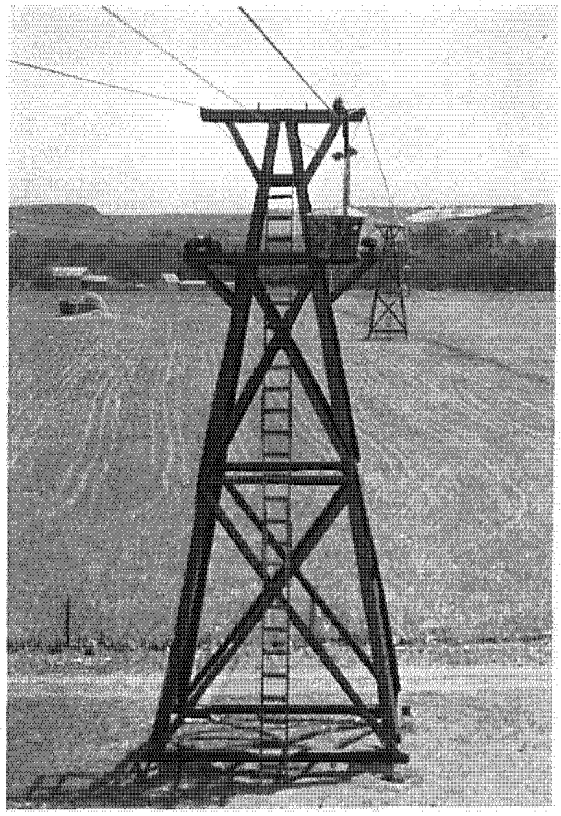
Du Pont explosives have been used practically from the beginning. While a number of different kinds were tried out during the first few years, the du Pont brand was selected in 1894 and has been the accepted standard for the past thirty-three years.

The present quarries of the company are located at Sun City, Kansas, about twenty-five miles west of the mills. Four quarries are operated and linked together by a narrow-gauge railway.

The rock is found in deposits fifteen to twenty feet in

thickness with an overburden of five to ten feet of hard, red dirt. Drilling is done with electric drills and the shots are fired by an electric battery. As the rock has to be sorted into four grades, it is desired to break it up into lumps that a man can handle, without shattering it too much, for when the rock is fragmented further it cannot be used in the process of making this cement. Accordingly, a combination of blasting powder and dynamite of low strength is used to obtain this effect. Both products are manufactured by the du Pont Company.

After sorting, the rock is loaded into small dump cars, holding four to five hundred pounds each, and is hauled over the narrow-gauge railroad to the crusher house, where it first goes through a jaw crusher. Then the broken rock passes through a gyratory crusher which reduces it to pieces of about one inch in size. In this form it is run into storage bins and from them is loaded into buckets holding somewhat more than a half-ton apiece. These are hauled over an aerial tramway from the top of the hills to a discharge terminal in the valley alongside the main line of the Atchison, Topeka and Santa Fe Railway.



A section of the one and one-half mile aerial tramway from the quarries to the main line of the Santa Fe Railroad

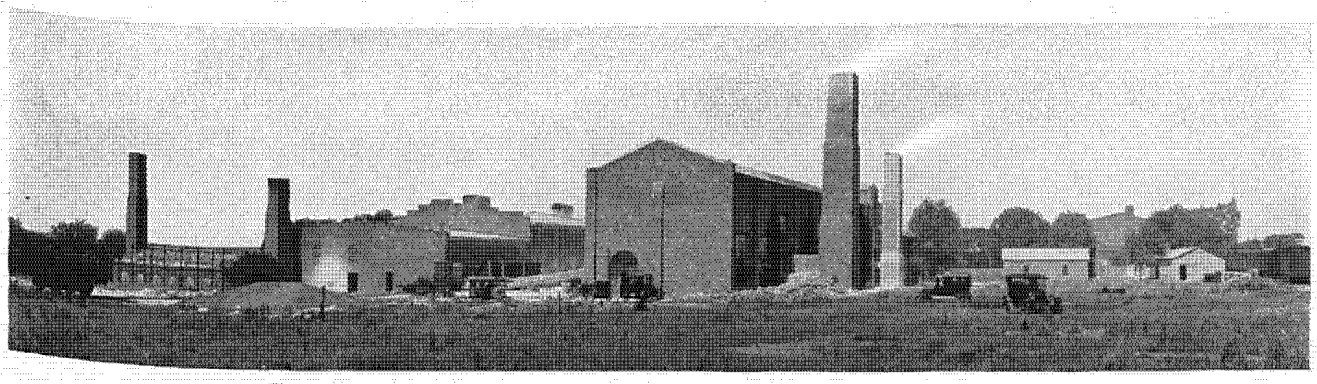
On arrival at the mills the rock is unloaded into bins and from thence goes to the 120-foot rotary kilns where it is calcined. It is then passed through a sixty-foot cooler and is distributed by a system of overhead conveyors to the different mills where it is handled on burrs, Raymond mills, and other equipment, depending upon the grade of cement the customer may desire.

Best Brothers Keene's Cement is made in five grades and is used not only for general plastering but also forms the base for most of the beautiful effects in scagliola or artificial marble, travertine, Caen stone, and other ornamental finishes which are so widely used in many of our high-class buildings in this country.

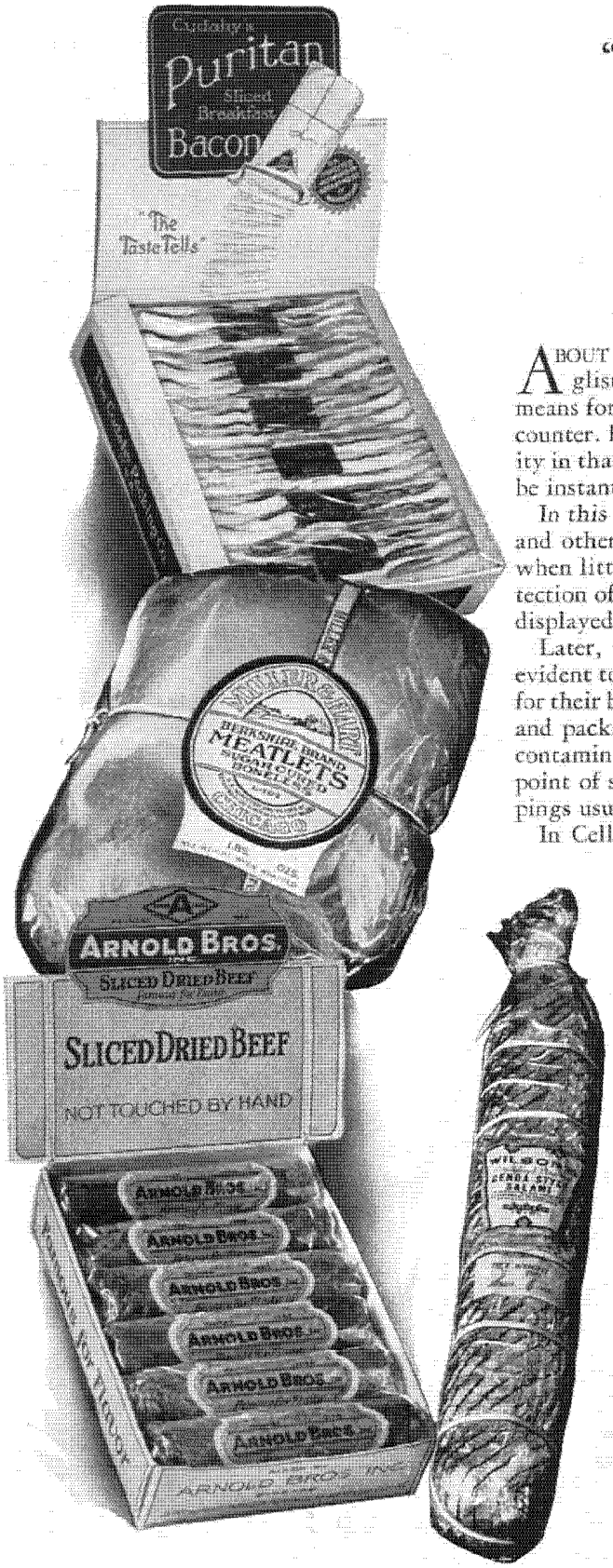
Today the American people are more interested in architecture and the decorative arts than ever before in our history. That is probably a reflection of the present era of prosperity and the fact that more people can now afford to build and maintain more beautiful homes and structures of all kinds than has been possible heretofore. Under such conditions it would appear that the future is most promising for the manufacturers of Keene's Cement.

---

*Medicine Lodge takes its name from the "Lodge" of the Indian medicine men who met there probably centuries before the white man invaded the western prairies. It was at this place in 1867 that the Government signed its famous peace treaty with the five tribes of plains Indians, which not only resulted in opening up the West for the completion of a transcontinental railroad, but also set aside the territory which later became the State of Oklahoma. It is interesting to note that the troops accompanying the Peace Commission were under the command of General Sherman. They were guided by "Buffalo Bill" who was scout of the expedition, and the event was reported for the *New York Tribune* by a reporter named Stanley. He later gained fame for his expedition into Africa. The citizens of Medicine Lodge celebrated this historical event last October by erecting a monument and holding a three-day celebration and pageant.



The mills are located at Medicine Lodge, Kansas, twenty-five miles from the quarries



"BRINGING HOME THE BACON"

How Cellophane literally carries out a well-known figure of speech

By A. W. SHAFFER

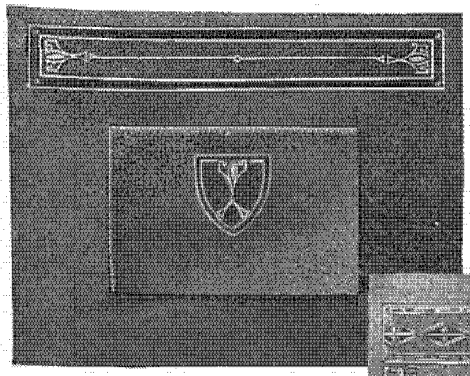
ABOUT three years ago a wide-awake meat packer saw in the glistening, transparent wrapper used on candy boxes the ideal means for protecting his sliced bacon when displayed on the dealer's counter. He recognized an additional and highly advantageous quality in that this wrapper permitted the attractiveness of his product to be instantly visualized by the prospective customer.

In this manner one of the most useful methods of marketing bacon and other dried and smoked meats was conceived. In the old days, when little thought was given to safeguarding health by strict protection of all foodstuffs from the dangers of contamination, bacon, if displayed at all, was displayed "in the open"—uncovered.

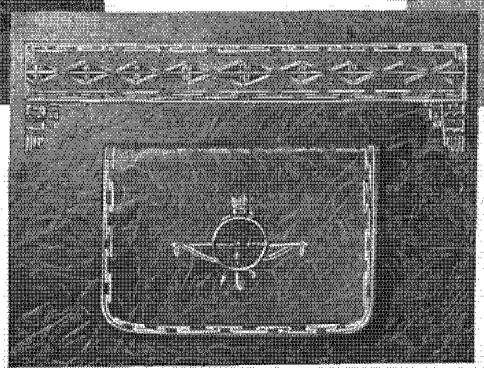
Later, when the importance of protection for foodstuffs became evident to health authorities, the packers adopted a package wrapper for their bacon and similar products. Although such protective wraps and packages generally solved the problem from the standpoint of contamination, they failed from the important merchandizing standpoint of showing the goods to the best advantage, since such wrappings usually hid the contents completely.

In Cellophane, the packers found the means for providing both complete protection and perfect visibility and as a result, this absolutely sanitary and transparent material is used today on the millions of packages of bacon marketed by over two hundred packing companies. In the packing industry this interesting development of a transparent package has not been confined to bacon alone, for during the past year many companies have begun to wrap sausage, dried beef, frankfurters, bacon squares, ham butts, meat loaves and even whole hams in Cellophane.

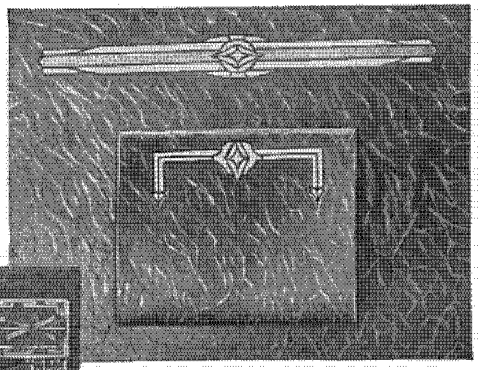




An interior Fabrikoid panel appointment in use on all Oakland open-car models



Below—This stylish door and panel design was worked out for Chandler open-car models



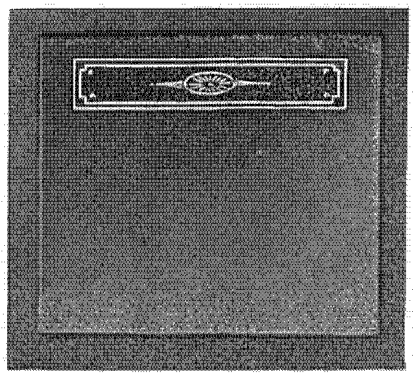
The distinctive custom door and pocket panel design created for Pontiac open cars

NEW PANEL TRIMMING

The automotive style engineer welcomes Fabrikoid as the smart interior panel decoration for the latest open-car models

THE luxuriousness which can be incorporated in distinguished motor designs is well demonstrated by the recent creations of our foremost custom body builders. The treatment of the interior of the closed body is executed with artisanship and taste of the highest order. Broadcloth, broad lace, Bedford cord or needlepoint is used in charming color schemes in the same interesting manner as that applied by the modiste or the decorator. Discriminating taste manifests itself throughout the interior appointments—in the hardware, companion cases, arm rests, assist cords, hassocks and other refinements. Door panels are trimmed with medallion designs in needlepoint, broad lace, inlaid wood or tooled leather to complete those minute details which make perfection.

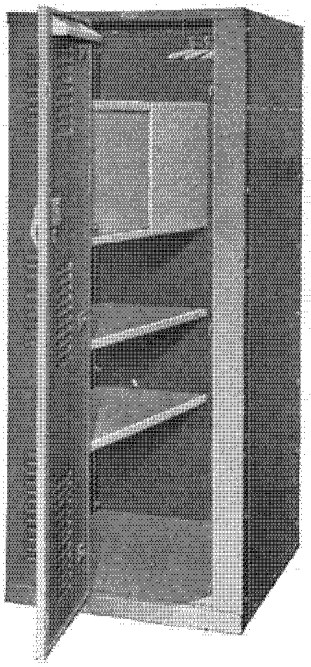
This same attention to the smallest detail reveals itself in the less formal modern utility cars. The convertible type as well as the open sport type is rapidly gaining favor. In the sport car the artist designer can reveal an inspiring originality in doing things just a little differently. Considerable thought is given to the comfort of the passengers, the accommodation of luggage, and the emergency seat arrangement. The sporting motif appropriately characterizes the new sport car from the radiator to its smartly tailored top.



Chrysler roadster models carry this tooled Fabrikoid pocket panel to complete the interior decoration

Leather or Fabrikoid is used for seat upholstery to provide the rugged appearance and serviceability correctly applied to this type of car. Fabrikoid is also used extensively in the trim work for door panels, backs of the front seats, instrument boards, kick pads and bindings. For this use it is thoroughly practical, first, because it can be economically fabricated by the body builders and second, because the color and texture of the material do not vary in the pattern. Thoroughly washable and waterproof, it possesses a distinct advantage of utility. It can be obtained in a wide variety of patterns and color effects to match the material used for upholstery.

In order to provide the automotive style engineer with a new material for trimming the inside of the door panels on the sport car, du Pont artists have created custom designs and decorative panels, using distinctive motifs and decorative schemes expressive of the individuality of the motor car. These designs are embossed in contrasting colors in order to bring out the full beauty of line and detail. Those illustrated on this page were produced for the Chandler, Chrysler, Oakland and Pontiac open-car models, and actual samples, made at Newburgh, New York, were supplied by the Fabrikoid Development and Advisory Service.



THE MEDART GOLF LOCKER

This new improved locker is equipped with shelves, coat hangers and a private compartment. It is Duco-finished

SPECIALIZATION in design is the order of the day, and so we invite your attention to the specially-designed Medart golf locker pictured here.

This locker embodies all of the features to meet the most exacting requirements of the golfer. It is twenty-four inches wide, twenty inches deep and sixty inches high—inside dimensions. The twenty-inch depth is just right for coat hangers. The twenty-four inch width is the result of a painstaking survey to determine just how much locker space a golfer really needs.

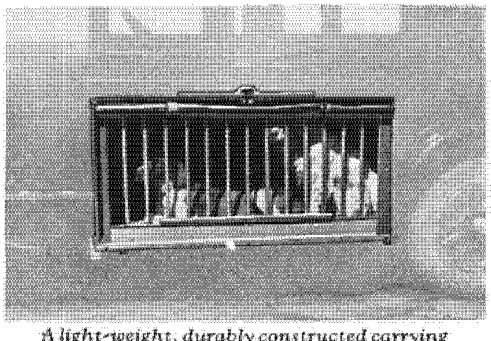
One important requirement is an inner compartment for the secure storage of golf balls and other personal articles of value. In the Medart golf locker there is an inside compartment with a sliding door, equipped with a companion lock, which responds to the same key used for opening the outer door. However, the lock of the inner compartment is not master-keyed, thus making the compartment inaccessible to locker-room attendants. The outside lock is the pin-tumbler, master-keyed type, controlled by a center-grooved key, and is built right in the door handle, which is made of rustless, aluminum alloy, die cast, and heavily nickel plated and polished.

The finish on this golf locker is an improved feature of this recent addition to the Medart line. For many years the only satisfactory finish for lockers was considered to be two coats of enamel, each baked on separately. It is not surprising that when du Pont Duco became available, members of the Medart research staff thoroughly investigated it. Today, in fulfillment of their enthusiastic recommendation, the Medart golf locker is finished in Duco. White has been adopted as the standard, although any color can be provided to meet special requirements.

CARRY YOUR DOG IN COMFORT

Let him ride in a crate attached to the running-board of your car

HOW often have you been ready to get into your car for the trip home after the day's shoot and found that the dogs decided to cool off by covering themselves with mud from a mud-hole? The Bird Dog's Palace, pictured at the right, makes this unpleasant happening less disastrous to the interior furnishings of your car. It provides your dogs with a comfortable, warm housing for the return trip after their day's work is over. This crate is likewise adaptable for carrying other household pets on a motor trip.

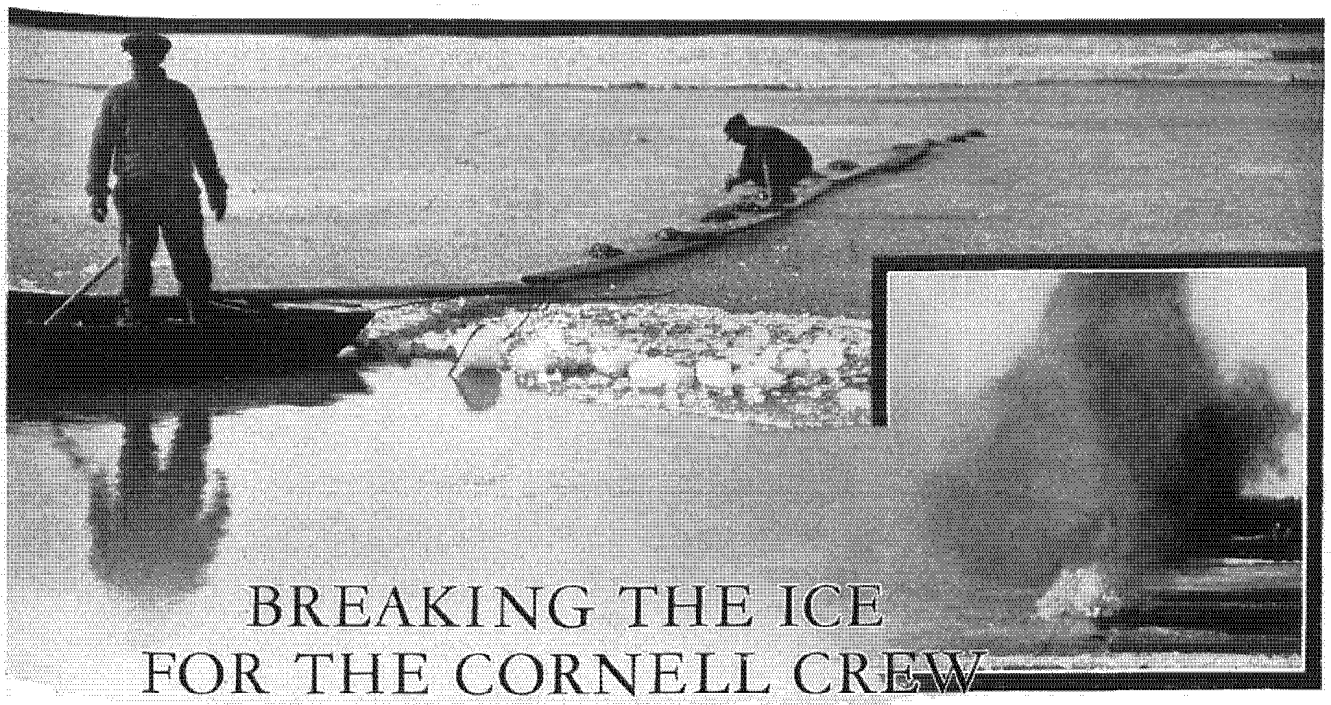


A light-weight, durably constructed carrying crate finished with Duco

The Bird Dog's Palace shown is the two-dog size, 25¾ inches high by 12½ inches wide and 48 inches long. The carrying crate consists of sheet steel at the ends and the back side, with hollow steel tubing on the exposed side. Metal primer is used throughout with one coat of du Pont Blue Diamond Sanding Surfacer to prepare the steel sheeting for an attractive finish of two coats of Duco. The reinforced flexible back on the crate is du Pont Drab Back Top Material, reinforced every 2½ inches with ⅞-inch sheet steel formed with round edges, giving it great strength. The storm curtain is of the same du Pont top material and the roof is of 40-ounce Cobra du Pont Closed Car Decking over a solid white pine roof. A panel across the entire front at the bottom prevents floor draft.

The crate has adjustable screw-type clamps and does not touch the body of the car. The sliding door operates vertically, allowing the dogs to come in and out without the driver leaving his seat. All trimmings are nickel plated.

This equipment is manufactured by the Dwight McBride Yellow Pine Sales Company, of Golden City, Missouri. Further details about it may be obtained by writing to the company at that address.



BREAKING THE ICE FOR THE CORNELL CREW

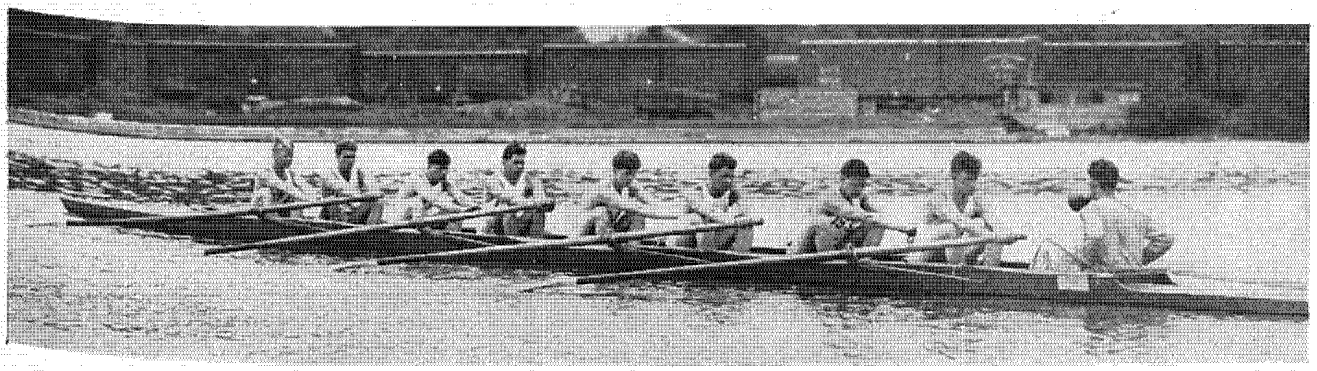
The Ithacans were able to make their way to clear water for an extra two weeks' practice last spring

INTERCOLLEGIATE competition in sports is becoming keener every year. Football coaches find plenty of men, eager to begin practice, but the shortness of actual hours available for sports hampers them to a marked degree.

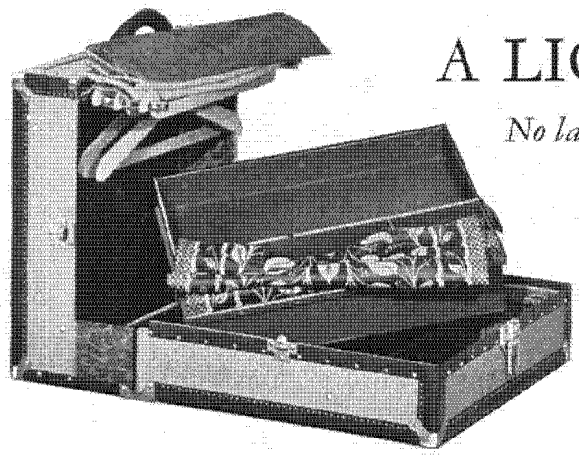
Crew coaches are continuously beset with worries, mostly caused by weather conditions. It is a hard job to get the varsities, junior varsities, and light-weight crews in proper shape early enough in the spring. The season for practice opens shortly after the Christmas recess. For approximately two months the eastern and northern colleges hold crew practices in stationary "shells" indoors. Generally swimming pools are utilized for this purpose.

The country's leading crews, representing Cornell, Columbia, Yale, Harvard, Princeton, Navy and Wisconsin, because of their geographical location have to fight Old Man Winter continually in an effort to go through with their spring work-out schedules.

Early last March the Cornell varsity eight, after weeks of indoor practice, was impatient to reach the open water and again hear the coxswain bark his orders. But Cayuga Lake, around the boat house in the inlet, was securely "iced-in" with little prospect of an early thaw. Romane Berry, graduate athletic manager of the Cornell University Navy Association, was not disposed to wait for it. Accordingly, several charges of 40 per cent Red Cross Extra dynamite were placed about four feet apart, in a row, leading from the boat house to clear water. The charges were mudcapped and fired with electric blasting caps by means of a blasting machine, and the varsity eight stroked through the ice blockade to clear water.



The Cornell varsity eight rowing out to clear water through the channel opened up in the ice



A LIGHT-WEIGHT TRUNK

No larger than a good-sized hat box—yet it meets the demands of a week-end trip.

FOR the prolonged week-end trip, or the motor tour, the proper luggage is quite essential. Realizing the drawbacks of many types of ordinary hand luggage, the Hartmann Trunk Company developed the Aerobe, illustrated here. Hardly larger than a good-sized hat box, this ingenious innovation is a marvel of spaciousness. Its wardrobe-type hangers will accommodate three suits or five dresses and will keep them fresh and unwrinkled.

There is ample room for accessories in the large tray, snugly covered with a protecting dust curtain to guard against soiling the contents. Even a laundry bag is included.

As the name implies, this latest addition to the Hartmann line is extremely light in weight, yet ruggedly built for long, hard service. A specially developed type of Fabrikoid, a pyroxylin-impregnated duck made for the Hartmann Company and called Hartmann Ducord, covers the exterior. This light-weight material is sturdy, resists countless hard knocks, is waterproof and practically puncture-proof. When soiled, it is easily washed and cleaned with soap and water.

Many striking harmonious color schemes have been obtained by using Fabrikoid as a covering material. The exteriors of the new Aerobes are as strikingly modern and smart as the interiors are compact and trim.

The Hartmann Trunk Company, of Racine, Wisconsin, will gladly answer further questions about the Aerobe and the many other models offered for sale.

A NEW CHEMICAL DISCOVERY

(Continued from page 1)

brittle and has almost totally lost its rubber-like qualities. It contains no Neozone. The sample above it was tested for twelve days—about two and one-half times as long. It still retains its original shape and much of its original elasticity. The only difference in the composition of these two samples is that the one shown at the top of the illustration contains one per cent of Neozone.

One of the important uses for Neozone is in automobile tires. It is well known that automobile tires and other rubber articles deteriorate, lose their elasticity and toughness, even when they are stored in a cool, dark place. The deterioration of a tire that is carried as a spare is still more rapid, because it is exposed to light and is heated by the direct rays of the sun. By the use of Neozone it is now possible to prevent this type of deterioration and to greatly improve the average mileage that a tire will render.

There is no rubber product whose serviceable life cannot be greatly lengthened by the use of Neozone. It is used by progressive manufacturers of fruit-jar rings to prevent the rubber from becoming hard and brittle. Makers of garden hose put Neozone into their product because it prevents the rubber cover from cracking prematurely; in fact, there are hundreds of rubber products whose serviceability has been improved by the use of Neozone. It is greatly to the credit of American rubber manufacturers that they have so quickly put this new discovery to practical use on a large scale.

IN THE NICK OF TIME

(Continued from page 3)

Other than for drilling and charging the holes, very little manual labor was required. Each shot made a clean bench and required very little work to prepare it for the drill crew.

At no time was traffic on East Ohio Street stopped for long while making a shot, nor was much time required for clearing away the débris from the street. There was no interference with railroad traffic and no damage to property.

The Honorable Charles H. Kline, mayor of Pittsburgh, was so favorably impressed with the coöperation given the city engineers by du Pont technical representatives that he wrote P. N. Denison, manager of the local du Pont office, expressing the appreciation of the City of Pittsburgh for the service they rendered.

An excerpt from his letter follows: " . . . Through the efforts of these gentlemen this dangerous ledge was removed piecemeal with no damage whatever and with but little interference to traffic. At no time was traffic blocked longer than fifteen minutes and, as a usual thing, five minutes sufficed to remove such débris as reached the street. On behalf of the City of Pittsburgh, I therefore wish to express our appreciation of the intelligent work of these gentlemen whose efforts prevented a very serious interruption to traffic on one of our main thoroughfares and very material damage to both the street and the Pennsylvania Railroad."

DU PONT

REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., Inc.

General Executive Offices

WILMINGTON, DELAWARE

All Inquiries Regarding du Pont Products Should Be Addressed to the Company—the Nearest Office

ACIDS AND HEAVY CHEMICALS

Acids, alums and miscellaneous heavy chemical products.

Philadelphia, Pa., 35th and Gray's Ferry Rd.
Newark, N. J., 256 Vanderpool Street

AMMONIA

Anhydrous and Aqua Ammonia.

Lazote, Incorporated
Du Pont Building, Wilmington, Del.

CELLOPHANE

Du Pont Cellophane Company, Inc.
New York, N. Y., Park Avenue Building
32d—33d Sts. and Fourth Avenue
Chicago, Ill., Railway Exchange Building
Michigan Avenue and Jackson Boulevard
San Francisco, Calif.
Balfour Building, 351 California Street

CHEMICAL PRODUCTS

Bronze powders, collodion, household cement, leather belting cements, Duco, No. 7 Duco Polish, No. 7 Auto Top Finish, No. 7 Nickel Polish, pyroxylin lacquers and enamels, split and patent leather solutions and other pyroxylin preparations and solvents.

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Avenue
Detroit, Mich., General Motors Building
Flint, Mich.
Parlin, N. J.
San Francisco, Calif., 569 Mission Street

DYESTUFFS

Dyestuffs and dyestuff intermediates. Rubber chemicals and seed disinfectants.

Boston, Mass., 274 Franklin Street
Charlotte, N. C., 232 W. First Street
Chicago, Ill., 1114 Union Trust Building
New York, N. Y., 8 Thomas Street
Philadelphia, Pa., 126 S. Front Street
Providence, R. I., 709 Hospital Trust Bldg.
San Francisco, Calif., 569 Mission Street
Bombay, India, Jacob Sassoon Building
Rampart Row, P. O. Box No. 1010
Kobe, Japan, No. 83 Kyomachi
P. O. Box No. 384
Hankow, China, No. 23 Tung Ting Road
Shanghai, China, Robert Dollar Building
3 Canton Road, P. O. Box No. 393
Tientsin, China, 52 Taku Road

MOTION PICTURE FILM

Positive and Negative.

Du Pont-Pathé Film Manufacturing Corp.
New York City, 35 West 45th Street

EXPLOSIVES

Explosives for all industrial, agricultural, military and sporting uses.

Birmingham, Ala., 601 Brown-Marx Bldg.
Boston, Mass., Harvey Building,
Chauncey and Bedford Streets
Chicago, Ill., 1814 McCormick Building
Denver, Colo., 406 Denver National Bank Building
Duluth, Minn., Hartley Building
742 E. Superior Street
Huntington, W. Va.
Suite 1004 Union Bank Building
Joplin, Mo., 816 Joplin Nat'l Bank Building
Juneau, Alaska, Room 503
Goldstein Building,
Kansas City, Mo., 210 Scarritt-Arcade Bldg.
Miami, Florida, 305 Clark Building
343 S. W. North River Drive
New York, N. Y., Graybar Building
420 Lexington Avenue
Pittsburgh, Pa., Fulton Building
Portland, Ore.
American Bank Building
St. Louis, Mo., 17th Floor, Arcade Building
San Francisco, Calif., Suite 403 Balfour Bldg.
351 California Street
Seattle, Wash.
Hoge Building, 2d Avenue and Cherry St.
Scranton, Pa., 710 Traders Bank Building
Spokane, Wash.
721–22 Old National Bank Building
Riverside Avenue and Stevens Street
Springfield, Ill., 716 Reisch Building
Wilkes-Barre, Pa.
728 Second National Bank Building

FABRIKOID

Fabrikoid for auto and furniture upholstery; auto topping, bookbinding, luggage, novelties, etc. Tontine Washable Window Shade Cloth.

Newburgh, N. Y.
San Francisco, Calif., 569 Mission Street

RUBBER PRODUCTS

Pontop for auto tops and curtains. Raincoat fabrics, gum rubber, Rug Anchor, Ventube for mine ventilation. All kinds of rubberproofing.

Fairfield, Conn.
San Francisco, Calif., 569 Mission Street

RAYON

Du Pont Rayon Company, Inc.
P. O. Station B, Buffalo, N. Y.
Greensboro, N. C.
708 Jefferson-Standard Building
Greenville, S. C., 408 Woodside Building
New York, N.Y., Park Avenue Building
32d—33d Sts. and Fourth Avenue
Old Hickory, Davidson Co., Tenn.
Philadelphia, Pa.
1209 Land Title Building
Providence, R. I., 941 Hospital Trust Bldg.
Reading, Pa., 31 N. 6th Street
San Francisco, Calif., 569 Mission Street

LITHOPONE, DRY COLORS & PIGMENTS

Products for paint, ink, oilcloth, linoleum, rubber and other industries.

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Ave.
Cleveland, Ohio, 876 Union Trust Building
Los Angeles, Calif., Citizens' Warehouse
1904 Atlantic Street
Newark, N. J., 256 Vanderpool Street
Philadelphia, Pa., 3500 Gray's Ferry Road

PAINTS, VARNISHES, DUCO (FOR HOME USE)

A complete line of paint and varnish products for all home and industrial uses.

Boston, Mass., Everett Station 49
Brooklyn, N. Y.
Building No. 26, Bush Terminal
Chicago, Ill., 2100 Elston Avenue
New York, N. Y., 21 E. 40th Street
Philadelphia, Pa., Public Ledger Building
Independence Square
San Francisco, Calif., 569 Mission Street

PYRALIN AND VISCOLOID

Pyralin—Arlington, N. J.
Viscoloid—Leominster, Mass.

Pyralin toiletware of Amber, Pearl, Shell and Ivory and combinations of these colors. Novelty and transparent sheeting, rods, tubes and beading. Also Cleanable Collars.

Boston, Mass., Harvey Building
52 Chauncey Street
Chicago, Ill., North American Building
New York, N. Y., 330 Fifth Avenue
San Francisco, Calif., 569 Mission Street

PACIFIC NOVELTY DIVISION

Toys, rattles, infant sets, hair ornaments.

New York, N. Y., 330 Fifth Avenue

When you are in Atlantic City, New Jersey,
Visit the du Pont Products Exhibit, at 1121 Boardwalk

Your shades can be kept as clean as your windows!



Make this test yourself... a genuine Tontine window shade for $1.00

(Special Note: This offer is for introductory purposes only. That is the only reason we can let you have a genuine Du Pont Tontine Shade at such a saving. Only one test shade can be sent to an individual.)

AN unusual opportunity! A genuine Du Pont Tontine shade for a dollar. Tontine is the washable window shade. It is bringing fresh beauty to thousands of American homes, a beauty which lasts for years.

Neat and trim in appearance, beautiful in modern tones of white, cream, ecru or green . . . your test shade will be sent you complete, ready to bring the charm of properly controlled light into any room you select.

A Test That Will Amaze You!

Pin a dollar to the coupon below and send for your test shade today . . . then make this test for yourself. Let your small son make finger marks over it. Or deliberately soil it yourself. Then, using plenty of water, suds and a brush, see how thoroughly the dirt vanishes and the original brightness and charm reappear. . .

Then you will know why Du Pont Tontine is preferred by those who require the best . . . by those who want their shades always to be as clean as their windows . . . by those who take pride in the spick-and-span beauty of their homes.

There is no secret about Tontine's unusual service. Tontine is impregnated with pyroxylin . . . forced through and through the fabric. This overcomes the faults that ruin ordinary shades.

And all you have to do to find this out is to pin a dollar to the coupon below, give the necessary details and send it now.

A Truly Washable Window Shade

You can take a shade of Du Pont Tontine and scrub it vigorously. Drench it (flow water over it)—just as if rain had accidentally struck it. But no harm is done. You can twist and crease it between your hands—but it will not flake or crack or "pinhole." It's as near lasting durability in shade fabric as any textile material can ever hope to be.

Today's Brightest Thought

Here's a suggestion! Your bathroom shades probably are subject to harder use and abuse than any others in your home. What a thorough test this provides for Tontine!

Put this shade up in your bathroom. After a week or two look it over carefully and then prove to yourself how washable Du Pont Tontine will solve once and for all your problem of keeping your shades as clean as your windows.

Follow these Details

Measure width of shade you wish to replace with the Tontine test shade. Measure tip to tip, including metal pins at ends of roller (see diagram below). Measure also length of shade unrolled. Specify which color is wanted: White, Cream, Ecru or Green. Fill out coupon fully. Pin $1.00 to coupon.

DU PONT

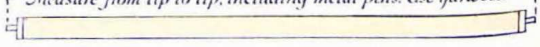
REG. U. S. PAT. OFF.

TONTINE

REG. U. S. PAT. OFF.

THE *WASHABLE* WINDOW SHADE

Measure from tip to tip, including metal pins. Use yard stick



E. I. DU PONT DE NEMOURS & CO., Inc., S. Plank Road, Newburgh, N. Y.

Canadian subscribers address coupons: D.M.—March
Canadian Fabrikoid Limited, New Toronto, Ontario, Canada.

Herewith $1.00 pinned to coupon. Please send me complete Tontine shade ..... inches wide, tip to tip, and ..... inches long (shade unrolled).

☐ White ..... ☐ Ecru ..... ☐ Cream ..... ☐ Green .....
Check color desired.

Name .....

Address .....