

The
DuPont
Magazine
Dec. 1923



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EXPLOSIVES ~ SERVICE

THE DU PONT MAGAZINE



Vol. XVII

DECEMBER, 1923

No. 12

Confidence in the Future is Warranted

The readjustment through which business has been going has been about completed

WHILE there is no good reason to expect that the next six months will witness a marked increase in business activity, neither is there reason to fear any marked decrease. The outlook is rather for the continuance of activity at about its present level, with perhaps some moderate improvement as confidence in the future becomes more general.

There are numerous indications that the process of readjustment through which business has been going has been about completed. The volume of trade apparently expanded somewhat more than seasonally in October; production in a number of industries increased, while in others the decreases were at a lesser rate than had been prevailing; prices have given evidence of at least temporary stabilization; and the recent easing of money rates, following their very moderate seasonal increase during the summer and early autumn, has made it clear that there has been no freezing of credits nor any excessive demand for funds such as ordinarily characterize the early stages of a business depression.

It is now more than half a year since business reached a peak and started to decline. In this period the general volume of business has suffered a sizeable reduction—some 10 or 15 per cent, according to various estimates. Yet this recession has occurred without forced liquidation or credit strain. The average of wholesale prices, as measured by the index number of the U. S. Bureau of Labor Statistics, is now only about 4 per cent below last spring's peak. Money rates are at approximately the same level as they were when the business recession began. No great increase in

By F. LESLIE HAYFORD
Economic Statistician
General Motors Corporation

bank loans has taken place. Only a slight reduction in industrial employment has occurred. Building con-

struction, which it was feared last spring would be drastically curtailed, has continued active and seems likely to do so for a considerable time longer. Railroad buying, which was one of the stimulating influences in the earlier part of the present business cycle, has continued large and announcement has been made that further large sums will be spent next year.

In the light of these facts the expectation of the continuance of good business during the next six months seems to be entirely warranted.

General Business Activity

The volume of trade was apparently somewhat larger in October than in September. While this is to be attributed chiefly to seasonal influences, the improvement seems to have been at least a little more than seasonal.

Bank debits outside New York City, which are probably the best single index of the general volume of trade, were 14 per cent larger than in September, an increase somewhat greater than the usual seasonal gain. Freight car loadings continued to exceed a million cars per week, although ruling slightly below the record figure of the last week of September. In the five weeks ended November 3 the number of cars loaded totaled 5,346,770, an increase of 2 per cent over the total for the preceding five weeks.

In general retail trade has been reported good. Combined sales of the two leading mail-order houses showed an increase in October of 45 per cent over the

September total. This evidently was largely a seasonal gain, since last year the October increase over September was 41 per cent.

Postal receipts in 50 selected cities, which tend to fluctuate with business activity, were 17 per cent larger in October than in September, an increase nearly twice as great as that shown last year.

On the whole, the indications are that October trade made at least slightly more than usual seasonal gains.

On the other side of the picture, the number of business failures increased more than is usual at this period of the year, the October total exceeding that of September by 24 per cent as against a normal seasonal increase of about 10 per cent.

Industrial Activity

Although forward buying in general continued to be restricted, a high rate of industrial activity was maintained in October and output in most industries for which figures are available was above that of September.

October automobile production as reported by the U. S. Department of Commerce, totaled 365,000 cars and trucks. This makes the eighth consecutive month in which the output of the industry has exceeded 300,000 vehicles. It is also the fifth month this year in which more than 350,000 vehicles were produced. In the first ten months of this year 3,397,000 cars and trucks were produced. This is 60 per cent more than the production of the corresponding period of last year, which, up to that time, was the record output for the industry. It is evident that the production for the 1923 calendar year will be close to 4,000,000 vehicles, or 55 per cent above that of 1922, the best previous year.

In the iron and steel industry October witnessed a continuation of the readjustment which has been in progress since early last spring. Pig iron prices were lower and the average daily rate of pig iron production was less than in September (although the total output was slightly more, because of the longer month). Steel ingot production increased in October, but this was apparently not due to an increase in new business. In the case of the United States Steel Corporation, the maintenance of a relatively high rate of operation resulted in a further reduction of unfilled orders, to the lowest point since April, 1922. Current buying, while sufficient to keep mills fairly busy, has obviously not been large enough to warrant an indefinite continuance of the present rate of activity. A marked increase in railroad orders and inquiries, however, has recently occurred. Sustained activity in

the building and automobile industries has also somewhat improved the outlook for the iron and steel industry.

Building demand continues large. Actual operations have been maintained at a high level and in October both the value of contracts awarded and of building permits issued showed considerable increases.

The cotton textile industry, in which curtailment of activity occurred during the summer and early autumn, increased operations somewhat in October, both the mill consumption of raw cotton and the number of active spindles showing gains. Prices of cotton goods have recently been stronger, although the advances have not been proportionate to the rise which has taken place in the price of raw cotton.

Commodity Prices

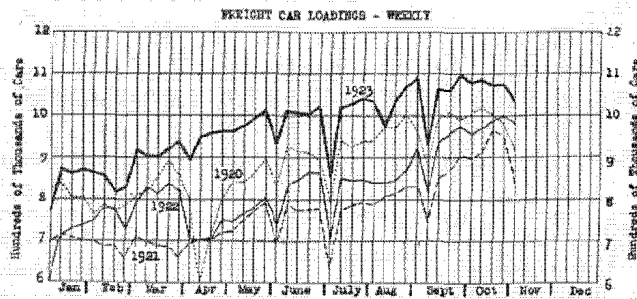
Price movements during October were of such a nature that little change occurred in the general wholesale price level. At least a temporary stabilization of average prices is indicated.

Bradstreet's index number, based chiefly upon the prices of raw material, advanced about $\frac{1}{3}$ of 1 per cent, following a rise of 1.4 per cent the month before. The index figure of the U. S. Bureau of Labor Statistics, more representative of general wholesale prices, which had risen 2.7 per cent in September, declined $\frac{2}{3}$ of 1 per cent in October. Of the commodity groups included in this index, the farm products, building materials, and housefurnishings groups showed no change; the food and chemicals and drugs groups advanced slightly; while the cloths and clothing, fuel and lighting, metal and metal products, and miscellaneous groups declined, the greatest recession occurring in the fuel and lighting group, in which appreciable declines were recorded in the prices of bituminous coal, coke, crude oil, and gasoline. While the general wholesale price level is approximately the same as it was a year ago, there has been considerable readjustment in the relationship of the prices of individual commodities, and the spread between the commodity groups composing the index number of the Bureau of Labor Statistics is considerably less than it was last year.

Banking and Credit

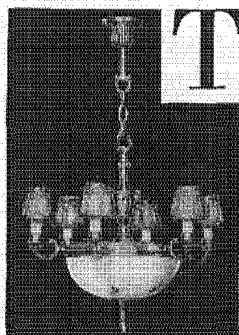
An easing of money rates occurred in October. Stock Exchange time and call money were both lower, the rate on six months bank acceptance was reduced slightly, and at the end of the month there was a decline in the maximum rate on commercial paper. The relaxation of the commercial paper rate is significant

(Continued on page 12)



You See Pyroxylin Finishes Every Day

In the home, in the office, on the street—almost everywhere



*Finished with
Du Pont Lacquer*

THE knowledge which the average individual has of pyroxylin finishes is likely to put him in the position of the woman who was told to give her husband sodium chloride in hot water. She went to the nearest drug store to purchase what the doctor had ordered, only to learn that it was common, ordinary house salt. To most of us the term pyroxylin finishes means materials with a limited, technical field of usefulness.

Few realize that they play an important part in practically every part of our daily routine.

If the bathroom fixtures in your home are not made of porcelain or enameled ware, the chances are that they are finished with a white pyroxylin enamel. The medicine cabinet will probably also be finished with the same product. The glass holder, the towel rack, soap holder and the other fittings are often finished with a pyroxylin material. The superior durability, non-peeling, resistance-to-stain and waterproof qualities of these products explain their wide use for bathroom furniture and accessories of the kind mentioned.

In the bedrooms in many homes the stand on the reading lamp will be finished in polychrome with these same materials. In hundreds of homes furniture is being used which is finished with Duco, the new pyroxylin material. Judging from the rapid adoption of this new finish by manufacturers, it seems safe to say that within a few years the majority of homes will be furnished with pieces finished in the same way.

In the kitchen pyroxylin-type finishes find a wide variety of uses. The wooden handles of utensils and implements are frequently covered with these materials.

Metal accessories which require durable finish are done with pyroxylin products. Even broom handles are now

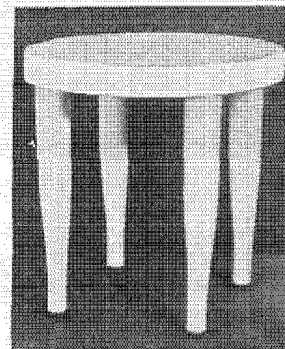
By MATT DENNING

being finished with a clear Duco of special type for this class of work. In some cases the kitchen cabinets are beautified in the same manner. Over one-third of the washing machines made in this country are finished with du Pont pyroxylin materials.

In the dining room pyroxylin-finished furniture is an asset to every home. Several manufacturers of dining room suites are now finishing their product with this material because of its resistance to ordinary wear, its waterproofness, the fact that it will not mark under hot dishes and its other unusual qualities.

Even the silverware, in most cases, has an exceedingly thin protective coat of clear lacquer to prevent it from tarnishing readily.

This same type of pyroxylin finish is also generally used for brass or nicked or plated hardware such as door escutcheons, knobs, latches, catches, etc. If the lighting fixtures in your house are of polished metal, it is very likely that these also are protected from tarnish by a thin coat of lacquer. Pyroxylin finishes also find a wide use for covering insulation of various kinds.



*Courtesy of Speakman Co.,
Wilmington, Del.*

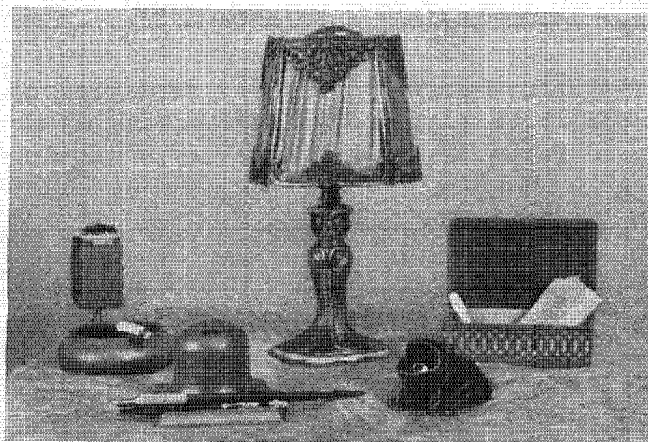
This bathroom stool is finished with white pyroxylin enamel

In the living room the lamp stands, ash trays, the desk sets, the bronzed picture frames, push buttons, statuary, are quite frequently finished with some type of pyroxylin finish.

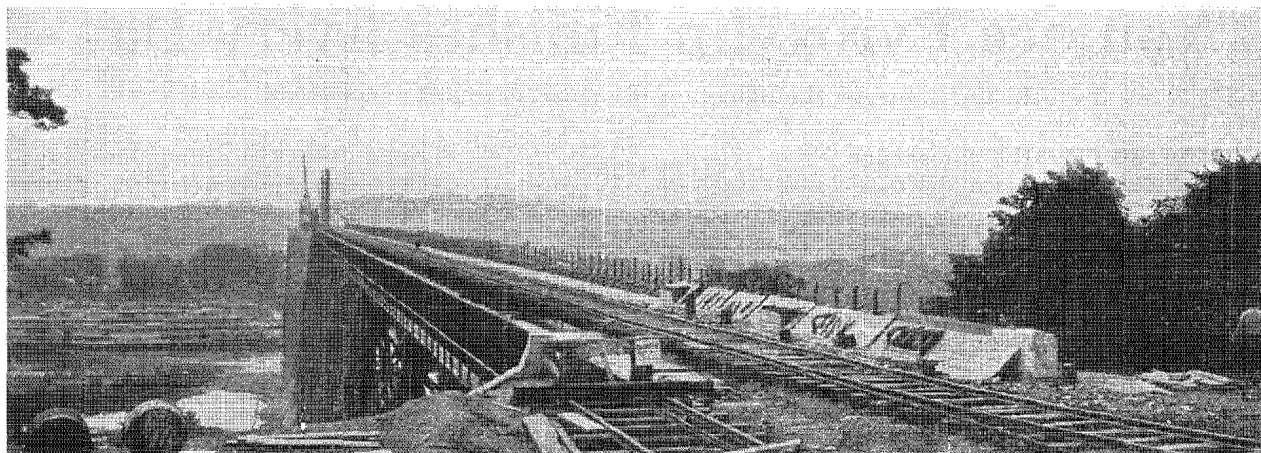
In addition, outside the home, pyroxylin finishes play an important part. Automobiles are now being finished with Duco, the new du Pont finish. In a number of cities automobiles are already being refinished

with this product although its development has been so recent. The metal pencil, or in many cases the wooden pencil you write with, may be finished with a du Pont

(Continued on page 12)



*Just a few of the many household articles finished with
du Pont pyroxylin materials*



West end of the huge new bridge spanning "America's Rhine," the Hudson River, at Castleton, New York

Spanning America's Rhine

The Castleton Cut-off is a construction job of the first magnitude

BIG projects are the order of the day, because Progress constantly forces new problems to the front and demands their solution. Take, for example, the Castleton Cut-off now under construction a few miles south of Albany, New York. It is a big project that will involve the expenditure of \$30,000,000, but it is a necessary one, and here's why:

The Hudson River separates Albany from Rensselaer, but there is a bridge connection, and over it each day passes an enormous tonnage of freight east and westbound. It comes from the West Shore Railroad on the Albany side, and from the converging lines of the Boston & Albany and of the New York Central Railroads on the Rensselaer side. The freight traffic has outgrown the bridge facilities for carrying it. The result is traffic congestion made more acute by lack of yard facilities at these two points.

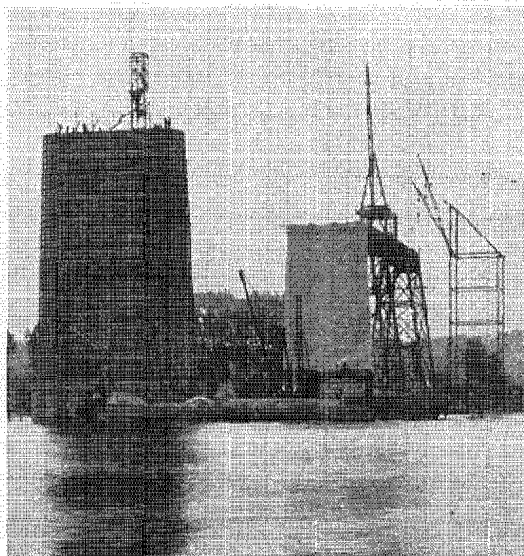
It is to relieve this congestion that the Castleton Cut-off is being built. The project involves linking the three railroads together by a connecting line from the Old Boston Post Road on the Boston & Albany to Feura Bush, New York, which will be the western terminus of the

By R. H. NICOL
Sales Representative
E. I. du Pont de Nemours & Co., Inc.

world's largest railroad yard. The connection point with the New York Central will be near Castleton, where the new bridge spans the river, and the West Shore Railroad will be joined to the new line at Selkirk, the eastern terminus of the big yard, which will be six miles long with a handling capacity of 25,000 cars a day.

Members of the United States Army War College consider this development important for national defense, because it eliminates what they characterize as the "neck" of the national transportation "bottle" at Rensselaer.

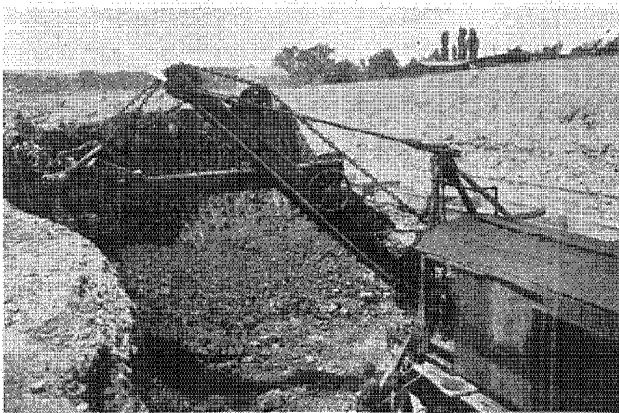
The work began in May, 1922, with the Castleton Bridge as the *pièce de résistance* of the contract and the freight yards at Feura Bush next in importance. The bridge is one mile long and is higher than the Poughkeepsie Bridge and twice as heavy. In two spans there will be 23,000 tons of steel. One illustration shows the beginning of steel construction work on the east side of the Hudson River. One hundred and thirty-five feet above water level the huge mule traveler lifts 50-ton girders, some of them one hundred feet long, with apparent ease. But that is only one phase of the work.



Steel construction work begins on the massive concrete piers 135 feet above the water level

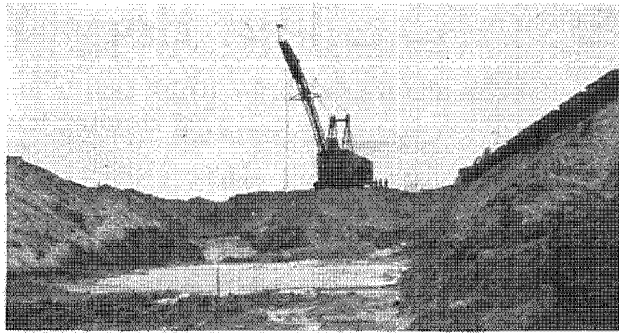
Many steam shovels are at work between Dorn's Cut, which is 71 feet deep on the east end of the line, and Hoffmire Cut, 82 feet deep above the Hudson. The drilling and blasting crews, working day and night, are just ahead of the shovels which keep many construction locomotives busy handling dirt and hauling in supplies.

Great difficulty was encountered in these cuts in excavating approximately 600,000 yards of indurated clay, so dense as to approach solid rock. All of the standard explosives were used by the contractors in their attempt to loosen this material sufficiently to permit of its removal by steam shovels, but with little success. Finally, experts of the du Pont Company were called in by the general contractors and a special explosive was prepared and used with great success.



This gives you some idea of the stubborn material encountered in excavating Dorn's Cut, which is 71 feet deep for two tracks

A very different type of material was encountered at the west side of the bridge where Defreest Cut was excavated. This cut is 6,000 feet long with an average depth of twenty-five feet. It is wide enough to accommodate three tracks. The material here proved to be a very soft, blue clay necessitating the installation



The dragline operation known as Defreest Cut at the west end of the bridge. This cut is 6000 feet long and 25 feet deep

of the dragline equipment shown in the illustration.

Grading and concreting is the big job on the west side of the river, with steam shovels doing the heavy grading work, and tractors, mechanical loaders and double-span mule teams handling the lighter tasks. For months steam shovels, work trains, labor gangs and mules have been changing the topography along the right of way on both sides of the river. Farms have been wiped out by steam shovels and draglines. Huge masses of concrete rise in peaceful pastures and miles of rolling land have been leveled to the grade of the new freight yard. It has been necessary to build overhead and underground crossings for the numerous highways encountered. Some of these overhead structures exceed a quarter of a mile in length.

As a part of the project, a double-track railroad seven miles long was built from Selkirk to Ravena, connecting the new yards with the present West Shore Railroad at the latter point. At Selkirk, too, there is under construction a 32-stall roundhouse with terminal facilities, such as coaling and cindering plants, and there will probably be two additional roundhouses of the same size erected at Feura Bush.

Upon completion of the Feura Bush yards, it will be

(Continued on page 6)



A section of the Hoffmire Cut, looking west. It is a broad, deep gash and will accommodate two tracks

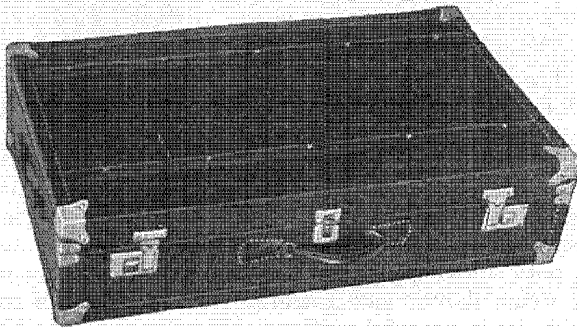
The Berg Wardrobecase

A miniature wardrobe trunk that is not checked on the train but strapped on the running board of your car

THE ingenuity of automobile accessory manufacturers is certainly as pronounced as are the strides made by the manufacturers of automobiles themselves in providing conveniences and comforts that make motor-ing the wonderful pastime that it has become

By A. H. BERWALD

to moisture, dirt or grease and with-stands to a wonderful degree the hard usage of motor travel. Another advantage of the Fabrikoid covering is that it does not scuff nor scar, always keeps its rich appearance and can be washed without injury, so that the Berg Wardrobecase with its Fabrikoid covering should retain its attractive appearance indefinitely.



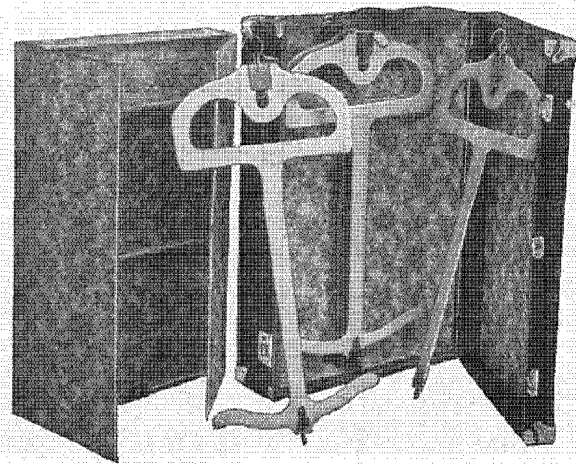
This is the Berg Wardrobecase—a handsome piece of serviceable luggage. It is covered with Fabrikoid

We have had the opportunity of describing in this magazine many clever and practical devices for the use of the motorist. In a recent issue we described the Tablecase, a combination of a table and four chairs, all nested together in a compact carrying case formed by the table itself. We now describe its near relative, the Wardrobecase, designed and produced by the Berg Auto Trunk & Specialty Company, of Long Island City, New York, and we understand that it will be prominently featured at the forthcoming Automobile Show in New York City.

The Wardrobecase is a light-weight wardrobe suit-case, or it might be called a midget wardrobe trunk. It has the small size and convenience of a suit-case as a piece of hand luggage, yet it incorporates the wrinkle-saving, labor-saving features of a wardrobe trunk. At the same time, as our illustration shows, it is in no way complicated but is simplicity itself.

The manufacturer claims to have incorporated a novel and original arrangement of the hangers, which saves several inches in the length of the Wardrobecase by *standing* the hangers up instead of *hanging* them up. These hangers are nevertheless removable so that they can be quickly taken out and hung up in any closet.

The manufacturer also claims that this Wardrobecase is a distinctive design and of unusually dignified appearance. It has been carefully planned for motor travel and is especially built to withstand wear and weather. The waterproofness of the Wardrobecase is accomplished by covering it completely with a very good grade of Du Pont Fabrikoid, which is impenetrable



A view of the spacious interior. Note the novel arrangement of the hangers

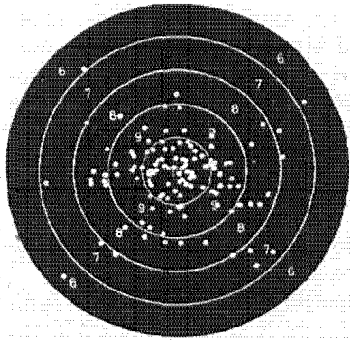
The manufacturer, in advertising the Wardrobecase, says that it is fitted for use not only on the running board of the automobile but that it can be carried on the rear rack or in the tonneau. It will fit under the berth of a pullman and is, therefore, practical both for railway and steamship travel.

Spanning America's Rhine

(Continued from page 5)

necessary to furnish a supply of 5,000,000 gallons of water daily. Already the contractors have laid a 16-inch cast-iron main extending about nine miles from the Hudson River throughout the entire length of the yard.

It is expected that the entire project will be in full operation during the summer of 1924. Altogether, it ranks as one of the largest undertakings in railway construction in the East, involving the removal of between four and five million cubic yards of material, the placing of approximately 140,000 yards of concrete in various structures, the building of the bridge and the world's largest railroad yard. The Walsh Construction Company may well feel proud of the progress made and highly elated at the early prospect of carrying through so vast a project in so short a time.

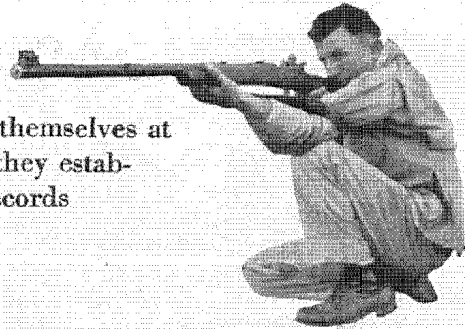


*How Fisher's score of 1090 looked
A new world's record*

World's Records Smashed

American riflemen distinguished themselves at Camp Perry, Ohio, this year; they established ten new world's records

By C. B. LISTER
Staff, National Rifle Association
Washington, D. C.



TEN new world's records, all the world's championships, and the most successful National Matches in the history of the United States were outgrowths of the 1923 rifle shooting activities of the National Rifle Association. It was the greatest year from the standpoint of results obtained, members engaged, and public interest aroused, that the American rifleman has ever enjoyed. Topping the record-breaking performances was the work of Sergeant Morris Fisher, of the Marines, firing as a member of the American International Rifle Team. Fisher won the world's individual free rifle championship, free rifle championships in the prone position and kneeling position, and established three new world's records besides.

The previous record for the Free Rifle Championship had been held by Staheli, of Switzerland, for ten years, on a score of 1078. Fisher's score this year was 1090. The individual prone record had been held by Leinhardt of Switzerland, with a score of 375. Fisher completely eclipsed this performance with a score of 385. The individual kneeling record was established by Fisher at 367.

As a unit, the American Free Rifle Team under Major L. W. T. Waller, U. S. M. C., established a record which might carry the slogan of a well-known

automobile company—"If a better one is ever made, we will make it."

*Sergeant Morris Fisher
U. S. M. C.
World Champion*

The Swiss team in 1912 established the team record at 5172. The Americans, shooting like machines through a cold, drizzling rain at Camp Perry this year, raised the total 129 points, establishing the new mark at 5301. In doing this they broke the team prone record which had been established by the American team in 1921 with a score of 1849, resetting it at 1884; and the team standing record, previously held by the Swiss with 1627, was raised 45 points to 1672. The team kneeling record also was set at 1745.

In all the history of international shooting there has never been a more perfect example of close holding, accurate sight adjustment, splendid physical condition, superior rifles and nearly perfect ammunition than this performance of the American team on the historic range at Camp Perry, Ohio.

Following the free rifle events, the International Service Rifle event, the Palma, was fired. In this competition, too, the American team hung up a new mark under the tutelage of Major K. K. V. Casey, who directs the sale of military explosives and propellants



Some of the magnificent trophies of silver and bronze which were awarded to the winners of the N. R. A. Matches

and rifle powders for the du Pont Company. The Palma Match has been one of the most bitterly contested international events in which Americans have



The U. S. Free Rifle Team of 1923 and the Argentine Cup. Left to right: Fisher, Boles, Fenton (alternate), Moor (alternate), Major Waller, team Captain; Osborn, Nuesselein and Stokes

participated. Dating back to 1876, the trophy has changed hands repeatedly between the United States, Canada, and Great Britain. Neither the Canadians nor the British were able to send teams to Camp Perry this year, and in accordance with precedent, the match was fired by the American team shooting against the record set in 1912.

That was a prolific year for the hanging up of shooting records. In addition to the numerous free rifle match records made in that year, the world's record for the Palma course was also established when the American team scored 1720 points.

The 1923 Palma team had this record to shoot against and the performance of their free rifle contemporaries. Having so hitched their wagon to a star, they proceeded

to travel to stardom over the long course of fifteen shots per man at 800, 900 and 1000 yards. When the final score had been computed, the new world's record for the Palma course stood at 1772, fifty-two points greater than the 1912 achievement.

In making the team record a new individual record was established by Lt. G. W. Trichel of the Coast Artillery, who turned in a perfect score over the entire course, for a total of 225, three points ahead of the 1912 record established by Russell of Canada.

Concluding the International Rifle Matches came the Small Bore Team Match, familiarly known as the Dewar. Each year since 1919 the American team has established a new record in this match, and it has been well for us that they have, for the British and Canadian teams have also consistently improved their scores each year. Twenty men make up the Small Bore International team. They fire twenty shots per man at fifty yards and twenty shots per man at one hundred yards. Colonel C. E. Stodter, Director of Civilian Marksmanship for the War Department and a keen enthusiast in the .22 calibre rifle shooting game, captained the Dewar team.

Preliminary tryouts had indicated that the American Small Bore team this year would be an unusually fast-shooting aggregation. It was accordingly decided to put the entire team on the firing line at one time to give them the opportunity to complete their shooting in the early morning when conditions were the most favorable. The wisdom of this policy was amply indicated when late risers in camp, hurrying over to the Small Bore Range, found that the Dewar team had completed their task by defeating the British and Canadians and had followed the example set by their brothers-in-arms by establishing a new record of 7748, sixty-three points higher than the record of the previous year.

Russell Wiles, Jr., an R. O. T. C. student from Chi-



The United States International Small Bore Team broke the Dewar Cup record this year at the Camp Perry matches

cago, Illinois, snatched the honors from a field of nationally and internationally known riflemen, with a new individual world's record of 394, dropping only six points over the entire course. Three of the Americans equaled the previous record of 393.

The National Matches brought out an entry list which crowded the target facilities and the mile-long firing point almost to the point of strangulation.

The school of instruction and matches occupied the period from September 1 to 27. Crowded into that time were the national championships with the military rifle, special target rifle, service pistol, and target pistol. The records show that the entry list in almost every match exceeded a thousand competitors.

So evident was the interest of the American riflemen in these national matches that a complete rejuvenation of the range was decided upon, and as a result of the survey made at the time, additional land has been obtained and there will be available next year at least one hundred additional targets for the service rifle, one hundred targets for the pistol and revolver shooters, and fifty to one hundred additional targets for the small bore .22 calibre riflemen.

As a result of the interest manifest throughout the country this year, there can be no question but that the rifle and pistol shooting game is returning rapidly to its former place in the warm affections of the American public. The enlargement of the already magnificent range at Camp Perry is but one step in the direction of better facilities to take care of the increased number of shooters.

Plans are being made to provide instructors and programs for all municipal, state, or industrial police who are interested in having their uniformed representatives know what they are doing, what they can do, and what they should not do when they pull a gun in pursuit of a criminal.

The Regular Army and the National Guard are rehabilitating their ranges throughout the country, and any range supported wholly or in part by Government funds is available for the use of properly organized civilian rifle clubs.

The readily apparent advantages of the .22 calibre rifle as a means of rifle practice have been seized on by the uniformed forces, so that a great increase in the number of available National Guard and Regular Army .22 calibre ranges will take place this winter.

A broad program of gallery rifle and pistol matches has been approved by the N. R. A. open to civilians, high schools, colleges, police departments, National Guard, Reserve Corps, and Regular Army organizations, and considerable

sums have been spent in the purchase of appropriate medals for the various events. The program started in November and will continue until May, embracing individual and team matches divided into various classifications so that all competitors will fire on as nearly as possible a clear footing. These matches, as well as similar events conducted on the outdoor ranges in the spring, are all fired on the home grounds of the competitors, the official targets being mailed from N. R. A. Headquarters in Washington, fired in the presence of

witnesses and mailed back to Washington for scoring.

American riflemen will take their full part in the Olympic Games which will be held in Paris in 1924. Eighteen riflemen have already been selected as a result of the nation-wide tryouts which were held preliminary to the international matches this year. A second series of regional tryouts all over the United States will be held in April, and eighteen additional men



Du Pont headquarters at Camp Perry. Left to right: W. H. Coxe, A. Felix du Pont, general manager, Sporting Powder Department; Aiken Simons and C. S. Groondyke



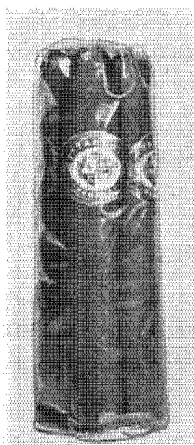
The U. S. Palma Team had no opposition this year, so the members shot against the 1912 record and broke it with a score of 1772. Major K. K. V. Casey, team captain, third from left, front row, is Director, Military Sales Division of the du Pont Company

selected for the Olympic teams. These two squads, totaling thirty-six men, will then be ordered to the Marine Corps Rifle Range at Quantico, Virginia, for a final tryout in May. On the basis of their performance

(Continued on page 12)

That New Wood Product—Cellophane

The first American plant for its manufacture is being built at Buffalo, New York. The properties and some uses of this interesting material are discussed in this article



Cellophane is used to wrap good cigars.

THIN as tissue but hard to tear; like

paper but not paper; transparent as glass but not glass—a non-fragile, waterproof product with a singularly wide range of uses—that's cellophane. Possibly you do not know it by that name, but surely you have seen the de luxe material that perfumers, confectioners, and other manufacturers use to wrap their fancy packages.

A chemist named E. Brandenberger first made cellophane in 1903 at Taon-les-Vosges, France. Today Bezons, eight miles northwest of Paris along the river Seine, is the home of the French cellophane industry and the source of supply for practically all of the product now used in this country. But American consumers will not have to wait long before American-made cellophane will be available, for the Du Pont Cellophane Company, a subsidiary organization of the Du Pont Fibersilk Company, is now building a large plant at Buffalo, New York, for the manufacture of this interesting material. Just why the Fibersilk Company is interested in cellophane manufacture becomes clear when it is understood that both products are identical in composition and both follow through the same manufacturing processes until the final stages.

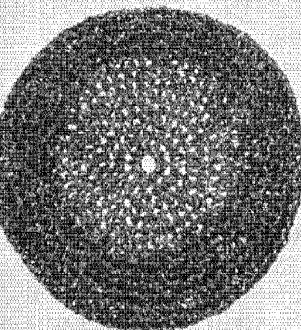
The raw material used is pure wood pulp, first treated with caustic soda, then with carbon bisulphide. The product thus obtained is completely soluble in water, and the solution is called viscose—an absolutely transparent fluid that can be compared to collodion. Viscose coagulates or solidifies very rapidly when brought into contact with certain salts or acids, just as the white of an egg does when it is brought into contact with boiling water; and this cellulose solution is used without distinction for the manufacture of both artificial silk and cellophane. It is only in the method of their fabrication that these two products differ. When artificial silk is made, the

By JAMES PIANI
Du Pont Cellophane Company
Buffalo, N. Y.

viscose is forced through a nozzle having a number of minute holes, and all the filaments obtained are solidified as they pass through a coagulation bath. The reunion of the filaments constitutes a silk thread.

In making cellophane, the viscose passes into a manifold and is forced through a slit-like aperture into a coagulation bath where it solidifies in the form of a sheet. Then it is treated chemically to eliminate all foreign matter. Washing and drying complete the process and the final transparent product is a sheet approximately 35 to 38 inches wide, from 1/1000 to 5/1000 of an inch thick, and of indeterminate length.

This sheet is perfectly transparent, with its surface as smooth and lustrous as polished glass. Of homogeneous texture, without pores and fibers, it is far stronger than paper. It is supple and flexible. A heat test shows that even at 100° Centigrade cellophane will not disintegrate as paper does. It burns



This shows you how narrow strips of cellophane can be woven into a hat

like paper, however, but is not highly inflammable. Cellophane put into boiling water does not melt nor is it in any way affected. It also resists the action of acids or bases. One of its most valuable properties is waterproofness. Grease, ether or gasoline put in cellophane will not penetrate or evaporate. Containing no animal matter, cellophane does not decompose, is bacteria-proof and can be easily sterilized in an autoclave.



So far the largest single use for cellophane in this country is for wrapping candy boxes. Many manufacturers use it.

Remarkable as these properties are, the list is by no means complete, for cellophane, like other cellulose products of which paper is perhaps the best known type, lends itself to many finishing operations that reveal

other valuable properties from a fabricating viewpoint. For example, after the transparent cellophane is dry, it leaves the machine in rolls ready for use, or it can be further transformed. After a most careful and minute inspection the rolls are sent to the different finishing rooms. There the material may be dyed, embossed, cut, printed and specially fabricated into boxes, bags, tubes and other finished articles.

Cellophane is a veritable piece of cloth without pores; it can be dyed as easily as cotton by passing a roll of material through a dye bath, drying it on a special machine, and then re-rolling it. It can be dyed any color without distinction from the deepest black to the most delicate pink.

And it can be transformed further by embossing. The machines used for this purpose consist of two cylinders. One of them—hollow and made of steel—is engraved after a given pattern, and the other is covered with heavy paper which forms the counterpart. The embossing is done under heat, and the cellophane leaves the machine completely transformed. It may thus be made to look like silk, taffeta, linen, moiré or whatever pattern is engraved on the cylinder. It is quite impossible to reproduce in black-and-white the novel and strikingly beautiful effects obtained by dyeing and embossing cellophane in this manner, but the halftones printed here will at least suggest the form if not the color values of the original copy we furnished the photographer.

The rolls, having been inspected, dyed and embossed, are ready to be cut into bobbins or sheets of different dimensions according to the use for which the product is intended.

For cutting cellophane into bobbins the material is

first cut into strips about three and one-half inches wide, and then cut to the size desired by feeding these strips into little machines, specially constructed for the purpose, which cut and roll simultaneously. An extraordinary regularity is thus obtained in ribbons of all sizes, beginning with a minimum of one millimeter, or approximately $\frac{1}{100}$ of an inch.

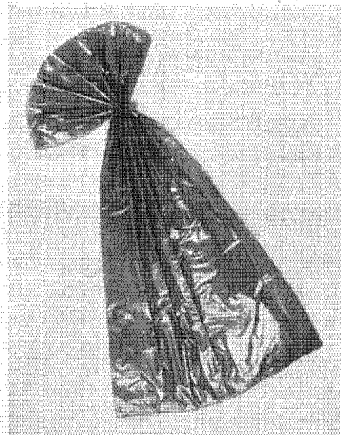
The bobbins find an especially important use in the millinery industry. It is not unusual to see women wearing hats made of cellophane braid, or woven cellophane, or even embroidered in cellophane. For this use the material is specially prepared—that is, dyed and embossed—to give the effect of jade, or silver, the form and color of metal scales, copper or steel, or the iridescent and marvelous opalescent effects resembling mother-of-pearl, or glistening enamel.

Cellophane works up almost exactly like paper; it may be pasted or printed, some precautions being necessary, and it may be used for making bags,

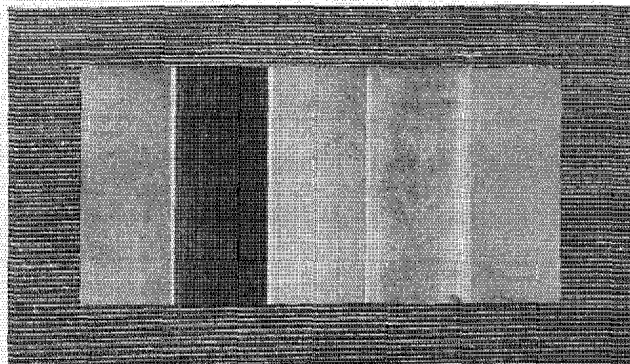
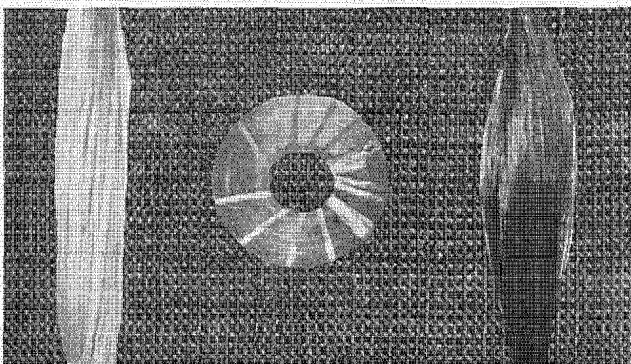
sachets, packets and other containers. Thicker stock is made into tubes and boxes which are quite transparent and very strong. In the Cellophane Shop in Paris, for example, there is a big aquarium made entirely of this material.

The many special properties and qualities of cellophane make it very useful to merchants and manufacturers. In fact, the uses of cellophane are even more numerous than its properties. To attempt to enumerate them all would be a futile task. Incidental reference has already been made to the use of a certain type of cellophane in the millinery trade, but the amount consumed in this way represents only a small part of the production. The great demand is for the plain transparent stock.

(Continued on page 13)



Beautiful cellophane bags are used in European shops to package dainty articles. This one has the appearance of gold.



Here are reproduced some of the distinctive cellophane materials principally used in the millinery industry—a roll of braid, hat straw, pleated and woven effects of cloth. The panels at the right are cellophane reproductions of silk in different colors, and of metals. You'll have to imagine the colors.

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Vol. XVII DECEMBER, 1923 No. 12

Merry Christmas!

THREE short weeks from today Christmas candles will be brightly gleaming, the belfry chimes of thousands of churches will be pealing out Christmas melodies, and in millions of homes the festivities of the Yuletide will be in full swing. Already crowds of shoppers are thronging the stores seeking gifts, and preparations are under way to make Christmas this year a memorable one.

Christmas is properly a red-letter day on the calendar, a day given over to the observance of time-honored customs of the past. But it is more than that; for Christmas, along with the gift-giving, feasting and merrymaking, is a day of inspiration to every one who believes the Gospel of Good Will to all Men, symbolizing as it does the noble virtues of friendship, brotherly love and charity. The spirit of Christmas lifts us out of ourselves, makes us more tolerant, quickens our sympathies and arouses the kindlier emotions through its benign influence. There is something in this season of the year that brings to the surface all of the better elements of human nature, and gives expression to heartfelt sentiments of good will.

And so, because it is Christmas, here is our sincere wish for you—

“A Merry Christmas and a Happy New Year!”

May our relations grow more cordial as each succeeding year goes by—may we come to regard each other more highly as confidence, that great attribute of friendship, grows stronger and stronger. And may the New Year come deep laden with good things to bring you Health, Happiness and Prosperity.

Confidence in the Future is Warranted

(Continued from page 2)

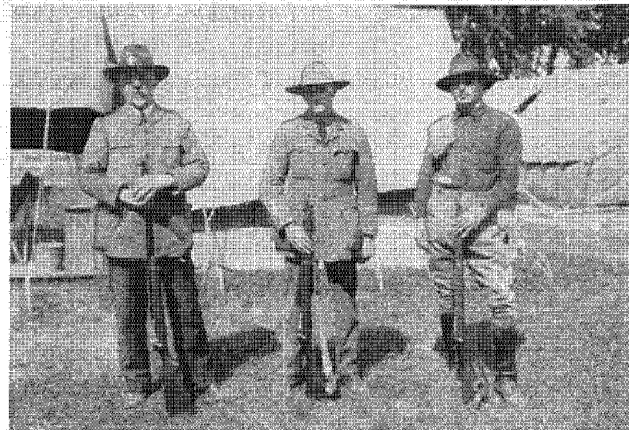
in that it shows a lack of credit strain and indicates the improbability of business depression. The fact that the business readjustment of the past six or eight months has progressed without a marked advance in interest rates, and that with the passing of the usual seasonal demand for funds, money rates have begun to relax, indicates that the business situation is sound.

World's Records Smashed

(Continued from page 9)

in this tryout, a free rifle team of seven men, a service rifle team, and four competitors for the running deer match will be selected and sent to Europe to represent the United States in the various rifle shooting events. Major L. W. T. Waller, who so successfully piloted the 1922 and 1923 International Free Rifle Teams, will act as team captain for the entire squad of American riflemen.

The growth in interest in rifle shooting among the undergraduates and faculty of high schools and colleges throughout the country is one of the most encouraging signs of progress in the proper education of Americans to the value of rifle shooting from the recreational standpoint. From the high school and college students of today are developing the citizens of



Three foreign representatives at Camp Perry this year. Left to right: Messrs. Regaud, (France), Boa (Canada), and Van Sprecken (Holland).

tomorrow, and as they learn the self-discipline, the team spirit, the good-fellowship, the clearness of vision, and the self-control that is acquired on the rifle range as in no other sport, the outlook is clearly promising that within the next few years America can again truthfully say of its citizens that they are a nation of riflemen.

You See Pyroxylin Finishes Every Day

(Continued from page 3)

pyroxylin product. The wooden brush for your clothes or hair is also frequently finished in the same way.

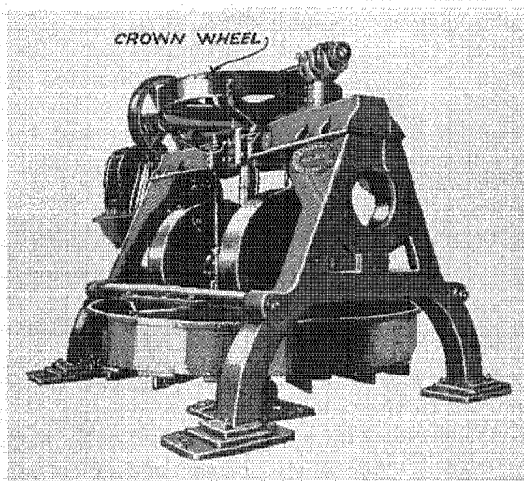
This article, because of its nature, can do nothing but indicate the thousands of uses to which products of this kind can be applied. It is intended to give the reader only a general idea of the wide variety of articles which are finished with this kind of material and to let him know what an important part pyroxylin finishes, particularly of the Duco type, play in his daily affairs.

Cracking A "Frozen" Wheel with Dynamite

Another case where small charges of dynamite helped to solve a problem

A CROWN wheel on the top of a fire clay dry pan which has become "frozen" to the shaft during fifteen years' use is not very easy to remove—unless you know how. Mr. J. A. Dixon, superintendent of the New Florence Brick Company of New Florence, Missouri, found this out not long ago when he tackled the job of removing a crown wheel whose teeth had worn so sharp that it had to be discarded. The hub had rusted fast to the shaft so that it was impossible to pull out the key, which fits into a slot running from the hub down into the shaft to keep the wheel from slipping, or to budge the wheel. Efforts to pry out the key and to knock the hub loose with ordinary tools were alike unavailing. Mr. Dixon was on the point of sending to the main office of his company in Chicago for help but decided that he would first see what he could do with a little du Pont dynamite.

By D. M. JOHNSON
Sales Representative
Explosives Department



This shows you the type of fire clay dry pan mentioned, and the positions of the shaft and crown wheel

He placed one-fourth of a stick of 40 per cent Red Cross Extra, $1\frac{1}{4}$ " x 8", primed with a blasting cap and fuse, on the rim of the wheel, made a mudcap over this charge and fired it. This shot broke off about one-third of the rim and also two of the five 8" x 12" spokes, close to the hub. He then put one-third of a stick of dynamite on the hub, which was 8" in diameter and 3" thick, mudcapped it and shot it. This shot cracked the hub slightly. A similar shot at another point on the hub cracked the hub open so that he was able to pull out the key with his fingers. This being done, the wheel was then easily removed.

The whole operation took slightly less than thirty minutes instead of the several days that would have been consumed had not Mr. Dixon resorted to the use of dynamite.

It was a demonstration of the most efficient way to do the work—quickly and at little cost.

That New Wood Product—Cellophane

(Continued from page 11)

The most common use for cellophane of this type in America is for wrapping candy boxes in the manner shown by one of the illustrations. When a beautiful box is enveloped in a transparent wrapper that gives positive protection and at the same time enhances the beauty of the package, as cellophane does, nothing further within reason can be asked for. Some manufacturers go a step further by wrapping the bonbons themselves with little pieces of cellophane.

This material is also used for wrapping packages of perfume, powder, soap and drugs, and even cigarette boxes and packages of cigars. Because cellophane is absolutely impervious to goods containing grease, oil, and essences, and is air-proof, odor-proof, water-, dust- and even germ-proof, it becomes an ideal wrapping material for all kinds of food products. For example, coffee or tea sealed in a cellophane bag preserves the aroma quite as well as in tin cans. Cellophane can successfully be used by packers for wrapping and protecting such goods as sliced bacon, ham, and preserved fruits. Biscuits, butter, lard or other grocery products may similarly

be wrapped with cellophane, which has the endorsement of physicians as a truly hygienic wrapper for all kinds of food products.

As a matter of fact, physicians have discovered that this material can be used with advantage in their own professional work. Does a wound need to be dressed? A cellophane bandage serves the purpose of protection, and the transparency of the material allows a view of the healing of the wound. Also it is useful in sterilizing surgical instruments. First, they are wrapped in cellophane, then put into an autoclave and sterilized. On removal, the cellophane, which is absolutely germ-proof and bacteria-proof, keeps the instruments in a condition ready for the surgeon's use when the emergency arises.

Another interesting use, developed during the World War, was the fabrication of special cellophane stock for making gas-mask lenses. The transparency of the material in connection with its non-fragile property made it far superior to glass for this purpose.

(Continued on page 16)

Demand du Pont Powders

Three investigations prove the outstanding popularity of du Pont Smokeless Powders among those who sell shotgun shells

TO think of hunting or shooting is to think of du Pont Smokeless Powders. Conversely, to think

of du Pont Smokeless Powders is to think of hunting and shooting. The close-linked association of ideas hardly permits of separation. It is like Boston and baked beans and brown bread, like spark plugs and automobiles, Thanksgiving and turkey, Christmas and Santa Claus.

The goal toward which every manufacturer strives is to develop popularity and prestige for his goods to such an extent that when prospective purchasers think of that class of merchandise they will automatically think of *his* name and *his* product to the exclusion of all others. The manufacturer who reaches that goal is in an enviable position.

For one hundred and twenty-one years the du Pont Company has sought to attain that position as a manufacturer of sporting powders of the highest quality. In its dealings with the trade the company's traditional policy of fair dealing has been adhered to through all the years. What has been the net result? How far has the company advanced toward the goal? That material progress has been made is evidenced by three very interesting investigations among dealers handling shotgun shells.

Investigation No. 1

In April, 1923, one of the large scientific monthly magazines which enjoys an excellent reputation with the public and in the publishing field, conducted an investigation among hardware dealers in the states of Pennsylvania and Michigan. The object was to determine, if possible, whether the dealers were really interested in knowing what kind of smokeless powders were loaded in the shotgun shells they offered for sale.

It is worthy of note that the du Pont Company was not aware of the fact that this investigation was being made. The magazine sent out its own inquiries and received and tabulated the replies from dealers. From this independent, disinterested mail canvass to find out what dealers thought about branded and unbranded loads, the publishers secured expressions of opinion representing the personal convictions of those who answered the questionnaire; and a digest of the replies was forwarded to us.

The replies, tabulated below, indicate that a great majority of dealers did specify the kind of powder when ordering shells, and considered this a very important factor in connection with this kind of merchandise:

75.3% wanted the brand of powder shown on both wad and carton.
16.5% wanted the brand of powder shown on the box only.
4.2% wanted the brand of powder shown on the wad only.
2.0% said it was unnecessary to show brand of powder at all.
2.0% no longer sold shells.

By E. R. GALVIN
Director of Sales
Sporting Powder Department

Later, this investigation was extended to the states of North Carolina, South Carolina and Georgia, with the

following results:

78.5% wanted the brand of powder shown on both wad and carton.
11.0% wanted the brand of powder shown on the box only.
3.5% wanted the brand of powder shown on the wad only.
6.0% said it was unnecessary to show brand of powder at all.
1.0% no longer sold shells.

It will be noted that in Pennsylvania and Michigan 96 per cent of the dealers wanted the brand of powder on either the wad, box or carton, and in North Carolina, South Carolina and Georgia 93 per cent wanted the brand of powder shown. Rather conclusive evidence, isn't it, that the popularity of du Pont Smokeless Powders is an asset of great value, not only to the du Pont Company, but also to the merchant who handles shells.

Investigation No. 2

In July, 1923, Frank Seaman, Inc., an advertising agency of New York City, conducted an independent market investigation to ascertain the popularity of du Pont powders loaded in shotgun shells. Representatives of this agency called on a large number of dealers and jobbers in the states of Massachusetts, New York, Ohio, Indiana, Virginia and North Carolina. Both in large and small towns they interviewed jobbers and dealers irrespective of their size or prominence in business.

The following graphs and figures speak for themselves and indicate that fully 90 per cent of the jobbers and dealers interviewed prefer du Pont smokeless brands and say that they are by far the most popular brands on the market. One can hardly ask for stronger evidence of the demand for du Pont smokeless powders.

Familiarity with du Pont standard load table and campaign to reduce number of loads

Jobbers	100%
Dealers	63%

Opinion of du Pont table of standard loads

Jobbers say:

Is good	61%
Helps dealer	22%
Will meet all demands	22%

Dealers say:

A good idea	71.6%
Helps dealer	16.8%
Best plan that du Pont has put over	6.3%
Sufficient to meet all demands	4.2%
No need for multiplicity of loads	2.1%

Do not believe du Pont has gone far enough	2.1%
Not the final authority	2.1%
Miscellaneous opinions	5.5%

Do customers specify brand of powder?

Jobbers say:

Yes	94.0%
No	6.0%

Dealers say:

Yes	94.2%
No	5.8%

Percentage of customers who specify

Jobbers say:

Over 75%	50.0%
20 to 50%	33.4%
50 to 75%	16.7%

Dealers say:

20 to 50%	38.5%
50 to 75%	35.0%
Less than 20%	25.3%
75 to 90%	1.2%

What percentage of your customers specify in detail?

Jobbers say:

20 to 50%	35.6%
Over 75%	28.6%
Less than 20%	28.6%
50 to 75%	7.2%

Dealers say:

20 to 50%	47.1%
Less than 20%	33.1%
50 to 75%	12.2%
Practically none	6.1%
Over 75%	1.5%

Do customers specify brand of shell?

Jobbers say:

Yes	89.5%
No	10.5%

Dealers say:

Yes	91.6%
No	8.4%

Percentage of customers who specify

Jobbers say:

Over 75%	47.0%
50 to 75%	23.3%
20 to 65%	17.8%
Less than 20%	11.9%

Dealers say:

50 to 75%	49.4%
Over 75%	19.7%
20 to 50%	16.1%
Less than 20%	14.8%

What is the best-selling brand of powder?

Jobbers say:

Dupont	58.4%
Ballistite	29.1%
Competitive powder No. 1	8.3%
Competitive powder No. 2	4.2%
Competitive powder No. 3	0%
(Total du Pont	87.5%)
(" competitive	12.5%)

Dealers say:

Dupont	53.3%
Ballistite	39.6%
Competitive powder No. 1	5.8%
Competitive powder No. 2	.9%
Competitive powder No. 3	.4%
(Total du Pont	92.9%)
(" competitive	7.1%)

Investigation No. 3

About two months ago we addressed the following letter to several thousand dealers in sporting goods:

"The du Pont Campaign in 1920 reduced the number of shotgun loads by 80 per cent.

"This meant more profit, better turnover, less trouble and expense for you.

"Can the list of shotgun loads be reduced still further and meet the requirements of your trade?

"Our sole desire is to serve you, and we want your opinion and assistance.

"Kindly reply to the questions on the inside pages and mail back to us in the enclosed, stamped envelope. Thanks."

The questions sought information as to shell sales, and primarily called for an answer to the question, "What shotgun loads are most popular with your trade?" with a blank form of the standard load table reproduced so that the dealers might indicate their first and second choice of loads. Below it appeared the following questions:

"What brand of powder is most popular with your trade?

"What percentage of sportsmen specify powder when buying?

"About how many sportsmen in your vicinity?

"How many sports associations, rod and gun clubs?" and other questions about the kinds of game found in the locality, status of hunting conditions, and posted property.

No attempt was made to influence the character of replies. No leading questions were asked. We sought information in a straightforward manner and more than 4,000 responded, their replies coming from 3,539 cities, towns and villages in forty-six of the forty-eight states

of the Union. An analysis of these sources of information, with particular reference to the population of towns represented by replies, follows:

Population	Replies from
1 to 1,000.....	1,422 towns
1,001 to 2,500.....	735 "
2,501 to 5,000.....	482 "
5,001 to 10,000.....	372 "
Over 10,000.....	528 "

Thus the replies came from all quarters and from towns of all sizes, giving assurance that a composite of the information procured was a true index for the entire country.

Answering the question, "What brand of powder is most popular with your trade?"

79.06% stated du Pont powders were preferred.
16.00% stated no preference existed.
3.50% stated a preference for one competitive powder.
1.44% stated a preference for another competitive powder.

It is significant that du Pont brands are the preference of about 80 per cent of sporting goods dealers, and that the margin of preference for du Pont powders is roughly expressed by the ratio of 4 to 1 in comparison with the stated preference for powders made by both of the competitors combined.

What all this means to dealers

To dealers handling shotgun shells loaded with du Pont powders the outstanding popularity of du Pont

brands means quick sales, quick profits, quick turnover, no slow-moving or dead stock, satisfied customers and satisfied merchants. Dealers can best serve their own and their customers' interests by selling only those shells that are loaded with powders of well-known quality—the powders that sportsmen everywhere know are good and thoroughly dependable. There is sound sales sense in selling the brands of merchandise that the public shows an overwhelming preference for. Du Pont powders are the choice of about 80 per cent of the nation's sportsmen.

Sell shells loaded with the powder they like to use.

That New Wood Product—Cellophane

(Continued from page 13)

Printed cellophane labels glued on bottles, tin, or glasses add to the fine appearance of many articles sold over the counter. In Europe, cellophane bags are used for enclosing powder puffs, silk lingerie, gloves and other articles that need a dainty wrapper, and more and more in this country the product is finding more extensive use as a wrapping material in high-class stores.

It is not easy to take an inventory of the many, many uses to which this product may be suited, but it is safe to predict that American resourcefulness will find scores of new uses for it that are not dreamed of now.

E. I. DU PONT DE NEMOURS & CO., INC., WILMINGTON, DELAWARE

All Inquiries Regarding du Pont Products Should be Addressed to Our Nearest Office

ACIDS AND HEAVY CHEMICALS
Acids, slums and miscellaneous heavy chemical products.
Philadelphia, Pa.
35th & Gray's Ferry Rd.

CHEMICAL PRODUCTS
Bronze powders, ether, collodion, household cement, leather belting cements, pyroxylin lacquers and enamels, split and patent leather solutions and other pyroxylin preparations and solvents.
Parlin, N. J.

Chicago, Ill.
1814 McCormick Bldg.
San Francisco, Calif.
569 Mission St.

CLEANABLE COLLARS
Challenge, Blue Ribbon and Water Nymph brands.

Poughkeepsie, N. Y.
Poughkeepsie Works

DYESTUFFS
Dyestuffs and dyestuff intermediates.

Boston, Mass.
274 Franklin St.
Charlotte, N. C.
232 W. First St.
Chicago, Ill.
1114 Tribune Bldg.

New York, N. Y.
8 Thomas St.
Philadelphia, Pa.
126 S. Front St.
Providence, R. I.
709 Hospital Trust Bldg.
San Francisco, Calif.
569 Mission St.
Kobe, Japan
P. O. Box No. 384
Shanghai, China
Robert Dollar Bldg.
3 Canton Road

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

Birmingham, Ala.
601 Brown-Marx Bldg.

Boston, Mass.
Harvey Building
Chauncey & Bedford Sts.

Buffalo, N. Y.
Prudential Bldg.

Chicago, Ill.
1814 McCormick Bldg.

Denver, Colo.
406 Ideal Bldg.

Duluth, Minn.
Hartley Bldg.

742 E. Superior St.

El Paso, Tex.
811 Mills Bldg.

Huntington, W. Va.
401-19 Robson-Pritchard Bldg.

Kansas City, Mo.
225 Seavitt Bldg.

Mexico City, Mex.
Edificio de La Mutua, 406

New York, N. Y.
120 Broadway

Pittsburgh, Pa.
Fulton Bldg.

Portland, Ore.
Northwestern National Bank Bldg.

St. Louis, Mo.
17th Floor, Arcade Bldg.

San Francisco, Calif.
569 Mission St.

Seattle, Wash.
Hoge Building
2d Ave. & Cherry St.

Scranton, Pa.
710 Traders Bank Bldg.

Spokane, Wash.
721-22 Old Nat'l Bank Bldg., Riverside Ave. & Stevens St.

Springfield, Ill.
716 Relsch Bldg.

FABRIKOID AND RUBBER FABRICS

Fabrikoid for automobile tops, body covering and upholstery; bookbinding, furniture, luggage, nozzles, etc. Pontop for auto tops and curtains. Pontine shade cloth. Ventube for mine ventilation.

Newburgh, N. Y.

San Francisco, Calif.
569 Mission St.

LITHOPONE, DRY COLORS & PIGMENTS
Products for paint, ink, oil cloth, endures, rubber and other industries.

Boston, Mass.
Everett Station 49

Chicago, Ill.
2100 Elston Ave.

Newark, N. J.
256 Vanderpool St.

Philadelphia, Pa.
35th & Gray's Ferry Rd.

PAINTS AND VARNISHES

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

Boston, Mass.
Everett Station 49

Chicago, Ill.
Chicago Varnish Works
2100 Elston Ave.

Flint, Mich.
Flint Varnish & Color Works

New York, N. Y.
Room 544 Hudson Terminal Bldg.
30 Church St.

Philadelphia, Pa.
35th & Gray's Ferry Rd.

PYRALIN

Ivery Pyralin, Shell Pyralin, and Amber Pyralin toiletware, Novely and transparent sheeting, rods, tubes and heading.

Boston, Mass.
Harvey Building
Chauncey & Bedford Sts.

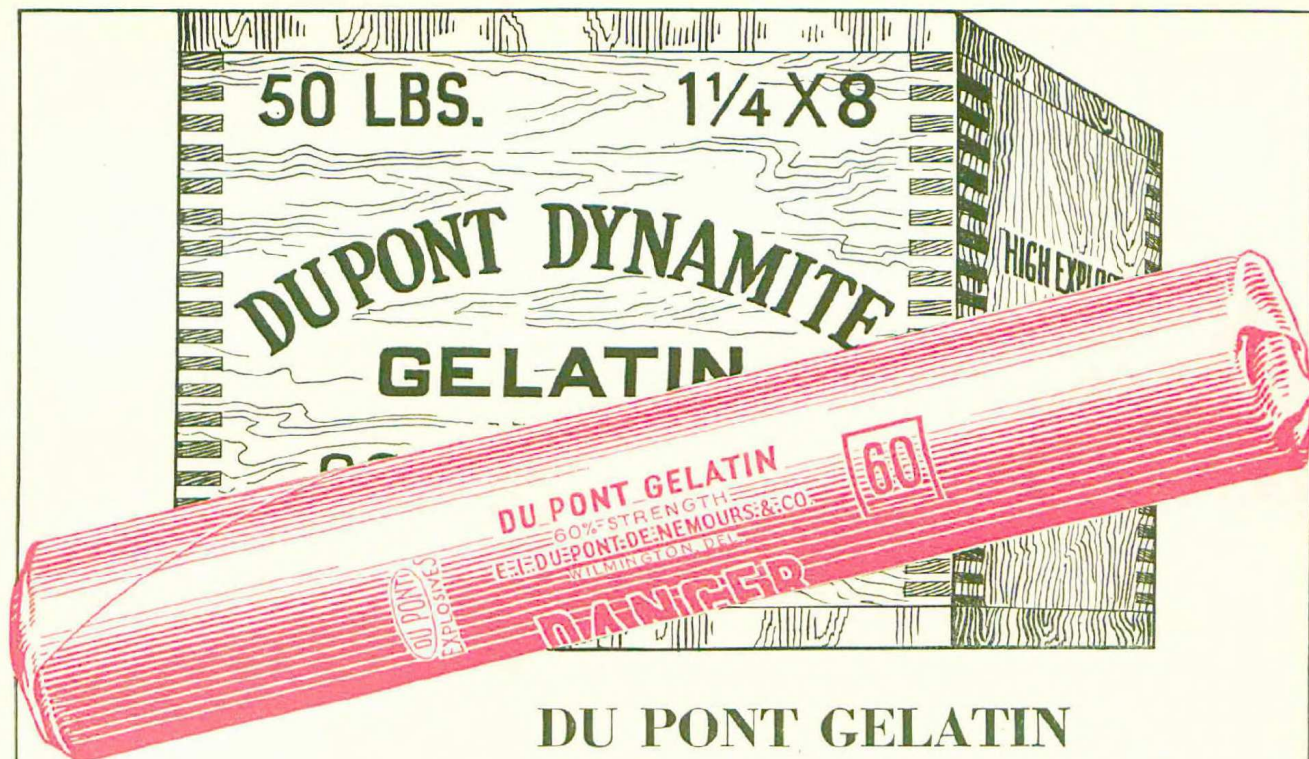
Chicago, Ill.
14 North Franklin St.

New York, N. Y.
21 E. 40th Street.

St. Louis, Mo.
Mallinckrodt Bldg.
907 Washington Ave.

San Francisco, Calif.
569 Mission St.

Atlantic City, New Jersey, 1121 Boardwalk, Du Pont Products Exhibit



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