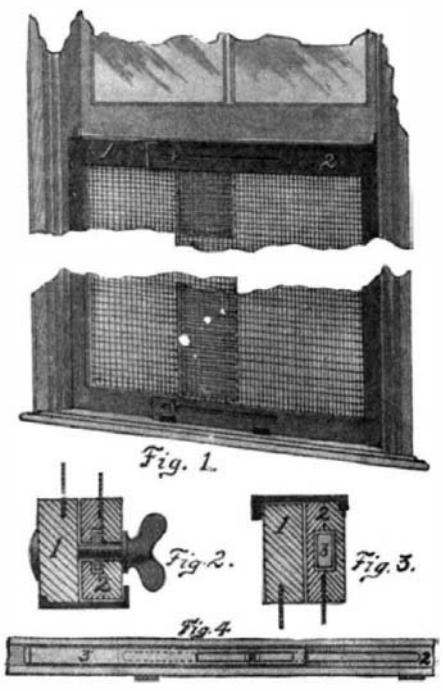
AN IMPROVED WINDOW SCREEN.

Extensible window screens as commonly made are formed of two overlapping screen sections, adapted to slide one upon the other, so that they can be adjusted to fit windows of different size. A recent invention provides for securing these sections at the desired adjustment by means of thumb nuts threaded onto bolts which are secured to one section and pass through slots in the other. For the purpose of enabling the sections to be extended to their limit without uncovering these slots, sliding plates are concealed in the frame, which are extended when the screen is extended so as to close these slots. The construction is clearly illustrated in the accompanying engraving. Fig. 1 shows the screen as applied to a window frame. A channel plate secured to the upper edge of one of the screen sections overlaps the other section, and affords a sliding connection between the two, while at the same time it closes the gap between the screen and the window sash. The screen sections are held together at the bottom in sliding relation by a pair of clips, as illustrated in F g. 2. The frame of the rear section is marked 1 in the engraving, while that of the forward section is marked 2. The latter, as best shown in Figs. 2 and 3, is formed both at the top and at the bottom of two pieces, between which there is a recess. In each recess a plate 3 is adapted to slide. This plate is formed with a slot at one end, and a nib or head at the other end. The adjusting bolt is secured to the frame 1, and passes through the slots in the frame 2 and plate 3. In use when the screen is extended, the nib on the plate 3 will engage a shoulder in the recess of frame 2, and thus be extended to cover the slot. When the screen is closed, the end wall of the frame 2, bearing against the end of the plate 3, will push the latter back to its normal position. This arrangement permits of extending the screens to any desired limit and securing them, while closing any opening through which insects might crawl. A patent on this invention has just been granted to Mr. Harry W. Tuthill, 134 Linden Avenue, Middletown, N. Y.

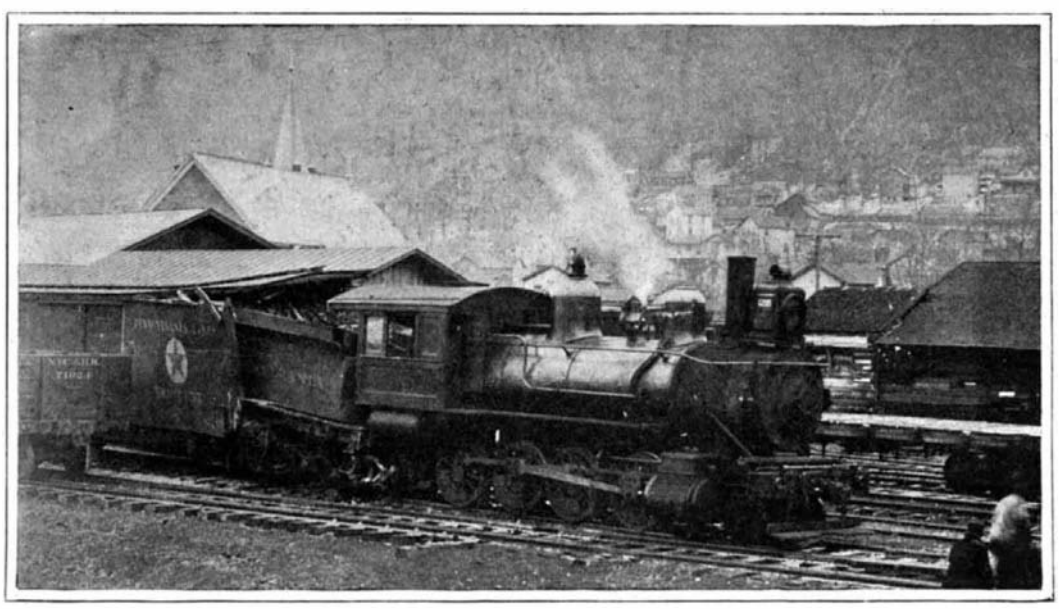


IMPROVED ADJUSTABLE WINDOW SCREEN.

TELESCOPING A CAR OF DYNAMITE.

Thanks to the omnipresent camera, we are enabled to present a photograph of a railroad collision which, because of the attendant circumstances, is of rare interest. According to our correspondent, Mr. R. C. Dodson, of Emporium, Pa., at which town the accident occurred, a switching engine, which was running through the yard, took an open switch and crashed into the first of three carloads of dynamite which were standing on the adjoining track. Our correspondent states that about 100 feet further up the track were four more cars loaded with the same material. As will be seen from the illustration, the tender, which was itself jammed into the cab of the engine, telescoped the forward car, being driven into the latter for fully half of its length. Within the car were 400 fifty-pound boxes of dynamite, or ten tons in all. The boxes were smashed open and the dynamite crushed and broken up. In spite of the terrific impact, however, there was no detonation, a fact which is to be attributed to the fortuitous circumstance that the explosive was "frozen"; that is to say, its temperature was something below 40 to 45 degrees. Had the collision occurred in warmer weather, and had the explosive been some other than a gelatine dynamite, the adjoining town of 3,500 inhabitants would have been swept out of existence. The detonation of from 50 to 70 tons of dynamite in the midst of a town that was built, like this one, in a narrow valley with its buildings ranging up the hillsides, would have been accompanied with destructive effects more easily imagined than described.

The question of the safe carriage of high explosives is one that has been very much in the public eye ever since the recent wreck of a passenger train, due to its collision with a freight train on an adjoining track, one of the cars of which was loaded with dynamite. Among the precautions taken in the carriage of high explosives is to place a distinctive mark upon all cars so loaded. In the present case, as will be noticed in the photograph of the wrecked car, the mark consists of a red star on a white ground.



A SWITCHING ENGINE TELESCOPES A CARLOAD OF DYNAMITE AND ESCAPES DESTRUCTION.

Automobile Notes.

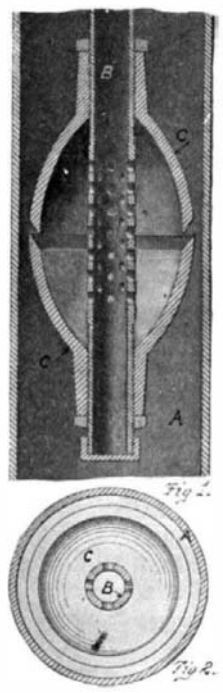
Plans for the Glidden tour this summer have not as yet been perfected. In all probability, however, the tour will extend from Buffalo through Canada to Montreal and thence south to Saratoga or to the White Mountains. There is scarcely a doubt that the tour will be liberally patronized, and that it will be an even greater success than last year.

So great is the increase in commercial vehicles and so wide the field in which they may be used, that there has just been started in this city a new monthly devoted exclusively to this class of automobiles. The first issue of The Commercial Vehicle has descriptions of many of the leading American trucks and some of the foreign ones, as well as useful articles telling what has been and is now being done in this field, and showing how to get the best results. The user of self-propelled vehicles for business purposes will find this new journal very helpful.

The New York Motor Club, which held its first economy contest with successful results last November, will conduct another affair along similar lines next May. A much larger list of entries is expected, and it is hoped that many interesting facts will be learned regarding the economy and endurance of 1906 cars. In this connection it is interesting to note that in an endurance run held recently between Los Angeles and San Diego a Maxwell touring car received a special medal for exceptional excellence. One thousand points were awarded each car before the tour commenced and points were deducted from this maximum for the various break-downs and mishaps encountered. This car traveled 172 miles on 13 gallons of gasoline and 1½ pints of oil, carrying four passengers. This is equivalent to 14 miles per gallon of fuel and 115 miles per pint of lubricant. Its score for reliability at the end of the tour was 1,000 points; but it was then penalized one point for carrying a sign, which was contrary to the rules of the contest. It was the only car in the run, in an entry list of 26 cars comprising 18 different makes, that had a cost per passenger of less than one-half cent per mile. Figuring gasoline at the market price of 20 cents a gallon and oil at 60 cents a gallon, it cost just $2.71 for the entire trip, or 67¾ cents per passenger for 172 miles. This is less than four-tenths of a cent per passenger per mile—to be correct, **$0.0039.** The same infraction of the rules regarding carrying a sign, cost a Maxwell runabout a gold medal after it had made a perfect score. The cost per passenger per mile for this car was **$0.0051, or** little over a half a cent per mile.

EJECTOR PUMP FOR DRIVEN WELLS.

A patent has recently been granted to Mr. Charles A. Dryer, of Champaign, Ill., on an improved ejector pump for driven tubular wells. The invention consists in the provision of a novel form of head for receiving and discharging air, steam, or the like under pressure into the well tube, to elevate the water therein. This is clearly illustrated in the accompanying engraving. The well tube is shown at *A*, and the liquid pressure tube is indicated at *B*. The lower end of the tube *B* is closed by a cap threaded thereon. Mounted on the lower portion of the tube *B* is the head, comprising two cup-shaped members *C* and *C*, arranged with their larger ends adjacent to each other. These ends are spaced apart to form an annular port. It is designed that the width of this port may be regulated and, therefore, the members *C C* are threaded on the tube *B*, so that they can be adjusted toward or from each other. In this adjustment the members are held by jam nuts. It will be noted that the facing walls of the cup-shaped members are inclined upward and outward, so that the fluid pressure acts in an upward direction. The cup-shaped members form a comparatively large air chamber, which receives air from the tube *B* through a number of openings therein. In operation the air, under pressure, is passed down through the tube *B*, and enters the chamber *C*, from which it discharges in the well tube through the annular port, thus creating an upward suction in the pipe, which serves to raise the liquid in the well tube.



EJECTOR PUMP FOR TUBULAR WELLS.

The Fiftieth Anniversary of the Coal-Tar Dye Industry.

The present year will witness the fiftieth anniversary of the foundation of a great branch of chemical industry which, perhaps more than any other discovery in applied chemistry, has reacted upon the science itself to its lasting benefit. Half a century ago the first artificial coloring matter obtained from a coal-tar product was discovered and manufactured by William Henry Perkin under the trade name of "mauve." The subsequent development of the coal-tar color industry has been one continuous series of triumphs, and the colossal scale on which organic compounds of great complexity are now manufactured, often in a state approaching chemical purity, cannot but strike the future historian of scientific industry as one of the most marvelous achievements of applied organic chemistry of the present age. The marvel is enhanced when it is borne in mind that the whole of this industrial development, which has been made possible by the intervention of pure science at every stage, has taken place during the last half-century. The founder of the industry, Dr. Perkin, is happily still in full vigor, and a movement is now being organized to celebrate the jubilee of the discovery and do honor to the discoverer.—Nature.

Rock Salt as a Screen Against Radium Rays.

J. Elster and H. Geitel have found that rock salt is an effective screen against the Becquerel radiation which is distributed all over the earth. It is impervious to gases, and therefore also to radium emanation. In considerable thicknesses it absorbs even the very penetrative γ rays. And lastly, its own radio-activity, is very slight, owing no doubt to the fact that the natural deposits of rock salt were in a liquid condition for some time after the radium compounds had been precipitated together with the calcium. The authors tested the efficacy of rock salt as a screen by mounting a dissipation apparatus in a salt mine near Wolfenbüttel. They found that at the bottom of the mine the rate of dissipation was reduced by 28 per cent. The residual radio-activity must be ascribed to thorium compounds, which are not so easily precipitated as are radium compounds.—Elster and Geitel, Physikalische Zeitschrift.