RECENTLY PATENTED INVENTIONS.

Railway Appliances.

SWITCH WORKER.—Frank Wood, Middletown, N. Y. This is a simple apparatus for use in connection with the ordinary switch lever and signal post, to be operated by a passing train to automatically close and open switch, the mechanism also shifting the signal post to indicate safety. The switch is normally held closed by a spring-pressed switch bar having a shoulder adapted to engage the horizontal member of a pivoted spring-pressed bell crank to hold the switch open, while a convex spring contact bar has one end pivoted adjacent to one of the rails and its other end connected to one of the cranks of a transverse shaft, a rod connected to the vertical member of the bell crank being also connected to one of the cranks of the shaft.

CABLE GRIP.—Michael F. Robinson, New York City (No. 42 East 105th Street). This is a cross cable grip at angles, of very simple and inexpensive construction, and conveniently applied. It permits of the passage of a cross cable through the carriage of the grip without interfering with or checking the progress of the car, and without detracting from the support which the carriage should give to the grip, or the connection between the carriage and the car. The jaws of the grip have a substantial serpentine bite, holding the cable by compression, and the jaws may be conveniently opened or closed by the gripman on the car, the cable being simply released or entirely discharged by means of the same shifting device.

CAR CONSTRUCTION.—Benjamin F. Allen, Mobile, Ala. This invention relates more particularly to car axles and the manner of hanging them, providing a two-part axle so hung that in rounding a curve the wheels will swivel slightly in relation to each other to follow the rails without friction, the wheels being placed near the ends of the car if desired, and thus obviating the tendency of the car to rock. The two-part axle is journaled and pivoted in a frame on which is pivoted a lever whose ends are connected by rods with the inner ends of parts of the axle, and when the car rounds a curve the wheels move in true concentric circles, the inner ends of the axle sections swinging slightly in opposite directions, but returning to normal position, through the action of the levers and springs, when the car strikes the straight track.

RAIL JOINT.—Martin Hubbell, Mount Kisco, N. Y. This is an improvement on a formerly patented invention of the same inventor, a base plate notched on the edges supporting the rails at the joint, in connection with two fish plates, while clamping plates impinge the side of one of the fish plates and pass loosely through the notches of the base plate, and bolts clamp the parts together, passing through aligned holes in the rail webs, fish plates, and clamping plates. Hook-headed bolts bind the base plates on the rails. It is claimed that this joint not only prevents lateral deviation of the rails, but is measurably elastic.

CAR FENDER.—Adelbert L. Reynolds and David A. Center, New York City. This device, for picking up without injury persons in the path of a car, consists of a horizontally slidable platform in combination with inclined guides rigidly supported from the truck frame. The fender has at its front end a series of springs, each with curved or rounded front portion terminating in a longitudinal top part, with free rear end to permit the spring to readily yield on striking an obstruction, and to lift the latter.

CAR COUPLING.—Andrew D. Alden, Brockport, Pa. This is a coupling of the link and hook type, having parts adjustable for coupling or uncoupling from either side of the car. In the link-receiving recess of the drawhead is pivoted a latch hook having a depending nose adapted to engage the coupling link when the latter is in place in the drawhead, while a gravity link pivoted to the latch hook is adapted normally to lock the latch hook against movement, a lifting device being connected with the link for lifting and unlocking the latch hook.

Electrical.

TELEPHONE TRANSMITTER.—William A. Mason, Sumter, S. C. This is an improvement in transmitters in which one or more carbon pencils or bars hangs or leans from gravity against another carbon bar or pencil, the latter attached to the vibrating diaphragm and forming one terminal of the circuit, while the gravitating pencils or bars form the other. The leaning bars, according to the improvement, are made with a hole through which passes the other carbon electrode, the hole being reamed out on both sides to form a sharp circumferential edge at the point of contact, whereby extreme sensitiveness for low tones is obtained without any jarring or confusion of sounds in the louder tones.

Mechanical.

ROLL POLISHING DEVICE. — Charles and John L. Greer, New Castle, Pa. This is a device more especially designed for smoothing the surfaces of rolls employed for rolling sheet metal plates, the rolls not having to be stopped and the process being adapted to both hot and cold rolls. It consists of a tapering tongue adapted to be projected between the rolls, and made in separate sections, with independent means of adjustment, the bearing surface consisting of an elastic cushion covered by a surface of metal.

LEVELING DEVICE.—James Darragh, New York City. This is a device for use in machine shops, and by bridge builders, carpenters, masons, and other mechanics, for conveniently leveling in places a considerable distance apart, without the use of straight edges or other tools. It comprises two indicators, consisting of graduated glass tubes connected by a flexible tube containing a liquid whose rise and fall in the glass tubes indicate the difference of elevation. On the upper end of each tube is a ring for conveniently suspending each indicator from an article, such as shafting, etc., and on the base of each indicator is a spirit level, while a graduated rod indicates the distance of the base from the object being leveled.

Miscellaneous.

RUBBER TREATING APPARATUS. — Francisco G. P. Leas, New York City. For treating rubber and similar vegetable juices, which coagulate when acted upon by certain gases, this inventor has devised a simple apparatus for forcing the gas through the material to be treated, to produce a homogeneous coagulated mass, the apparatus avoiding the loss of gas and preventing the contamination of the material by foreign matter. The coagulating chamber is connected with a bellows provided with means for supplying gas from a holder, and in the chamber is operated a plunger to bring the gas or smoke for the coagulating of the material in contact with its inner particles.

CISTERN.—Henry P. Schaefer, Schulenburg, Texas. This is a sheet iron upright cylindrical cistern, and applied around its upper open end is a strengthening rim of wrought iron or steel metal tubing or piping, which is fastened to the cistern and arranged preferably around its outside. A similar strengthening rim is also applied if desired at different places around the body of the cistern, the pipes or tubes, being always readily obtainable, giving great strength, and being bent and applied with comparatively small expense.

THILL COUPLING.— James T. Welch and David A. Dreyfus, L'Argent Landing, La. This device comprises an axle clip having forwardly projecting parallel lugs with notches in their upper edges, a latch bing pivoted on and having a crossbar to swing over the ends of the lugs, and the side arms of the latch having notches to register with the notches in the lugs. The device is simple and inexpensive, does away with the use of bolts, holds the thills securely, and facilitates instant coupling or uncoupling.

ICE CREAM FREEZER. — Giuseppe Ottino and Antonio Raffo, New York City. This freezer comprises a cylinder turning in an ice box, there being within the cylinder an air blast chamber connected with an air supply, and a perforated plate in close proximity to the rim of the cylinder. A liquid supply pipe discharges over the plate and a scraper arranged through the cylinder engages the inner surface of the plate to scrape off what freezes on its surface. Cream or other liquid is quickly frozen by the action of the air blast, dividing the cream into fine particles and passing it on to the cold revolving cylinder.

CLOCK STRIKING MECHANISM.—Oscar G. Ahlstrom, New York City. This is an improvement in automatic gongs for use in lodge rooms or other places where special signals are to be sounded, facilitating the sounding of a predetermined number of alarms at certain distances apart. When the alarm is required a push button is pressed and a starting arm controlling the striking mechanism is turned, its stop attachment releasing a wheel which sets all the gearing in motion.

SASH FASTENER. — George W. C. Woolery, Bedford, Ind. In each side of the sash, according to this improvement, is embedded a metallic strip or detent plate, with bottom curved cavities, permitting the horizontally moving bolt of a sash lock in the sash to slide from one recess to another, against the tension of spring, the spring being of sufficient strength to maintain the bolt in outer position against the weight of the sash. The outer ends of the bolts are slightly rounded to permit the sash to be readily moved up and down, and the arrangement of the lock is such that the tensional force of the spring may be readily increased. A key is provided by which the bolt may be locked in outer position to hold the sash closed or at any desired elevation.

METAL FRAMED MIRROR. — Albert Wanner, Jr., Hoboken, N. J. This inventor has devised an improved circular mirror, of inexpensive but quite ornamental construction, for toilet use. The frame is preferably a sheet metal strip, semicircular in cross section, with ornamental joint cover pieces at its ends, the frame inclosing the beveled edges of the glass as the ends of the frame are drawn together. The handle piece is a metallic bar or length of wire made to simulate strung beads, and the mirror has an ornamental reverse facing piece covering and protecting its silvered surface.

TIP CAP FOR UMBRELLA RIBS.—Alfred B. Hunt, Brooklyn, N. Y. This is a cap of elastic material with slotted spring metal body and enlarged head, to be applied to the outer extremity or tip of each rib, in order that covers with such tips attached may be kept in stock in furnishing and other stores for ready application by customers to old umbrella frames.

UMBRELLA OR CANE RACK.—Albert J. and Harry S. Grimes, Portsmouth, Ohio. Upon the upper end of a standard supported by a suitable base is a revolving hub with radial arms on the opposite sides of which are double spring clips, there being hooks on the arms above the clips, and the clips and hooks being numbered. For each hook is a numbered check, to be passed to any one whose umbrella or cane is placed in the rack.

CIGAR CASING.—Nathan Schwab, New York City. This is a cheap protecting casing, of glue, celluloid, paper, or other suitable substance, the casing being made in two parts, to cover the two ends of a cigar and leave an exposed middle portion. It is designed to be cheap enough to be thrown away when the cigars are consumed, but to afford such protection that individual cigars may safely be carried in the pocket, while the open middle portion allows one to judge of the color and quality of cigars thus protected while they are in the boxes.

FISHING NETS.—Harald Hommerberg, Brooklyn, N. Y. An apparatus for closing and hauling nets or seines, without pulling the nets on shore, and without danger of losing the fish, has been devised by this inventor. At the lower edge of the net is a block line held on a flap, a weight block having a slidable connection with the block line, while a weight line is connected with the block for hauling it in. In hauling in the net the anchor lines are slackened, and the net is closed after the fish are entrapped, without leaving the fishing ground.

MOUSE TRAP. — Henry Obermeyer, Jansen, Neb. This trap consists of a cage with a pivoted gate or door in its front wall, in connection with a weight-lifted hood, while a vertically movable platform is so connected to the gate and hood as to be depressed by the weight of the animal.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

AN HISTORICAL SKETCH OF MADISON SQUARE, NEW YORK CITY.

Marcus Benjamin has edited for the Meriden Britannia Company an illustrated monograph, descriptive of the square and its surroundings half a century ago, and the statues of distinguished persons, and fountains within the park and the beautiful buildings which now surround it.

POPULAR SCIENTIFIC LECTURES. By Ernst Mach. Translated by Thomas J. McCormack. Chicago: The Open Court Publishing Company. 1895. Pp. 313. Price $1.

These lectures extend over a considerable ground in natural science. They are translated from the German. The author's views are more or less one-sided, he advocating a greater devotion to science and less to the classics.

The 1895 Catalogue of the Keuffel & Esser Company, of New York, is a model in its way. The company are large manufacturers and importers of drawing materials and surveying instruments, and their catalogue fills over 400 closely printed pages, this year's issue being the twenty-sixth edition, greatly enlarged, revised, and rewritten. The book is copyrighted entire, and some four hundred of its illustrations and much descriptive matter have also been separately copyrighted. The number of kinds and grades of drawing paper shown, the great variety of instruments and sets of instruments, and all related appliances, would seem to amply justify the assumption of the company that nothing in their line which is good and reliable has been omitted. There is also a good deal of valuable and instructive matter in the text. The catalogue should be in the hands of all users of or dealers in such goods.

SCIENTIFIC AMERICAN BUILDING EDITION.

JANUARY, 1895.—(No. 111.)

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Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.
References to former articles or answers should give date of paper and page or number of question.
Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
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Scientific American Supplements referred to may be had at the office. Price 10 cents each.
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(6392) The H. E. S. Co. write: A few years ago a portable electric light (so called) was advertised and sold through the country, the production of light being caused by heating, in the flame of a small alcohol lamp, a small spiral of very fine wire through which passed a current from a medium sized Grenet battery. What metal was the spiral? This was quite a novelty at the time, producing as it did a brilliant, soft light for a limited time at intervals. A. The wire was probably platinum. The heating in the flame not only helped the incandescence directly, but also increased the resistance, so that a thicker wire could be used than one required for the battery alone.

(6393) S. N. asks: 1. How thin can I use the wire for a line 100 feet long able to conduct an electric current (under water) strong enough to give a spark at the end of the line? I want it as flexible as possible. What kind of insulation is the best? A. Use gutta percha insulated wire No. 24. 2. Would it not be the best to use a spark coil to obtain the necessary tension? A. Yes. 3. Could the coil be placed near the battery or must it be at the end of the line? A. Place it anywhere. 4. How many cells of standard dry batteries would be required? A. Six or eight.

(6394) F. J. M. asks: 1. What number wire is used in common electric bells? A. No. 22 to 24 is a good size. 2. Is wire double covered? A. It is best so; not necessarily. 3. How many layers are employed on spools? A. Nine or ten are enough. 4. What other metal besides platinum is suitable for contact breaker? A. Platinum is most available. Iridium is excellent.

(6395) W. W. S. asks: 1. What is meant when a water main is said to be negative to a rail in a track above it? A. When in electrolysis hydrogen would be evolved from it. 2. To prevent or reduce electrolysis of water pipes, should the pipes be positive or negative to the rail, and why? A. Negative, because oxygen is the corroding element.

(6396) E. Y. M. asks: 1. Can electric light carbons be pulverized and reshaped for battery purposes? If so, how can it be done? A. The best way is to solder or clamp them together. See SCIENTIFIC AMERICAN, October 27, 1888. 2. What make of incandescent lamps gives the best satisfaction? A. There are a number of equally good qualities. 3. What is the best size of wire for the primary coil in an induction coil having three of No. 36 wire in the secondary coil? A. Use two layers No. 16 wire. 4. How much battery power would be required to get the longest possible spark from above coil? A. Four amperes.

(6397) F. C. M. writes: I have a regular magneto call bell with telephone receiver attached to binding posts at side. It has four wires extending below the box. Now I wish to attach another receiver to be used as a transmitter. Which wires shall I connect my transmitter to? A. Connect your second telephone either in parallel or in series with the first. It makes little difference which way you connect it.

(6398) E. W. S. says: I send a stereoscopic view which is a puzzle to me, and if convenient

for you I should be pleased to have you explain it. When I look at this view through a stereoscope, objects which should be in the foreground appear to be in the background and vice versa, and several persons to whom I have shown the picture see it in the same way. This peculiarity is particularly noticeable in the case of the trees in the background, which show above the canopy and appear through the stereoscope to be nearer the observer than the canopy is, and in the back of the canopy itself, which appears to be between the observer and the people who are sitting in front of it. By examining the picture through a stereoscope you will undoubtedly notice these things, and I should be glad to have you throw some light on the subject. A. The appearance is due to the fact that the print was not cut in two and the prints transposed, as must always be done in mounting stereoscopic photographs. See SCIENTIFIC AMERICAN, November 5, 1892.

(6399) Subscriber asks: Can I run two incandescent lamps (16 candle power) with a battery, or a number of batteries, and if so, whose make of batteries and how many of them? If it is practical to light two lamps with electricity from batteries, how would the cost compare with two Hitchcock lamps run the same number of hours, with kerosene oil at 45c. per gallon? A. Electric lighting on a small scale cannot be made to compete with kerosene. Electric lighting by means of primary batteries is both expensive and troublesome. Where it is done by secondary batteries charged by primary batteries it is somewhat less troublesome, but still expensive. See correspondence column this week for general arrangement of primary and secondary batteries. It will require 9 or 10 cells of secondary battery to run one 16 candle power lamp, but the same battery would run 8 or 10 lamps for a shorter time.

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