

RECENTLY PATENTED INVENTIONS. Railway Appliances.

TRAIN SIGNAL.—Augustus H. R. Guiley, South Easton, Pa. This is an improvement on a formerly patented invention of the same inventor for an electric block system for railways, the earlier patent providing for diagonal contact plates to be engaged by the lateral presence of contact arms, while the present invention covers an improved form of contact plate and brush. Applied to a single track railway, the apparatus indicates to each other the presence of trains on different sections of track, whether the trains are running in the same direction or running toward each other.

MAIL BAG CATCHER AND DELIVERER.—Charles F. Sliger, San Antonio, Texas. This is a device which may be used at either side of a door opening in a car, to transfer mail bags from a hanger to the car while the latter is in motion, or to deliver a mail bag at the station, one operation not interfering with the other, the device being automatic in its operation and quite simple and inexpensive. A spring-controlled catcher arm carries a retaining arm and locking mechanism, a delivery arm being fulcrumed on the catcher arm and a locking device engaging the retaining arm, while there is a trip connection between the locking device and the delivery arm, there being also a carrier on the latter arm and a trip to throw it into open position.

Mining, Etc.

DRY WASHER.—Frederick E. McKinley, Albuquerque, New Mexico. This is a machine for placer mining, designed to save all the gold, both flour and nuggets in the sand, without the use of water and quicksilver. It consists of a sand roaster discharging into a nugget-separating machine leading to conveyors connected by elevators with the uppermost of a series of screens one above the other, each having riffles to retain the gold and an outlet for the tailings. The screens are graduated, and each has a hopper discharging into the next lower screen. The machine is run by a team attached to sweeps.

Mechanical.

LINK MAKING DIE.—Joseph Smith, Puebla, Mexico. This invention provides for sets of dies for successively bending, swaging, overlapping, and welding the iron to form a link, in such way as to greatly facilitate the manufacture of links for railway couplings and other purposes. The individual dies for bending the rod and performing the different operations may be in separate sets, or they may be assembled in two pieces, of which one carries all the female dies and the other all the male dies. By treating the rod in the manner provided for by the invention, links of great durability and strength may be very economically made.

GLAZIER'S GLASS BREAKER.—George A. Rogers, Allegheny, Pa. This is a tool for use in connection with a glazier's glass cutter, and may be used in combination therewith or as an independent tool. It is so constructed that, by the movement of a lever, a sliding jaw has movement in relation to a fixed jaw to accommodate glass of various thicknesses, the glass being received between the two jaws, and a strip or section of glass being then broken off quickly and cleanly.

Agricultural.

HAY SLING.—Samuel M. Jenks, Madison, South Dakota. This is a device which may be used as a substitute for a fork or other carrier, and made to carry a large quantity, binding the hay so completely that there is no scattering or dribbling, while it may be instantly tripped to deposit its load, which it leaves in excellent condition for pitching. It has two separable tripping or center heads, one with projecting arms having heads and the other with dogs to engage the heads, a bed plate on which levers swing and slide, a second lever working the swinging and sliding levers, and connecting rods extending from the swinging and sliding levers to the dogs. The device may be advantageously used in loading and unloading and in stacking.

Miscellaneous.

DUMPING GRATE.—Benjamin E. Weeks, New York City. This is a cheap and simple grate adapted to maintain an entirely level fire. It comprises a cradle formed of parallel bars, one of which is journaled in a support, and connecting cross bars, while a series of grate bars is arranged at right angles to the parallel bars and have transverse slots on their undersides to receive the journaled bar of the cradle. It is arranged in sections which may be successively dumped, enabling the good fire to be held on one while the ashes and poor fire are dumped from the other. A simple and strong mechanism is provided for holding the grates in position, and a very easily operated lever mechanism for working them.

COAL DELIVERY BOX.—Hermann Kehl, New York City. This is a box especially designed for supplying customers with coal in small quantities, without danger of soiling the apartments on delivering or removing the coal from the box as needed for household purposes, while also insuring the customer the proper amount of coal ordered. It has a sheet metal casing with hinged lid, a flat back and curved front, and has a screen-like false bottom under which is a removable receptacle. In the lower portion of the box a downwardly inclined plate extends nearly across the box, and below the plate is a door hinged to swing outward upon a level with the false bottom, the shovel being introduced in this door to remove the coal. A vertical slot, covered by a translucent strip, enables the customer to see at any time how much coal there is in the box.

HOISTING AND CONVEYING MECHANISM.—Frederick H. McDowell, Montclair, N. J., and Sebern A. Cooney, New York City. This improvement relates to tramways for hoisting material from a quarry or other cutting, and provides for duplicate fall ropes arranged to convey material to either terminal of the tramway, either rope being used to control the travel of the carriage. At one terminal of the carriage are winding drums operative together or separately, there being on the drums duplicate fall ropes, one leading directly to the carriage and the other to the opposite terminal of the carriage and returning to the carriage, while there

are separate sets of sheaves and separate fall locks for each of the fall ropes, forming independent tackle. Each fall is operative independently for lowering its block or for maintaining the carriage in place, and both of the independent fall ropes form, when in the raised position, a practically endless haul rope.

WINDMILL.—Peter A. Norberg, Roslyn, Washington. This wheel comprises a shaft from which extends sets of radial arms, the lower arm having a beveled recess forming limiting shoulders, and there being blades with vertical trunnions journaled in the arms, the lower end of each blade being beveled to fit into the recess to abut against the shoulders. The construction is designed to be very simple and durable, and is adapted to utilize the force of the wind to the greatest advantage.

FIFTH WHEEL.—Caleb R. Turner, Brooklyn, N. Y. This is an improvement in that class of fifth wheels in which roller bearings are used to enable the vehicle to turn easily. It provides opposite-arranged circular angle irons forming top and bottom bearing plates, and constituting a strong but light housing for the rollers, where they cannot become clogged with dirt and dust and are also shielded from water. The improvement is designed to combine simplicity, cheapness and efficiency to the greatest possible extent.

THRILL COUPLING.—George Cargin, Wells, N. Y. According to this invention a spring is held on the thrill clip, and carries in its free end a shaft having a projection adapted to engage the eye of the shaft or pole, a handle on the shaft being adapted to extend across the pivot pin for the thrill coupling. The device is very simple and durable, permits of quickly changing poles or thrills, and prevents rattling or accidentally losing the pivot pin.

PRODUCING CHENILLE.—Nicholas Albrecht, Philadelphia, Pa. This inventor provides a method of forming the chenille strands employed in weaving chenille fabrics—first weaving a chenille cloth with plain or single-ply portions and alternating three-ply portions, all the warp threads being interwoven in the single ply and a portion only in each of the three superposed plies; second, cutting the single ply lengthwise between each two sets of warp threads, leaving the three-ply sections uncut, whereby the cloth is separated into three divisions or fabrics; and, third, cutting each of the three piles midway between each two sets of its warp threads.

PAPER GAGING MACHINE.—Louis Schopper, Leipsic, Germany. This invention provides indicating devices arranged on a roller over which passes the paper produced in a paper machine to visibly indicate the thickness and weight of the paper, and to transmit to various distances audible signals when the thickness or weight of paper has exceeded or fallen below certain limits. The indicating devices are constructed to show at any time on a scale the thickness of the paper passing over the roller and the weight per square meter or any other size, and the signals made on a change of product are produced by suitable electrical connections.

MEASURING AND DRAWING INSTRUMENT.—William S. Rowell, Muncie, Ind. This invention consists principally of a blade having at one end a fixed head with a triangular opening, the base of which passes through the center of the head, and a centering head held adjustably on the blade and having its arms parallel to the sides of the triangular opening. The instrument may be advantageously used for laying off any shaped figures inside the circumference of another figure, enabling the workman to very accurately draw the desired lines and figures on the work.

ROUND EXTENSION TABLE.—Nestor Lattard, New York City. This invention provides for a small or a larger increase in the diameter of a circular table by the addition of one or more circular series of segmental extension pieces, and also for a convenient storage compartment in the table for the extension pieces. Suitable leg supports are provided and the table is made strong and stable.

FILTER.—Joseph G. and Smith A. Sutton, West Newton, Pa. This is a filter especially adapted for use in wells or cisterns, and it is provided with a cleaning brush adapted to be normally held from contact with the filtering walls, while capable of being rotated and reciprocated over such walls to remove accumulations settling on them. A supplemental tank or water holder is also connected with the main filtering chamber, with a valve mechanism adapted to be set in operation as the filtering chamber becomes filled, producing back pressure on the water within the chamber to force it out through the filtering walls and clean them.

FRUIT PITTER.—James L. Hall, Kingston, Mass., and Frank H. Chase, Grand Rivers, Ky. This is an improvement upon a formerly patented seeder or pitter, providing an attachment in the nature of a ring encircling the spring prongs of the seeder, and serving as a guard to prevent the heads of the prongs spreading or expanding laterally, while also increasing the effectiveness of the device, by taking the place of a row or circle of prongs, thus aiding in cutting the pulp and extracting and retaining seeds.

LOCK.—John S. Barney, Brooklyn, N. Y. This is an improved device for locking coats and other articles, and may be attached to the inside of a coat collar and worn without inconvenience. It may be conveniently locked to a hook or other hanger, to fasten the coat thereto, and may be quickly and easily unlocked by one knowing the combination. The combination is simple, but cannot very well be accidentally worked.

FASTENING DEVICE FOR SEATS.—Charles G. Taylor, Farmington, Wash. This improvement is to facilitate the securing in place of seats and chairs in school houses, halls, etc., in such way that the seats may be readily removed and replaced. An improved fastener is, according to the invention, applied to the legs or frames of the seat, the fastening attachment being adapted to engage fixed sockets or keepers on the floor, the sockets presenting little or no obstruction to the cleaning of the floor when the seats or chairs are removed.

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NEW BOOKS AND PUBLICATIONS.

POOR'S MANUAL. 1894. Twenty-seventh annual number. New York: H. V. & H. W. Poor. Pp. xvi, 1390, 104.

There is no need for us to review Poor's Manual. Its annual appearance is as much a feature of modern life as that of the directory. For the past year of rather dreary achievements in railroad work, the manual possesses, perhaps, especial interest; notably a column of dividends paid during the eight years from 1886 to 1893, will be particularly interesting reading, in the light of present dividends and of probable future ones.

SCIENTIFIC AMERICAN BUILDING EDITION.

MARCH, 1895.—(No. 113.)

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- 1. Elegant plate in colors showing a cottage at Mount Vernon, N. Y., three perspective elevations and floor plans. Mr. H. R. Rapelye, architect, Mount Vernon, N. Y. An attractive design.
2. "The Gables," a half timbered cottage recently completed at Glen Ridge, N. J. Perspective elevation and floor plan. Mr. Charles E. Miller, architect, New York City.
3. A cottage at Great Diamond Island, Me., recently erected for H. M. Bailey, Esq., two perspective elevations and floor plans. A unique design for an island cottage. Mr. Jno. C. Stevens, architect, Portland, Me.
4. A dwelling at Armour Villa Park, N. Y., recently erected for J. E. Kent, Esq., at a cost of \$5,200 complete, two perspective elevations and floor plans. A very picturesque design.
5. A colonial cottage at New Rochelle, N. Y., recently erected for C. W. Howland, Esq., two perspective elevations and floor plans. Mr. G. K. Thompson, architect, New York City. A unique example of a modern dwelling.
6. The residence of Charles N. Marvin, Esq., at Montclair, N. J. A design successfully treated in the Flemish style. Two perspective elevations and floor plans. Mr. A. V. Porter, architect, Brooklyn, N. Y.
7. A fine Colonial house at Elizabeth, N. J., recently completed for Henry A. Haines, Esq. Perspective elevation and floor plans. Architects, Messrs. Child & De Goll, New York City.
8. A residence at Flatbush, L. I., recently erected for C. H. Wheeler, Esq., at a cost of \$11,000 complete. Two perspective elevations and floor plans. Architect, Mr. J. G. Richardson, Flatbush, L. I. An attractive design.
9. A cottage at Plainfield, N. J., erected for Chas. H. Lyman, Esq., at a cost of \$5,000 complete. Two perspective elevations and floor plans. Architect, Mr. W. H. Cunn, Plainfield, N. J. A picturesque design.
10. An elegant house at Scranton, Pa., erected at a cost of \$15,000 complete. Two perspective elevations and floor plans. Architect, Mr. E. G. W. Dietrich, New York City.
11. Engraving showing the new building of "The Bank for Savings," recently erected on 22d Street, New York City. Mr. C. L. W. Elditz, architect, New York City.
12. Foundation piers of the American Surety Company's building, New York City. Four illustrations, showing the most advanced methods of caisson construction for city buildings.
13. Miscellaneous contents.—An automatic gas saving governor, illustrated.—Heating a residence with open grates, illustrated.—Arranging effective interior, illustrated.

The Scientific American Building Edition is issued monthly. \$250 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates in colors and with fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

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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. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(6448) H. S. asks: To how low a degree can the spirit thermometer be read, also the mercurial thermometer? Will the mercury remain fluid in the cold as long as spirit? Which is the more reliable under all circumstances? Of what proof must the spirit be? A. The mercurial thermometer is the more accurate. It can only be read to -39.4° C. The alcohol should be absolute.

(6449) F. J. S. writes: Please give definition of sound, and can there be sound without an ear to hear it? A. According to the Century Dictionary, sound must be heard to exist. The definition reads: "The sensation produced through the ear, or organ of hearing; in the physical sense, either the vibrations of the sounding body itself or those of the air or other medium, which are caused by the sounding body, and which immediately affect the ear."

(6450) H. C. S. asks: Do incandescent electric lamps ever explode of themselves? I have had one or two complaints from customers of lamps breaking without being touched. One of these was from the postmaster, who said that on throwing a heavy mail bag on a table ten feet away from the lamp (which was suspended from the ceiling by drop cord), it exploded. A. It is possible and to be anticipated. In the case cited the concussion of the air was probably the determining cause.

(6451) S. N. asks: How many additional layers of wire are necessary to wind simple motor described in SCIENTIFIC AMERICAN SUPPLEMENT, No. 641, for dynamo? I have it wound now for motor. Fields are cast. A. We do not advise the use of the motor as a dynamo. The wire need not be changed in size or quantity. The windings depend on the results desired.

(6452) Rollins College, Fla., and F. L. F. ask how to make carbon paper. A. Melt 10 parts lard, 1 part of wax, and mix with a sufficient quantity of fine lampblack. Saturate unglazed paper with this, remove excess and press.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted March 12, 1895, AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Table listing inventions and their patent numbers, including: Acetone apparatus for making, O. Porsch; Alarm, See Burglar alarm; Amalgamator, ore, G. A. Kennedy; Antimony and obtaining same, double salt of, Schill & Sellacher; Armature conductor for dynamo-electric machines, G. Eisenhoner; Automatic switch, J. Moeller; Axle, L. I. Waite; Bag, See Mail bag; Bales, end cap, tie, and seal for cylindrical cotton, L. W. Campbell; Baling press, O. Gates; Band tie, S. Knighton; Barber's chair, M. Melchior; Barrel or package, metallic, G. Waterson; Batteries, constructing secondary, A. Hough; Battery, H. N. F. Schaeffer; Bean picker, H. A. Bacon; Bed brace, G. W. Green; Bed brace, H. C. Heitman; Bed or couch, invalid, R. V. Wicks; Bedstead, N. Ernst; Bee smoker, J. E. Crane; Bell, bicycle, G. W. Goff; Bicycle attachment, C. A. Coey; Bicycle brake, W. M. McCarthy; Bicycle luggage carrier, F. A. Martin; Bicycle pump, automatic, W. R. Moore; Bicycle stand, C. Mee; Boiler, See Steam boiler; Book and index, combined order, S. B. Rosenbaum; Boring machine, G. T. Whitney; Boring mill turning and facing attachment, J. T. Williams; Bottle closing device, L. N. Thomas; Bottle, infant's feeding, G. Muller; Bottle, non-blebble, J. H. Reeland; Bottle stopper, F. T. Robinson; Box, See File box; Lubricating box, Self-closing box; Braze, See Bed brace; Ratchet brace; Brake, See Bicycle brake; Car rail brake; Brake slack adjuster, F. Robinson; Brake slack adjuster, J. H. Sewall; Brick kiln, J. K. Caldwell; Brick kiln appliances, portable grate for, W. M. Leonard; Brick, lock, G. J. Herbin; Brush, shaving, W. S. Finley; Buckle, suspender, G. F. Atwood; Burglar alarm and house call, electric, H. L. Carpenter; Burling machine, L. E. Woodard; Burning fuel, process of and apparatus for, F. H. Richards; Button and staple feeding mechanism, W. G. Metcalf; Cabinet, E. W. Woodruff; Can, See Oil can; Can filling machine, Hemingway & Barber; Can heading and crimping machine, J. W. Green; Can heads, punch and die for forming keyopener, N. Troyer; Cane mill, J. H. Fogarty; Cap and cutting machine, T. C. Merg; Capsule trimming machine, T. C. Merg; Car buffing device, J. Timms; Car coupling, Bischoff & Baird; Car coupling, J. Dewey; Car coupling, W. Dunlap; Car coupling, W. M. Long; Car door, E. F. Grant.