

## RECENTLY PATENTED INVENTIONS.

## Railway Appliances.

**SWITCH.**—Edward W. Coughlin, Baltimore, Md. This inventor has devised a special construction for switching across the rail of an unbroken main line, providing for so bracing the parts by each other at the point of crossing that one cannot be depressed without a corresponding depression of the others, preserving the proper fitting of the joints at the crossing, no matter how great the load. The base section of the main line rail has an extended plate with a seat for the tongue of the swing section, which is pivoted at one end on the base plate and has a tongue and a rib to fit the hollow of the main line rail.

**RAIL TIE PLATE AND BRACE.**—August L. Starke, New York City. This plate has on its upper side internal inclined rail braces whose inner ends fit the side of the rail, while there are parallel longitudinal ribs integral with the under side, there being spike apertures in the plate, which is composed of a single piece, and adapted to be placed on an ordinary sleeper. It is cheap and simple and easily applied, and rigidly supports the rail, and at the same time braces its sides, to prevent the rail from either turning or spreading.

**BRIDGE SIGNAL.**—John E. Zimmerman, Trinidad, Col. This is an inexpensive, simple and positive working apparatus, to be arranged at the side of the track at a suitable distance from the bridge, and connected with some portion of the track-supporting structure, being so arranged that when the latter is displaced in any way a signal mechanism is operated and a torpedo moved out upon the rail, where a passing train will explode it. The improvement is especially designed to give warning when a bridge is washed away or is unsafe, or when a culvert, trestle, or other part of the roadbed has been broken away.

## Electrical.

## BLOCK SYSTEM FOR TROLLEY ROADS.

—Willard F. Lewis, Swampscott, Mass. A contact device connected with one of the trolley wire hangers is arranged to make contact with the line wire, a second contact device making a contact for a day or night signal, as a lamp, while an electro-magnetic releasing apparatus is connected with the contact devices for extinguishing the lamp after a car has passed a turnout. The improvement is more especially designed for single track roads, to guard turnouts and prevent cars from making long waits, as well as to prevent collisions between cars moving in opposite directions.

**CUTOUT AND CORD ADJUSTER.**—Edgar D. Knap, Schenectady, N. Y. This is a device to hold the safety fuse or thermal cutout in the branch circuit in position of use, the cord adjuster also varying the length of the cord connected with the lamp or other translating device. It comprises a casing in spindle shape containing four pairs of contact plates, each pair of plates being adapted to clamp opposite ends of a fuse wire, and also clamp the ends of a cord, and form good electrical connections between the cord ends and the fuse wire. In the ends of the case are also diagonal key-shaped slots to receive the loop of the cord and clamp it with sufficient friction to cause it to remain in any position in which it may be placed in the cord adjuster.

**ANIMAL SHEARS.**—Chester M. Palmer, Lamartine, Wis. This inventor has made an improvement in clippers, having an electro-motor attachment to reciprocate a movable knife in working contact with a fixed and toothed cutter. According to the improvement the cutters proper are connected with a magnet in such way that they are attracted and held in close working contact without the aid of springs or other supplementary devices, the cutters being both oppositely polarized.

## Mechanical.

## STOP MOTION FOR LOOMS.

—Benjamin S. Taylor and Charles Heritage, Hampden, Mass. This is a shuttle box stop motion, arranged to immediately stop the loom in case the shuttle box is not even with the shuttle race at the time the loom starts to pick. Combined with the rising and falling shuttle box and a belt shifter is a notched arm carried by the shuttle box, two pivoted levers and a connection between them and the belt shifter, whereby the belt shifter will be operated to stop the loom whenever the shuttle box is not in proper position relative to the shuttle race. The construction is simple and durable, and the improvement operates very effectively.

## APPARATUS FOR TREATING COTTON.

—Friedrich Zeiler, Cuero, Texas. According to this improvement a number of gins and condensers are located in consecutive order over a flue, the lint cotton in bat form being delivered from all of the condensers in independent bats to a common conveyer, upon which the bat cotton increases in thickness in its travel to a press, compress or other receptacle, receiving the different bats from the different condensers, one bat lying smoothly upon the other, until at the discharge end of the common conveyer, where a bat of evenly distributed lint of considerable thickness is conveniently discharged. The flue in which is the common conveyer, and into which all the conveyers of the condensers lead, has ventilators for the escape of surplus air. This improvement is attached to the steam gin of Messrs. H. Runge & Co., Cuero, Texas, where it has been practically tested for more than a year, giving the best of satisfaction.

## KNITTING MACHINE ATTACHMENT.

—William Cutts, Tabernacle, N. J. This invention relates to knitting looms or embroidering machines making gauze and similar fabrics, and provides a simple warp frame attachment by which threads may at any time be thrown into the work to make ornamental figures on the fabric. A slotted plate is arranged at the inner end of the warp frame, and in the slots are spring guides adapted to move upward, there being a series of levers beneath the guides by which the latter may be depressed. The attachments are inexpensive, conveniently applied to any ordinary machine, and operated by the customary jacquard to produce the desired figures or patterns.

## Mining.

**ROCK BREAKER AND ORE GRANULATOR.**—Harvey P. Jones, Denver, Col. This is a double-

ended machine having grinding bowls or mortars in each end, and simple means for actuating grinding levers and pestles, utilizing all the power by transmission from one end to the other, and giving the pestles a simultaneous reciprocating and oscillating movement, so that they will crush and grind rapidly. The machine is very powerful, and crushes and granulates the rock or ore to any desired degree of fineness. All the wearing parts of the machine are readily removable, so that it may be easily replaced by new parts as the old ones become broken or badly worn.

**PLUNGER WORKER FOR CONCENTRATING JIGS.**—Otto Abeling, Burke, Idaho. According to this improvement the plunger is moved rapidly down and slowly up in the water, by means of a strong, simple, and adjustable arrangement, not creating any suction on the ore as the plunger rises, but permitting it to drop very rapidly to force the water in the jig up quickly through the ore body, so as to raise the lighter particles of ore. The apparatus has comparatively great capacity and requires but little attention, and the sieve is also kept perfectly clean by the passage of the water through it in a strong upward current.

## Agricultural.

**HAY RAKE.**—George D. Lamm, Ackley, Iowa. This is a side delivery rake, the machine leaving the hay in a continuous straight windrow requiring no dumping. The rake teeth, as they are drawn along, have an intermittent picking movement, to more effectively separate the hay and avoid packing it, whereby it cures more evenly and quickly. All the rake teeth can be raised at one time by a lever within easy reach of the driver, and each tooth is capable of independent movement, lifting automatically in passing over obstructions.

**HARROW.**—Charles Wehrenberg, Mount City, Ill. This harrow has a toothed revolving drum, with the teeth so arranged and of such peculiar shape at their heads or outer ends that they will cut through the clods, to separate them and pulverize the entire surface over which they pass, and leave it comparatively even. When it is desired to go from one field to another, the movement of a lever causes the toothed drum to be raised out of engagement with the ground.

**DRAUGHT EQUALIZER.**—Samuel I. Larkins, Murray, Iowa. This is an improvement on a formerly patented invention of the same inventor, simplifying the construction and rendering the equalization of the draught of the cutter bar of a reaper or mower, or whatever load is to be drawn, more positive or decided, the improvement being applicable to any form of machine or vehicle where an equalizer for a four-horse team is desired, in which the draught must be equally divided.

**COTTON SEED SEPARATOR.**—Thomas A. Jackson, Easton, Ga. For separating imperfect from perfect cotton seed, this inventor has devised a simple and compact machine, which will not crush or break the seed, and which during its operation also removes dust and lint and other impurities. In this machine rotary screens and rotary blast fans having side suction are dispensed with, but the machine has a fixed screening body with air inlets at its feed end, designed to give a greater air force than has been usual heretofore in rotary screen mechanisms.

## SUGAR CANE TRANSFERRING DEVICE.

—Alberto Sanchez, Gibara, Cuba. This is a simple and durable construction designed to facilitate the rapid transfer of sugar cane from cars to an endless carrier belt delivering the cane to the mill. It comprises a pivoted platform on which the car to be unloaded is run, a lifting mechanism to lift one end of the platform and dump the cane off the car into an inclined revolvable cylinder in which are longitudinal ribs to straighten the cane, which is thus passed lengthwise upon the carrier belt in proper position to be fed to the crushing rolls.

## Miscellaneous.

## MANUFACTURE OF PLASTIC ARTICLES.

—Konrad Witz, Hoboken, N. J. By a particular construction of the matrix and a special preparation of the mass to be subjected to pressure, this inventor has provided improved means of forming plastic articles between a stamp and a matrix, particularly in pictures or designs of pressed paper board. The cutting of the surface of the paper board by the sharp edges of the matrix is avoided, obviating cracks in the finished article, which is made very strong and durable by one operation of the press, even where the height of the raised portions is quite extreme.

## TRIMMER FOR VAULT LIGHTS.

—Philip Schwickart, Brooklyn, N. Y. To quickly and conveniently cut or trim the surplus material of the putty, cement, or other substance employed for fastening in position the glass bull's eyes of vault lights, etc., this inventor has devised a novel trimmer. It consists principally of a central post to be supported on the bull's eye, and a cutter frame turning on the post and having cutters which circularly trim off the surplus material at the joint of the bull's eye and the metallic frame.

## CANNON PINION FOR WATCHES.

—John V. Coats, Delhi, N. Y. This is an improvement in pinions which have spring tongues engaging a groove or shoulder of the center post, whereby the pinion and post are securely held together. According to this invention the cannon pinion has the upper portion of its hub screw-threaded and provided with a spring tongue located between the threaded portion and a pinion proper, while a cylindrical nut screws on the hub and engages the upper end of the tongue at a point below the screw thread.

## PHOTOGRAPHIC PLATE HOLDER.

—Erastus B. Barker, New York City. This is a simple and efficient device by which the plate holder may be applied to a camera and the slide withdrawn and replaced without danger of fogging or accidental exposure. A camera back is secured to the rear end of the camera box and provided with a transverse guide, a slide placed in the guide being provided with a ground glass screen, and there being means for holding the plate holder and manipulating the dark slide.

**CONVERTIBLE CHAIR.**—Clara N. Weston, Gloucester, Mass., and Dennis W. Palmer, Hermon Center, Me. This is an easy and commodious chair, to be upholstered in the usual way and form an ornamental article of furniture, while it may also be converted into a sick chair, writing desk, bed, table, dressing case, etc., the entire space of the chair being utilized for some practical purpose, and the various portions arranged to conveniently fold together.

**DOOR SPRING.**—James L. Wilson, Mountain Peak, Texas. This is a cheap and simple device to be applied to a door frame and door to hold the door in open or closed position. A notched lever is pivoted on a notched bracket attached to the door frame, and one end of a spring is held in the bracket notch and its other end in the notch of the lever, while a second lever is pivoted on the outer portion of the bracket, a rod connecting the levers, and the second lever being connected with the door.

**WINDOW.**—Rudolph J. Mitchell, Jenkintown, Pa. The construction of this window is such that the sashes slide vertically in the ordinary way, while they may also be swung inward to throw open the whole casement and bring the sashes into position to be repaired or facilitate washing the glass. The details are also so arranged that the improvements may be applied to an ordinary window in an old building, as well as to new constructions.

**FIRE ALARM.**—Elmer A. Wright, Monrovia, Cal. This is an automatic mechanism, with one wire passed through a number of rooms in one direction, then looped and returned, with a fixed guide for the looped end, while a tension device is connected with the ends of the looped wire to keep it normally taut, there being fusible joints in the wire and alarm devices connected with and adapted to be operated by the separation of the wire. The system operates positively to give an alarm in all parts of a building when a fire occurs in any room.

**SLEEVE SECTION AND CUFF.**—George S. Grier, Milford, Del. This is a combination article with closed tubular section whose middle portion is large and of single ply, but with symmetrical cuff ends of multiple ply and having slits running down into the middle portion, while a circular skirt or flap is stitched exteriorly to the largest part of the middle portion, to fold over and conceal the edge and cover the slit of the cuff end that is not in use.

## SEWING MACHINE ATTACHMENT.

—Joseph W. Betz, Brooklyn, N. Y. This is a simple and inexpensive felling attachment, so made as to permit the feed block or other feeding device of a sewing machine to have direct contact with the seam flap which is to form the welt, so that if the goods are cut bias, or the seam is curved, as on the inner and outer seams of a garment sleeve, the fullness of the seam flap at its free edge will be properly gathered in as the work progresses, and a neat welt finish will be made.

**COOKER.**—Moris Finklestein, New York City. This is a simple device particularly adapted to cook milk, or food composed largely of milk, and is arranged in such a way that it may be used in connection with any kind of a fire or source of heat, keeping the milk in circulation so that it will not be burned even though it be cooked for a long time and with an intense heat.

## WASHING MACHINE.

—Theophilus B. Arndt, Florin, Pa. This machine has a clothes holder whose bed consists of a series of radiating ribs, alternate upright slats fitting at their lower ends snugly between the ribs, providing an improved rubbing surface and novel means for securing the bed or clothes receiver in the tub box. A simple construction of handle renders it easy to operate the machine by persons of different heights.

## WIRE AND SLAT FENCE MACHINE.

—Andrew W. Lane, Fredonia, Kansas. According to this invention, slide bars carrying oppositely arranged racks engage gear wheels formed with transverse openings for the wires, whereby the pickets or slats may be quickly and securely woven in place in the sets of wires. A picket is inserted in the sets of wires at the end of each up or down stroke of the rack bars, so that the twists on opposite sides of a picket are in opposite directions. The machine is of strong and simple construction, and designed to be very efficient in operation.

## VEHICLE DASHBOARD AND FENDER.

—Alma F. Blease, Hammond, Ind. This improvement comprises a metallic frame made in two sections and formed with hooks on their opposite faces, the hooks being adapted to engage one another, and a sheet of leather, fabric, or other material interposed between the frame sections and formed with slots for the passage of the hooks, whereby a strong and durable dashboard or fender is produced, and which can be readily applied to the vehicle.

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.

**ELECTRICAL MEASUREMENTS FOR AMATEURS.** By Edward Trevert, Lynn, Mass.: Bubier Publishing Company. 1894. Pp. 117. Illustrated. Price \$1. No index.

Four chapters are contained in this book, one on Electrical Units, one on the Measurements of Resistance, one on Current Measurements, and finally, one on Potential Measurements. In the beginning of the second chapter the author speaks of "taking the volts and amperes of a current." This is, unfortunately, perpetuating, to a certain extent, the formerly frequent error of attributing voltage to a current, and in the same sentence he refers to "a number of special instruments which are modifications of one or more of the above methods." As almost any work on this subject must be useful to a greater or less extent, we can at least say that Mr. Trevert's book will be of some value, but the examples of inaccuracy of expression given from a single sentence certainly go to

indicate the need of careful revision to bring the work up to the proper standard. A four-line contents is given, and no index is contained in the book.

**MINING: AN ELEMENTARY TREATISE ON THE GETTING OF MINERALS.** By Arnold Lupton. London and New York: Longmans, Green & Co. 1893. Pp. xxiv, 519. Price \$3.

The somewhat egotistical preface discloses what seem to be admirable qualifications for the writer of such a book. It is a thoroughly practical treatise, illustrated and indexed, and what is more to the purpose, is not dedicated to any of the deadly syllabus of the English examination system, and for the actual mining engineer we believe it is strongly to be recommended.

**COLUMBIAN KNOWLEDGE SERIES. No. 1. Total Eclipses of the Sun.** By Mabel Loomis Todd. Boston: Roberts Brothers. 1894. Pp. xv, 244. Illustrated. Price \$1.

The preface states that the volume now being reviewed is written "neither for astronomers, nor for eclipse experts, but to give very unprofessional information to those without technical knowledge." A very pleasantly written preface note discloses this much, and while it discloses much that is really in the book, it reveals also its very popular and attractive style. It is very beautifully illustrated and is strongly to be recommended. It has an excellent index and contains very interesting biographical matter, including portraits of several distinguished astronomers.

**HOW TO MAKE AND USE THE TELEPHONE.** By George H. Cary. A treatise for amateurs, with working drawings. Lynn, Mass.: Bubier Publishing Company. 1894. Pp. 117. Price \$1.

The title of this book describes what it is. It is entirely practical and written for the amateur and unprofessional user of telephones. It has both contents and index, and contains some useful wire tables.

## SCIENTIFIC AMERICAN

## BUILDING EDITION.

JUNE, 1894. (No. 104.)

## TABLE OF CONTENTS.

1. Elegant plate in colors showing a cottage at Poehelle Park, recently completed for Dr. N. M. Beckwith. Floor plans and two perspective elevations. Cost complete \$11,000. Mr. G. K. Thompson, architect, New York. A very unique design in the old Dutch style of architecture.
2. Plate in colors showing a handsome residence at Evanston, Ill., recently completed for H. D. Cable, Esq. Two perspective views and floor plans. Messrs. Raeder, Coffin & Crocker, architects, Chicago, Ill. An elegant design.
3. An attractive residence at Hartford, Conn., recently completed for Albert S. Cook, Esq. Cost \$7,500 complete. Mr. A. U. Scoville, architect, Hartford, Conn. A pleasing and attractive design, two perspective views and floor plans.
4. Perspective elevations and floor plans of a residence at Portchester, N. Y., recently erected for William Mertz, Esq. The design is severely classic in its treatment and illustrates the American progress in architecture. Mr. Carl Volz, architect, New York.
5. A residence in the colonial style recently erected at Ashbourne, Pa., for Addison Foster, Esq. Perspective elevation and floor plans. Estimated cost \$5,500. Mr. Samuel Milligan, architect, Philadelphia, Pa.
6. A residence at Freeport, L. I., recently completed for J. E. Brown, Esq. Perspective elevations and floor plans. Cost complete \$6,950. An attractive design.
7. The dwelling of J. S. Benner, Esq., at Reading, Pa. Three perspective views and floor plans. Mr. Geo. P. Barber, architect, Knoxville, Tenn.
8. A colonial cottage recently completed for Howell E. Beane, Esq., at Ashbourne, Pa. Cost \$4,000. Perspective elevation and floor plans. Mr. Horace Trumbauer, architect, Philadelphia, Pa.
9. Perspective elevations and floor plans of a cottage recently erected for A. P. Dunn, Esq., at Lowere, N. Y. An elegant and attractive design. Cost complete \$3,800. Mr. R. H. Duryea, architect, New York.
10. California Midwinter Fair. Half page engraving, showing a bird's eye view, the Mechanic Arts Building; also a view of the Fine Arts Building.
11. Miscellaneous Contents: Damage to water pipes by electrolytic action.—Red slate.—Treating stones for construction.—Metal plated lumber.—Damage by lightning.—Gas from wood.—The steel clad bathtub, illustrated.—An attractive greenhouse, illustrated.—The band saw.—The "Grand" fireplace heater, illustrated.—Fly screens, illustrated.—The Norris patent sash pulley, illustrated.—Glutol.—The Ives sash lock, illustrated.—Interior finish of the home.—The Peerless steam and hot water heater, illustrated.—Reproducing architects' drawings.—Cortright metal roofing shingles, illustrated.—A fine metalwork arch, illustrated.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 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.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural Publication in the world. Sold by all newsdealers. MUNN & CO., PUBLISHERS, 361 Broadway, New York.