

RECENTLY PATENTED INVENTIONS.

Engineering.

BOILER.—William Mooney, Atlantic Highlands, N. J. This invention relates especially to improvements in locomotive boilers, providing means whereby the steam taken from the dome will be very dry. Within the boiler are depending brackets supporting a sectional baffle plate beneath the dome, the plate having a detachable connection with the brackets, and the steam in the main body of the boiler is compelled to take a circuitous route which the water cannot follow, thus enabling the engine to run under full throttle or high pressure without trouble from surging or working of water in boiler.

GAUGE COCK.—James D. Mitchell, Marine City, Mich. This is a device which can be readily applied to any boiler, but is more especially designed for use on boilers in which a high steam pressure is carried. A nozzle is fixed on the valve body and adapted to be closed by a metallic plate held in a bead fitted to slide on the valve body. The pressure with which the plate is held against the nozzle can be increased or diminished by shifting a weight outward or inward on the arm of a lever fulcrumed on top of the valve body.

Railway Appliances.

CAR COUPLING.—John L. Smith, Ogden, Utah Ter. This is a simple and efficient automatic car coupling, the device permitting easy uncoupling from either the top or sides of the car. Combined with a slotted and apertured drawhead provided with a draught limb and a pivoted bail coupling link is a pivoted guard plate, a sliding lifting bar having a forwardly projecting arm, and a connection between the guard plate and lifting bar for operating the former from the latter.

CAR COUPLING.—Patrick Lee and John A. O'Farrell, Boise City, Idaho. This is an improvement on a formerly patented invention of one of these inventors, the coupling thus improved being simple and durable in construction, very effective in operation, and arranged to be readily taken apart when desired. The drawhead is formed with a hook at the top, near the front end, and a link is mounted to swing loosely in the drawhead, in which extends a transverse shaft on which are secured two arms or link lifters, each formed with two lugs engaging the sides of the link. There being two arms or link lifters for each link, and two dogs to lock the arms in place, accidental uncoupling is not likely to take place.

Mechanical.

SCREW CLAMP.—Joseph Frank and Frank H. Frankenberg, Pueblo, Col. The base of the body of this clamp is rabbeted, to slide in a guideway formed in a detachable base plate, through which projects a fastening screw, to facilitate securing the clamp in position for use. A follower or clamping plate is swiveled to the hand screw that works in the elevated front end of the clamp, and its rear portion is extended and tapered to work in a vertical guide groove in the body of the clamp, the follower being thus prevented from rotating while being adjusted by the hand screw, although free to assume different inclinations.

NUT AND BOLT LOCK.—Charles M. Stetson, Rosario, Argentine Republic. This is an improvement in nut locks in which a key and a concave washer are employed in connection with a slotted bolt. The bolt has a slot having an inclined end, and a concavo-convex washer is held on the bolt, while a toothed key passed into the slot engages with its teeth the raised edge of the washer.

Agricultural.

CULTIVATOR.—Thurston Lull, Ainsworth, Neb. This cultivator is adapted to cultivate listed corn and other crops, the knives and shovels being adjustable and so constructed as to completely cultivate all the ground between the rows, throwing up the dirt as much as necessary to each row without covering up the growing corn. The knives or shovels are adjustable independently of each other to each plow a furrow of any desired depth, or to plow a wide or narrow furrow, and by means of double clevises the knives or shovels may be set at any angle desired.

ASPARAGUS BUNDLER AND CUTTER.—John S. Van Mater, Hazlet, N. J. In a suitable frame are oppositely arranged stationary and swinging curved jaws, the swinging jaws having their lower ends formed into racks to which is geared an oscillating crank shaft moved by a lever. By means of this machine the asparagus may be quickly and nicely bundled and the butts of the stalks cut off, the jaws being actuated by a strong and easy movement, and the machine not easily getting out of repair.

HAY LOADER AND CARRIER.—Denis McCarthy, Columbus, Ohio. A framework on suitable supporting wheels has at its rear end a mechanism for raking, elevating, and discharging the hay into a storage box in which the hay is to be carried to the stack. The storage box is inclosed at its sides and top by a network of cords or cables, which may be readily removed or quickly and simultaneously tightened.

Miscellaneous.

BLANK FORM FOR KEEPING ACCOUNTS.—Theodore M. Brown, Cazenovia, Minn. This invention provides a form of account designed to effect a great saving of labor and time in keeping daily debits and credits and ascertaining and recording daily balances. A double page sheet is ruled to have ten or more special columns, arranged vertically, for individual accounts, and at the right of such columns are two more similar ones for totals, and these twelve vertical columns are sub-divided by heavy horizontal lines into parts for the business days of each month. The invention also includes several other novel features, by which the daily payments and receipts are indicated

so as to be ascertainable at a glance, and the total debits and credits accrued and given each day, as well as during the whole period business has been carried on.

COIN OPERATED PHOTOGRAPH MACHINE.—Pierre V. W. Welsh, New York City. This machine has an exposure opening in the front side of the main case, beneath which is a delivery tray, while above is a coin chute, the deposit of a coin in which sets in motion a main shaft whereby all the operations of taking and finishing a picture are effected, the work being done automatically and the picture being delivered in the tray for the purchaser. The improvement is designed to provide a mechanism having simple, easy, and positive movements, to the end that the machine may work perfectly and wear well.

STORE SERVICE APPARATUS.—A. B. J. Sloanecker, Farmersville, Mo. This is a simple and efficient apparatus for carrying money and merchandise from one part of a building to another. It has two parallel wires, a lever mechanism for moving them and changing their inclinations, and a car running on the upper wire has catches to engage balls on the lower wire. The car may be sent in either direction from any point on the line, or it may be stopped at any point, or brought from either end of the wire to the operator at any point on the line.

DRIER AND CARBONIZER.—Michael J. Spencer, Lawrence, Mass. This is a machine for drying and carbonizing wool or other fibrous material, there being arranged within a casing provided with a fan or blower a series of belt carriers, by which the material fed into the casing will be continuously moved until it is thoroughly dried, thus enabling the material to be dried at a comparatively low temperature, the carbonizing to be effected at a higher temperature.

SELF HOISTING FLOOD GATE.—Herbert A. Corlies, St. Helen, Oregon. This gate moves upward on a roller journaled in the sluiceway, being forced up by the water pressure, and locked in place by a ratchet mechanism. The improvement is intended for use in flumes through which logs are floated, where the water reservoir is small and it is necessary to save the water to flush the flume, to float the logs quickly through it and then shut off the water. By this means the water may be turned on and shut off instantly.

BOTTLE FILLING APPARATUS.—Amalia M. Donally, New York City. Combined with a flexible filling tube is a compressing device for compressing the tube to cut off the flow of the liquid, with mechanism for raising and lowering the compressing device, and to lower and raise the tube in and out of the bottle, a number of tubes being operated simultaneously, and each one regulated independently as desired. The improvement provides a means of filling bottles quickly and conveniently from a keg, barrel, or other receptacle.

FENCE.—James F. Ogletree, Stinson, Ga. A fence to be constructed in panels, readily disconnected for transportation, and easily set up on uneven as well as on even ground, is provided by this invention. Each panel has two end posts, with a central post also for long panels, and the construction is such that the panels have an interlocking connection, the top and bottom rails bearing on opposing end posts in opposite directions, thus forming an effective tie between the panels, while links connect the top and bottom portions of the end posts.

TRAWL ROLLER.—John B. J. D'Entremont, East Pubnico, Canada. This is a grooved roller mounted in a yoke and has its sides recessed and ratchet wheels mounted therein, there being boxes in which are gravity pawls on the inner sides of the upper ends of the members of the yoke. A brake mechanism is thus provided, whereby the rollers may be readily turned in a direction to admit of the trawl lines being drawn in readily, the mechanism automatically preventing the roller from turning outward. The mechanism may be added to any form of trawl roller at but little cost.

PHOTO PRINTING INDICATING TABLET.—John Ready, Boonville, N. Y. A simple device for indicating the number of prints taken from a negative, and showing the condition of the print when last inspected, is the object sought by this inventor. A frame is provided with two openings and a recessed back in which is inserted a celluloid or other tablet for marking on with a pencil, while there is also a slide in the recess showing through one of the openings of the frame, the slide being suitably colored, and indicating the condition at the last inspection of the print being made.

CLOTHES HANGER.—Theodore M. Garrison, Hazleton, Pa. This is a simple and inexpensive device which can be readily opened out for use and readily folded in compact space when not needed. The frame or support proper is formed of sections having sliding connections, whereby the hanger body can be readily extended or folded in, the lower end of such body being placed against a wall and its upper portion held tilted forward by means of a supporting cord passing through a sheave hanger.

BELT SUPPORT.—Louis Sanders, Brooklyn, N. Y. This is a device which may be moved freely on the belt, and has a jaw or clamp to engage a button of the trousers in connection with which the belt is used. It is made of a loop of flexible material, on the rear face of which is a stiffening plate carrying a clamp. The device prevents the belt from slipping, is inexpensive, and may be highly ornamented.

SHIRT ADJUSTER.—John H. Billings, New York City. An elastic band, whose length is adjustable by a buckle, has at its lower end a fastener adapted to engage a button of the drawers, and is connected at its upper end with the base plate of a stud or button, for buttoning on the shirt tab below the bosom. The device is very simple, and designed to hold the shirt bosom down tightly and yet permit the necessary freedom of movement to the wearer.

EGG CUTTER.—Ernest Berrini, Tacoma, Washington. This is a device for cutting off one end of an egg, by parties at a table or by a waiter, without any liability of soiling or burning the fingers. It consists of a knife having a socket to fit over the upper end of the egg, as it is held in the egg cup, a spring-con-

trolled and latch-governed plate being then locked in open position and tripped, when the blade cuts through that portion of the shell beneath the socket of the knife.

DESIGN FOR SPOON HANDLE.—Austin F. Jackson, Taunton, Mass. This handle has at its larger end a special arrangement of the leaves, fruit, and blossoms of the orange tree, with a cluster of three oranges, the outer edges giving an irregular outline to the margin of the handle.

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.

ICE MAKING MACHINES. The theory of the action of the various forms of cold-producing or so-called ice machines. Translated from the French of M. Ledoux. By J. E. Denton, D. S. Jacobus & A. Riesenberger. New York: D. Van Nostrand Company. 1892. Pp. lviii, 190. Price 50 cents.

Mathematics of ice-making machines are somewhat elaborately treated of in this work, which is one that no advanced engineer in this department of work should be without. The technical nature of the book rather prohibits an effective review within the space at our command. The work, it may be said, however, is characterized by thoroughness. It embodies also numerous tables which will be acceptable to those interested in the subject treated.

PRACTICAL ELECTRIC LIGHT FITTING. By F. C. Allsop. With 224 illustrations. London: Whittaker & Co. Pp. xv, 275. Price \$1.50.

The subject of wiring buildings for the production of the electric light in all its details of practical work is here given in considerable detail. Not only is the subject of buildings treated, but something of the theory of the subject and of the different systems of central station supply are also given. Very numerous illustrations, all of practical everyday type, add materially to the value of the book, which, it may be noted, is not only very fully illustrated but is excellently indexed. Street work and accumulator work are included in the topics.

THE ICE CROP. By Theron L. Hiles. New York: Orange Judd Co. 1893. Pp. 122. Price \$1.

The cutting and housing of ice, the construction of ice houses, the legal and sanitary aspect of the subject, the marketing of the product, artificial ice and cold air machines, and retarding houses without ice, are suggestive topics treated by our author. In addition to these a very practical portion of the book is devoted to farm and family use of ice, and to recipes for iced food and beverages. The work is very fully illustrated and possesses an excellent table of contents, index and list of cuts—three points of merit in themselves. It will, we believe, meet a real want.

ENGINEERS' SURVEYING INSTRUMENTS, THEIR CONSTRUCTION, ADJUSTMENT, AND USE. By Ira O. Baker, C.E. Second edition. New York: John Wiley & Sons. 1892. Pp. ix, 391. Price \$3.

Professor Baker in this work does something which has really been a desideratum. He treats of modern surveying instruments very fully, giving the most modern practice in their use. We note special sections devoted to the plane table and to telemeters, especially the stadia—subjects sometimes neglected by writers on surveying. Very numerous illustrations are included, and the barometer, we are glad to see, both aneroid and mercurial, receives special attention.

MAGNETISM AND ELECTRICITY. A manual for students in advanced classes. By Arthur William Poyser, M.A. London: Longmans, Green & Co. 1892. Pp. xi, 382. Price \$1.50.

This book is written for the English examination—something which usually casts a shadow of limitation of scope over the works designed for such uses. The book is intended as a student's manual, and certainly does not go beyond that point. It has numerous illustrations, many of them quite familiar. Samples of South Kensington examination papers are given at the end of the work.

FIGURE SKATING, SIMPLE AND COMBINED. By Montague S. Monier-Williams, Winter Randall Pidgeon, and Arthur Dryden. With illustrations by Ronald Gray. New York: Macmillan & Co. 1892. Pp. xvi, 322. Price \$2.25.

It seems impossible that so large a book could be devoted to the art of skating, but, with its diagrams and text, the book seems very fully provided with matter. It is written from an English standpoint, the writer throwing out of consideration any other skate than the permanent fixed one, the recognized favorite in England.

OLD AND NEW ASTRONOMY. By Richard A. Proctor. New York: Longmans, Green & Co. 1893. 4to. Pp. 824, 31 plates, 472 wood cuts. Price \$12. Also in 12 parts at 90 cents each and 1 at 35 cents.

The publication of the "Old and New Astronomy" was announced in 1887, and the first part was published in March, 1888. At the date of Mr. Proctor's death, in September, 1888, Part VI. had been issued and Part VII. was in type. Mr. A. Cowper Ranyard was selected to finish the work. The parts which we have received are beautifully illustrated and the presswork is of the best. The great reputation of the author is sufficient guarantee for the text. We hope to be able to review the entire work at a later time.

SOUND AND MUSIC. By Rev. J. A. Zahm, C.S.C., Professor of Physics in the University of Notre Dame. Chicago: A. C. McClurg & Company. Pp. 452. 8vo. Price \$3.50.

This is the title of an extraordinary book by one of our foremost workers in science. The writer, in the outset, makes acknowledgment to two eminent workers in the same line, Professor A. M. Mayer and Dr. Koenig. The volume is one which on a cursory glance appears like a popular work on the subject, but a more intimate acquaintance with its contents reveals the fact that it is a thoroughly scientific treatise, one which will give to the student a practical and theoretical knowledge of the subject. It is a book which will be of great value to the physicist, as it embraces all the modern ideas of sound and music, and includes descriptions of modern apparatus for demonstrating the principles involved. It is beautifully printed in clear type on fine paper of good weight, and is profusely illustrated. The book is tastefully bound, and is withal one of the most attractive scientific books that has come to our notice. Now that students of music are beginning to find it to their advantage to familiarize themselves with the principles upon which their art is based, it is not too much to say that in no single volume can they find the same amount of valuable information as is to be found in Professor Zahm's new book.

SINAI. By the Rev. Professor Sayce. London: Society for Promoting Christian Knowledge. New York: E. & J. B. Young & Co. 1892. Pp. 224. Price \$1.

This little book is one of the series entitled "Ancient History from the Monuments." The history of the biblical region is very fully treated here, considering the limited size of the work, and the little book will be found, from its systematic arrangement, a most excellent and valuable contribution to biblical history. Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

SCIENTIFIC AMERICAN BUILDING EDITION. FEBRUARY, 1893, NUMBER.—(No. 88.)

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1. Elegant plate in colors, showing a very picturesque dwelling at St. David's, Pa. Floor plans and perspective elevations. An admirable design. Mr. N. Trumbauer, architect, Philadelphia, Pa.
2. Plate in colors showing a residence at Bridgeport, Conn. Two perspective views, one interior view and floor plans. Messrs. Longstaff & Hurd, architects, Bridgeport, Conn. An excellent design.
3. A model dwelling at Holyoke, Mass., erected at a cost of \$6,000 complete. Perspective views and floor plans. H. W. Coolidge, architect, Holyoke. A pleasing design.
4. A cottage erected at Cranford, N. J., at a cost of \$5,000. Floor plans, two perspective views, etc. F. W. Beall, architect, New York.
5. The First Baptist Church recently erected at Warberth Park, Pa., at a cost of \$6,000. A unique design in the Gothic style of architecture.
6. A residence recently erected at Bridgeport, Conn., at a cost of \$5,900 complete. A picturesque design. Perspective elevation and floor plans. Mr. C. S. Beardley, architect, Bridgeport.
7. An elegant residence recently erected at Newton Highlands, Mass. Perspective view and floor plans. Cost complete \$6,472.
8. An attractive design for a suburban dwelling at Holyoke, Mass. Perspective elevation and floor plans. Messrs. Gardner, Pyne & Gardner, architects, Springfield, Mass.
9. A row of model dwelling houses on West Sixty-eighth Street, New York City. An exquisite design. Floor plans and perspective.
10. A cottage at St. David's, Pa., recently erected at a cost of \$5,100 complete. Floor plans and perspective elevation. Messrs. F. L. & W. L. Price, architects, Philadelphia.
11. Views of the extensive red sandstone quarries at Potsdam, N. Y., together with views of various public and private residences built of Potsdam red sandstone.
12. Perspective and floor plans for an architect's residence at Buffalo, N. Y.
13. Miscellaneous contents: Architecture in brick.—Architecture and the phonetic arts.—The housing of workers.—Concrete roofs.—Roman temples.—An automatic perspective machine, illustrated.—Drake's Columbus drinking fountain.—Sleigh bells.—A planing machine requiring little room, illustrated.—An improved side and roofing tile, illustrated.—An improved spring hinge, illustrated.—An improved hand planer and jointer, illustrated.—To darken oak.—An improved automatic water gate, illustrated.

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