

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR DOOR.—John W. Crumbaugh and Leander C. Prater, Kansas City, Mo. This invention covers an improvement on doors for cattle cars formerly patented by the same inventors, and consists in peculiar means for adjusting and operating the doors in connection with the bridge. The door is made in two sections hinged together, and a set of crank shafts connects one of the sections to the car for a radially swinging parallel motion, the doors when opened only swinging one-fourth of the door opening or one-half the width of each double car, while the swinging sections may be raised over a platform. There are no sliding connections at top or bottom, and no danger of obstructions by mud or straw from the car door, while the action of the bridge is free in its adjustment, and cannot be obstructed by rubbish or freezing.

RAIL SUPPORT.—Charles M. Dyer, Cloverdale, Ind. According to this invention a screw rod is formed with a clamp engaging the base of the rail, a nut engaging the screw rod, and a tie plate formed with a casing in which the nut is mounted to turn, the whole forming a rail support which is simple and durable in construction and permits of conveniently and quickly raising or lowering the rail to keep the track in proper alignment without distributing the road bed or ties.

TO TURN NUTS ON FISH PLATES.—Raymond Allen and Hugh Ross, Revelstoke, British Columbia, Canada. A machine for applying nuts in operations on track irons is provided by this invention, the machine being designed to be quickly and securely clamped to a rail joint, and used to simultaneously tighten or loosen all the nuts of a joint. The machine comprises a frame with adjustable jaws to be clamped to the track by a lever mechanism, the outer jaws being connected by a cross bar having sockets, while a series of transverse shafts are mounted in the frame and provided with sockets at their inner ends, the shafts being turned by a gear mechanism. The machine is as well adapted to the lifting as to the laying down of track, all the nuts of a joint being operated on at once.

ELECTRIC BLOCK SIGNAL SYSTEM.—John La Burt, New York City. A movable contact block is arranged adjacent to the track rails, a swinging lever in the path of the block being connected with a semaphore, which is brought to a locked position, to be released by a suitable electric connection, while the locomotive has contact brushes forming terminals of a circuit with intermittent contacts along the track, in connection with a lever mechanism controlling the steam supply, with other novel features. By this system the signals are designed to be automatically operated by the moving train, being first set to indicate danger and afterward set for safety, while in case the engineer does not see the danger signal, and runs over it, the steam is designed to be automatically shut off to stop the train.

Mechanical Appliances.

LOOM HARNES.—William A. Grant, Paterson, N. J. This invention relates more particularly to a loom employed in the finer grades of fancy weaving, providing therefor a simple harness that will relieve the irregular tension placed on the warp threads by the harness now used. The invention provides a double scale harness, by the arrangement of two shafts either in front or rear of the jacquard or figure harness, the two shafts working solely the ground or the fabric, and when the design is to appear, the jacquard lifts the coupling and the pair of threads therein are raised, the threads being connected with the eyes of the two different independent heddles. The improvement is designed to be adaptable to many varieties of weaving, involving less than the usual wear and tear of the parts and facilitating the making of more perfect goods, as there will not be so many stops of the loom to pick up ends.

PIPE WRENCH.—John Ryan, New York City. This wrench is made in four pieces, a body bar with attached handle and guide strap, an adjusting bar carrying the upper jaw, an adjusting nut traveling on the toothed surface of the adjusting bar and fitting within a recess in the body bar, and a laterally movable spring-controlled lower jaw supported by the body bar. The wrench is simple in construction, and is designed to be durable and economic, the various parts being readily separated and any one part duplicated if necessary.

Agricultural.

HAY RAKE.—Nathan H. Miller, Rushville, Ohio. This rake is designed to be operated by a driver seated on an animal pulling the rake over the field, or the rake may be actuated by the operator following in the rear, the windrow being formed on the pulling of a lever, and the rake automatically returning to a gathering position. The invention relates to that class of rakes whose toothed heads revolve in forwardly extended arms to which the draught animal is attached, the improvement covering improved means for rotating the toothed head or rake shaft. This rake is designed to be simple and durable in construction, containing but few parts, which are not liable to get out of order, and in case of injury can be readily replaced.

Miscellaneous.

GUNBOAT TURRET.—William H. Avey, Columbus, Ky. In this turret the common platform is adapted for vertical adjustment, and is held to revolve with the turret or shield proper. The upper part of the turret is made tapering, and it is held to rotate with a central shaft extending down into the lowermost compartment, and driven by suitable power. The common supporting floor fits inside the turret, with the body of which it may be connected for both to rotate together. In operation, when the floor is lowered the cannon is first drawn inward, and can be sighted if desired, and it and the floor raised to the desired height, when the cannon will be moved so that its small end will project through a port hole in the turret and close it.

FENDER FOR VESSELS.—Jacobus T. C. Koch, Amsterdam, Holland. This invention provides different forms of improved fenders for the bows and sides of vessels, by means of which the injurious effects of collisions may be materially lessened. These fenders have the common feature of being elastic, and also have a rigid frame to which the elastic cushion is secured, whereby body is given to the latter, and the effect of a blow will be distributed over a large surface. The fenders are secured in place on the vessel by guys and suspension ropes.

SALT PAN.—Alvin T. Dora, Hutchinson, Kansas. This is an improved device for evaporating salt brine, the pan having a flat bottom with inclined sides at one end and the remaining portion of the bottom being formed into a series of troughs, in the bottoms of which screw conveyers are operated to carry the salt to the flat portion of the bottom of the pan, from whence it is carried by a belt provided with scrapers and delivered to a conveyer which carries it to the packing room. By this construction the salt is being constantly raked from the bottom of the pan, which is provided with a large heating surface, while the brine is so continuously stirred that the accumulation of salt and the formation of scales on the pan bottom are prevented.

FLOAT GOLD COLLECTOR.—Robert Elliott, Paulina, Iowa. This is an apparatus for collecting and saving float gold in rivers or streams, for which purpose posts are set on opposite sides of the stream to carry guide rods on which slide other rods provided with hooks, to which by means of links is attached a sieve formed of bolting cloth or other suitable material, the sieve extending transversely across the stream, and being retained in position by weights. The sides of the sieve are adjusted vertically on rods as desired, and the sieve can be readily hauled in, in the form of a bag, to be unhooked, and the collected gold washed out.

CHALK LINE HOLDER AND PLUMMET.—Robert C. Huxtable, Dartmouth, N. S., Canada. The body of this device is of rubber or other flexible material, with spiral grooves around it on which the line may be wound, the line passing through the body by eyed holes in each end, while the central space of the body is mainly filled with chalk. The device is of convenient shape to be held in the hand, and one end is weighted. When used for making a chalk line, the line is first drawn through the device, to be properly chalked, and is then used in the ordinary way, but when used for a plummet the body is moved to one end of the line, and then forms the weight of the plummet as it is held suspended by the line.

FENCE CLAMP.—Hugo Loether, Fredonia, Kansas. This is a device especially adapted for use in constructing picket fences where the pickets are to be held in position by wire, the clamp consisting in a shank with two claws at each end, bent oppositely outward and then curved inward, with their ends far enough apart to admit the wires. The length of the clamps determines the distance apart of the pickets, the device acting in the double capacity of a clamp and a gauge. By this means a fence may be quickly and economically put up by an inexperienced person, and a fence machine is not required.

HOSE AND OTHER COUPLING.—Isaac St. Clair Goldman, Los Angeles, Cal. This coupling comprises a female section having a semicircular recess in its end and provided with a lip, a male section having a semicircular head fitting in the recessed section, with a washer to form a tight joint, and provided with a rigid hook engaging the lip of the female section, with means for locking the two sections together. The device is of simple and durable construction, can be quickly applied to securely fasten the parts in place, and is designed for use on hose, rods, etc.

WASHING MACHINE.—Henry Church, Parkston, South Dakota. This invention provides a cylindrical clothes holding and washing chamber, composed of two hinged sections, mounted to be revolved in a suds box. The sections of the clothes cylinder are secured together by a peculiar form of safety latch, and secured to the head walls of the cylinder are spaced slats, with wider slats having diagonal ribs, and within the two sections are pairs of cleats forming abutments on which the clothes will rub as the cylinder is turned. The machine is designed to be simple, compact, and thoroughly efficient, having novel features to expedite the operation of washing.

MAP OR CHART STAND.—Henry E. Hayes, Brooklyn, N. Y. This is an adjustable stand in which a vertical rod is supported in the socket of a block held on a low wire tripod, there being on the rod an adjustable sleeve having inclined socket projections adapted to receive outwardly projecting rods or arms. Clamping bars, in which may be placed charts or maps, are supported by these projecting arms, and the maps or charts may be readily raised or lowered by the adjustment of the sleeve on the vertical rod. The device is made in several parts, which can be readily set up or taken apart to be packed in small space.

GLOVE.—William J. Fanshawe, Brooklyn, N. Y. This glove has eyeletted apertures in its palm portion, and is provided with a chain or cord leading outward therefrom and carrying an attaching device for connection with a pocket book, purse, or the like, whereby the purse may be securely held and locked in the gloved hand, while allowing of convenient access to it.

DRAWER PULL.—James Preston, New York City. This invention relates to cabinet hardware, the invention providing a simple, cheap and durable post for handles, consisting of a wire threaded at its inner end and bent at its outer end to form an eye and a stop, a sleeve being cast on the post adjacent to the eye. Posts thus made are inexpensive, and being formed of wrought metal, are stronger and more durable than the ordinary cast posts.

VEGETABLE CUTTER AND SLICER.—Mathias Blumer, Shelby, Wis. The body of this machine consists of a circular casing having an open bottom and partially closed top, secured on standards projecting upward from a base frame. It has horizontal

knives which may be adjusted to cut either a thick or thin slice, and vertical knives which may be removed if desired, the machine being operated by a crank, and being adapted to either slice or mince vegetables or fruit in a convenient and expeditious manner.

LAMP CHIMNEY ATTACHMENT.—Mary S. French, Monmouth, Ill. This device consists of a strip of spring metal bent upon itself to an essentially pear shape, the lower extremities of the side members being convexed on their outer faces and provided with downwardly extending hooks near their centers. The device is capable of being clamped to and supported on the top of a lamp chimney, being especially adapted for maintaining a curling iron or its equivalent in an upright position within the lamp chimney over the flame of the lamp, and out of engagement with the flame or with the chimney.

TONIC REMEDY.—Charles Schmidt, and Aline R. Ledet, Birmingham, Ala. This is a tonic designed for use in dyspepsia, or debility of the stomach and loss of appetite, also for regulating the action of the bowels. It is composed of cinchona bark, wild cherry bark, mamme nut shells or fruit, rhubarb, oxide of iron, sherry wine, and other ingredients, in certain proportions, and prepared in the manner described.

WATER CLOSET, ETC.—Anne G. Chadbourne, Roxbury, Mass. This invention provides an improvement applicable to water closets, commodes, and earth closets, and relates especially to the seat portion thereof. The improvement consists in a novel construction of both the bowl and seat, designed to promote cleanliness without the necessity of constant care.

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.

DIE ELEKTRISCHE KRAFTÜBERTRAGUNG UND IHRE AMVENDUNG IN DER PRAXIS. By Eduard Japing and J. Zacharias. 61 illustrations. Third Edition. Vienna: A. Hartleben's Verlag.

The third edition of "Electrical Power Transmission" is completely changed from the first two editions, owing to the tremendous progress made in the last few years relative to such transmission. The introductory chapter treats on transmission and power in general. A chapter is devoted to "generating the electric current;" the main portion of the book, however, treats on Transforming the Electric Current into Power. The book is admirably written and refers to the latest improvements and experiments, giving full data as to results, costs, etc.

A HANDBOOK OF INDUSTRIAL ORGANIC CHEMISTRY. By Samuel P. Sadtler, Ph.D. Philadelphia: J. B. Lippincott Co. 1891. Pp. 519. Price \$5.

The application of chemistry to the arts and manufactures is the subject treated by Dr. Sadtler. He divides his work into chapters treating of Petroleum and Mineral Oil Industry, Fats and Fatty Oils, Essential Oils and Resins, Cane Sugar, Starch, Fermentation Industries, Milk Industries, Textile Fibers, Animal Tissues, Destructive Distillation, Artificial Coloring Matter, Natural Dye Colors, and Bleaching, Dyeing and Textile Printing. This extensive range of topics is treated quite at length with numerous illustrations. The standpoint taken is not exclusively the preparation and manufacture, but includes the analysis of the products, microscopic characteristics, etc. The work will, we believe, be found to fill a real place in technical literature. Each chapter has a bibliographical index, increasing greatly the value and use of the work.

CHEMISTRY OF THE CARBON COMPOUNDS OR ORGANIC CHEMISTRY. By Professor Victor von Richter. Authorized translation by Edgar F. Smith. Philadelphia: P. Blakiston, Son & Co. 1891. Pp. 1040. Price (cloth) \$2.

It is not too much to say that a real want is at last filled by the production of this manual. The entire field of organic chemistry is comprised in its scope, and is treated in considerable fullness. The great advantage of having the full matter contained in a single volume with a single index is obvious, and is doubly acceptable to those who have had to consult some recent multiple-indexed chemistries, bound up in separate volumes and separate parts besides. On glancing over its pages one excellent system appears, that of giving the preparation of compounds. It will be noticed that the title page gives a definition of organic chemistry, something long wanted, and we fear still wanting, even in the light of the name in question.

DYNAMO CONSTRUCTION. By John W. Urquhart. New York: D. Van Nostrand Co. 1891. Pp. xvi, 353. Price \$3.

The subjects treated in this work embrace framework construction, field magnet and armature grouping and compounding, the magnetic circuit and elements of dynamo calculation. Numerous illustrations are employed to elucidate the text. The practical aspect of the subject is preserved by the production of examples of leading commercial dynamos and motors of different countries. The introduction, giving the history of the invention and development of the modern dynamo, is especially interesting.

AN INTRODUCTION TO THE MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM. By W. T. Emtage, M.A. Oxford: Clarendon Press. 1891. Macmillan & Co., New York. Publishers. Pp. viii, 228. Price \$1.90.

The title of this book must serve as its review, as owing to its nature it cannot be adequately treated in these columns. The work is comprised in three parts, the first treating of electrostatic electricity, the second of magnetism, and the third of dynamic electricity,

electro-magnetic measurements, etc. While mathematical in its basis, the reading text is amplified so that formulas and abstract statements form really a small proportion of the contents. It is well worthy commendation to our readers.

PROGRESSIVE EXAMINATION OF LOCOMOTIVE ENGINEERS AND FIREMEN. By John A. Hill. New York: John A. Hill. Publisher. 1891. Pp. 97. Price 50 cents.

Mr. Hill is a member of the Brotherhood of Locomotive Engineers, etc., and writes this work from the plane of a graduate of the footboard. It is excellently written. The plan followed is to give several examinations in question and answer from four different degrees of progress, following each by a short lecture on the ethics as well as practice of the engine runner's work. It is all so well and graphically put as to form good reading for those who never expect to set foot on an engine, and is not the only instance we could cite of good writing by a locomotive engineer.

THE NATURE AND SOURCE OF ELECTRICITY, AND ITS APPLICATION TO THE ELECTRO-PLATING PROCESS. By Scott A. Smith. Providence, R. I. Pp. 35.

This attractively printed and prettily bound book is issued by the Gorham Manufacturing Co., and is a convenient little manual on the titular subject.

DIE BADE-ANSTALT. By J. H. Klinger. 47 illustrations. Vienna: A. Hartleben, Publisher.

The book is intended for architects, builders, etc., to assist in the proper construction of public bathing establishments for cities.

ELEKTRO-METALLURGIE. Die Gewinnung der Metalle unter Vermittlung des elektrischen Stromes. By Dr. W. Borchers. With 19 illustrations. Harold Bruhn, Brunswick. 1891.

In this book Dr. Borchers admirably treats the several processes for reducing metals by means of the electric current. The first part is devoted to the lighter metals, such as alkali metals, alkaline earth metals, magnesium, barium, calcium, strontium, and metallic earths. The second part treats on the heavy metals, including zinc, nickel, cobalt, copper, lead, silver, gold, antimony and platinum.

SCIENTIFIC AMERICAN BUILDING EDITION.

NOVEMBER NUMBER.—(No. 73.)

TABLE OF CONTENTS.

1. Colored plate of a very attractive cottage erected at Asbury Park, N. J. Cost \$2,500. Perspective elevation, floor plans, etc.
2. Elegant plate in colors showing a residence in the Colonial style of architecture, recently erected for Mr. Gerald Hayward, at Larchmont Manor, New York. Floor plans, two perspective elevations, and interior view.
3. A cottage at Plainfield, N. J. An excellent design. Plans and perspective. Cost \$8,500 complete. Messrs. Rossiter & Wright, architects, New York.
4. A neat cottage at New Dorp, Staten Island, N. Y. Cost \$3,300 complete. Plans and perspective.
5. A handsome cottage at Rochelle Park, N. Y., erected at a cost of \$10,000. Perspective elevation and floor plans.
6. Plans and elevation of an attractive dwelling at Asbury Park, N. J. Cost \$4,300 complete.
7. A model cottage at Chester Hill, Mt. Vernon, N. Y. Floor plans and perspective view. Cost \$4,000 complete.
8. Perspective and plans of a cottage at Fordham Heights, N. Y. Cost \$5,800 complete.
9. A cottage recently erected at Asbury Park, N. J. Cost \$2,700 complete. Floor plans and perspective.
10. Perspective view of the residence of Mr. H. P. Rugg, St. Paul. Mr. A. H. Stern, architect, St. Paul.
11. Perspective and ground plan for a memorial church.
12. Accepted design for the completion of the South Kensington museum, Ashton Webb, architect.
13. Miscellaneous contents: Clover honey.—Fire precautions in building.—What taste with a little money may accomplish.—Wrought iron gate, illustrated.—Plan designing.—Simple precautions against fire and rats.—Floor painting.—The Japanese house.—The Postmaster-General's bricks.—Architecture in relation to hygiene.—Fireproof buildings.—Some novel effects in paper hangings, illustrated.—An improved woodworking machine, illustrated.—An improved tenoning machine, illustrated.—An improved swing cut off saw, illustrated.—The Byrkit-Hall sheathing and lath, illustrated.—Power hack saw, illustrated.—An improved dumb waiter, 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.