

## RECENTLY PATENTED INVENTIONS.

## Railway Appliances.

**CAR COUPLING.**—James Mutton, Frisco, Utah Ter. This invention is designed to provide a coupling with which any form of drawhead may be conveniently and expeditiously attached to the drawbar, as well as a drawhead which will remain locked with an opposing drawhead, the device being one which can be uncoupled from the top or side of the car.

**CAR COUPLING.**—James F. Shannon, Macomb, Ill. Combined with an apertured drawhead, a guide block, and a plate spring extending therefrom attached to the drawhead, is a slide block and a plate thereon to support a coupling pin in uncoupled position, the device being an improvement in link and pin couplers, whereby the coupling may be effected automatically.

**CONNECTING ROD FOR BRAKE BEAMS.**—Christian Feil, New Utrecht, N. Y. The main rod has attached thereto a bent supplemental rod, notched clamp plates being applied to the rods, one at each edge of the brake beam, making a secure connection with the beam without enlarging, boring or recessing it, the invention being applicable for street and other cars.

**BAGGAGE CHECK.**—Frank H. Crump, Washington, D. C. This is an excess tag with protective flap and bearing underneath similar coupons with printed scale of excess in weight and the date, to be punched by the agent, the coupons being successively torn off by each road over which the trunk passes, and thus constituting a basis of settlement with the road first receiving the trunk.

## Mechanical.

**WORK HOLDING TABLE FOR CARVING MACHINES.**—Frank R. Potter, New York City. This is a table for supporting work of different lengths and widths, or work curved upward or downward or to either side, without the use of blocks or plates, the invention covering various novel features of construction and combinations of parts.

**DRESSING TOOTHED CHISELS.**—Floyd G. Smith, Buckhannon, West Va. This invention provides a machine for dressing chisels used by marble and stone cutters, there being used, in connection with a punch, a die made in sections and adjustable, so that it can be set to suit any suitable size of punch, for the dressing of the most delicate carving tool or the largest size of chisels.

**FRICTION CLUTCH.**—William H. McConnell, Nelsonville, Ohio. This is a device designed to be simple and durable in construction and especially adapted to all classes of hoisting and other machines, comprising two segmental arms pivoted at one end of the driving pulley, toggle arms connected with their free ends, and a block or crosshead sliding radially on the driving pulley and connected with the toggle arms.

## Agricultural.

**CORN PLANTER.**—Knut Buland, Linn Grove, Iowa. This is a machine in which the seed dropper also acts as a marker, the ground being broken in advance of the planters by pulverizing disks, while grooves in the drive wheels, following in the track of the planters, cover the earth over the seed dropped.

**SEED PLANTER AND FERTILIZER DISTRIBUTER.**—John M. Johnson, Prosperity, S. C. This is a machine of the sulky class designed to simultaneously plant two rows of cotton or other seed or distribute two lines of fertilizer at variable distances apart, and whether the rows or lines be straight or laterally crooked, while most of the mechanism is within easy reach of the driver from his seat.

**SICKLE DRIVING MECHANISM.**—Patrick C. Gibbons and George R. Heaberlin, Baring, Mo. This is for use in connection with mowers and similar machines, a pin being adapted to travel in the groove in the sickle-driving wheel to sustain friction equally upon all its faces and be capable of instantaneous reverse movement, imparting a uniform movement to the sickle bars and preventing their becoming clogged.

**LAWN MOWER.**—Jules P. Blondeau, St. Joseph, Mo. This invention covers a combined grass receiver and dumper to catch and carry the grass while the lawn mower is being operated, avoiding the labor of raking and injury to the sod, the attachment being readily applied to or removed from a lawn mower and adjusted to handles of different height.

## Miscellaneous.

**REEL HOLDER.**—Henry A. Buchholz, New York City. This is a device whereby a number of reels containing ruyching or other material for exhibition may be so placed in a stand or holder as to be conveniently examined, the device being of simple construction and readily manipulated.

**WAFFLE IRON HANDLE.**—Ernest H. Chesterton, Los Angeles, Cal. This is a handle adapted for quick application to the handle socket of the iron, and consists of a double-armed spring strip, the ends of the arms being arranged to fit within the iron sockets, and one or both of the arms having projections adapted to bear against shoulders formed on the iron sockets.

**FOLDING TABLE AND STEP LADDER.**—Levi Tobey, Morris, N. Y. This is a combination article of furniture, designed to be readily placed in position and firmly held for service in either capacity, being especially fitted for an ironing table, while it is strong and durable, and can be folded so as to occupy but little space.

**HAME.**—Martin V. Nichols, Port Arthur, Ontario, Canada. This hame has a slot or passage for the hame strap, with a number of blocks adapted to fill such passage, except the room necessary for the strap, the blocks being adjustable, whereby the strap

may be held above or below or between them, the place of connection of the hames with the strap being set at any point desired.

**STEERING APPARATUS FOR VESSELS.**—Julio E. Garcia-Sanchez, New York City. This invention provides for a rudder at the bow as well as one at the stern of the boat, the two rudders being connected and operated by tiller ropes from a drum mounted in standards on the deck, the tiller ropes being reversely wound on the drum, so as to turn the rudders in opposite directions.

**WINDMILL.**—Julio E. Garcia-Sanchez, New York City. This is a windmill of which the wings may be lowered and closed when not required for use and automatically opened by the wind when raised into position, and in which also the rate of movement of the mill may be readily regulated, the invention covering various novel features and combinations of parts.

**SURFACE WATER DRAINAGE CONNECTION.**—Charles P. K. Kahler, Baltimore, Md. This invention provides means, in connection with a pipe or conduit and suitable basins, whereby the waste water may be carried off without having gutterways at street crossings, and whereby the water may be carried from one side of the street under cable conduits and the like to the other side.

**SANITARY SERVICE TANK FOR WATER CLOSETS.**—Richard A. L. Blondel, No. 60 Hudson Street, Boston, Mass. Two patents under this title have been issued to this inventor, one providing a flushing valve in a water closet tank, an after-filling valve, and mechanism by which to operate both valves, with no danger of the tank overflowing or of a constant flushing flow, while the siphon of the closet is kept properly filled at all times; and the other providing, in connection with the tank and closet proper, a circuit having two breaks, a closer for one of such breaks being arranged for operation whether the tank be full or empty, while a second closer is automatically operated as the tank fills and empties, so that it will close the circuit when the tank is full and break the circuit when the tank is empty.

**PIPE STOPPER.**—William Baguley, New York City. This device consists of a split collar with apertured lugs engaging bolts having eye bolts received by a head plate with apertured lugs, such stoppers being more particularly designed for use in testing waste pipes to detect flaws through which sewer and other gases would escape.

**ORE FEEDER.**—George C. Mueller, St. Louis, Mo. This is a conveyer especially adapted for feeding crushed ore to stamp batteries, whether the material is fine or coarse, wet or dry, and has a casing with inclined bottom in which a screw conveyer is held to revolve, while a vertically adjustable essentially triangular shed is located in the casing above the conveyer.

**BURNING HYDROCARBON OILS.**—Ethan Rogers, Ballston, N. Y. This invention is designed to overcome the difficulty in burning oil by means of a blast, providing a system by which the pump employed to raise the oil to flow to the burners is driven by the belt employed to drive the fan, whereby the fan must operate when the pump is operated, and the required amount of air will be delivered at all times to the burner.

**HEATER.**—Charles L. Haight, Pittsburg, Pa. In this device a duplex hood is employed, adapted for suspension above the burner, the inner hood having an opening in its upper portion, and there being a connection between the outer hood and the heater, the construction being especially adapted for use with natural gas burners, to concentrate the ignited gas at the burner and conduct the heat with the waste products downward through a heater, and thence through and out of the heater to the flue in which the burner is located.

**EXTENSIBLE STOVE PIPE JOINT.**—James P. Warren, Chicago, Ill. A longitudinal rod is secured at one end to the inner side of one joint of pipe and a vertically slotted bracket on the inner side of the other section, the rod passing through the slot, in which a vertically swinging cam is pivoted, whereby a joint may be quickly and conveniently altered in its length to suit the situation and avoid the making of a special joint.

**FOUNTAIN.**—Charles P. F. Baillairge, Quebec, Canada. This fountain is made with a double casing having a water space between its walls, jet orifices in the outer wall and opposite lenses in the inner wall, in combination with which an electric light or other lamp is used, with or without colored lantern panes, to direct a beam of light through the lenses and into the issuing jet of water.

**TRACE DETACHER.**—John D. Blake, Smith's Grove, Ky. This is a detacher for singletrees such as formerly patented by the same inventor, and consists of a novel construction and arrangement of parts whereby a pull upon a strap is made to quickly disconnect the trace from the singletree.

**COMBINATION GARMENT.**—John T. Brodnax, New Orleans, La. This is a combination shirt or vest and suspenders, the invention being an improvement on a formerly patented invention of the same inventor, providing a new construction, combination and arrangement of parts.

**UNDER GARMENT.**—This is another patent granted the above inventor, according to which a re-enforce is applied to the fronts and backs of all kinds of vests and shirts, especially dress or bosom shirts, to greatly increase their strength and durability and provide pockets or passages in which suspenders are covered and concealed, while having all required freedom of lateral movement.

**BANGLE.**—Joseph P. Howard, New York City. This is a multiple bangle, comprising in one several rings or bands to encircle the wrist, and is so made in the means of uniting the several rings to each other that the bangle may be enlarged to facilitate putting it on and off, and when on the wrist it will automatically close snugly thereto.

## NEW BOOKS AND PUBLICATIONS.

**GEMS AND PRECIOUS STONES OF NORTH AMERICA.** A popular description of their occurrence, value, history, archæology, and of the collections in which they exist, also a chapter on pearls, and on remarkable foreign gems owned in the United States. By George Frederick Kunz. The Scientific Publishing Company, New York, 1890. Pp. 336. Illustrated with eight colored plates and numerous engravings. Price \$10.

The above summary of what is contained in this work, coupled with the name of its distinguished author, is sufficient assurance of its value. In general terms, it covers the entire ground of the mineralogy of gems with special reference to this continent. Up to the present time, North America has done little in the way of contributing to the world's riches in the way of jewels, and one of the objects of Mr. Kunz's work is to act as suggestion to the miners and mineralogists of America, in order that they may bring forward their country into the front ranks of jewel-producing lands. Much of Mr. Kunz's past work has been familiar to our readers, and this book fully sustains his reputation. It is printed and illustrated in very elegant form, appearing a true *édition de luxe*, one worthy a place beside King's classic treatises on gems. The colored plates are a surprise to the mineralogist from their accuracy of coloring and drawing. A very interesting chapter is devoted to the work of the aborigines of America, and shows that these primitive races did more proportionately in their own way to utilize the beautiful minerals of America than have their Caucasian successors.

**L'EXPOSITION UNIVERSELLE. Paris: J. Rothschild. 1890. Pp. xvi, 694. 700 illustrations.**

The entire history of the Paris exposition of 1889, its preliminaries and general features, and the details of all its parts, are given in this volume in the systematic method and well arranged form so characteristic of French publications. For those familiar with the French language it gives in small compass all that can be desired concerning the exposition in general. The numerous illustrations, many of which will be familiar to our readers, add to the value and interest of the volume. Many interesting figures of cost, etc., appear. Thus it is shown that the actual cost of the main buildings and appendages was less than thirty millions of francs, and amounted to three millions less than the estimates. The construction of the great buildings and of the Eiffel tower are well illustrated and described. Several portraits of those connected with the administration of the fair are also of interest.

## SCIENTIFIC AMERICAN

## BUILDING EDITION.

MAY NUMBER.—(No. 55.)

## TABLE OF CONTENTS.

1. Elegant plate in colors representing a tasteful cottage of moderate cost at Buffalo, N. Y. Perspective elevation, floor plans, sheet of details, etc.
2. Colored view of a residence at St. George, Staten Island, N. Y. Estimated cost \$20,000. Floor plans, perspective elevation, sheet of details, etc.
3. Stone residence, corner of St. Nicholas Place and 150th Street, New York city. S. Burrage Reed, architect.
4. New buildings at Eastgate and Bridge Streets, Chester.
5. Engravings of the residence of J. M. Johnson, Binghamton, N. Y. Perspective elevations and floor plans. Cost \$19,000 complete.
6. Perspective view of the office buildings of the Gotthard Railroad in Lucerne.
7. An English cottage. Perspective and floor plans.
8. A cottage recently erected at Binghamton, N. Y., cost complete \$3,800. Plans and perspective.
9. A residence in the Gothic style erected at New Brighton, S. I. Floor plans and perspective.
10. Excellent design of a country house recently erected at Belle Haven, Conn. Cost \$14,250. Oscar S. Teale of New York, architect. Perspective views and floor plans.
11. A double dwelling at Yonkers, N. Y., erected at a cost of \$8,000. Plans and perspective.
12. Residence of Chas. Kappes, Esq., at Stapleton, Staten Island, N. Y. Cost complete \$4,000. Perspective elevation and floor plans.
13. Cottage at Greenwich, Conn., erected at a cost of \$7,250 complete. Floor plans and perspective.
14. Miscellaneous Contents: High buildings.—Bad flues.—Imitation ebony.—Destruction of asphalt pavement by gas.—Art of building.—Improved dumb waiters, illustrated.—An improved skylight, illustrated.—Rogers miter planer, illustrated.—Dumb waiters and hand power elevators.—A fine window in the Convent of the Sacred Heart, illustrated.—Improved sash pulleys, illustrated.—A hot air and hot water heater, illustrated.—Colors for mortar.—Improved adjustable grooving head, illustrated.—An improved window screen frame, 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.

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## Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

For Sale—New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N. Y. Tuerk water motors at 12 Cortlandt St., New York.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Hoisting Engines. The D. Frisbie Co., New York city.

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"How to Keep Boilers Clean." Send your address for free 96 p. book. Jas. C. Hotchkiss, 120 Liberty St., N. Y.

Wanted—Hard rubber or celluloid and metal article manufactured. For particulars address F. P. Snow, Albina, Oregon.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocum & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps, acid blowers, filter press pumps, etc.

For low prices on Iron Pipe, Valves, Gates, Fittings, Iron and Brass Castings, and Plumbers' Supplies, write A. & W. S. Carr Co., 138 and 140 Centre St., New York.

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The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

## Notes &amp; 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. 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.

(2252) J. B. asks for the simplest way to ascertain the amount of lime in Paris white or whiting. A. Dissolve in dilute hydrochloric acid and precipitate the lime from ammoniacal solution (filtering first if necessary) with solution of ammonium oxalate.

(2253) J. M. T. asks: 1. What is meant by an alternating current, and what is its primary object? A. An alternating electrical current is one which flows alternately in opposite directions. It may be used like other currents for electric illumination, and finds one of its chief applications in the transformer system. 2. How many Leclanche cells will it require to light a 16 candle power incandescent lamp? A. The Leclanche battery is not at all suited to electric lighting purposes. It would require a large number, say 100, to run a 16 candle power lamp for a short time.

(2254) H. H. asks: What is most beneficial in preventing the sweating of feet? A. Try the following: To one part of salicylic acid add one of sub-nitrate of bismuth and two of starch. Wash, and apply powder freely.

(2255) J. W. M. asks how to make a silver polish for lead pipe that will last about six months. A. To a 10 per cent solution of nitrate of silver add ammonia until the precipitate first formed is redissolved. Add about one-tenth the volume of whiting, and apply after shaking, with a rag. It will stain the rag, fingers, and any organic substance it comes in contact with.

(2256) C. B. H. asks how to remove the coloring matter from a strong solution of sal soda and soap bark. A. Try filtering through a percolator or funnel packed with bone or blood charcoal.

(2257) C. B. W. asks for a recipe for a grafting wax. A. Melt together 3 parts resin, 3 parts beeswax, and 2 parts tallow.

(2258) A. T. writes: I would like to nickel-plate some small articles. Can I do it without a battery? If so, please tell me how. A. To nickel-plate satisfactorily, some kind of battery is advisable. We refer you to our SUPPLEMENT, No. 436, for formula, etc. On some materials a slight nickel coating can be obtained by simple immersion in the nickeling solution.