

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Robert L. Evans, Scottsborough, Ala. This invention covers a novel construction and combination of parts in a coupling designed to be simple and efficient, and which can be readily adapted for use in coupling cars of different heights.

CAR SEAT.—Erik Enequist, Brooklyn, N. Y. This car seat is designed to protect railroad travelers against injury or loss of life in cases of collision, the invention covering a peculiar construction and combination of parts whereby the seats occupy fixed positions under ordinary circumstances, but are caused to swing in case of collision, restraining the occupants from being thrown out or jammed against other seats.

SAFETY LAMP AND STOVE.—Owen Franks and William Carroll, Columbus, Ohio. This stove has a hinged gate and a hinged ash pit bottom, there being below the latter a reservoir containing a fire-extinguishing liquid, and a lever arranged to release the ash pit bottom and grate in case of collision, in combination also with a device for turning down the wicks of the lamps used on the cars to extinguish their flame.

RAILWAY SWITCH.—James B. Suffern, Hillburn, N. Y. Combined with the switch rails and a spring switch stand are two track levers, a slide upon the switch-operating bar, and a system of levers for moving and locking the slide, with other novel features, whereby the train may always be kept upon the main track whether the switch is set for the same or not.

PNEUMATIC CAR PROPULSION.—John T. Clark, La Grange, Ga. This invention covers a system of street car propulsion in which compressed air is conveyed along the track in a pipe having valved outlets with which inlets on the car temporarily communicate in passing to a receiving cylinder in the car, this car reservoir driving an engine between the supply points.

Electrical.

SWITCH STAND FOR DYNAMO STATIONS.—Robert E. Stewart, Dallas, Texas. Combined with outside circuit wires are switch contacts arranged in pairs, there being as many pairs of such contacts as there are dynamos belonging to the circuit, there being also combined with the pairs of contacts corresponding pairs of swinging arms, the arms of each pair being insulated from each other and adapted to engage the contacts of the outside circuit, making a simple switch for introducing dynamos into an electric circuit and removing them therefrom as desired.

Agricultural.

HARROW AND CULTIVATOR.—John C. Bryan, Fordyce, Ark. This invention covers a novel construction in which, by adjusting the cross bars to different angles, the standards will be brought to run closer together and yet the points or shovels will be at all times held at the same angle to the direction of motion.

GRAIN MEASURER.—William McConachie, Belleville, Dakota Ter. This is an attachment for thrashing machines, to automatically measure the grain as it is thrashed and deliver it to a chute which will convey it to a wagon, the invention covering various novel details constituting a simple and effective automatic measurer.

Miscellaneous.

CURTAIN HOLDER.—David D. Nolley and Robert L. Wyatt, Wilson, N. C. This device consists of arm pivoted on the window frame, and provided at its free end with a clamping device for holding the curtain to one side of the window and holding it in place in folded or closed position.

SUSPENDER HOOK.—Edward F. Paramore, Oconto, Wis. This device is designed to take the place of a suspender button, providing a detachable fastening for suspenders which may be readily attached to and detached from a pair of trousers, the fastening consisting of two parts—a hook and a fastening plate.

BOOK MARK.—Henrietta L. Mehrer, New York City. This book mark consists of two arms connected with each other at one end, a slide held to slide on one of the arms, and a pointer pivoted on the slide, the device being very simple, and indicating the line and word to be marked, as well as the page.

HEAT RADIATOR.—Adam Peart, Corning, N. Y. This radiator consists of a drum formed in sections, and having transverse intersecting air chambers connected with openings in the sides of the drum sections, with dampers movable over the air chamber openings, with other novel features, whereby a great amount of heated air is radiated without sacrificing space.

BILLIARD TABLE.—Charles G. Brockway, Pine Bluff, Ark. The bed of this table has a horizontal bolt hole in which is placed a stationary nut, in combination with a vertically adjustable cushion-carrying rail having a transverse vertical slot, a bolt passing through the slot into the bolt hole and nut, whereby the rail may be adjusted vertically without carrying the bolt and nut with it.

AMALGAMATOR.—Nathan L. Raber, Corvallis, Oregon. This invention provides a simple construction for thoroughly disintegrating the sand, pulp, etc., and flinging them thus separated, particle by particle, into the body of an undisturbed mass of mercury, thereby obtaining the most intimate contact of the precious metals and the mercury and their consequent amalgamation.

CARBURETING LAMP.—James P. Magenis, North Adams, Mass. This is a regenerative gas lamp having a hydrocarbon receptacle through which the gas supplied to the burner is passed to enrich it and

increase the brilliancy of the light, air being admitted to different portions of the flame to secure perfect combustion and permit of introducing a large proportion of carbon.

FISH HOOK EXTRACTOR.—Ezra L. Post, New York City. This device consists essentially of a two-armed tonge, one arm of which acts as a follower on the line and the other as a disengager for the hook, making a reliable implement for removing a hook from the stomach or gullet of a fish.

ASH PAN AND SIFTER.—James F. Sayer, Gouverneur, N. Y. This is a combined device consisting of two telescoping sections having overlapping screen bottoms, lugs or stops on the sections limiting their extensibility, and an imperforate bottom pan held to the sections to temporarily retain the ashes, being especially adapted for use under the grates of stoves for catching the ashes to be sifted.

HORSE DETACHER.—Charles R. Wilson, Bear Wallow, Ky. This invention provides for the attachment of a singletree of simple construction, and a means whereby the trace straps may be released from connection with the singletree at will by the driver, thereby releasing an unruly animal, and whereby also the traces may be attached without leaving the seat of the vehicle.

VEHICLE SPRING.—William S. and Horace C. Rounds, Townville, Pa. This is an improved spring for side bar vehicles, designed to be simple and durable, and is so made that the body of the vehicle may be hung low, while the spring will be a noiseless one and will communicate an easy motion, free from sudden jerks or jars.

FLUID MEASURING VESSEL.—Thomas E. Armistead, Mazomanie, Wis. This is an improvement in which a pointer is made to move across the face of a dial to indicate the quantity to be measured, whereby a predetermined amount of fluid may be introduced into a measuring receptacle and drawn as desired, without spilling the fluid.

SCIENTIFIC AMERICAN BUILDING EDITION.

APRIL NUMBER.—(No. 42.)

TABLE OF CONTENTS.

1. Plate in colors showing elevation in perspective and floor plans for a dwelling costing about four thousand dollars. Sheet of details, etc.
2. Elegant plate, in colors, of a residence of moderate cost, with floor plans, details, etc.
3. Perspective and floor plans of a modified Queen Anne cottage, at East Orange, N. J. Cost, six thousand five hundred dollars.
4. A cottage at East Orange, N. J. Plans and perspective.
5. Page engraving of a stairway in the Chateau de Chantilly. By Mr. H. Daumet.
6. Scenes at Zaandam, Holland, where the Czar Peter the Great learned shipbuilding in 1697.
7. Engraving of the new station and offices of the Great Indian Peninsular Railway, Bombay.
8. Perspective and plans of the new Biological Laboratory, Princeton College, New Jersey.
9. A residence at Roseville, New Jersey, costing five thousand dollars. Plans and perspective.
10. A cottage at Rosville, New Jersey, costing seven thousand dollars. Perspective elevation and floor plans.
11. The Orange Valley Church. Cost, sixty thousand dollars. Perspective and ground plan.
12. A residence at Fordham Heights. Cost, thirty-four thousand dollars. Elevation and floor plans.
13. Perspective view of the new Trinity Methodist Episcopal Church, Denver, Colorado.
14. Designs for wall paper decorations. Flower scroll, designed by A. F. Brophy. Strap ceiling, designed by G. A. Audsley. Arabesque panel decorations, paper for staircases, designed by Lewis F. Day.
15. Perspective and floor plan of an attractive carriage house in the Queen Anne style. Cost, nine hundred and fifty dollars.
16. Miscellaneous Contents: Something for architects and builders to remember.—Interior finish.—Sketch of Nathaniel J. Bradlee.—Colored decoration of churches.—On estimating.—Crushing of masonry.—The oldest architectural drawing.—Mahogany.—Flexible foundations.—Treatment of the ceiling.—The teredo.—The oldest timber.—Compressive strength of bricks and piers.—Repetition of ornament.—The Thomson-Houston electric system for street railways, illustrated.—An excellent system of heating.—The Ball high speed engine.—Beading, rabbit, slitting, and matching plane, illustrated.—The Sturtevant system of heating and ventilating, illustrated.—H. W. Johns' liquid paints.—Soapstone laundry tubs and kitchen sinks, illustrated.—Carpenter's vise, illustrated.—Metallic hip shingles, illustrated.—Corrugated iron lath.—Weather vanes, roof ornaments, etc.

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For Sale—Patent No. 399,371, March 12, 1889. Ash sifter. Geo. W. Bown, 1028 So. 3d St., Philadelphia, Pa.

Patent Insulator For Sale—Particularly adapted for arc light wires. Illustrated in SCIENTIFIC AMERICAN of March 30, 1889. Address Warren C. Brown, Tarrytown, N. Y.

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Wanted—A first class man for foreman of brass foundry manufacturing plumbing and steam fitting goods. Address, stating terms and references, to box 258, Milwaukee, Wis.

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For Sale—Patent ash sifter, No. 383,173, May 22, 1888. Ash pan sets inside revolving screen; consequently no dust. Circulars mailed. J. E. Crosby, Westfield, N. J.

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NEW BOOKS AND PUBLICATIONS.

L'ELECTRICITE A LA MAISON. By Julien Lefevre, Prof. à l'École de Medecin de Nantes. J. B. Bailliere et Fils, Paris, France.

Electricity as employed for domestic purposes is the subject treated of generally in the above work. Our new servant as it is called, which takes the place of lazy and unreliable domestics. Scarcely a new house is erected without being provided with electric wires for "call bells" and for lighting purposes. A number of chapters are devoted to this subject of electric lighting and its accessories—the storage battery, the dynamo, the various forms of lamps, etc. The different kinds of call bell annunciators, etc., are also described at some length, and then the author wanders in other fields, and we find a chapter on the subject of propulsion of boats by means of accumulators. A curious use of electricity is in the shoeing of vicious horses. A current is passed through the bit in the mouth of the animal. After this has been continued for a certain time, it is stopped, and the horse, it is said, is found to be entirely tractable. The work is fully illustrated.

THE PERICOSMIC THEORY OF PHYSICAL EXISTENCE, AND ITS SEQUEL. By George Stearns. Published by the author. 1888. Pp. 338. Price \$2.

In this work the theory of the planetary motions, physical force, the earth's orbital motion, and the nebular theory are all considered; and the final application of the author's theory, which gives its name to the work and embodies his views of the phenomena of nature is given in detail.

AN ELEMENTARY TEXT-BOOK OF CHEMISTRY. By William G. Mixer. New York: John Wiley & Sons. Pp. ix, 459. Price \$2.50.

This work is designed for use in colleges and schools, and treats of the general laws of chemistry. It gives a very complete view of the bases of the science of inorganic chemistry, is excellently illustrated, and in many respects appears to be a very valuable addition to school literature. It is devoted almost entirely to inorganic chemistry. The illustrations are a very good feature of the work, and the formulae of chemical equations are given in considerable detail. The atomic theory is considered in a special section at the end of the work.

THE ART OF FRET SAWING AND MARQUETRY CUTTING. A complete guide for amateurs and professionals, containing full and practical instructions for producing and making up marquetry, inlays, and every description of fret work. By David Adamson. Ward, Lock & Co., London and New York. 1888. Pp. 158. Price 75 cents.

This excellent work treats in detail of the popular mechanical amusement that gives it its title. The hand tools, machinery, and materials are considered in the introductory chapters. These are followed by the first lessons in cutting, next by the execution of a piece of real work, while hints for designing come next. Further on, inlay work, a more difficult modification of the art, is treated at considerable length. The work is well illustrated, and the explanations are clear and concise.

A GENERAL FORMULA FOR THE UNIFORM FLOW OF WATER IN RIVERS AND OTHER CHANNELS. By E. Ganguillet and W. R. Kutter. Translated from the German with numerous additions, including tables, diagrams, and the elements of over 1,200 gaugings of rivers, small channels, and pipes, in English measure, by Rudolph Hering and John C. Trautwine, Jr. New York: John Wiley & Sons. London: E. & F. N. Spon. 1889. Pp. xxiii, 240. Price \$4.

This treatise originally appeared in the *Journal* of the Austrian Association of Engineers and Architects in 1869. The volume of the *Journal* containing it has been exhausted by the great demand, and this fact inspired in part the present translation, which has been executed by Rudolph Hering and John C. Trautwine, with numerous additions, and the whole transferred to English measure. The distinction of both authors and translators alone is enough to recommend the work. It is made up largely of tables, and for the hydraulic engineer the work may be pronounced simply indispensable. The amount of labor involved both in the original work and in this translation must have been very great, and seems fully warranted by the high character of the work produced.

A TREATISE ON HYDRAULICS. By Mansfield Merriman, Prof. of Civil Engineering in Lehigh University. New York: John Wiley & Sons. 1889. Pp. vii, 381. Price \$3.50.

This excellent work, contributed by a professor of the Lehigh University, treats of the entire theory of the flow of water very fully. Toward the end of the book, after the flowing of water through orifices, channels, tubes, etc., has been treated, current indicators and measures of gauging the flow of rivers, surface curves, back water, etc., are considered. Then comes the dynamic pressure of flowing water, the distinction between static and dynamic impulse being clearly drawn. This introduces the subject of water wheels, direct acting and reaction, including turbine and other water wheels, and the concluding chapter is devoted to naval hydro-mechanics, which briefly considers the subject of the propulsion of boats. A short discussion of the jet propeller is of special interest.

DOSE AND PRICE LABELS OF ALL THE DRUGS AND PREPARATIONS OF THE UNITED STATES PHARMACOPEIA OF 1880, WITH AN APPENDIX FOR THE USE OF PHARMACISTS, PHYSICIANS, AND STUDENTS. By C. L. Lochman. Philadelphia: Dunlap & Clarke. 1889. Pp. xv, 201. Price, paper cover, \$1.25; flexible cloth, \$1.50.

This valuable little work contains a series of labels for use by pharmacists, in which each label is given both the Latin and the English title, the general origin of the tincture or drug named, the proportions for the dose or infusion, and a statement of its general action. The labels are so arranged that they can be cut out and pasted upon bottles if desired, the printing being on only one side of the paper. While the bulk of the work is devoted to this, it contains a number of useful tables, and a considerable section devoted to eclectic resinoids and new remedies; an index and a list of German names, with their translation and page reference, end the book. Although it is designed to be cut up, and pasted on bottles, so many valuable references are contained in it that we believe the majority will choose to keep the book intact.

BELL HANGER'S HAND BOOK. With ninety-seven illustrations. By F. B. Badt. Electrician Publishing Company, Chicago. 1889. Pp. 105. Price \$1.00.

This work is devoted to electrical bell hanging and gas lighting apparatus. The subject is treated in considerable detail, with numerous illustrations, and is a very practical contribution to a field in which there has been for some time room for such a work.

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