

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Valentine Erbach, Scranton, Pa. This improvement comprises a drawhead having at the sides noses, one below the other, with oppositely inclined upper and lower faces and parallel sides, and having vertical perforations, while a gravity link is arranged in the perforation in the upper nose. When the drawheads come together they are positively guided to coupling position and the coupling is automatically effected, and means are also provided whereby any desired number of steam and compressed air pipes may be simultaneously and automatically coupled.

CAR FENDER.—James L. Canham, South Orange, N. J. This is a device to be readily attached to or detached from the dashboard of a car, and of such construction as to present a yielding bed to any one falling on the fender. The parts are so arranged that the sagging caused by a body falling on the fender operates a trip and causes an auxiliary bed to be projected, as a further protection for a person caught in the path of the car.

Electrical.

GENERATOR.—John D. Hilliard, Jr., Bluefield, West Va. This is a compound wound alternating generator, with improved means of compounding and regulating the voltage, there being two windings on the field spools of the generator, one of which is furnished with a constant current from a separate exciter, and the other with a variable current supplied by the generator itself and varied with the variation of the load of the generator. The regulation of the voltage is quick and efficient, as there is but one magnetic field to vary.

GALVANIC BATTERY CELL.—Frank A. Glasgow, St. Louis, Mo. This is a small, easily portable cell, in which a tube or casing closed at the upper end is placed over the zinc or positive element, displacing the fluid from about the element, and protecting it from being destroyed when the cell is not in use, while the air or gas in the tube displaces the fluid when the tube is pushed down over the zinc. In the protrusion upward of the zinc from the bottom of the cell the exposed portion of the positive element stands free from support.

INSULATOR.—James M. Patterson, Springtown, Texas. For insulating and supporting telegraph and telephone wires, this inventor has devised an insulator comprising two sections of insulating material adapted to fit together and each having on its inner sides a longitudinal recess, in which blocks notched on their inner faces are to be inserted, the insulator being of a very simple and inexpensive character, and adapted to clamp the wire securely and prevent its longitudinal movement.

ALARM SIGNAL AND INDICATOR.—Jacques A. Buisson, New Orleans, La. This is a device for trolley roads, to be applied especially at crossings, curves, tunnels, and other dangerous places. Combined with the main trolley wire is a short auxiliary wire connected with the alarm and signal, and a double trolley establishes electrical connection between the main and auxiliary wires to sound an alarm and give a visible signal as the car passes along the portion of the track to be protected.

Mechanical.

PAPER MAKING MACHINE.—Thomas H. Savery, Wilmington, Del. This invention relates to the wire part of high speed Fourdrinier machines, in which the water from the pulp resting upon and carried by the wires over a series of table rolls is directed and caused to flow into save-all boxes, and provides table rolls adapted to support the wire, with deflectors interposed between the rolls and extending downward to the plane or level of the lower surfaces of the rolls, to prevent the water being thrown from one roll to the adjacent roll.

Miscellaneous.

STENOGRAPHIC MACHINE.—Joseph W. and Joseph K. Bailey, New Orleans, La. This is a machine in which the characters are formed by puncturing devices which penetrate and form a permanent record on a strip of paper, the machine being also adapted for printing as well as puncturing. The machine has a closely grouped set of horizontal and parallel bars with converging ends provided with properly shaped dies, horizontal rock shafts arranged at right angles connecting with the die bars and a series of vertical keys, there being means for connecting the keys to the rock shafts and the rock shafts to the die bars.

TIRE TIGHTENER.—Jasper N. Jennings, Portland, Oregon. According to this improvement, in a foot section adapted to fit on the wheel hub is journaled a screw carrying a laterally extending lifting arm, a nut threaded on the screw having a laterally extending arm on which a hook is adjustably held. The device is strong, cheap, and simple, and may be readily applied to any wheel to quickly tighten the tire without removing the wheel from the axle. It also facilitates spreading the wheel for the removal of the spokes if necessary, the straightening of the tires, etc.

HORSE COLLAR FASTENER.—John H. Emerson, St. Joseph, Mo. This invention relates to fastenings for separately connecting the lower abutting ends of horse collars, and provides a fastener comprising two caps to fit over and inclose the collar ends, each cap being divided horizontally and provided with securing tongues having bolt holes. The cap sections have overlapping portions to prevent slipping and locking lugs and hooks to secure them together and fasten the collar. The hame strap passes between pairs of registering lugs, and the device is easy to fasten and unfasten, holding the collar securely when in fastened position.

DISINFECTING AND PURIFYING WATER.—Carl Salzberger, Burgsteinfurt, Germany. This invention is for a process and apparatus for domestic and industrial uses, the process consisting in first mixing the

water with lime paste to purify it, then charging the mixture with carbon dioxide and subjecting it to the action of an electric current to separate and set free the carbonate of lime and the carbon dioxide. The electrolytical apparatus comprises a reservoir in which is an agitating device and provided with movable slatted frames forming one of the electrodes, a metallic perforated cylinder forming the other electrode.

SEPARATING GOLD AND SILVER.—Frederick Rinder, Chicago, Ill. For separating the gold and silver in a cyanide solution this invention provides a process consisting in first subjecting the cyanide solution to the action of a solution of sulphide of iron, to separate and precipitate the silver, and then subjecting the cyanide solution, in a separate tank, to the action of chloride of zinc, to separate and precipitate the gold. The invention is an improvement on the "MacArthur-Forrest cyanide process," using but little chloride, and the process requiring but little attention and labor.

BALANCE.—Clarence N. Fenner, Pater-son, N. J. In this balance the standard has a graduated segment over its upper end, and the scale beam has vertical longitudinally aligned set screws, having between their inner ends the middle knife edge engaging the upper end of the standard. The beam also has knife edges at its ends from which the pans are suspended, while a weighted inclined arm extends down from the center of gravity at the middle of the beam, there being a similar inclined pointer above the center of gravity and working over the segment. The improvement is designed for use on all classes of balances, including the most delicate and those for weighing merchandise.

ANTI-FRICTION BLOCK.—Gregory M. Mullen, Baltimore, Md. This block is especially designed for use in guiding the tiller ropes of tugs, yachts, etc., reducing the friction to permit the free and easy movement of the sheave. There are side rollers between the sheave and journal, terminating short of the end of the sheave, providing an annular cavity surrounding the journal and a flange or rib of the cap jaw entering the cavity. The sheave has its under side channeled and balls fit between the sheave and the main jaw.

BATH OR OTHER TUB.—Charles E. Marston, Dover, N. H. This invention provides means for keeping the water in the tub at a uniform temperature as long as desired, and also for quickly raising or lowering its temperature. A shower or spraying device is also provided to spray from the sides, and the tub may be utilized to heat the air surrounding the bather and maintain the required temperature in the room, the tub acting as a radiator. The tub may also be used as a laundry or kitchen tub.

CHURN POWER.—John T. Gilbert, Columbus, Ga. A turning as well as a reciprocating motion is given to the churn dasher in a very simple and effective manner by this improvement. In a vertical frame is held a shaft at whose lower end is the dasher, and on whose upper end is revolvably held a head pivotally connected with a pitman, the latter being connected with the crank arm of the drive shaft. In the shaft is a spiral groove engaged by the tip of a set screw, whereby the shaft is rotated as it is reciprocated.

CLOTHES LINE FASTENER.—Charles L. Feinberg, Brooklyn, N. Y. This is a simple device for quickly and firmly uniting the two ends of a pulley line and to facilitate taking up the slack at any time. It consists of two parts pivoted together, the outer end of one part terminating in an eye to which one end of the line is tied, while the two sections form at the other end a clamping jaw in which the line will be held by the pressure of the jaw sections.

WINDOW SHADE.—Joseph Eckert, New York City. A shade is constructed of a series of strips or sections, according to this improvement, each section being capable of movement to or from an adjoining section, providing for larger or smaller spaces for the admission of light, while the shade sections are adjustable to admit light and air without admitting the sun directly. The improvement comprises a series of independent rollers and locking devices, with a bar detachably connected to the lower parts of the shades, and all of the sections may be simultaneously manipulated.

LIQUID COOLING CAN.—Wolff F. E. Casse, Copenhagen, Denmark. For preserving and storing milk, cream and other liquids or food this inventor has devised a vessel having a jacket adapted to contain ice and prevent the water formed in the ice jacket from coming in contact with the inner wall of the jacket until nearly all the ice is melted. There are ice-holding hooks or projections in the inner wall of the vertical part of the jacket which prevent the ice from rising as the water is formed by thawing, and are thus designed to preserve the continuity of the layer of ice on the inner wall of the jacket.

ILLUMINATED COLUMN.—Charles Sieburg, New York City. In fixtures for offices, bars, etc., this invention provides a column designed to heighten the ornamental effects. The invention comprises a base on which is a hollow shaft of translucent or transparent material with a capital of opaque material in which is held a lighting device, preferably an electric light, adapted to throw its light down into the shaft to illuminate the latter from the inside. The arrangement is such that the shaft can be taken down and cleaned, and ready access to the lamp is provided for.

BICYCLE TROUSERS.—Henry J. Roschi, New York City. These are garments adapted to give efficient support to the abdomen and other parts of the body, and they have elastic gores at the waistband and novel leg attachments adapted to relieve strains and obviate any danger of rupture, while insuring a comfortable adjustment and good fit of the garment.

GAME APPARATUS.—Charles H. Buxton, Neenah, Wis. A game similar to that of base ball may, according to this invention, be played by a simple and inexpensive device with which runs may be scored, the player put out, the circuit of the bases made, etc., in manner simulating that of a regular game. The field is inclosed in a box and at the four corners of the diamond are holes representing the bases, there being also slots to represent "fouls" and holes to represent "outs," and the game being played by the movement of a ball over the board which constitutes the field.

Designs.

CANDLESTICK.—William Varney, New York City. This design comprises a representation of a flower and a cup somewhat concealed among the leaves, together with a foliage support in which are stems, leaves and buds.

ROLLING HOOP.—Francis C. Bates, Newport, Vt. In this hoop is a central star-like figure consisting of a circular disk having a double series of radial projections, and between the central figure and the hoop are connecting cords.

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.

STEAM AND THE MARINE STEAM ENGINE. By John Yeo. London and New York: Macmillan & Company. 1894. Pp. xiv, 196. Price \$2.50. No index.

Naval steam engineering is a profession which is acquiring year by year a greater importance. The possibility of economy and the importance of achieving it on ship board have brought about some of the most perfect types of boilers and steam plants which have been devised. This is another way of saying that the naval steam engineer stands justly at the head of his profession, having to design the most perfect power apparatus and to use it properly. The coal consumption is nowhere more closely watched than on a steam vessel, and in the present days of record trips the chief engineer is as important an officer as the captain. Although we regret the absence of an index, a very full table of contents, to a certain extent, takes its place.

REPORT OF THE BOARD OF GENERAL MANAGERS OF THE EXHIBIT OF THE STATE OF NEW YORK AT THE WORLD'S COLUMBIAN EXPOSITION. Transmitted to the Legislature April 18, 1894. Albany: James R. Lyon, State Printer. 1894. Pp. 647.

We will not attempt to describe this large volume. It is enough to say that it is an exhaustive synopsis of what New York State proper showed at Chicago, with numerous illustrations of the exhibits. We notice, among others, very satisfactory plates of the work shown by the Teachers' College, recently illustrated in our columns, but as every third or fourth page has a full plate, it will be found a perfect album of the exhibits and of many that will have a homelike and familiar aspect to the New Yorker. We doubt if any State can produce a much more creditable report upon its exhibits. The large size of the plates makes them tend to be satisfactory, and we think that teachers and other professional workers will find the volume one of great value. Numerous portraits are given of the members of the Commission, while general views of the fair proper are not lacking.

ELEMENTS OF MINERALOGY, CRYSTALLOGRAPHY AND BLOWPIPE ANALYSIS, FROM A PRACTICAL STANDPOINT. By Alfred J. Moses and Charles Lathrop Parsons. New York: D. Van Nostrand Company. 1895. Pp. vii, 342. Price \$2.

The joint authorship of this volume gives it value, as it involves the views of two somewhat separated institutions. The book is rather more a work on crystallography and the identification of minerals than a blowpipe manual of the usual kind, the application of the blowpipe to mineral identification being closely followed in it. The work is qualitative in the sense that quantitative analysis is not given. The liberal illustrations and thoroughly practical treatment make it quite an attractive addition to the literature of the science.

THE DISEASES OF PERSONALITY. By Th. Ribot. Chicago: The Open Court Publishing Company. 1895. Pp. 163. 16mo. Paper 25 cents, cloth 75 cents.

An authorized translation of the work of M. Ribot, professor of comparative and experimental psychology in the College of France. He is also the author of "The Psychology of Attention" and "Diseases of the Will." The present work treats of organic disorders, affective disorders, disorders of the intellect, dissolution of personality, zoological individuality, etc.

CATECHISME D'ELECTRICITE PRATIQUE. By Ernest Saint-Edme. Paris: Bernard Tignol. Pp. 128. 16mo, 73 illustrations.

Under the attractive catechism or question and answer form the author has attempted to treat the whole subject of electricity in 128 pages. The illustrations are poor and do not show the later forms of apparatus. The work is undated and has no index.

THE MECHANICAL ENGINEER'S POCKET BOOK. A reference book of rules, tables, data, and formulæ, for the use of engineers, mechanics, and students. By William Kent, A.M., M.E. New York: John Wiley & Sons. 1895. Pocketbook, full gilt, flaps. Pp. 1087. Illustrations, tables, etc. Price \$5.

More than twenty years ago the author began to follow the advice given by Nystrom: "Every engineer should make his own pocketbook, as he proceeds in study and practice, to suit his particular business." The results of Mr. Kent's judicious gathering of engineering facts and figures are found in the present admirable collection of rules, tables, and out of the way information. The scope of the work is different from that of Trautwine and Haswell and it would be a valuable acquisition to all who possess these important works. Much attention has been paid to the abstracting of data of experiments from recent literature. The section relating to ice machines is particularly valuable, as the literature on this subject is limited. The electrical tables are interesting, and the

section devoted to fuels is also noteworthy. The greatest merit of the book consists in its furnishing information which would require long search in the files of technical journals and the proceedings of professional societies. Even such subjects as jet propulsion are adequately treated. Access to the stores of information is rendered easy by an excellent index.

PRACTICAL DIRECTIONS FOR ELECTRIC GAS LIGHTING AND BELL FITTING FOR AMATEURS. By Edward Trevert. Lynn, Mass.: The Bubier Publishing Company. 1895. Pp. 64. 16mo, 18 illustrations. Paper 25 cents.

This inexpensive little work contains an excellent series of diagrams of connections which will be appreciated by all electrical bell fitters.

HISTORY OF EDUCATION IN MARYLAND. By Bernard C. Steiner, Ph.D. Contributions to American educational history, No. 19. Washington: Published by the United States Bureau of Education. 1895. Pp. 331. 8vo, illustrated.

The present work forms one of the interesting monographs on the history of education by States. The series is edited by Dr. Herbert B. Adams, professor of American and institutional history in the Johns Hopkins University. Maryland has not obtained wide renown until recent years for her higher institutions of learning, and yet the number and importance of them has been too great to justify such neglect as they have received. The present work gives a succinct account of education in colonial Maryland, primary and secondary education, the first university of Maryland, etc. The Johns Hopkins University comes in for a fair share of attention. The value of the work would be enhanced by an index.

THE PHONOGRAPHIC DICTIONARY AND PHRASE BOOK. By Benn Pitman and Jerome B. Howard. Cincinnati: The Phonographic Institute Company. 1894. Pp. 48. 16mo, pamphlet. Price 10 cents for the first part; no other parts will be sold separately. The completed work will cost \$2.50 in cloth.

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SCIENTIFIC AMERICAN BUILDING EDITION.

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2. An elegant plate in colors showing a cottage at Bronxwood Park, Williamsbridge, N. Y., recently erected at a cost of \$2,200. Perspective view and floor plans. Mr. A. F. Leicht, architect, New York City. A neat design.
3. A cottage at Flatbush, L. I., recently erected for W. K. Clarkson, Esq., at a cost of \$5,000. Perspective elevation and floor plans. Mr. Christopher Myers, architect, New York City. A picturesque design.
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