

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Emerson L. Bolles, China, La. According to this improvement the draw-head has a vertically oval throat and a lateral chamber in which a spring-pressed latch block, hook shaped at one side, is movable transversely, a hook-ended link bar being adapted to engage the block, on which there is a shackle loop, links and levers being connected with the block to retract it. The coupling is automatically effected as the cars come together, even if the cars vary considerably in height, and the uncoupling may be conveniently accomplished from either side or the top of the cars.

FENDER FOR TRAM CARS.—Samuel J. Rosenfeld, New York City. This is a rotary fender, in which projecting shafts beneath the platform, and actuated from the car platform, rotate stout wire or sheet metal fender arms in a manner adapted to throw away from the car any object in its path. The fender shafts are preferably arranged in triangular form, constituting the sides of a pilot, the front of which consists of a vertical lattice body. The improvement may be quickly and conveniently attached to any car, and is concealed by the platform.

Mechanica.

BEAM FRAMING MACHINE.—Robert H. Ireland, New York City. This is a machine by means of which iron beams may be shaped in the shop ready for framing, so that when set up they need only to be put in place. It has a reciprocating knife head mechanism carrying knives above a table fitted to support a beam in upright and horizontal position, the table having adjustable portions to increase or decrease its beam openings. Two different knives are arranged to cut the top and bottom flanges of a beam, while a third knife cuts the web.

TIRE TIGHTENER.—William T. Mackey, Vancouver, Canada. This invention provides means for expanding wheels after they have shrunk and become loose in the tires, so that they will snugly fill the tires, and the wheels will also be held in their expanded position. It is a simple and powerful screw-actuated apparatus, which may be conveniently clamped to the spoke of a wheel and applied to its felly, to pull out the felly in relation to the spoke and separate the ends of the felly sections, spoke washers being employed and a wedge plate entered between the felly sections.

Agricultural.

THRASHING MACHINE ATTACHMENT.—Moses Schlatter, Burrton, Kansas. The band cutter and feeder which form the subject of this invention are designed to make it impossible for the cylinder of the thrasher to draw to it more material than it is designed to receive, while assuring a regular and gradual feed, the quantity fed being under the complete control of the operator. The feed rollers maintain an adjusted distance apart, and have spikes or teeth so located that some of them will be at all times in engagement with the grain, whose movement to the cylinder will thereby be nicely regulated. The improvement may be readily applied to any thrasher.

AUTOMATIC HAY PRESS FEEDER.—William H. H. Johnson, La Due, Mo. This improvement consists principally of a rake for raking the hay into the plunger box feed hopper, a feed bar being pivoted on the rake and adapted to press the hay down the feed hopper into the plunger box in advance of the reciprocating plunger. The device is of strong and simple construction, and automatically and continuously feeds the hay into the plunger box of the press, in unison with the movement of the reciprocating plunger in the box.

COVER FOR BUTTER RECEPTACLES, ETC.—Henry C. Carter, East Orange, N. J. This is an improvement on a formerly patented invention of the same inventor, in which the cover had a movable central part or locking tongue, and provides for making such tongue of wedge shape, with outwardly beveled sides, to be engaged by corresponding undercut sides of the cover, so that when the cover is properly placed and the tongue driven home the cover will be firmly held down and prevented from rising or leaking in the center.

Miscellaneous.

STREET SWEEPER.—George Morrow, Salt Lake City, Utah. This machine is designed to sweep a street or road and deliver the sweepings to one or more receptacles carried by the machine and removable therefrom, the operation of the machine being automatic, and provision being made for removing from the path of the broom large stones or other obstacles. The latter are removed by an adjustable mould board, and means are provided for elevating the broom and connected parts from the ground when desired. The mould board may also be used for removing snow from the ground or as a road scraper, the broom, in the latter case, being held out of the way.

UNICYCLE.—Henry J. Sacksteder, Louisville, Ky. A wheel in which are arranged supports for the rider has in its rim friction rollers, while an exterior rim carries the tire, a traveling chain or belt being interposed between the exterior rim and the friction rollers, the belt or chain passing over a driving wheel with the usual treadles, there being also an additional set of friction rollers to hold the belt or chain to the rim of the driving wheel. The wheel is designed to be rapidly propelled with but little power.

DOOR AND HINGE.—William Vaughan, Jr., Passaic, N. J. The door frame, according to this invention, has recesses in its upper face at opposite sides of the door opening, and the hinged doors are flush with the outer face of the frame and each provided with slotted hinge butts having inclined or undercut end walls, while links pivoted in the butt slots have ends inclined to engage the undercut, the stationary slotted butts being secured to the outer walls of the frame recesses to which

the outer ends of the links are pivoted. The improvement is especially applicable to a cellarway or bulkhead, closing it snugly with a practically flat exterior surface without protruding hinges, permitting the doors to be securely locked on the inside, and preventing any water running through on the floor below.

GAS GOVERNOR.—Silas H. Moore, New York City. This improvement relates to governors designed to maintain an even pressure at the burner, and particularly to that class in which a float actuated by the back gas pressure is used to regulate the movement of a controlling valve. The invention simplifies and reduces the cost of construction of the valve casing and renders it more compact, and also adapts it for attachment to and support of the liquid seal tank in a superior manner.

PHOTOGRAPH DISPLAY CABINET.—Henry W. Potteiger and William A. Kohman, Reading, Pa. This is a photograph album in the form of a cabinet or casket, arranged so that the photographs may be readily carried to a vertical position for display, while they will be compactly located in the cabinet when not being viewed. The mechanism is simple and inexpensive, and any one of the photographs in the cabinet may be brought to a position of display by simply pressing a button or operating a conveniently placed lever.

MUSICAL INSTRUMENT.—Bernhard H. Monneuse, Brooklyn, N. Y. This is a tubophone, or an instrument made up of a series of tubes, the tubes arranged in such order that when struck by a hammer the scale may be played in whatever key the tubes have been tuned to, or any piece of music written in such key. The tubes are designed to be suspended in a frame in a very simple and expensive manner, and so that it will be exceedingly simple to make the necessary repair should any tube support be broken.

TUNING DEVICE.—Daniel M. White, Boston, Mass. This is a device for tuning stringed instruments, such as pianos, etc. The outer ends of the strings, after leaving the bridge, are each connected with a lever fulcrumed at the base of the bridge on the string plate, the free end of each lever being engaged by a wrest pin screwing in the string plate and extending into openings formed in the pin block, so that any sound passing through the wrest pin also passes into the pin block and to the other wooden parts of the frame. The device is of simple construction, and designed to hold the strings more permanently at the proper tension, permitting the operator to quickly and accurately tune the instrument without much exertion.

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.

THE PRINCIPLES OF ELLIPTIC AND HYPERBOLIC ANALYSIS. By Alexander Macfarlane. Boston, Mass.: J. S. Cushing & Co. Pp. 47.

This monograph is an abstract which was read before the Mathematical Congress at Chicago last year. The subject is such that it will not admit of review within our limits. As an example of printing it is worthy of all commendation.

ON THE DEFINITIONS OF THE TRIGONOMETRIC FUNCTIONS. By Alexander Macfarlane. Boston: Norwood Press. J. S. Cushing & Co. Pp. 49. Price 50 cents.

In this we have another paper by the same author, read before the Chicago Congress. Like the other one just reviewed, we cannot go beyond our limits in order to give an adequate notion of what it contains. The two will be found of great interest.

THE GAS ENGINEER'S LABORATORY HANDBOOK. By John Hornby, F. I. C. London, England: E. & F. N. Spon, No. 125 Strand. New York: Spon & Chamberlain, 12 Cortlandt Street. 1894. Pp. xvi, 304. Price \$2.50.

In this work the gas engineer seems to receive at last the attention which has long been his due. It treats of true chemical determinations of substances which come within the scope of the gas engineer, and is not devoted to the inadequate and approximate methods which have so long been made to do duty in the text books of the past. Written from the English standpoint, we naturally find some American methods, or methods that have been proposed in America, omitted. Much of the text takes the aspect of analytical chemistry, but the modern gas engineer is often a fair chemist, and able to execute such operations as are here described.

ELEMENTARY NAVAL TACTICS. By Commander William Bainbridge-Hoff. First edition, first thousand. New York: John Wiley & Sons. 1894. Pp. viii, 110; 15 folding plates. Price \$1.50.

The author of this work on naval tactics dedicates it to his son, "an officer of the United States Navy, serving in the fourth generation." The dedication adds interest to the book from the personal standpoint. It is written up to the times and describes fleet maneuvers with steam vessels—something of course radically different from the practice of old times, when sailing vessels were used. It should find extensive circulation among naval officers especially.

IN THE REDWOOD'S REALM. Compiled and arranged by J. M. Eddy, under the direction of the Humboldt, Cal., Chamber of Commerce. Printed by D. S. Stanley & Co., San Francisco, Cal.; engravings by Bolton & Strong, San Francisco, Cal. 1893. Pp. 112. Price 50 cents.

The many illustrations by half tone process of scenes in Humboldt County, California, make this book one of considerable value, although it is published only as a species of advertisement. Remarkable growths of redwood and the cutting and working of same, and scenes in the cities and settlements in the great western land, make the pamphlet of unusual interest to all.

CARD GAMES AND HOW TO PLAY THEM. Publishers' seventh edition of Rules of Popular Games. Cincinnati: The United States Printing Company. Pp. 82. Price 25 cents.

This short work, bound in paper, represents really the most advanced and latest views on poker, whist, and other games of cards. It will be, we are sure, of interest and value to those who desire to play cards in accordance with the most recent rules.

EXPORTERS' HAND BOOK ON MEXICO. Valuable information to American manufacturers desiring to cultivate Mexican trade. Compiled by Phillip G. Roeder, Cleveland, O.; Calla de La Palma, No. 2, Mexico City, Mexico. 1893. Pp. 65. Price \$5.

This little volume is a list of cities and prominent firms therein in Mexico. It will be of considerable use to merchant travelers, exporters, and manufacturers.

PUBLICATIONS OF THE LICK OBSERVATORY OF THE UNIVERSITY OF CALIFORNIA. Printed by authority of the Regents of the University. Volume II. Sacramento. State Office: A. J. Johnson, Supt. State Printing. 1894. Pp. 255.

The contents of this volume, the second volume of the publications of the Lick Observatory, are largely technical. Of course the book will be a necessity to every astronomer.

COUNTRY ROADS. By Isaac B. Potter. Pp. 64. Price 10 cents a copy.

Mr. Potter, well known for a number of months as the editor of the magazine *Good Roads*, published in the interest of the highways of the United States, proposes to issue bi-monthly or every second month a little volume like the present, on some subject appertaining to good roads. The present, which is the first of the set, is addressed to the farmer and tells how the roads in the country may be improved and maintained. It is a most attractive and interesting book, and we are sure the series of which this is the first sample will do much good.

FUNGI AND FUNGICIDES. A practical manual concerning the fungus diseases of cultivated plants and the means of preventing their ravages. By Clarence M. Weed. New York: The Orange Judd Co. 1894. Pp. vii, 228. Price \$1.

The author claims that the enormous loss inflicted on plants by fungi in America might be saved in large proportion by the application of the various preventives and remedies now known to be available. This book claims to tell the farmer how to keep down the diseases which ruin his crops and also describes the diseases themselves so that they may be diagnosed as well as cured. Numerous illustrations will go toward making the book quite popular and very useful.

THE PRACTICAL MANAGEMENT OF DYNAMOS AND MOTORS. By Francis B. Crocker and Schuyler B. Wheeler. With a special chapter by H. A. Foster. New York: D. Van Nostrand Co. Strand, London: E. & F. N. Spon. Pp. 205. Price \$1.

This volume the authors state to be simply the groundwork of a larger and more complete treatise which they are preparing, and for which they invite suggestions. Testimony to the value of the work is accorded not only by the names of the authors, but by the very practical treatment of the subject and because it is designed for everyday use of the dynamo.

PRACTICAL INSTRUCTIONS IN QUANTITATIVE ASSAYING WITH THE BLOWPIPE. Containing also already applied qualitative blowpipe tests. By E. L. Fletcher. First edition, first thousand. New York: John Wiley & Sons. 1894. Pp. vi, 142. Price \$1.25.

There is something fascinating in the application of the blowpipe to quantitative assaying. This volume in small space covers both qualitative and quantitative work.

THE DISEASES OF THE WILL. By Th. Ribot. Authorized translation from the eighth French edition. By Merwin Marie Snell. Chicago: The Open Court Publishing Co. 1894. Pp. vi, 134. Price 75 cents.

The science of the alienists is heretreated. It is written from a popular aspect and at the same time is based on the most advanced views. It will repay very careful perusal. Its chapters on the impairment of the will and on the impairment of voluntary attention reveal very peculiar and disagreeable phases of human nature.

THE PSYCHOLOGY OF ATTENTION. By Th. Ribot. Authorized translation. Second revised edition. Chicago: The Open Court Publishing Company. 1894. Pp. vi, 115, cloth Price 75 cents.

This second work of Dr. Ribot's can be taken as representing more positive and normal actions of the mind than those described in the one just reviewed. Like its predecessor, it will repay careful reading by all. It is an effort in the study of the most complex subject of our actual daily experience, the mind of man.

METALLURGY OF GOLD. By T. Kirke Rose. Being one of a series of treatises on metallurgy, written by associates of the Royal School of Mines. Edited by Prof. W. C. Roberts-Austen. London: Charles Griffin & Company, Limited. 1894. Pp. xvi, 462. Price \$6.50.

We here have Professor Austen acting as editor of a series of books, the present volume being written by one who has had practical experience of gold and silver abstraction in the western part of this country. The combination is a good one; the practical knowledge of the

author under guard of Professor Ansten's high theoretical knowledge is a guarantee that the work is a good one. It has an excellent aspect and must be regarded as an important accession to the metallurgical library.

PLANE TRIGONOMETRY. By S. L. Loney. Part II. Cambridge: At the University Press. 1894. Pp. xxvi, 480. Price \$1.

DIE PHOTO-GALVANOPHAGIE ZUR HERSTELLUNG VON KUPFERDRUCK UND BUCHDRUCKPLATTEN. By Ottomar Volkmer. Halle a. S.: Wilhelm Knapp. Pp. 94; 16 figures and 7 sample plates. Price \$2.40.

This book forms the sixth volume of the Encyclopedia of Photography, and treats the reproduction of copper and other plates by galvanoplastic processes in a very exhaustive manner. The sample plates can be considered gems of the art. A photogravure of the inventor of photo-galvanography, Mr. Paul Pretsch, forms the title picture.

MISERFOLGE IN DER PHOTOGRAPHIE. By H. Muller. Halle a. S.: Wilhelm Knapp. Pp. 72; 9 test figures. Price 80 cents.

This little book treats on unsatisfactory results in photography and remedies for the same, and will no doubt be a welcome guide for amateurs, and even professionals, to enable them to produce photographic pictures perfect in every respect.

MIKROPHOTOGRAPHIE UND DIE PROJEKTION. By Dr. R. Neubaus. Halle a. S.: Wilhelm Knapp. 1894. Pp. 58; 5 illustrations. Price 40 cents.

This book treats microphotography in such a popular way that even a beginner, by following the rules laid down, will soon be enabled to produce satisfactory pictures. The second part of the book gives a description of how to project prepared microscopic objects on a screen.

SCIENTIFIC AMERICAN BUILDING EDITION.

JULY, 1894. (No. 105.)

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