

RECENTLY PATENTED INVENTIONS.

Bicycle-Appliances.

BRAKE.—JOSEPH F. A. FARFAN, Port-of-Spain, Trinidad. This bicycle-brake has a brake-shoe carried by the fork of the steering-head and arranged to engage the tire or rim of the wheel. The brake-shoe is operated by a lever on the steering-handle, which lever is flexibly connected with the brake-shoe.

Engineering Improvements.

ROTARY ENGINE.—MARTIN A. GREEN, Philadelphia, Penn. The engine is inclosed in a casing having an internal chamber provided with tangentially-discharging feed-ports. In the chamber a turbine-piston rotates, having a series of peripheral pockets terminating in lateral escape-grooves. A valve is fixedly held in the end of the internal chamber and is fitted with exhausts, portions of which are adapted to receive the direct impact force of the exhaust from the piston escape-grooves, before the exhausts from the piston communicate with the exhausts in the valve. The piston thus receives a supplemental forward thrust independent of the live steam-pressure entering against the piston.

ROTARY ENGINE.—WILLIAM S. TICHENOR and JAMES F. WILLIAMS, Owensville, Ind. Through the cylinder of the engine a main shaft is extended on which two pistons are mounted. One piston is rigidly connected with the shaft, the other is longitudinally movable of the shaft. Each piston is provided at its outer face with an annular channel. In each channel an abutment is located. Abutment-blades are movable into the channels and also into recesses formed in offsets of the cylinder. Cam-wheels carried by the shaft move the abutment-blades outwardly, means being provided for moving the abutment-blades inwardly, and means for controlling the admission and exhaust of steam.

Mechanical Devices.

MACHINE FOR PITHING STALKS.—GEORGE R. SHERWOOD, Kearney, Neb. This invention is an improvement in machines for separating the pith and the shell or casing of pith-bearing stalks. In the present machine means are provided whereby the shell is removed from the opposite side of the stalk, so that the intermediate pith-portion may be discharged after the shell or casing is removed. In this operation the shell is removed from the opposite sides of the stalk, so the pith, as it passes from the first to the second cutter, will be supported by the shell on one side of the stalk.

GRAIN-LOADING MACHINE.—JOHN E. COWLES and CHARLES W. ANDRIDGE, Storm Lake, Iowa. This apparatus is adapted to be connected with a grain-elevator and to be arranged partly within and partly without the car to be loaded, and to be operated in such a manner as to discharge into either end of the car, the grain descending through the elevator spout. The apparatus comprises a fan-casing, a fan, a rotary shaft having a pulley on its outer end, and a rigid bar adapted to be held and adjusted between the guides. The direction of the rotation of the shaft and fan determines which end of the car shall receive the grain.

MECHANICAL MOVEMENT.—OTTO WEISE, Aschersleben, Germany. The invention relates to that class of mechanism used in putting bench and vice screws into and out of action. The screwed spindle is mounted in a bush in which it slides longitudinally, but upon rotation carries the bush around, owing to a keyway-and-feather connection between the two. One collar of the bush is so formed with a pawl-shaped tooth that rotation in one direction causes a specially-formed sliding nut to throw the screw out of gear; but rotation in the reverse direction allows the nut to come into gear again.

MECHANISM FOR MOVING FILMS OR WEBS INTERMITTENTLY.—AUGUST and LOUIS CHRONIK, Manhattan, New York city. This mechanism, for employment in connection with chronophotographic apparatus, comprises a drum-wheel having projecting elements and two actuating devices therefor, each having locking-faces and driving elements for engagement with the projecting elements of the drum-wheel. The projecting elements of the drum-wheel in the locked position are out of the path of travel of the driving elements of one actuating device and in the path of travel of the driving elements of the other actuating device. It is claimed that by means of this mechanism pictures can be exhibited or taken without danger of the film's slipping or not moving the desired distance.

LUMBER-MEASURING INSTRUMENT.—JOSEPH A. WHITE, JR., Warsaw, Ill. To provide a simple instrument by means of which the measurement of any board may be quickly taken without mental calculation, is the purpose of this invention. The novel features of the invention are found in an adding-device having a series of numbered tumblers operated by drawing the tape across the lumber to be measured. With five tumblers measurements may be recorded up to one hundred thousand feet; by varying the tumblers, the capacity of measurement may be correspondingly varied. By means of the device the total foot-measure in any number of boards of equal or unequal lengths may be ascertained.

WEIGHING-MACHINE.—SAMUEL P. MACKAY, Ridgefield, Wash. The inventor has devised a receptacle which, having been operatively connected with a liquid supply, will open the valve and allow the liquid to enter until the scale-beam is overbalanced, whereupon a portion of the device is turned, the receptacle drops, and the inlet valve closes. If so desired, a second or outlet valve may be opened in the receptacle, allowing the liquid to find an exit therefrom. The receptacle may be placed upon a support that one of the machines can accommodate several different storage-reservoirs, and that the attachment between the machine and any one of the reservoirs may be quickly made.

Railway-Contrivances.

GRAIN-CAR DOOR.—ALBERT N. HOPKINS, Duluth, Minn., and FRANKLIN P. HOPKINS, Hyattsville, Md. Grain-car doors should be capable of being opened outward, and swung inward when the car is empty, and locked in closed position. To attain these ends, the inventor forms a recess in the outer face of the door and provides the door with locking and sealing plates at its

opposite edges. An adjusting connection is seated in the recess. Rods are secured to the locking-plates and are threaded into the adjusting connection. Guides for the rods have base-plates lying on opposite sides of and forming bearings for the adjusting connection.

Miscellaneous Inventions.

DISPLAY-CARD.—BARNET COHN, Brooklyn, New York city. This card is designed to display such jewelry as finger-rings, screw ear-rings, pendent ear-rings, scarfpins, and the like. While the various cards used are modified to suit the different articles for which they are intended, they all have the same characteristics; that is each has a main or front plate with a holding device and a strip movable relatively thereto.

SMOKE-CONSUMING FURNACE.—ANDERS B. RECK, Copenhagen, Denmark. The fuel-chamber of the furnace has its walls composed of superposed, separated bars surrounding a central space. A body surrounds the fuel chamber in proximity to the bars. The body has air inlet and outlet channels immediately adjacent to the bars so that the channels communicate with the central space of the fuel-chamber through the space between the bars.

MOTOR-VEHICLE.—GUSTAVE V. L. CHAUVÉAU, Paris, France. The present invention has for its object improvements in automotive tricycles of a type intermediate between a velocipede and a full-sized road-carriage. These improvements relate more particularly to special arrangements of removable seats and parcel-carriers. The arrangement of seat devised is said to afford a passenger a comfortable position such as has never hitherto been obtained. For the removable front seat a box for carrying goods for tradesmen's use is employed, which box may be readily detached when no longer required.

FLAGPOLE.—EDWARD ROWE, Indiana, Pa. The pole is constructed of metal, in skeleton form, and is made in sections capable of being readily fitted together, enabling the pole to be transported conveniently from place to place and set up by the average workman. A pole of this type, 136 feet high and weighing 8,000 pounds, has been erected on the grounds of the Indiana Normal School.

HEARSE.—ABNER C. COX, Belleville, Kan. The hearse is provided with a tilting platform which can be adjusted up or down at both ends in order to keep the body at a true level in ascending and descending grades. The invention is also applicable to ambulances and similar vehicles.

RUNNING-GEAR.—GEORGE F. UEBEL, Harlan County, Neb. (P. O. address: Oxford, Furnas Co.) This running gear is especially applicable to agricultural separators and is designed to facilitate the movement of the vehicles and to assist in turning them by causing both axles to swing in the act of turning. To the bolsters, sills are rigidly attached. Two curved track-plates are attached to one of the bolsters and project at the front and rear. The track-plates have lugs engaging the bolster and blocks at their ends for connection with the sills. Antifriction-rollers are mounted on the axle beneath the track-plates and respectively engage the track-plates.

PASSENGER-REGISTER.—ORLANDO C. ALSPAUGH, Newton, Kan. [This invention provides a device for registering automatically the number of miles and fractions of a mile during which a seat in a railway-car has been occupied, thus furnishing the mileage earnings of a train and enabling any shortage or errors to be ascertained. Each seat is provided with a registering device so constructed that the weight of a passenger will set it in operation during the time the seat is occupied. The device can be adjusted to carry children without registering, and will prevent a passenger from occupying more than one seat.

ELASTIC TIRE AND RIM FOR WHEELS.—WILLIAM F. WILLIAMS, London, England. The wheel-rim is of channelled section and has flanges inwardly projecting from the side cheeks of the rim. An elastic tire formed of an endless outer cover of transversely-arched section provided with inwardly-projecting rigid flanges in short lengths incloses a connected series of juxtaposed transversely-extended springs bent to an arched form and provided with hooked ends which engage with the inwardly-projecting flange of the rim. The sides of the cover are held between the cheeks of the rim; and the inwardly-directed flanges of the cover are clamped by the springs against the inwardly-projecting flanges of the rim.

PLATFORM-TRUCK.—GEORGE K. DAVIS, Lewiston, Me. The present invention provides a platform-truck especially adapted for use in an orchard and for use by builders. The truck is so constructed that its platform may be lowered or raised and held firmly in either position, and that it may be conveniently moved around a tree or the like, to which it may be attached or used in the same manner as an ordinary truck. The truck may be held stationary even when it is not attached to an object.

ARCHITRAVE, ARCH, AND LINTEL.—EDWARD M. HACKETT, Manhattan, New York city. Blocks of terra-cotta or like material have been devised so constructed that when combined between iron beams or other supports they will have a dovetail connection to enable a straight structure to be erected between the beams or other supports. One side may serve as a floor and the opposite side as a ceiling, the blocks or members being so tied together as to impart to the straight or architrave structure all the strength of the arch.

DRILL.—LAFAYETTE DURKEE, Denver, Col. This drill is an improvement in "jump-drills," in which the reciprocating driving member has a sprung connection with the drill-holder. In the present improvement, a novel means is employed for connecting the driving mechanism with the drill, so that the reciprocation of the drill in one direction is made more rapid than in the other direction. A compensating spring sustains the weight of the drill-holder.

BOOT-BLACKING CHAIR.—ANDREW C. HOLMES, Chicago, Ill., and LOUIS J. HOLMES, North Clarendon, Pa. The chair has a swinging seat beneath which is located a foot-rest connected with the seat to slide outward as the seat is raised. When the chair is occupied, the seat is raised, thus projecting the foot-rest forward and

placing the device in position for use in blacking the shoes.

WAIST-BELT.—CHARLES MESSICK, JR., Hackensack, N. J. This belt has a pocket adjacent to the buckle and adapted to receive that end of the belt which is passed through the buckle so that when the belt is in position upon the body the end which is passed through the buckle will not be visible, thus dispensing with the necessity of a loop and also preventing the free end of the belt from being carried out of engagement with the body-portion of the belt.

Designs.

BADGE.—WILLIAM J. CROWE, St. Catherines, Canada. The leading feature of the design consists of a badge having a shield forming the base, and an eagle holding a pan on the obverse of the shield.

WATCH-CHAIN AND NECKLACE.—MARCEL M. MIRABEAU, Manhattan, New York city. This design provides a combined watch-chain and necklace for ladies' wear. The device has the especial merit of enabling the wearer to adjust the necklace portion in any desired manner, the adjustment being most readily effected by the use of side-buttons attached to the necklace portion and sliding on the runs of the watch-chain.

PIN.—MARY J. SMITH, Manhattan, New York city. The leading feature of the present design is a foundation-plate in which there is an irregular opening and a tongue which extends over the face of the foundation-plate and across the opening.

WASHER.—JOHN J. TURNER, Manhattan, New York city. The washer is funnel-shaped at its upper and lower ends; and its upper end is formed with radiating spouts. The device is placed in a wash-boiler, and by its geyser-like action is designed to facilitate the cleansing of the clothes.

CAP.—MARK DAVIS, Manhattan, New York city. The cap has two vizors extending oppositely from a crown with a flat top and with sides bulging down over the vizors.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

DIE MODERNE CHEMIE. Eine Schilderung der chemischen Grossindustrie. Von Dr. Wilhelm Bersch. Vienna: A. Hartleben. 1899. Large 8vo. 1 Lieferung. Illustriert. Price 20 cents.

Dr. Bersch has undertaken the task of describing all industries which employ processes based upon chemistry. The work is not technical in the true sense of the word; but appeals more to the general reader. The field covered is very broad, extending as it does over every chemical process employed in the arts and manufactures of our times.

LEXICON DER METALL-TECHNIK. Redigirt von Dr. Josef Bersch. Vienna: A. Hartleben. 1899. Large 8vo. 1 Lieferung. Price 20 cents.

From this first installment of Hartleben's metallurgical dictionary, it would seem that a long felt want in German technical literature is about to be filled. The modern ironmonger has neither the time nor the inclination to wade through a mass of technical books in order to find the information which he is seeking. He would, no doubt, prefer a reference book in which he could find trustworthy explanations of the problems he endeavors to solve. Such a work is this "Lexicon der Metall-Technik."

STEAM ENGINE INDICATOR AND ITS APPLIANCES. By William Houghtaling. Bridgeport, Conn.: The American Industrial Publishing Company. 1899. Pp. 307. 8vo. 157 illustrations. Price \$2.

The volume before us is a comprehensive treatise for the use of constructing, directing and operating engineers, superintendents, master mechanics and students, describing in a clear and concise manner the practical application and use of the steam engine indicator. It is accompanied with many illustrations, rules, tables and examples for obtaining the best results in the economical operation of all classes of steam, gas and ammonia engines, together with original and correct information on the adjustment of valves, computing horse power, diagrams and extended instructions for attaching the indicator. The subject appears to have been treated in an admirable manner by a thoroughly practical man. The literature relating to indicators is already quite large, but there is no doubt that there is an ample field for usefulness for the present book.

CHARACTERS OF CRYSTALS. An Introduction to Physical Crystallography. By Alfred J. Moses. New York: D. Van Nostrand Company. 1899. Pp. 211. 8vo. Price \$2 net.

A new book on crystallography has been needed for a long time, and Dr. Moses, the Professor of Mineralogy in Columbia University, is splendidly equipped for writing a book on the subject. He has certainly succeeded in elucidating many points which have always proved troublesome to students. In the present volume he has given a large number of diagrams which are either original or have been published only in German works on the subject. It is a book which we can unqualifiedly recommend.

A PRIMER OF CALCULUS. By E. Sherman Gould. New York: D. Van Nostrand Company. 1899. Pp. 122. 18mo. Plates. Price 50 cents.

This is a second edition, revised and enlarged, of a book which we reviewed a year ago. Calculus is apt to prove a great stumbling block to readers of scientific and engineering books and to students. With the aid of a book of this kind the labor of the student will be much simplified.

THE HISTORY AND ANTIQUITIES OF THE COLLEGIATE CHURCH OF SAINT SAVIOUR, SOUTHWARK, LONDON. By Rev. Canon Thompson, M.A., D.D. London. 1898. Pp. 78. Illustrations.

It is a mistake to believe that there are no lovers of London monumental buildings in America; they are, however, few in number, but they will appreciate the rare treat which has been prepared for them by Canon Thompson. The matter is interestingly presented, and the illustrations and plans are numerous and good. The whole is a valuable contribution to ecclesiology.

MANUAL OF ASSAYING GOLD, SILVER, LEAD AND COPPER. By Walter Lee Brown. Pp. 551. 12mo. Price \$2.50.

It was only a short time ago that we reviewed Brown's "Assaying," and now its phenomenal sale has caused a new edition to be printed. We have already expressed our opinion of this book several times. We only desire to say that it is the most admirable book on the subject which has been written, and no one who desires a book on assaying should miss an opportunity of acquiring a copy.

NOTES ON DESCRIPTIVE GEOMETRY. By W. L. AMES. Terre Haute, Ind.: S. P. Burton. Pp. 90. 18mo. 95 illustrations. Price 50 cents.

It is evident to all who have taken note of the trend of practice in mechanical drawing in the best drafting offices that the use of the third quadrant in projecting will become universal. In the study of descriptive geometry, however, with few exceptions, the first angle projection is taught. The author of the little booklet before us has for some time used the third angle in teaching descriptive geometry. The methods given appear to be very satisfactory in practice.

HAY FEVER AND ITS SUCCESSFUL TREATMENT. By W. C. Hollopeter, A.M., M.B. Philadelphia: P. Blakiston, Son & Company. 1899. Pp. 151. 12mo. Price \$1.

About a year ago we had the pleasure of reviewing the first edition of this book, and now we are glad to know that a second revised and enlarged edition is ready for the public. Hay fever sufferers are so numerous that we should not be surprised if a third edition would be called for in a short time. The ordinary practitioner is often woefully ignorant of this very peculiar disease, and we think that many patients would be pleased to read up the subject themselves, although of course we do not approve of self-doctoring.

DAS LÄNDLICHE WOHNHAUS. Studie über praktische Anlage von kleinen Landhäusern und Cottages in Verbindung mit Gärten. Von Alfred Reinhold. Vienna: A. Hartleben. 1899. Pp. vii, 78. Large octavo, with 76 illustrations. Price, paper, \$1.

The little book which lies before us is chiefly intended to assist architects in the erection of cheap country homes. The author has taken as his motto the words of Bacon, "Houses are built to live in and not to look on," and with this as his guiding principle, offers us a work which is valuable for the ideas which it presents, and for the practical advice given to builders of cottages.

TASCHENBUCH DER PRAKTISCHEN PHOTOGRAPHIE. Von Dr. E. Vogel. Berlin: Gustav Schmidt. 1899. Pp. vi, 308. 12mo. Illustrated. Price, cloth, \$1.

The late Dr. Vogel's work in photography requires no extended praise here. It has been so fully treated in the photographic and scientific press that another review is superfluous. The little "Taschenbuch" is one of the most popular of Vogel's photographic books; and that it has now passed through a sixth edition is no more than its due.

OBSERVATIONS SUR LES FRELONS. Par Charles Janet. Extrait des Comptes rendus hebdomadaires des séances de l'Académie des Sciences. Paris. 1895.

ETUDES SUR LES FOURMIS, LES GUÊPES ET LES ABEILLES. Note 14. Rapports des Animaux Myrmécophiles avec les Fourmis. Limoges. 1897.

ETUDES SUR LES FOURMIS, LES GUÊPES, ET LES ABEILLES. Note 15. Appareils pour l'Observation des Fourmis et des Animaux Myrmécophiles. Par Charles Janet. Paris. 1897. Au Siège de la Société Zoologique de France.

SUR LES MUSCLES DES FOURMIS, DES GUÊPES ET DES ABEILLES. Par Charles Janet. Extrait des Comptes rendus hebdomadaires des séances de l'Académie des Sciences. Paris. 1895.

SUR LA VESPA CRABRO L. PONTE, CONSERVATION DE LA CHALEUR DANS LE NID. Par Charles Janet. Extrait des Comptes rendus hebdomadaires des séances de l'Académie des Sciences. Paris. 1894.

SUR LES NÉMATODES DES GLANDES PHARYNGIENNES DES FOURMIS (PELODERA, SP.). Par Charles Janet. Extrait des Comptes rendus hebdomadaires des séances de l'Académie des Sciences. Paris. 1893.

The Street Railway Journal of New York in addition to the regular monthly issue will hereafter publish a "weekly news edition" containing in digested form the current electric railway news of the world. Progress in electric traction is so rapid that even an ably conducted paper like the journal cannot always be on time with news, so their enterprise in starting a weekly is to be commended.