

RECENTLY PATENTED INVENTIONS.

Engineering.

PROPELLER SHAFT THRUST BEARING.

—Hans C. Pedersen, Brooklyn, N. Y. A sleeve having frictional engagement with the shaft is held to revolve in the outer end of the thrust block, a collar rotating on the exterior of the block having recesses in its inner face in which are fitted adjustable blocks, while friction rollers engage the outer end of the thrust block and the collar of the shaft, balls being interposed between the outer ends of the rollers and the inner surfaces of the adjustable blocks. By this improvement, which is readily adaptable to any propeller shaft, it is designed that the friction between the shaft and the bearing will be greatly reduced, while the construction is economical and durable, and quick and convenient access is afforded to any of its parts.

GAS GENERATOR.—John H. Miller, Jr., Gallon, Ohio. This is a water gas generator for the manufacture of gas for either heating or lighting purposes by the decomposition of steam and oil. Above the fuel chamber is a vertical partition wall in the middle forming two compartments, with baffle plates arranged in them, and with oilinlets, draught dampers, and gas outlets arranged at the top of the compartments. The improved generator is easily and economically operated, and very effective in producing a large volume and good quality of fixed gas, without being fouled by deposits of carbon. The baffle plates are tiles which are easily put in and taken out, and afford a great heating surface for fixing the gas without the use of checker work.

Railway Appliances.

METALLIC TIE.—Albert E. Roberts, Norwalk, Ohio. The base or tie bar of this tie is formed of a steel plate with upwardly bent side flanges, in conjunction with which is used a metal seat block, having spiked sockets at its opposite ends ending at their lower ends in angular enlargements, into which angular detachable abutments are projected. This tie is designed to absolutely prevent the spreading of rails, is not expensive to manufacture, and can be quickly placed in position, the spikes as they are driven having their ends automatically clamped to the seat block to prevent drawing.

CAR STARTER.—Karl J. Pihl and Oscar W. Hult, Brooklyn, N. Y. On one of the car axles are two fixed clutch hubs and two loose clutch disks, a loose spiral spring on the axle being fast to the clutch disks, with means of locking and unlocking either clutch disk. The device is very simple, and is adapted to store energy when the car is stopped, giving out such energy again when a releasing lever is moved, to assist in turning one of the axles as the car is started. The device operates effectively in either direction of travel.

CAR COUPLING.—Gustav Runge, Sidney, Neb. This invention provides an improvement in that class of side latching or Janney couplings in which each of the twin jaws is locked in engagement by a pivot bolt passing through it, the object being to provide a more secure lock than in other couplings of this class. This coupling can be readily arranged for coupling with the ordinary link and pin coupling.

BLOCK SIGNAL SYSTEM.—John La Burt, New York City. This system comprises a series of semaphores arranged along the track, a circuit closer connected with each and acting as a balance for it, an electric motor at each geared to depress the arm and raise the circuit closer, a lever mechanism for tripping the circuit closer by the passing of a train, and electrical connections whereby the tripping of the circuit closer of one semaphore will close the circuit through a motor at the next semaphore. The system is comparatively simple and not likely to get out of repair, is positive and efficient, and is automatically operated by the movement of the train to throw up a semaphore as the train passes a block, and throw down the arms in advance of and in the rear of a train. The invention also provides for automatically shutting off steam and stopping the train, should the engineer accidentally run over a block.

TO SECURE RAILROADS AGAINST LOSS OF FREIGHT.—Joseph B. Mockridge, New York City. The invention provides an original system for controlling the shipping of merchandise to secure railroads and shippers of merchandise against loss of freight. The system prevents, first, the loading of merchandise in the wrong car at the shipping station; and secondly, in case it should happen that a package is wrongly loaded in a car, then it is at once detected, and the railroad will have no difficulty whatever in tracing merchandise from the time it passed into its hands until it is delivered to the receiver. The means consist principally in printing a shipping receipt with characters indicating the receiving car, and a ticket containing like characters, so that ticket and receipt control each other. The ticket is delivered to the stevedore and placed into a receptacle held temporarily on or near the car destined for a certain distant point.

Electrical.

ROCKING CHAIR ATTACHMENT.—Charles E. Hartelius, Bay Ridge, N. Y. This is a dynamo attachment, so arranged that the movement of the chair will operate the dynamo and generate a mild current of electricity, which passes through electrodes on prominent places, as the arms, the current passing through the body when the occupant places his hands on the electrodes. This improvement does away with the use of batteries, and enables a person to take a gentle shock for any desired length of time, the chair being used in the ordinary way when the hands are removed from the electrodes.

Mechanical.

LUBRICATOR.—Vilhelm C. Th. Lohmann and Carl V. Andersen, Copenhagen, Denmark. This is a device adapted to automatically deliver a required quantity of oil to moving parts of machinery. It is very practical, durable, and inexpensive, and may be operated by the machinery it lubricates, while it can be easily and nicely adjusted to deliver just the required quantity of oil.

MOULD FORMING KNIFE.—Louis His, New York City. A vertically adjustable knife having an inclined lower edge is held by adjusting screws in the opposite end uprights of a supporting frame, a gauge, over which moves a pointer, being secured to one of the uprights. By means of this improvement a mould for a propeller blade may be quickly and accurately formed in a flask without the use of a pattern, the knife being quickly and nicely adjustable to form a mould of any necessary thickness.

CONTINUOUS BRICK KILN.—James P. Veirs, Omaha, Neb. In this kiln the brick burning proceeds continuously through a tunnel which returns into itself, the drying and burning of bricks, the cooling and removal of the burned bricks, and the recharging of the tunnel with green bricks, going on at the same time in different parts of the tunnel. The invention covers a peculiar construction and arrangement of parts whereby the operations are carried out more expeditiously, economically, and uniformly, insuring a better burning of the bricks and a greater economy of heat and saving of fuel.

Agricultural.

CORN HARVESTER.—Rasmus Pedersen, Dramman, Minn. This machine is drawn between rows of corn and cuts the stalks of two rows at the same time, delivering the corn to tilting tables, and when bundles have been formed or suitable quantities accumulated, the tables are tilted to spill the corn upon the ground. The construction is such that the cutters or knives may be either stationary or laterally reciprocated as desired. The levers are all within convenient reach of the driver's seat, and the front of the machine may be lowered to cut the corn as close to or as far from the ground as may be desired.

Miscellaneous.

ADDING MACHINE.—Augustus J. Brooks, Wichita Falls, Texas. This machine, while being simple, inexpensive, and easily operated, is adapted to mechanically register the amounts of successive additions in such a way that there is no chance for mistake. In operation, every complete revolution of the units wheel moves the tens wheel, and every revolution of the latter moves the hundreds wheel, the successive additions being made by depressing the keys marked with the successive figures, and where columns of figures are added and the amount of successive additions is registered, a locking plate comes into use. The sum of an addition is displayed on number wheels to be read at sight.

CHECK REGISTER.—Carol T. Daniels, Naperville, Ill. This is a simple, convenient, and positively working apparatus which may be easily arranged for use, and is designed to keep an absolutely accurate account of sales made. Tablets of celluloid or similar material, each representing a definite amount, are held in troughs of novel construction in such a way that, when a sale is made, and the salesman presses downward on a key-piece, the front tablet is pushed through a slot into a drawer, the tablets being thus deposited in the drawer to represent the amount of each sale made.

PHOTOGRAPHIC PRINTING DEVICE.—Wilhelm Ohse, Dessau, Germany. The frame of this device has a back of translucent glass, the top and bottom being of a clear glass backed with a colored strip, while a holder adapted to receive a negative is located at the front of the frame opposite the translucent glass, and a lighting device is located back of the translucent glass. The device is designed to facilitate printing at night by lamp light, and is designed to afford as good effects in such printing, with certain negatives, as can be obtained with the best natural light—negatives of a certain density being thus better printed than can be done by sunlight.

MUSICAL INSTRUMENT.—August Petersen, Eskilstuna, Sweden. This invention relates to stringed instruments, such as violins, etc., providing an improved instrument with additional strings, arranged in connection with the regular strings, to produce additional harmonious sounds that are difficult to produce on ordinary violins. The invention consists of a detachable casing held on the neck of the violin and provided with spindles connected with the additional strings, the latter being arranged close to the ordinary strings, so as to be sounded simultaneously with the latter to produce harmonious sounds.

WINDOW.—Peter Vandernoth, New York City. This window comprises a frame having a movable sill, parallel guide rods arranged on opposite sides of the frame, and overlapping window sashes held to slide and swing on the guide rods, the lower sash resting normally on the sill. With this improvement the window sashes may be swung wide open and raised to the upper portion of the frame, thus opening the entire window to permit the free circulation of air and to facilitate the passing in and out of various articles. The movements of the sashes are positive and easy, and they may be cased up tightly if desired to have the appearance of an ordinary window.

SHUTTER WORKER.—Louis Kutscher, New Britain, Conn. This is a device which may be readily attached to any window, and readily operated in connection with any blind carried by the window frame. It can be operated from the inside of a room to open or close the shutters, and to hold them locked in an open or closed position, or in any intermediate position, the device being very simple, durable, and inexpensive in construction.

SCRUBBER.—Ophelia Smith, Shepherdsville, Ky. This is a reversible device, having a scrubbing brush on one side and a mop on the other, for first loosening the dirt on a floor with the brush and then following with the mop, there being a further attachment of a wringer by means of which the mop may be easily wrung without touching it with the hands, the operator not being required to bend much.

BREAD RAISER.—John C. Nicholls, Blue Mound, Ill. This apparatus includes an outer casing having an inner raising chamber, below which is a hot air chamber, there being three means of regulating the

heat in the raising chamber—one by adjusting the flame of the lamp, another by means of the valve inlet opening, and the third by a valve-controlled outlet opening. The heat may be thus evenly distributed to the different portions of the raising chamber, the air of which will not be contaminated by any of the smoke or gases of the flame.

FAN.—Herman Scheuer, New York City. This is a simple form of fan adapted to be readily opened and closed, or snugly folded. It comprises a circular folding web, a metallic handle made in sections, a wooden strip secured on each metallic handle section and connected with the end of the web, and a metallic block held in the handle section and clamping the wooden strip in place at its outer end.

PNEUMATIC TIRE.—Foster H. Irons, Toledo, Ohio. This tire is formed with an exterior and an inner tube, each tube having a joint in its inner side, and a re-enforcing strip is held within the inner tube and arranged to cover the joint. The rubber tubes of the tire are moulded in a spiral shape, and straightened out when formed into a tire, thus contracting and condensing the rubber, so that if either tube is punctured the aperture will be closed by the pressure of the adjacent parts of the rubber.

FUNNEL.—Edward N. Gaudron, Portland, Oregon. Two patents have been granted this inventor for a funnel for conveniently filling liquids into receptacles, the funnel automatically closing when the vessel is filled to the proper height, at the same time retaining the liquid remaining in the funnel when the latter is removed from the filled vessel. A pivoted cylinder closed at its ends and containing a ball is connected at one side of its fulcrum with a valve adapted to close the funnel nozzle, a float being connected with the cylinder at that side of the fulcrum of the cylinder normally containing the ball, to trip the cylinder on the rising of the fluid. One of the patents especially provides for a magnet for finally seating the funnel valve.

ALE TAP.—John Neumann, Brooklyn, N. Y. Two patents have been issued to this inventor for ale taps, one patent providing specially for a tap adapted to withstand blows of a mallet when the tap is driven into a plugged cask, the tap being convenient to remove from an empty cask, having its faucet body separable from the tap shank, and being easy to manufacture. The shell of the tap, which may advantageously be made of cheaper metal than brass, has a faucet-protecting skeleton frame in front, an insertible faucet, and means for connecting the skeleton frame and faucet. The other patent provides a tap or spigot especially adapted for tapping casks in vaults or cellars, to be connected with a dispensing device in a room above. The tap is cheap and simple, while it is more durable than those of ordinary construction. The major portion of the tap may be made of malleable iron or soft steel, instead of brass, thereby greatly reducing the cost of production, and great facility is afforded for extending the tubular connection in any direction from either side of the tap stock.

LOADING DEVICE.—Louis A. De Mayo, New York City. This invention relates to devices for loading coal, grain, etc., into ships, from barges and other vessels, providing new and improved means therefor, to facilitate performing the work rapidly, without requiring much labor. Boxes, each having doors in its sides, are mounted to slide vertically in the barge, each of the boxes being preferably of nearly the width of the barge, and means are provided for raising the boxes separately or collectively.

SUSPENDERS.—Michael Feldman, New York City. This invention provides suspenders designed to insure the comfort of the wearer, the rear suspender ends readily adjusting themselves on the shoulder straps according to the movement of the wearer's body. The connection for the rear ends of the shoulder straps is provided with an elastic band, and its middle portion forms a self-adjusting bearing for the rear suspender ends.

LADDER.—Charles V. Childs, Pittsburg, Pa. This ladder is made in two sections hinged together, and a truss connecting the two sections with each other in such a manner as to prevent the sections from spreading when the ladder is used as a step ladder, and to strengthen the sections when they are extended to form a straight ladder. The ladder may be quickly and conveniently changed from a step ladder to a straight ladder and vice versa, and it can be very cheaply manufactured.

ROTATING GRAIN WEIGHER.—Benjamin Simons, Charleston, S. C. Fulcrumed upon a main frame is a balance frame carrying a rotary bucket wheel at one end and a track way at its opposite end, upon which travels a movable weight, stops on the main frame limiting the opposite movements of the weight. Automatic locking devices are adapted to lock the bucket wheel from rotating when raised, becoming disconnected therefrom when the wheel is depressed. Upon the upper board of the frame is a registering mechanism which records every dump of the bucket wheel.

STRAP.—Nils Nilsson, Brooklyn, N. Y. This is a metallic strap adapted to be used on packing cases and boxes of all kinds, the bands or straps being also capable of use as corner irons simply. The strap has openings to receive nails and fastening devices, the metal around each opening being so shaped that when the nails are driven the openings will be entirely closed, and the metal at the edges will be driven down into the material from which the box or casing is made.

HOOF TRIMMER.—Henry C. McCleave, Trimble, Ill. This tool comprises a knife part having an attached handle and an adjustable fulcrum part or bar having an upturned hook or lip at its outer end, the fulcrum piece having a series of holes by which it may be adjustably attached by a pivot to the knife. The implement is designed to greatly facilitate trimming the hoofs of horses or other animals preparatory to shoeing them, the work being thus effected more quickly and with less muscular exertion.

MATCH BOX.—Howard Cramer, Newberry, Penn. This invention provides a box in which the matches are retained by their heads, slightly separated from each other, the matches being individually ignited as they are withdrawn, without setting fire to any of the others. The box may be readily filled when empty, and the improvement is designed to prevent

smokers or others using matches from carrying off a handful of matches when it is intended to supply grates but one.

SHAMPOOING HAIR AND SCALP.—William C. Voss, Geneseo, Ill. A steam shampooing device is provided by this invention, the device being also arranged to dry the hair and scalp after they have been subjected to the action of steam. It is designed that a cleansing compound shall be sprayed upon the hair and scalp during steaming, the arrangement being such as to prevent the hair and scalp from being too highly heated. A belows or air attachment may be used or not as desired, and either hot or cold air used in drying the hair and scalp.

SYRINGE.—Joshua M. Wardell, Cadillac, Mich. This invention provides novel features in the nozzle and body of the syringe, whereby water of the required temperature may be discharged in a circle of jets or streams from the nozzle.

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.

STAR MAPS FOR EVERY MONTH IN THE YEAR. Specially prepared for use in North America. By Richard A. Proctor.—LUMINOUS STARS. A method for quickly learning the names and positions of the constellations, the movements of the planets, etc. By Alfred E. Beach. New York: Munn & Co. 1893. Pp. 35. Price \$2.50.

In this very elegant work we have given Proctor's celebrated star maps, twelve in number, for the night sky visible during different parts of the year. These maps are very elegantly printed in blue ground with the stars' constellation outlines, Greek letters and names in white. To make each map precise, the hours it corresponds to on each of six dates are given with each map. On the page opposite each map is given a full description.

The second portion of the work, "Luminous Stars," will have a more special interest, derived from its novelty as a delightful method of studying astronomy. The use of phosphorescent stars upon a dark background, or of dark stars upon a phosphorescent background, has already been described by Mr. Beach to the readers of the SCIENTIFIC AMERICAN. In this work we have the same subject put into permanent shape for the library and home. It is a home book—one which will do much to popularize the fascinating study of astronomy.

THE LIVING METHOD FOR LEARNING HOW TO THINK IN FRENCH. By Charles F. Kroeh, A.M. London, and Hoboken, N. J. Published by the author. Pp. 140, vii, ii. Price \$1.

Prof. Kroeh, in stating the basis of his method of learning French, states that you cannot speak French while thinking in English. To learn French he observes it is not necessary to live in France, but you must live in French. He therefore directs the student to associate complete French sentences with his daily actions. This book therefore carrying out this idea gives French sentences which describe the general actions of any one's daily existence, and presents an ingenious, easy, and practical system of rapidly acquiring familiarity with this beautiful language. It is decidedly the best work for the learner that has come under our notice. The "living method" is an outgrowth of the "natural method." As a species of appendix to this work, the author is preparing to supply at \$5 a set of phonograph cylinders which will give the pronunciation of the fundamental French sentences, the object being not to supersede the teacher, but to lighten his labor by enabling the learner to practice at home.

POOR'S HANDBOOK OF INVESTMENT SECURITIES. A supplement to Poor's Manual of Railroads 1892-93. Pp. 986.

We have to acknowledge the receipt of this standard work. Any review of it seems quite unnecessary, in the light of the authoritative stand which has been taken by Poor's Manual of Railroads among financiers. What that book does for railroads, this does for various investment securities. Every kind of information required by the general investor as regards the character of the investments, interest paid, when payable, and range of values of securities, and other allied topics, will be found to be exhaustively treated here. It is the third annual issue, and it is safe to say that many of those possessing the one work will have equal necessity for the other.

LOGARITHMIC TABLES. By Professor George William Jones, of Cornell University. Fourth edition. London: Macmillan & Co. Ithaca, N. Y.: George W. Jones. 1893. Pp. 160. Price \$1.

These tables will be welcomed by computers from their particularly clear arrangement. The numbers are widely spaced, and every facility is given for the application of differences in finding logarithms to the final figure. The range covered may be deduced from the fact that there are 18 different tables. Besides the tables of logarithms and logarithmic functions, some very valuable collection of data, etc., are given under mathematical constants used in chemistry, engineering and physics. The author offers a reward of \$1 for the first notice of each error, an excellent guarantee for the subsequent editions which we are sure will follow the present.

THE MINING DIRECTORY AND REFERENCE BOOK OF THE UNITED STATES CANADA AND MEXICO. George W. Ramage, editor. Chicago, Ill.: Pook Bros., publishers. 1892. Pp. 551. Price \$10.

To those interested in mining engineering, and all subjects connected therewith, the above work would seem to be of very great interest and in many cases indispensable. The book contains a most exhaustive list of all kinds of mines and quarries throughout the United States and Province. It also gives compilations of the