

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

DRAW BAR AND SPRING.—Ferdinand E. Canda, New York City. This invention provides a spring casing permanently attached to the car timbers, with a removable bottom plate, while a mortised tail bolt is adapted to receive the pulling strain and a follower with key guides prevents the tail bolt from turning. The casing is designed to have the greatest possible strength and be of such form as to have the firmest anchorage to the draught timbers, while being easily accessible for the renewal of springs, followers, etc., the improvement providing increased strength in all parts connected with the draught rigging, as called for by the heavy tonnage cars now used on the various railroads.

SPIKE.—John S. Van Leer and John T. Redmon, Sedalia, Mo. This spike is especially designed for securing rails on ties, and has its shank square near the head, from which there is a laterally projecting wedge-shaped flange, there being a boss on the head directly above the shank, which is triangular below the square portion, each side of the triangular part being longitudinally grooved to afford channels and intervening ribs, all sides being sloped to form a triangular point coincident with the axis of the shank. This spike is designed to be economically made and to seal the puncture formed by its insertion in the wood, while it is readily guided to drive in a straight line vertically or at any desired degree of inclination.

DUMPING CAR.—Christian Schmalzrid, Donaldsonville, La. Tilting cars which dump their load at the side from the top of the body of the car may be made of improved construction by means of this invention, which consists in a raising and lowering car body in connection with a truck on the wheel frame of which it rests when not to be tilted. Special means are provided for raising and lowering the car body and for tilting it laterally to dump when needed. The improvement, although applicable to hauling and dumping coal and other materials, is more especially designed for the hauling of sugar cane from the field to the mill, and dumping it quickly on a suitable carrier.

Electrical.

INSULATOR.—Frank A. Ross, Livingston, Montana. This insulator is threaded internally to receive a supporting pin, and has a water shed at its lower end, while its upper end has a screw-threaded transversely slotted part to receive the wire. At the bottom of the transverse slot the insulator is concaved or corrugated to antagonize a screw having a similar surface, and a screw adapted to the threaded portion of the insulator for clamping the wire on its corrugated surface. With this device the use of binding wires will be avoided, and the conductor may be securely clamped without injury to the insulation or the wire itself.

Agricultural.

CULTIVATOR.—Parrott M. Hardy and Thomas R. Boyd, Edwards' Mill, N. C. The frame of this machine has a series of offsets, with inclined faces and recesses opposite the offsets, cultivator blades being secured to the inclined faces and cultivator teeth located in the recesses, while there is a fastening device for securing the cultivator teeth and blades adjustably to the frame. The implement is designed to be conveniently adjusted laterally to work upon rows of different widths, while the harrow teeth and cultivator blades carried by it may be readily and quickly adjusted vertically to and from the ground.

GRAIN AND COCKLE SEPARATOR.—Thomas F. Gray, Monroeville, Ohio. This is a simple and durable machine, that is inexpensive to manufacture, in which a vibrating frame is mounted in the main frame, and parallel inclined rollers are mounted in the vibrating frame, an endless belt provided with pockets passing around the rollers, and the belt being operated by the vibration of the frame, which is effected by a cam on the drive shaft. The machine also provides means whereby the cockle and wheat kernels are separately delivered, each being passed into a receptacle provided therefor.

Mechanical Appliances.

REAMER.—William W. Gregory, Pasadena, Cal. This invention relates to drilling tools for boring wells, providing a simple and durable reamer which expands to ream out the hole made by the drilling tool to facilitate the lowering of the well pipes or casing. Two opposed reaming blades are pivoted on a head, below which they extend, and a longitudinal plate spring is secured on the inner side of each blade, the springs being bowed inward into contact with each other and holding the blades normally apart at their lower ends. The reamer is attached to the drill rod in the same manner as the drilling tools.

SECTIONAL CORE.—Marshall J. Hughes, New York City. This is a core for the foundation of stereotypes, electrotypes, printers' furniture, etc., and is formed of sections of varying width, to replace type metal with cast iron or other cheap material which will support the cast and give it the required rigidity and strength. The invention provides apertured core sections of hard metal with apertured sections of soft material disposed intermediate of the hard sections, whereby the cast may be separated into sections without trouble, in combination with a core support adapted to enter the apertured sections.

SHOE TURNING MACHINE.—Jason H. Edgerly, Chicago. A hollow form adapted to approximately fit inside the heel of a shoe, and bear upon the sole near its edges, is secured to a slide, by which it is held in position on a suitable work bench, and a plunger, worked by a treadle, has a vertical movement from above down to the form. When the shoe is placed, bottom up, upon the form, and the plunger is moved downward by pressing on the treadle, the sole is pressed down within the form, and the operator completes the operation of turning by lifting the edges of the upper by hand.

AXLE GAUGE.—Henry F. C. Feus, Savannah, Ga. This gauge consists of a bar on which is held to slide a series of sets having equidistant set screws projecting from three sides, and a thumb screw in the fourth side adapted to impinge on the bar. It is a simple and convenient device to accurately test an axle to indicate whether it is properly turned and the wheels properly set, and it may also be used as a straight edge and rule.

CIGAR BUNCHING MACHINE.—Bernhard Wertheimer, Karlsruhe, Germany. This machine has a plurality of parallel independent bunching aprons arranged side by side and secured at one to independent rollers, in combination with a form plate provided with a series of transverse forms or moulds. There are other novel features, and the machine is specially adapted to roll the wrappers upon the fillers and automatically deliver the completed cigar into a form. While not entirely making a cigar, the machine is designed to greatly facilitate the work, forming the cigar in such shape that the tobacco will be evenly distributed and the bunch will be rolled symmetrically.

WRENCH.—Albert Cincade, Jersey City, N. J. This invention is for an improvement in that class of ratchet wrenches having pivoted spring dogs for locking a pivoted head or block that carries adjustable jaws for holding a nut or other object to be turned. The improvement relates to the construction and combination of the pivoted block and the jaws and the means for adjusting the latter, the construction being such that either of the jaws may be quickly carried into engagement with the block or disengaged therefrom to convert the wrench into a right or left hand ratchet wrench, according to the character of the work and the place in which it is to be used.

COMBINATION WRENCH TOOL.—Aaron C. Hanty, Pott's Grove, Pa. This invention provides in one tool of simple construction an alligator burr wrench, a pipe wrench, a hammer, a tack puller, and a screw driver, while special means of adjustment are applied to the wrench portion of the tool, forming an implement adapted for service in a great variety of work.

Miscellaneous.

SOLAR CAMERA.—Frank T. Wilson, Stillwater, Minn. The frame which supports this solar camera is to be fitted to a door or window or a suitable opening in the wall, and, in connection with the projecting lenses, there is a fixed inclined mirror for directing the sun's rays into the projecting apparatus, and an adjustable mirror mounted on a revoluble support and adapted to receive the light from the sun and reflect it upon the fixed mirror. The revoluble mirror may be readily turned and adjusted to any desired angle, and the entire camera is conveniently adjustable.

PROTRACTOR AND BEVEL.—George E. Allen, Hartford, Conn. This is a combination implement of simple and durable construction, capable of ready adjustment for measuring angles, bevels, etc. The pointer is pivoted in the center of the protractor, and a slotted bar is fitted to slide on the pointer, and be secured with it on the protractor. The bar can be moved inward or outward as desired and is held in fixed position by a thumb screw.

LIQUID MEASURING DEVICE.—George M. Bellais, Lakefield, Canada. A scale beam adapted to support a vessel is, according to this invention, pivoted on a post, and a weight sliding on the post is supported on an arm or tongue of the scale beam, while a device is connected with the weight and with the faucet discharging into the vessel, so that when the proper quantity of liquid has been measured out the scale beam is actuated and its arm or tongue is disconnected from the weight, when the latter actuates the device to turn off the faucet. By this means all overflow and loss of liquid is prevented, while only the desired amount of liquid is passed into the vessel.

ENVELOPE BOOK.—Marcellus M. Hitt, Sheffield, Ala. This book is more especially designed for envelopes to be distributed in which contributions are to be collected, as for church purposes, etc. The envelopes are detachable from stubs held in the book, the envelopes having mouths at their inner ends, on which they are provided with closing flaps, while the stubs from which the envelopes are detached remain in the book, and are inscribed with the record of the particulars of each envelope, as the name of the donor, amount subscribed, object of contribution, etc.

SEWING MACHINE SPOOL RACK.—Eduard Kolber, New York City. This is a frame supporting a rack designed to hold a number of spools and guide the thread of any of them to the proper mechanism of the machine on or near which the rack is employed, the rack being simple and durable in construction and securely locking the several spools in place. The frame of the device is adapted to be readily fastened to the arm of a sewing machine, to a table, or in other desired position.

WINDOW.—Valentine Schirmer, Nos. 334 and 336 West Fifty-sixth Street, New York City. This is an inexpensive improvement for windows, designed to afford means to open the window by swinging the sash within the apartment, and also enable the sash to slide vertically and independently, as usual, the swinging adjustment being provided to facilitate the cleansing of each side of the upper and lower sash in a safe and convenient manner. The improvement may be readily applied to any window of the ordinary description where the sash is counterbalanced by weights and suspended with ropes or cords. The construction is simple and practical, and involves no loss of light or air, windows being really made more thoroughly air tight by the employment of this improvement.

CHEESE COVER.—Strother J. Lynn, Hope, Kansas. This is a double cover, the inner casing of which only comes entirely down to the base board, while the compartment between the inner and outer casings is designed to afford a channel for ample ventilation, having many openings at the top. The inner casing is also provided with many top and side apertures, too small to prevent the entrance of insects, and

in the side wall of the inner casing is a small pocket to receive a wet sponge and thus supply a proper degree of moisture. The ventilation and protection afforded by the casing is designed to prevent mould and keep the cheese in good condition.

HOUSE DOOR LETTER BOX.—Henry K. Day, Elyria, Ohio. Combined with a frame to which a door is hinged are latch levers and a sliding trip bar pivotally connected with the levers, with other novel features, forming a box of simple and durable construction which can be easily opened by the postman and locked after the mail has been placed in it. An alarm is sounded on a gong on both the upward and downward movement of the trip bar, and on the front of the box a name plate may be placed, while a paper or package receptacle can be conveniently attached to the box, and when not required may be practically hidden.

EXTENSION LADDER.—George Albee, Susquehanna, Pa. The movable part of this ladder is adapted to be raised or lowered by means of a lifting rope. The fixed and movable parts are provided with clips and arranged to slide one on the other, in combination with one or more weighted catches adapted to engage the rungs of the ladder, a latch being pivoted to the catch to close its hook, when desired, to allow the movable part of the ladder to descend without engagement of the catch.

VENTILATOR FOR MATTRESSES.—George H. Hildreth, Cincinnati, Ohio. This device consists of a perforated rubber tube having a metallic top and a perforated cover, the tube being designed for insertion in the body of the mattress from opposite sides at the points where mattresses are usually tufted, the ventilators being held in place by the twine used in tufting the mattress. The tubes, being flexible, do not interfere in any way with the efficiency of the mattress, while they insure the constant thorough airing of its interior.

ICE CUTTING MACHINE.—Thomas F. Lynch, Philadelphia, Pa. A frame carrying a motor and main driving shaft has vertically sliding racks in which a saw shaft is journaled so as to permit the raising and lowering of the saws without interfering with their rotary motion, the shaft being provided with two or more saws placed at a distance apart according to the width of the cakes of ice to be cut. The machine is designed to be easily operated to cut ice from the surface of ponds, lakes, etc., for storage, rapidly dividing it into strips and cakes of the desired size.

HARNESS FLY NET CLIP.—Lyman Rosenberger, Harleysville, Pa. This is a simple device for clamping a fly net to a harness, and is made in two sections—a keeper or box-like section, open at one end and having at the other extremity an intumescence clip, and a detachable latch section, made of a single piece of spring metal. The clip can be conveniently and easily applied to hold the net securely in engagement with the straps of a harness.

BREAST STRAP SLIDE.—James A. Macrae, Regina, Canada. This slide consists of a hollow case having opposite side openings, with a snap hook projecting from one side and a keeper rigidly secured to the opposite side. The improvement forms a simple, durable and efficient device by which the breast strap of a harness may be quickly secured to the ring of a neck yoke.

SADDLE JACK.—Eugene E. Bateman, Marquez, Texas. A frame is mounted to turn on a pivoted arm having transversely extending brackets connected together at the top by a beam with which clamping plates are adjustably and detachably connected, with other novel features, forming a jack which is simple and durable in construction, and which can be readily adjusted to hold the saddle tree in any desired position for the convenience of the workman engaged upon it.

ADJUSTABLE SINGLE TREE.—Sosthenes Moeschler, Riceville, Va. This invention consists of a pair of rods pivoted together and connected by the pivotal bolt with the clevis, being attached at their outer ends to an adjustable bar, thus forming a single tree which may be lengthened or shortened to suit the animal attached to it and the work to be done.

TRUCK.—William H. Gohring, Binghamton, N. Y. This is a hand truck for moving freight or baggage, etc., and is designed for use ordinarily as a two-wheeled truck, but it is so constructed that, when a heavy or large load is to be carried, another axle and pair of wheels may be swung into position, converting the truck into a four-wheeled vehicle on which a large load may be piled, and having a handle by which it may be drawn.

DINNER PAIL.—Robert Dickinson, Sr., Millgrove, N. Y. This pail is of sheet metal, and is divided into several compartments adapted to hold a variety of liquid and solid food, while it is also provided with a lamp and appliances whereby the liquid and solid food may be simultaneously heated. The device also affords a drinking cup and a platter to eat from, the whole being arranged in simple, compact, and convenient form.

HAIR PIN EXHIBITOR.—Louis D. Nessler, New York City. This is a box having an inclined bottom, above which, at different distances, two strips of coarse netting are held in horizontal position, the prongs of the pins dropping easily through the netting, so that the pins may be readily arranged in rows one above another in a manner well calculated to display them.

GAME APPARATUS.—Albert Cromwell, Philadelphia, Pa. The game board provided by this invention has a central concave portion and a flange around its outer edge, while upon the board are placed concentric rows of pins in shallow sockets. A top having facets on its sides is used in playing the game, the player holding the board with one hand and with the other spinning the top, at the same time tilting the board to guide the top from a central position out through the rows of pins and back again.

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.

HANDBUCH DER PHOTOGRAPHIE FÜR AMATEURE UND TOURISTEN. VON G. Pizzighelli. II. Edition. Volume I. Photographic Apparatus. 485 pages and 531 illustrations. 1891. Halle a. S.: Wilhelm Knapp Publisher.

The first volume of this handsomely illustrated handbook for amateurs and tourists treats in an exhaustive manner in six chapters, objectives, cameras, selection of objectives and cameras, stereoscopic apparatus, apparatus for enlarging and reducing, and magnesium flash light apparatus.

DIE PHOTOGRAPHISCHEN OBJECTIVE, IHRE EIGENSCHAFTEN UND PRÜFUNG. By Dr. J. M. Eder, Director of the School for Photography and Reproduction, etc., in Vienna. 273 pages, 197 woodcuts and 3 plates. 1891. Halle a. S.: Wilhelm Knapp Publisher. Price \$2.

This publication forms the fourth number of Vol. I. of Handbook of Photography by the same author. This number contains three plates with fine portraits of Dr. Steinheil, Voigtlander and Joseph Petzval. The book is divided in 16 chapters, and treats objectives in a very systematic and exhaustive manner, showing the author's thorough knowledge of the various forms and construction of lenses. A chapter on the history of camera and objectives furnishes very interesting reading for the student.

1. The chapters in their order treat on photographic optics.
2. History of camera and objectives.
3. The lensless camera.
4. The single lens as a photographic objective.
5. Aplanatic, euryscopic, rectilinear, and similar symmetric aplanatic lenses.
6. The anti-planetaric objectives.
7. Portrait objectives according to Petzval's system.
8. Anastigmatic and triplet objectives.
9. Petzval's orthoscope, Sutton's water lens, sphere lens, pantoscope, periscope, etc.
10. Combination objectives.
11. Mirror objectives.
12. Mirrors and prisms for inverting pictures.
13. Diaphragms.
14. Fastening of the objectives.
15. Selections and trials of lenses.
16. Calculating the time for exposure from the nature of the lens and the subject.

SCIENTIFIC AMERICAN

BUILDING EDITION.

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3. A very pretty cottage costing \$3,600, erected at Springfield, Mass. Floor plans, elevations, etc.
4. A beautiful modern residence at Bridgeport, Conn., erected at a cost of \$7,500 complete. Plans and perspective elevation.
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