

## RECENTLY PATENTED INVENTIONS.

## Bicycle Appliances.

**SADDLE.**—Frederick C. Avery, Toledo, O. The object of this invention is to produce a saddle which will properly sustain the weight of the rider. The saddle consists of a seat portion, a cantle, a pommel-clip and an intermediate bearing plate connected to the seat portion. Means are provided for connecting the plate to the cantle to support the rider. The plate may also be yieldingly connected with the pommel clip. With this construction it is possible to adjust the tension on the saddle cover on the seat portion and horn portion independently. Any unnecessary weight on the horn portion causes that portion to move down, so that it can do no harm, the springs with which it is provided holding it in place.

**TOOL-CASE.**—Louis H. Knopping, New York city. This tool-case is formed in two halves, each half comprising a metallic frame consisting of a band or bar and forming the outline thereof to which a sheet of fabric is fastened. Hinges connect the two halves at their bottom edges. The case is fastened to the bicycle frame by a clamp consisting of a band of spring metal wound around the tube and having its ends bent inward at right angles to the body. One end is pierced to receive a clamping bolt. The other end is provided with a slot extending inward from the end, adapting it to slip over the clamping bolt. This fastening device is applicable not only to bicycles, but to all kinds of tubes.

**BICYCLE-RAILWAY.**—William F. Mangels, Brooklyn, N. Y. The purpose of the inventor in constructing his railway was to provide a means whereby unskilled persons can enjoy bicycle riding with the utmost safety. The railway is provided with a continuous track in which a duct is formed. An endless band of rigid material is mounted to travel in the duct. Upon the band posts are erected at intervals, frames being carried by the posts and connected with the bicycles traveling on the track. A brace arranged above the band connects the posts with one another. When the bicycles are actuated by the pedals, then they move forward carrying the band along, and since the bicycles are rigidly supported, no danger of falling off is incurred by unskilled persons.

## Mechanical Devices.

**CORN-PLANTER.**—Samuel M. Wixel, Marcus, Ia. The object of this invention is to provide a device to be used as a substitute for the check wire—namely, a belt contained in its entirety upon the machine and provided with driving devices operated by contact with the ground. A simple mechanism is also provided whereby the dropping apparatus of the seed-boxes is operated by the check-belt, and the markers are operated from the seed dropping mechanism. A marking device is also provided which will make a mark by which to draw and a mark by which to drop.

**HAT-PRINTING MACHINE.**—Thomas J. McCarthy, Orange Valley, N. J. In this machine for printing labels, firm names and ornamental designs in a hat, a frame is provided having guideways, another frame being mounted to slide on the guides. A lock holds the sliding frame in its lower position and a plunger in the sliding frame carries a printing die. Means are provided for normally retracting the plunger. A lever is mounted on the sliding frame and is connected to the plunger to project it upon an impression bed and the hat resting thereon. A gas-beating apparatus is situated in the plunger for heating the die, and an inking roller mounted upon a transversely movable slide engages the die in its upper position.

**TICKET-HOLDER AND REGISTRAR.**—Manuel Fortuño (deceased), Perry B. Turpin, Washington, D. C., administrator. The object of this combined ticket-holder and ticket-register is to prevent manipulation of the tickets by the conductor and to obviate the necessity of employing other means than the apparatus itself for registering the number of tickets sold. The apparatus comprises a reel for carrying the ticket strip, means for feeding a ticket of proper size and a registering device operatively connected with the feed device. The strip of tickets is forced out of the apparatus by means of a mechanism consisting of a plate on which the strip is supported, a sliding plate being provided with clamping arms to clamp the strip and carry it along. The sliding plate is impelled onward by means of a device consisting of a spring-controlled trigger outside of the apparatus, a shaft on which the trigger is mounted and a spring controlled lever mechanism mounted on the shaft and operatively connected to the trigger and sliding plate. The pulling of the trigger by the conductor actuates the sliding plate mechanism. The registering is done by a series of lettered rotary dial plates connected with the ticket operating mechanism.

**BRUSHING OR COMBING MACHINE.**—Edgar Cassanova, New Orleans, La. This machine, for combing the fringe of towels and for brushing the nap of blankets, comprises a casing in which a rotary brush-carrier is mounted. A series of brushes are fixed to the carrier and a transversely curved bed-plate is located in an opening in front of the casing. A holder-bar above the bed plate holds the fringe in place, so that the brushes will move through the fringe, which hangs free over the bed-plate. An endless belt movable below the brush carrier receives whatever lint may be brushed from the fringe and deposits it upon an upper stretch of endless belt which drops the lint in a suitable place. The brush-carrier may be rotated by any desired means. In brushing the nap of a blanket, the motion of the brushes and endless belts is reversed. The blanket is fed between the upper and lower belts, and is carried forward around a roller and along with the upper stretch of belt. As it passes underneath the brushes the nap is brushed and raised.

**APPARATUS FOR COPYING, REGISTERING, CHECKING AND ADDING.**—Jules Frydman, Paris, France. According to this invention a board adapted to be inserted in the machine is employed in conjunction with the apparatus. The board carries a pad on which figures may be inscribed and a series of pivoted projections or plates bearing numerals and other indications. These plates, when in a predetermined position, are adapted to engage various parts of the machine upon

the insertion of the board, and thus the machine will be operated according to the position of the plates.

**MECHANICAL MOVEMENT.**—Edward C. Riddle, Browning, Mo. This invention provides for a mechanical movement designed to convert reciprocating into rotary motion and the contrary. The invention comprises two racks, each consisting of two side bars having their inward or opposed surfaces toothed, and at such distance apart as to permit a pinion to engage the teeth of one side without touching the teeth upon the other side. Various constructions are provided by which the racks are caused to reciprocate by the revolution of the pinion or by which the pinion is caused to rotate by opposite reciprocations of the racks.

## Miscellaneous Inventions.

**FOUNTAIN-PEN.**—John Weeks, Brooklyn, N. Y. In this fountain-pen the barrel is provided with a plunger moving longitudinally in the barrel and connected to a valve. The plunger, when moved in one direction, draws the ink from the nib, and when moved in the opposite direction forces the ink toward the nib, the valve controlling the supply of ink to the nib. The flow of ink is thus always under perfect control, and may be cut off to such an extent that the pen may be carried point up or point down without danger of leakage.

**FIRE-EXTINGUISHER.**—Abram H. Van Riper, Nutley, N. J. The object of this inventor is to provide a simple means whereby a chemical—usually a gas similar in chemical properties to carbon dioxide—may be mixed with a stream of running water, thus increasing the capacity of the apparatus. The fire-extinguisher comprises a mixing cylinder connected to a water inlet and outlet. A perforated conical disk is situated forward of the inlet. A cylinder for containing gas is also provided. A pipe leads from the gas-containing cylinder into the mixing cylinder and has a perforated disk-outlet discharging in the direction of the inlet of the first-named cylinder. Means are provided for mixing the gas and water in the first named cylinder. The invention is an improvement over most extinguishers in so far as the supply of extinguishing liquid is practically unlimited.

**DISPLAY RACK.**—Edward S. Robbins, Parker, S. Dak. This display rack is constructed in separable sections, one section being provided with a sleeve and the other section with skeleton tongues at angles to one another. A skeleton base constructed of diverging members connects the two tongues, either of the tongues being adapted to enter the sleeve. With this rack goods may be displayed in many positions to the best advantage.

**GAS-STOVE.**—Robert Pringle, London, England. This gas-stove has a casing comprising a roasting space which is provided with a door at the front. An air admission and heating chamber surrounds the remaining sides of the roasting space and is located at the lower part of the roasting space. The upper part of the heating chamber is offset or inwardly projecting, and is traversed by vertical flues leading from the space beneath to the roasting space above. Burners are situated in the space beneath the air heating chamber, but not directly beneath the flues. Air-inlets rise within the chamber and direct the incoming air against the flues. A depending baffle or curtain incloses a downcast passage opening to the combustion chamber at or below the level of the burners therein. An inner curtain depends within the line of the burners, so as to prevent the flames from being deflected inward and the products of combustion from passing up through the roasting chamber, while permitting the direct radiation of the heat from the flames to the roasting space.

**STOVE.**—Charles T. Litchfield and Joseph T. Baugher, Spokane, Wash. A combustion chamber is provided in this stove and on it is placed a casing having a closed top and draught-openings in its lower portion. A fire-box having its lower portion projecting into the combustion chamber is provided at its upper end with an extension. The fire-box and its extension form with the casing a heating space. A feeder or magazine projects through the top of the casing and extends into the upper end of the fire-box, the magazine forming, with the extension of the fire-box, an annular chamber through which the air from the heating-space passes to the fire-box. Stoves of this pattern have a strong down draught through the fuel, the coking surface being, moreover, formed in the fuel above the grate and beneath the fuel supply.

**CARPET STRETCHER AND TACKER.**—Cyril M. Jansky, Au Sable, Mich. This carpet stretcher is so constructed that, after having driven one tack, the tacking mechanism will be automatically moved to the position for driving the next tack, thus providing means for successively driving several tacks without moving the stretcher from its position. The carpet stretcher comprises a frame which may be secured to the floor, a stretching bar for engagement with the carpet and means for moving the stretching bar toward the frame. A tacking device is mounted on the frame and means are provided for imparting a step-by-step motion to the device longitudinally of the frame.

**WIRE-FENCE TOOL.**—Hugh W. Denison, Gebhart, Pa. With the assistance of this tool it is possible to shrink wires when they have become slack and also to splice them when they are broken. The tool has a shank carrying a head and two angular lugs projecting from one face of the head and arranged in proximity to each other, the lugs having portions cut away at their corners to produce plane surfaces by which angles may be formed in the wire as the wire is crimped by the action of the tool. From the other face of the head a splicing lug projects having an undercut. A radial slot in the head leads to the splicing lug and receives the ends of the wire to be spliced, the ends being also engaged by the splicing lug. The tool is then turned so that the ends are twisted together and the splicing effected.

**SCALE-WEIGHT.**—John F. Brazleton, Butte, Mont. The purpose of this invention is to provide a weight which, when properly placed relative to the weight-bar, will not leave its position. A crotch or slot for the reception of a scale bar is provided in

this scale-weight. The weight is made heavier at that side in which the crotch or slot is produced, the upper surface of the weight being inclined in the direction of the inner end of the slot or crotch.

**HEEL-SPRING FOR BOOTS OR SHOES.**—George E. Swan, Beaver Dam, Wis. When walking with a shoe to which this spring has been attached it is claimed that the muscles are relieved from the severe strain to which they are subjected under ordinary circumstances. The device is provided with a plate having an opening and adapted for attachment to a heel. A tread-block has its ends resting against the inside of the plate, the tread-block being of reduced thickness at its rear end. Its forward thickened end projects outward through the slot in the plate. A spring bears against and exerts a downward pressure on the block, and at its forward end presses against the front end of the tread-block, the rear end of the block being free to slide on the plate when the front end is pressed inwardly.

**MUSICAL INSTRUMENT.**—Benjamin C. Auten, Princeville, Ill. This musical instrument comprises a box and a sounding device within the box, actuated by devices controlled by keys. The keys and actuating devices are contained in a slidably mounted carriage. A top plate for the carriage has apertures through which the heads of the keys project, the apertures being arranged in rows indicating chords and scales. A shaft is journaled in bearings in the box and is provided with a gear wheel in mesh with a rack on the carriage. A ratchet wheel is mounted on the shaft. A spring-pressed pawl is attached to the box and engages the ratchet wheel. This instrument, it is claimed, can be played by persons of little or no musical knowledge.

**READING ATTACHMENT FOR METERS.**—Camillo L. Arques, San José, Cal. The reading attachment of this inventor comprises a plate having apertures for viewing the dials on the meters on which the attachment is to be used. Ring-shaped dials are mounted to turn on the plate concentric with the apertures, each movable dial being formed with numeral graduations from zero upward.

**TWINE HOLDER.**—Frank Boosong, Ellensburg, Wash. This twine holder is designed for use in mercantile establishments and is in general characterized by a take-up rod yieldingly suspended in proximity to a twine support or receptacle, so that the twine is always lifted out of the way when not in use and is at the same time held in position to be readily grasped when necessary. In use the rod is pulled down, and when the cord is released it springs up. The holder is mounted on a vertically adjustable carriage-plate, the side edges of which are turned rearwardly and inwardly to embrace a track-plate secured rigidly to a wall. A locking device retains the carriage-plate in any desired position.

**CAPONIZER.**—Andrew M. Duncan, Alton, Iowa. This caponizer comprises a handle and a bowl or spoon-shaped end having a slot for the reception of the cord of the organs, a wire loop adapted to be contracted in close proximity to the bowl or spoon-shaped end to effect the operation and means for contracting the wire.

## Designs.

**LAMP-BODY.**—William A. Rayment, Taunton, Mass. In this design a globular bowl is lined to simulate the appearance of a golf-ball and is supported by a series of golf-sticks, whose heads rest upon a base and whose shafts are crossed beneath the bowl. A flag and balls are produced in relief on the base and a depression is formed to simulate a golf-hole.

**TIP FOR TOOL HANDLES.**—John H. Hamlin, Salt Lake City, Utah. The body of the tool in this design is chambered and its closed end is convex. Upon the convex surface a tapering projection appears. One side-edge of the body is provided with a projecting head surface, a side of which is formed by a portion of a curved surface. In the opposite side-edge of the body an undercut recess is formed adjacent to the edge of the convex surface, which surface above the recess resembles a claw.

**GRASS AND WEED CUTTER.**—Jesse K. Painter, Julesburg, Col. The essential feature of this design consists of a flat blade whose edges are beveled at the upper surface. In outline the blade is provided with a rear edge formed upon the lines of a compound curve, the convex portion being at the center and the concave portions adjacent to the side edges of the blade. The sides are each formed with a short, straight surface. These straight surfaces meet converging surfaces, the latter forming at their connection a point at the front center of the blade.

**KITCHEN CABINET.**—Samuel Sanders, Leaveyworth, Kan. The principal features of this design consist in a base and a casing rising from the rear portion of the base. The front edges of the sides of the casing are curved, the base having its front appearing with side posts and with ornamental legs connected by a vertical band. A horizontal top leads to a step-like top of the base, the top appearing in front of the lower portion of the casing.

**PUZZLE-BLOCK.**—Cortez Gatewood, Washington, D. C. This design comprises a rectangular game board upon which is a star having a broad tinted outline with depressions at the extreme points of the star and depressions at the junction of the points, the several depressions being wholly outside the star-lines.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send the name of the patentee, title of invention, and date of this paper.

## NEW BOOKS, ETC.

**AMERICAN AGRICULTURIST YEAR BOOK AND ALMANAC FOR 1898.** By Herbert Myrick. Springfield, Mass. 1897. Orange Judd Company. Pp. 665, xxxviii. Price 25 cents.

This year book is a treasure of statistics for the farm and home and office. It is a reference book on every

subject pertaining to agriculture, industry, commerce and markets, economics and politics, household education, etc. It appears to be a very valuable book for the farmer, for whom it is primarily intended. It is remarkable what a large book can be sold for so small a sum.

**THE DIFFERENTIAL.** 1899. Published by the Junior Class of Case School of Applied Science. Cleveland, O. Pp. 147, xxxiii.

**PRACTICAL STAIR BUILDING AND HAND-RAILING.** By the square section and falling line system. By W. H. Wood. London: E. & F. N. Spon. New York: Spon & Chamberlain. 1894. Pp. 88. Price \$4.25.

This work has been written to assist those who wish to acquire a knowledge of the most practical and systematic methods adapted for the execution of stair building and handrailing. The system of handrailing outlined is somewhat new, but the author has continuously put it to a practical test for more than five years, and he is convinced that it is only required to be known to be appreciated. In compiling this work the author has kept steadily in view the absolute necessity of treating most fully the elementary part. The book is illustrated with thirty-two plates.

**THE DESIGNING OF CONE PULLEYS.** A non-approximate, graphical solution for the problem of proportioning cone pulleys. With concise, practical rules. By Walter K. Palmer. Lawrence, Kansas. 1898. Pp. 35. Price 50 cents.

Probably no other minor operation of machine designing involves such a complex mathematical analysis as the apparently simple one of proportioning a pair of cone pulleys. The present pamphlet is intended to convey information useful in designing such pulleys.

**WATERS WITHIN THE EARTH AND LAWS OF RAINFALL.** By W. S. Auchincloss, C. E. Philadelphia. 1897. Pp. 43.

**ANIMAL FATS AND OILS.** Their practical production, purification and uses for a great variety of purposes, their properties, falsification and examination. A handbook for manufacturers of oil and fat products, soap and candle makers, agriculturists, tanners. With 62 illustrations. By Louis Edgar Andés. Translated by Charles Salter. London: Scott, Greenwood & Company. New York: D. Van Nostrand Company. 1898. Pp. 240. Price \$4.

The present work takes up the subject of animal fats and oils from the practical manufacturer's standpoint, and it contains illustrations and descriptions of the latest processes of producing and purifying a large number of oils for a great variety of purposes; as, in the case of vegetable fats and oils, considerable improvements have been introduced into the preparation of the animal products belonging to the same category. Great improvements have also been made in the preparation of bone, waste fat, fish oil, etc., all of which are included in the present work, which should be in the hands of all those who are interested in the fat industry.

**ALGEBRA MADE EASY.** By Edwin J. Houston and Arthur E. Kennelly. New York: American Technical Book Company, 45 Vesey Street. 1898. Pp. 101. Price 75 cents.

This little volume has been prepared by the authors for the purpose of elucidating the mathematical formulae appearing in the pages of Prof. Silvanus Thompson's "Dynamo-Electric Machinery and Polyphase Electric Currents."

**THE PROCESS YEAR BOOK FOR 1898.** A review of the graphic arts. Edited by William Gamble. London: Penrose & Company. 1898. Pp. 132. Price \$1.50.

The Process Year Book is always a welcome visitor, and we do not remember any of the former volumes in which there has been such a notable improvement in the quality of reproductions. The half tone work is superb and the splendid plates are printed on the finest quality of half tone paper, thus insuring the best possible results. The use of tints appears to be quite general in the highest class of work, and the Vandyke printing from the Swantype blocks is very noticeable. The three color blocks are also excellent. One of the finest photographs we have ever seen is the one showing the removal of the charge from a retort in a gas works, taken from a flashlight photograph at night. This is an ideal subject for the painter. Another notable engraving shows the shooting of a natural gas well. As usual, the text is made up of contributions by practical men of all countries.

**PRÄTIKUM DER WISSENSCHAFTLICHEN PHOTOGRAPHIE.** Dr. C. Kaiserling. 26 Bogen in Lex.-8°. Mit 193 Figuren und 4 Tafeln. Verlag von Gustav Schmidt (vorm. Robert Oppenheim). Paper \$2.50, cloth \$2.75.

The position occupied by Dr. Kaiserling as an assistant and lecturer on photography in the Royal Pathological Institute of Berlin has eminently fitted him to write a book on the practice of scientific photography, the need of which has been felt particularly by physicians and students of natural science. The work, as its title indicates, is, above all, practical, only the absolutely necessary theoretical foundations of photography having been retained. The technical methods recommended are those which have been tested by the author's long experience as a scientific photographer. Excellently treated are the difficult problems of microphotography, and of particular interest are the sections on radiography and photography in natural colors. The two hundred illustrations with which the work has been embellished contribute not a little to its general excellence.