

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**SIGNALING SAFETY VALVE.**—John J. Roy, Lawrence, Mass. This is an inexpensive boiler attachment, so arranged that the escaping steam sounds an alarm without creating an undesirable back pressure. From one side of the safety valve extends an outlet pipe, from which projects a horn or whistle, and at the point of its projection drops a loop or U-shaped pipe adapted to contain either water of condensation from the steam or water filled directly into the loop. The water creates sufficient back pressure to sound the alarm, but this need not be more than about a pound, and there is no back pressure until the valve is opened.

**QUICK ACTION TRIPLE VALVE.**—William Hirst, Trenton, N. J. This improvement relates to a formerly patented invention of the same inventor, the improvement providing for automatically moving the triple valve into a released position for recharging the auxiliary reservoir without releasing the brakes, and always maintaining the pressure in the brake cylinder. The invention is especially applicable to the brakes of the ordinary Westinghouse system, and consists of a retaining valve of especial construction, comprising a casing into which opens the exhaust port of the triple valve, a cap on the casing communicating with the main slide valve chamber, while a spring-pressed piston valve has seat faces, one of which is seated on the cap, to close the connection between the triple valve exhaust port and the main slide valve chamber.

**FLUID PRESSURE BRAKE.**—John M. Hurst, Salt Lake City, Utah. This invention is designed to give the engineer full control of the pressure in the brake cylinders, to increase or decrease the pressure at will and recharge the train while the brakes are set, utilizing also the air which, according to the present practice, is allowed to escape to the atmosphere from the preliminary exhaust port of the engineer's brake valve. The invention comprises a retaining valve and a retaining reservoir connected to the preliminary exhaust port, with connections from the brake cylinders to the retaining valve, the valve and reservoir being usually located on the engine.

## Railway Appliances.

**WRECKING FROG.**—Charles K. Marshall, Tacoma, Washington. For placing derailed cars back on the track, this inventor has devised a simple and inexpensive device. It consists of an inclined support, having its sides similarly constructed to adapt it to fit upon either rail and to extend in either direction, a reversible switch rail having a removable and adjustable connection with the support. With this device the car can be readily pulled upon the frog and incline, and its wheels guided upon the rails of the track, permitting cars on either side of the track to be readily replaced on the rails.

**SWITCH.**—John M. Perkins, Brooklyn, N. Y. This is an improvement more especially adapted for adoption by street railways, the construction being simple and the invention providing for the shifting of the switch while the car is in motion by a projection operated from the front platform of the car. Centrally of the road bed, opposite the switch rails and a switch point, is embedded a face plate, on which are pivoted two shifting arms, each pivotally connected with a shifting bar having pivotal connection with the switch point; and between these arms is a wedge-shaped guide block, to guide the switching device pendant from the car, and move one of the switching arms.

**MAIL BAG CATCHER.**—William T. Stuart, Cheyenne, Wyoming. This device is designed to project outwardly on the car and to move into engagement with the bag, so as to direct the latter bodily into the car, the bag not being bent or crushed and being handled with less liability to injure its contents than is possible with other devices. The catcher may be adjusted to operate at either side of the car, and when the car is going in either direction.

## Electrical.

**PERFORATING MACHINES.**—Joseph J. Relfgraber, St. Louis, Mo. This is a machine by means of which a strip of paper or other nonconducting material is perforated to represent printing characters to be electrically transmitted to one or more distant stations by a special transmitter, and then received by a special receiving mechanism in type-written Roman characters or figures. The characters received may be impressed in a strip of fiber or other suitable material from which stereotypes may be cast to be printed like other matter, or to be received on one strip in type-written print and on another strip in perforations. The machine is also designed to compose and perforate into a transmitting strip "solid" or "display" matter having the same appearance as hand work in typesetting, making long or short lines and justifying and correcting every line before it is perforated into the transmitting strip.

**PRINTING TELEGRAPHY.**—A further invention of the same inventor provides a transmitter for sending the impulses required for sending the message, a synchronizer and distributor for receiving the impulses over a single wire and sending them to the different magnets in the printing and reproducing mechanism, together with such a mechanism for printing on paper, impressing a strip of fiber or other material for a matrix, or perforating a strip of paper or other non-conducting material, which may then be used to operate a type-composing or type-bar producing machine. The invention provides a mechanism to operate a type-composing or type-bar producing machine in connection with the perforated copy, and the electric circuits and devices for controlling the same.

**ELECTRIC RAILWAY SYSTEM.**—David M. De Witt, Morrilton, and William K. Elliott, Little Rock, Ark. According to this improvement the line conductors are carried in a conduit or insulated track box midway between the rails, and contact devices are located at intervals along the line to be actuated by the moving cars, whereby the energy for operating the motor of the car is transmitted. On the inner side of each rail is a pivoted spring-pressed contact rail, to be engaged by

the flange of the wheel of a passing car, and the contact rail is pivoted to an inwardly extending link adapted to make contact with contact blocks electrically connected with the line conductors, or lead and return wires.

## Mining.

**CONCENTRATOR.**—William H. Rockefeller, Baker City, Oregon. This invention relates to placer and quartz mining, providing a simple and inexpensive construction designed to save the fine gold in the sand and pulverize quartz. It comprises a table mounted to rock sidewise about a longitudinal sub-jacent axis, the table having an end discharge and screening and amalgamating devices, whereby the sand and water in passing through the machine will be constantly agitated and a thorough mixing of the sand with the mercury will be effected. At the discharge end of the machine is a water wheel actuated by the discharged material, and thus affords power, by a crank and lever connection, to give to the table its rocking movement.

## Mechanical.

**PUMP.**—William P. Keeler, Spokane, Washington. This is an improvement in pumps which have eccentrically mounted and rotating pistons, the invention providing an effective pump of simple and inexpensive construction. Fitted in the casing is a solid revolvable cylinder provided with grooves forming two oppositely arranged eccentric pistons, the cylinder dividing the casing into two compartments, and hinged valves resting upon the pistons. A chest above the casing is provided with two compartments communicating with the casing, a valved discharge being connected with each compartment of the chest.

**WINDMILL ATTACHMENT.**—Morrison M. Kingman, Chelan, Washington. For varying the stroke of the pump rod of windmills, so that the pump will be operated uniformly, notwithstanding the variations in the operations of the windmill pitman, this inventor employs two levers to form guideways, fulcrumed one at each side of the windmill frame and respectively connected to the pump rod and to the pitman, there being between them a slidable bracket capable of movement to and beyond each side of the pitman and pump rod. By this movement of the bracket the motion transmitted between the two parts may be increased or diminished.

## Agricultural.

**HARROW.**—John McCormick, Brooklyn, N. Y. In this harrow the teeth have a circular movement, the frame of the harrow carrying a disk to which are fixed rings concentric with each other, there being between the fixed rings a movable ring carrying teeth, and the ring being driven by gearing and clutch members on the axle engaging the wheels. As the machine moves forwardly the rings travel in circular paths and cause the teeth to effectively cultivate the ground, but either or both sides of the disk may be raised by a lever to avoid obstructions or throw the machine out of operative adjustment.

**HANDLED CLAMP FOR HOLDING PLOW-SHARES.**—Charles Nerud, Elroy, Wis. This invention provides a tool designed to be more efficient and durable than the tongs generally employed in handling and repairing short landside plows, more firmly clamping the share and landside, and more readily adjusted to and removable from the plow. It comprises a handle having a transverse opening and a transverse head projecting from one end, there being share-securing devices at each end of the head, while a brace, extended transversely through the opening in the handle, has at its outer end means for securing the share and for adjustably securing the brace. The tool is strong enough to resist bending when heated, enabling the share to be rigidly held when being sharpened or welded, affords a ready and wide range of adjustment, and prevents all springing of the plow while sharpening or pointing.

**PRESERVING MILK AND CREAM.**—Edward P. Hals, New York City. This inventor has devised a method of preserving milk and cream and similar liquids in such manner as to destroy all germs and other injurious matter, and at the same time facilitate transportation to market. The milk or cream is first sterilized in bulk at about 167° F. and then immediately and quickly cooled to about 50° F., when it is placed in metal boxes or barrels of desired size and shape and frozen solid, being afterward removed and sent in sealed packages in refrigerators to market.

**GATE.**—William Heaton, Allerton, Ill. This is a simple and inexpensive gate which any farmer may make for himself, and which may be so hinged as to be opened or swung from either end, or may be entirely lifted off and set to one side when necessary. It has two vertical parallel bars at each end, and the upper horizontal bars are doubled at the top to form hinging supports. There are two posts at each end, a shorter one being connected to a longer one by a crossbar and having its end extending into the space between the top bars of the gate and forming a pintle. By means of a removable section, the gate may be hung so as to swing above snow.

**GATE.**—James Simpson, Veedersburg, Ind. This patent is for an improvement on a formerly patented invention of the same inventor, simplifying the operating mechanism and affording complete control of the gate from either side, allowing one to stop the gate at any point after starting to open or close it, and also allowing it to be readily opened or closed from any point where it may be at rest. The gate controlling mechanism preferably consists of controlling and operating levers and their connections, without employing cables or their equivalents, or pulleys and similar guides.

**SCRAPER AND LEVELER.**—Gilman N. Folsom, Hobart, Nevada. This is a combination machine adapted to scrape and level roads, or to pulverize and level ground and save the work of a harrow, and which may also be advantageously employed in building new roads. It consists of a frame having a forward and a rear transverse runner, with inclined under surfaces, with a scraper blade adjustably mounted on the forward runner and means for rocking it. The earth may be

scraped and carried in advance of the machine to any desired point, and then gradually or instantly released for filling purposes, and made level by the leveling attachments. The latter are so constructed as to ride up a mound of loose earth while leveling it, causing the team the least possible exertion.

## Miscellaneous.

**TIME INDICATOR AND REGISTER.**—James M. Helfenstein, New York City, and William K. Holmes, Brooklyn, N. Y. This improvement embraces a working mechanism which is preferably arranged in connection with the gearing of an ordinary clock, in a clock casing of ordinary size, and is adapted to indicate the expiration of fractions of an hour or longer time, as may be especially desired in teaching or practicing music lessons, etc., where limited periods are given to certain exercises. It also has a suitable registering device which automatically registers the aggregate periods of time devoted to exercises or other work.

**STEAM BAKE OVEN.**—Adam Spangler, Silverton, Oregon. A boiler forms the top of the combustion chamber of this oven, and above the boiler is located an oven supported by brackets, the oven being completely surrounded by steam spaces except at the front, thus producing a uniform heat, and the arrangement being such as to obtain the greatest efficiency from the fuel. By means of steam supply pipes any desired amount of steam may be injected into the ovens, giving a moist heat, insuring a perfect baking of bread or other material and giving a fine luster, without danger of burning.

**TANNING PROCESS.**—John C. Rogers, Cuero, Texas. According to this process the hides may be limed and unhaired in the usual way, after which they are subjected to a threefold bating process. The first bate consists of a weak solution of sulphuric acid, to soften and plump the flesh, and thus facilitate its removal; the second bate is of soapsuds, followed by soaking in cold water and slicking, and the third bate is a solution of salt, for a few minutes, to toughen the hides. The hides are afterward placed in tan vats with bark, and covered with a solution of alum and water, where it is designed they shall be thoroughly tanned without any changing of barks or raising the hides.

**BAG HOLDER.**—William H. Boyd, Gainesville, Fla. This is a device which may be used to advantage in connection with platform scales, holding the bag suspended and with its mouth fully opened for the introduction of material, while allowing the filled bag to be quickly released when desired. It comprises an adjustable base with bracket stand, a forked arm on which is hung a rectangular frame, and hooks pivoted to rock on opposite sides of the frame, with other novel features, designed to facilitate the filling of a certain weight of material in sacks or bags, and thus quickly making a large quantity of merchantable packages.

**HORSE COLLAR.**—Richey G. Lehman, San Diego, Cal. This improvement relates especially to breast straps or breast collars, providing a simple and improved form adapted for heavy as well as light work, and which shall be light and ornamental and easy upon the breast and shoulders of the horse. Two nearly triangular padded or stuffed side portions are connected together across the breast by a flexible connection, their rear opposite sides having means for attachment to the traces, and the upwardly extending portions being connected together across the neck, such portions being formed in two separated plies constituting loops for the passage of the reins, and thus dispensing with the employment of rings.

**MEASURING MACHINE.**—Hermann P. Wolf, Burlington, Iowa. According to this invention a stationary or revolving cabinet, provided with one or a number of compartments, in which may be kept spices, powder, seeds, etc., is provided with means for measuring out or dispensing such amounts of material as desired. In each compartment are upper and lower divisions and a pivoted trough of definite area, designed to hold a specific quantity of the material to be measured, and by turning a handle such quantity of material is released and discharged into a scoop placed to receive it. The device is very simple and inexpensive, and is designed to prove a great convenience to storekeepers and others.

**MILK RECEIVER.**—Charles M. Wilkins, Wilmington, Del. This invention is for a receptacle to be placed within the house to receive milk poured through a funnel from the outside, so that it cannot be tampered with by outsiders, and the contents will be wholly protected from dirt or dust. The receptacle is adapted to be secured to the inside of a door, and has a removable top with a vertical open portion covered by a swinging door, a curved milk tube being adapted to be inserted through an opening in the door to engage with and open the door, and afford means for pouring milk from the outside into the receiver.

**CURTAIN HOLDER.**—Charles J. Swanson, Deadwood, South Dakota. This is an improvement in open hook window curtain holders adapted to be secured to the window frame or casing, the novelty of the device consisting in a stop provided for the pivoted rotatable curtain hook proper, holding it horizontal in its normal position of use. The hook may be swung around from such position to hang downward at the side of the window, its position when not in use. The device is very simple, and easily secured to or removed from the window frame.

**SHADE ROLLER TIP.**—William B. Shaw, Brooklyn, N. Y. This inventor provides an extensible tip for spring shade rollers, enabling the ends of the roller to be adjusted horizontally. The shade attached to a roller with this improvement may be centered, and the same roller may be used on a wider window, the adjustment being effected without interfering with the spring in the roller. The shade roller has in one end a bore, and fitted to slide on the bore end is a tip having a longitudinal slot for permitting the shade to be secured to the end of the roller, there being a spring mechanism carried by and movable with the tip.

**INFORMATION CARD.**—Henry P. Stamford, Grand View on Hudson, N. Y. For cards bearing classified information so as to be easily accessible, this

inventor has devised a system by which the cards are so constructed that any given series numerically, alphabetically or otherwise designated may be simultaneously and quickly gathered and drawn from an apparently miscellaneous pack of cards. The cards have openings in a certain order, those designed for recording the same kind of information having similar openings, whereby these openings will be in alignment when the cards are placed in a pack. The cards are used in connection with a box or drawer having corresponding registering openings, a lifting pin being adapted to pass through the box openings and into sundry of the openings in the cards, the cards of a certain series being entered by a pin and elevated without disturbing the other cards.

**PAPER DOLL AND DRESS FOR IT.**—Mariana T. Jones, Boston, Mass. According to this invention the body and dresses of a paper doll are so made that the dresses will be held firmly to the body, and the doll when dressed may be freely handled without fear of the costume dropping from its body. The invention also provides fastening devices for attaching the costume to the body of the doll, such fastening devices being made in a very simple, durable and inexpensive manner, and readily and conveniently applied to the body of the doll.

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

## NEW BOOKS AND PUBLICATIONS.

**BIBLIOTHEQUE DE PHOTO GAZETTE-LES PETITS PROBLEMS DU PHOTOGRAPHE.** Par E. Wallon. Paris: Georges Carre, editeur. 1896. Pp. 72. Price 50 cents.

The little hitches in photography that always trouble the amateur, such as the depth of focus, hyperfocal distance, and similar points, are here given in clear summary, so that the book, for those photographers who read French, must be warmly recommended as useful.

**CUSHING BOILED DOWN.** An A B C guide to Parliamentary law based on the highest authorities and adapted to general use. By F. M. Payne. New York: Excelsior Publishing House. T. J. Carey & Company. 1896. Pp. 127. Price 50 cents.

It is said that there is wisdom in a multitude of counselors, and the experience of mankind has shown that strict rules of order are essential when such a multitude are assembled. Cushing's manual has met with wide acceptance, and the following little work, an abstract thereof, deserves commendation for its neatness and convenience. As a sample of its treatment of a subject we commend the paragraph on "previous question," which is at once historical and technical.

**MECHANICAL-ELECTRICAL POCKET DICTIONARY, WITH MECHANICS' TABLES, GEAR PRACTICE, ETC.** Edited by F. D. Leslie, assisted by Arthur R. Curtis and others. The chapter on gears being by George B. Grant. Cleveland, O.: The Mechanics Publishing Company. Pp. 348. Price \$1.50.

This excellent little book will be found useful for mechanics and electrical engineers. It contains numerous tables, in the main very well selected, and various information relating to engineering in general which cannot fail to be acceptable. Its size makes it a veritable pocket manual.

**MATRICULATION DIRECTORY, NO. XX, JUNE, 1896.** With articles on the special subjects for January and June, 1897. Price 50 cents.

This book, although arranged exclusively for the London or English horizon, will be found to be very useful by educators of other countries, in showing the drift of thought and of practice in England, and the scope of examination required under the London University system, and should with these advantages meet very considerable circulation in America among those in charge of its educational field.

**MONEY, SILVER AND FINANCE.** By J. Howard Cowperthwait. Third Edition. New York: The American News Company. 1896. Pp. 242. Price 25 cents.

The so-called dreary science of political economy, if it be made to include finance, bids fair to become a very interesting subject, at least one affecting very vital interests, within the next few months. The present little essay is from the standpoint of a believer in gold and seems to be very interestingly and well written, and will, we are convinced, meet with warm appreciation from its readers.

**SOMETHING ABOUT X RAYS FOR EVERYBODY.** By Edward Trevert. Illustrated. Lynn, Mass.: Bubier Publishing Company. 1896. Pp. 78. Price 25 cents.

**DIE GRUNDLEHREN DER ELEKTRICITAT.** Mit bersonderer Rucksicht auf ihre Anwendungen in der Praxis. Von W. Ph. Hauck. Mit 82 Abbildungen, Dritte Auflage. Wein. Pest, Leipzig. A. Hartleben's, Verlag. 1896. Pp. 295. Price \$1.

Prof. Eder's "Jahrbuch" für Photographie und Reproductions technik für das Jahr 1896 has just been published and it brings on 645 pages a large number of original articles, by well-known writers, on the present state of the photographic art, and a review with text illustrations of the progress made in this art during the years 1894 and 1895. Considerable space is given to interesting articles on color photography and color photographic printing, and special attention is called to an article on this subject by Dr. O. Wiener, pages 55, 187. A large number of beautifully executed plates showing the present state of the art accompany the volume. The publisher is Wilhelm Knapp, Halle a. S., Germany.