

## RECENTLY PATENTED INVENTIONS.

## Electrical.

## SEPARATOR FOR BATTERY ELEMENTS.

—Chaimsonovitz P. Elieson, New York City. The cells of batteries having outer and inner electrodes are, by this invention, separated by means of a skeleton frame of insulating material open at one end and having slotted sides, the frame being adapted to contain the inner electrode and fit snugly between the two electrodes. The outer and inner electrodes are thus held in fixed relative positions, while the separator also serves to strengthen and support them.

**TROLLEY POLE CATCHER.**—Edward L. Langheinz, Brooklyn, N. Y. A set of counteracting springs are supported on the bracket frame that sustains the trolley pole foot support, the springs being stronger than the lifting springs for the pole, and held dormant but in tension by mechanism which releases them when impinged by adjustable blocks on vibratable attachments of the pole. A simple attachment is thus provided for a trolley bracket foot on a car, to serve as a guard and counteract the force of the lifting spring for the pole on the foot piece, preventing a sudden, abnormal elevation of the pole and trolley on it, should the trolley be released from contact with the line wire.

## Mechanical.

**BENCH CLAMP.**—Erik Olson, Neihart, Montana. The frame of this clamp can be conveniently swung into horizontal or vertical position, according to the size of the object held, which can be readily clamped, no matter what the position of the frame. The latter is approximately U-shaped and provided with an apertured cross bar, while it has a hinged joint at the upper end of its inner arm, a clamping arm being pivotally connected at its lower end with the cross bar at any desired aperture and a screw extending through the outer frame into engagement with the clamping arm.

**BUILDER'S JACK.**—John Callahan, Durango, Col. This jack has two rectangular sockets, one of which has attached to its inner end a hub threaded to receive the end of a screw, the head portion of which is swiveled in the inner end section of the opposing socket, the screw being operative so as to bring the sockets toward each other or force them apart by means of a head attached to the neck of the screw. The jack is especially adapted for squaring or adjusting window frames or sashes, and other similar work.

**BURNISHER.**—Thomas Lloyd, Boston, Mass. This is a tool to be operated by hand for burnishing or polishing boots or shoes, metal goods, or other articles to be brightened by rubbing. The working face is formed upon a casing filled with sponge, hair, or other suitable springy material, and the rubbing or working face consists of a firmly fastened loose fibrous coating. A clamping device forms the back and handle of the cushion casing, a base piece and top piece being held together by screws or bolts in such manner that the clamping device and handle may be easily applied to a cushion, and when one cushion is worn out it may be applied to another.

**SAWING MACHINE.**—John H. Peterson, Portland, Oregon. This is an improvement on a formerly patented invention of the same inventor, providing a slitter which is simple in construction and effective in operation, and arranged to prevent the feeding of material not having the proper thickness. The machine has a feed table leading to revolvable saws, with front and rear top and bottom feed rolls, pivoted frames carrying the top rolls and a bolt connecting the frames, while an expansion gear connects the bottom feed roll shaft with the corresponding top feed roll shaft, to impart a uniform motion to all the feed rolls.

**CENTRIFUGAL PUMP OR VENTILATOR.**—Auguste Rateau, St. Etienne, France. Surrounding a conical wheel is a casing having a passage or throat whose radial diameter increases from its inception, while an exterior volute passage is adjacent to and surrounds the throat, the latter passage being also of progressively greater cubical capacity from its inception. The wheel mounted in the casing has a toro-conical base and curved and tapering wings with concave upper longitudinal edges. The parts are so arranged as to permit the fluid, air or water, to circulate rapidly, and avoid friction as much as possible.

## Railway Appliances.

**TRACK MOWING MACHINE.**—Joseph Sindelar, Ipswich, South Dakota. This is a machine designed for use on railroads, to cut the weeds growing on the track inside and outside of the rails. This machine has independent cutting mechanisms having a vertically and also a laterally yielding movement away from the rails, two being between the tracks, one in front of the other, and two outside of the tracks. The machine is preferably arranged upon a hand car, and the cutters between the rails are designed to pass over fishplates or other obstructions in the roadbed.

## Agricultural.

**RAKE.**—Robert J. Schneider, New York City. Wooden rakes, used for raking hay, etc., are designed to be improved by this invention, to increase their holding capacity, while the several parts of the rake may be easily put together when the rake is made. The handle is fastened to the head of the rake in such a way that neither the head nor handle is perforated, making the rake very strong.

**SEED COTTON CLEANER AND CONVEYOR.**—Ferdinand E. Smith, Birmingham, Ala. The cotton, with its seed and impurities, as it comes from the field, is fed to this cleaner by pneumatic action, an induction pipe for the cotton and air opening into the upper part of a casing in which is a cylindrical screen revolving about a vertical axis, there being near the bottom a suction pipe for carrying off sand and dirt, while a discharge valve operates automatically to carry off the cleaned cotton without impairing the draught. The revolving screen presents a constantly clean and new surface to the impact of the cotton, which drops from gravity as the screen revolves.

**FRUIT GATHERER'S COAT.**—Robert D. Maund, Geneva, Ga. This is a sleeveless garment made double throughout to form a receptacle, between its inner and outer portions, and with pocket holes in front and a spout leading from its lower front portion. The discharge of the fruit may be facilitated by a cord passing from the lower rear portion of the garment over the shoulder, the cord passing through an eyelet.

## Miscellaneous.

**CAISSON DRIVER.**—Theodore F. Perrenot, Rockport, Texas. This invention relates to apparatus for sinking caissons in gravel or mud for bridge foundations, jetties, etc. It comprises a frame with parallel vertical guideways in which are mounted slide blocks to engage the upper edge of the caisson at opposite points, while connected at their upper ends is a series of vertical pipes descending between the guide blocks and having discharge outlets at their lower ends to form jets to loosen the material on which the caisson is to be sunk and face it outwardly, water being forced under pressure through the pipes. The pressure is applied to the caisson by means of tackles so arranged that great power may be obtained.

**APPARATUS FOR EXCAVATING WELLS, ETC.**—George A. Miller, Colfax, Washington. A former patent of this inventor provided for excavating by an explosive, upon which a hammer was dropped, and the present improvement is for removing the loosened material. A steel head or shoe has a central opening and other passages provided with check valves connected with tubes, a reservoir receiving the material delivered from the tubes, while a device which reciprocates through the shoe alternately performs the functions of a drop hammer and the piston of a force pump. The shoe forms a barrier to resist the explosive action of the torpedo, and when the hammer or piston is dropped, the water, slush and disintegrated mass is forced up the tubes into the reservoir.

**COMPUTING SCALE BEAM.**—Frank M. Daniels, Traverse City, Michigan. This scale beam is provided with a number of counterpoises, by properly manipulating which the price of a certain weight of goods is indicated. The device will also indicate the amount of goods which may be sold for a certain price, and it may be used for weighing goods in the ordinary way.

**THRILL COUPLING.**—James S. Patten, Baltimore, Md. The thrill iron of this coupling has at its lower end a head to engage the thrill seat, and a latch has its stem bent around a portion of the head, whereby the latch is pivotally connected. The invention also embraces other novel features, providing a spring support for the thrill, and furnishing means by which the thrill iron may be coupled to the clip and held without rattling springs or rubbers, to avoid rattling, take up wear, and permit the easy adjustment of the thrill iron and its removal without the unscrewing of nuts or bolts.

**WIRE STRETCHER.**—Lemuel A. Scarborough, Memphis, Tenn. This is a cheap and simple form of hand lever stretcher which can be used to force the wire against the post without carrying the stretcher around the post. The handle is bifurcated at its forward end, the sides of the bifurcation being provided with metallic plates with laterally projecting prongs at their forward ends. The device is adjustable for thick or thin wire.

**TAN LIQUOR HEATER.**—Ross Owens and Myron Lewellyn, Olean, N. Y. This heater has upper, lower, and intermediate steam-supplied heating pans, between which are arranged two liquor pans, all of the pans having ports and passages in their sides. The apparatus can be quickly set up or taken down, and can be readily cleaned when desired, and in it the liquor may be gradually and properly heated as required, by steam or other heating medium.

**SHIELD FOR BUILDINGS.**—William Durkin, Philadelphia, Pa. This invention provides a protection for buildings to prevent dampness rising above the first floor, and to keep out vermin. It consists of metal shields with side flanges arranged above and below the foundations, one flange extending beyond the outer face of the wall and the other beyond its inner face to an engagement with the joists. The shield may also be applied to all piers, arches, and center walls of any structure.

**PERMUTATION LOCK.**—Leopold Kaplan, Berlin, Germany. This is a keyless lock which may be locked by merely pressing upon a knob and moving any one of a series of locking slides, the unlocking being automatically effected when the locking slides are brought in a certain position. The bolt is engaged by a pivoted spring-acted latch moving transversely of the case, and the lock is controlled by one or more locking slides and permutation disks, the slides being actuated by racks operated by pinions upon the spindles of which the permutation letter disks are arranged.

**FILTER.**—John H. Bellamy, New York City. This is a device adapted for convenient attachment to the water service, and is designed to retain all the impurities of the water flowing through it, the construction being such that the interior parts of the filter may be readily cleaned. The casing is adapted to screw on the faucet of the water service pipe, and the water passes through a strainer and thence through a filtering vessel containing sand, charcoal, etc., as a preliminary vessel, after which it passes through another strainer and a porous stone.

**DEVICE TO STOP RUNAWAY HORSES.**—Leon Chauvin, Sr., Cairo, Egypt. A plate and spring, with attached pointed pin or pricker, are, according to this invention, arranged to be held between the nostrils of the horse, under control of the reins, so that when desired the device may be operated to prick the horse on the end of its nose between the nostrils.

**VEHICLE TOP.**—Jack C. Griffis, Gipsy, Ala. This invention provides an attachment for the seat rail of an ordinary top buggy by which the slack of the top stays may be readily taken up. It consists of parallel clips to be secured to the rail, revolvable winding bolts journaled in the clips being secured to the lower

ends of the top stays, with fastening devices to lock the bolts. The device is very cheap, strong, and simple, and can be readily placed on the rail of any ordinary buggy seat.

**PRODUCING LITHOGRAPHIC DRAWINGS.**—Franklin F. Haggmuller, New York City. This invention covers a method of transferring to the grained surface of the stone an impression taken with acid-resisting ink from an ink-stippled surface, covering the stippled surface with asphalt or an equivalent, removing the asphalt, except that which adheres to the stipples, etching the unprotected part of the stone, removing the ink stipple, washing the surface with acid to remove fatty matter, covering the surface with asphalt or other ink-taking substance, and then removing the latter either wholly or partly at the required points according to the toning effect desired.

**MANUFACTURING ARTIFICIAL BONE.**—Robert Reiman, Egg Harbor City, N. J. This invention covers a process consisting in separating or dividing by chemical action the constituent parts of raw or natural bone in a finely comminuted state, and, after preparation by precipitation and washing, mixing them together with substances operating to produce a hardening effect and to develop the original bone substance into gelatine by a high heat, at the same time keeping the mass under strong pressure in suitable moulds or receptacles.

**LEAD PACKER.**—Clarence E. Dawson, Joplin, Mo. A packing machine to pack white lead or similar paint in barrels, solidly and in desired quantities, at the same time permitting the rapid escape of the air, is the object of this invention. A cylinder is inserted in the barrel, and a lead supply pipe and plunger are worked up and down in the cylinder, a supply of paint being admitted at every up stroke, which takes place gradually, while the paint is held and the air released on the down strokes. The fumes are all forced back into a blast pipe, and cause no flying dust or paint, and it is not necessary for any one to be near enough to inhale any escaping fumes.

**FRUIT OR VEGETABLE STAND.**—James J. Farrell, Brooklyn, N. Y. This stand has a connecting cross piece, outwardly swinging side pieces hinged to the posts and their free ends having angular projections, a hinged collapsible top, and guard rails resting on the top and in the projections of the side pieces. It is strong and simply made, can be folded into small space, and easily set up and arranged to display articles to advantage and carry a large quantity of goods.

**HEAD REST FOR CHAIRS.**—John L. Baker, Baird, Texas. Barbers' and dentists' arm chairs may advantageously have a head rest such as here designed, facilitating the adjustment of the head of an occupant of the chair, and enabling it to be changed in position laterally without raising it from the support it rests upon. The rest comprises a vertically adjustable bar on the upper end of which a frame is adjustably pivoted, parallel rollers being mounted in the frame to revolve in either direction, and an endless band inclosing the rollers.

**HAIR DRYING MACHINE.**—Joseph N. Powell, Elmwood, Ill. Heated air may, by this machine, be forced through the hair after shampooing, and thus quickly and nicely dried. A lower chamber containing a lamp is connected with an upper chamber in which is a fan, to draw out the heated air and force it through a perforated top of the case immediately behind the chair in which one sits, with the hair spread out over the perforated top. The fan is rotated by a crank handle, so connected that the fan may be moved very rapidly.

**BODICE FOR BELTS.**—Charles Scherer, Brooklyn, N. Y. The upper and lower ends of the bodice, when constructed according to this invention, are in no danger of turning outward or curling up, while the bodice is arranged to perfectly fit the wearer's waist. The belt is made as usual, and the bodices each have a vertical slot, made by cutting out the material in almond shape, and lacing it together.

**BRAKE FOR BABY CARRIAGES.**—Elmer J. Wells, Nashua, Iowa. The brake car of this device has lever arms carrying brake shoes, and hangers to which springs are attached at one end and at the other end to a projection on the brake bar. The brake may be adjusted for carriages of different sizes, and to act on either the front or rear wheels, and is operated by a setting lever forming the main part of a toggle joint that serves to lock the wheels until the brake is released by the tripping of the lever.

**SURGICAL APPLIANCE.**—Frank Orth, 89 Brown Street, Anderson, Ind. An apparatus to be fastened to the body is provided by this invention, designed under certain conditions, by closing an electric circuit, to cause a fan to be operated for cooling purposes, the patient being awakened by a bell if desired.

**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.

**PIONEERS OF SCIENCE.** By Oliver Lodge. With portraits and other illustrations. London and New York: Macmillan & Co. 1893. Pp. xv, 404. Price \$2.50.

Professor Lodge states that this book takes its origin in a course of lectures on the history of progress of astronomy, arranged for him in the year 1887 by three of his colleagues, one of whom gave the course its name. Who this one was the professor does not divulge. So we are left in some doubt as to the authorship of the book. It presents the work of the early astronomers, and naturally brings forward some of the more recent discoveries of the science. The presentation is eminently practical, and in the present time, when so much is being done for the popularization of astronomy especially, the work will find most interested readers. According to the preface, the work should be a pretty good one, at least the writer of the preface states that in no case has it been allowed to become technically and generally unreadable, which it is to be hoped will prove true. In one portion we notice a curious alternation of past and present tenses in consecutive sentences, which produces a rather peculiar effect.

The proper title to the work would have been "Pioneers of Astronomy," as it is really limited to such.

**EXPERIMENTAL SCIENCE.** By George M. Hopkins. Fourteenth edition. Revised and enlarged. Pp. 840. Price in cloth \$4. Half morocco \$5.

The great popularity of this book has been a sufficient warrant for the publication of a new and revised edition, enlarged by the addition of 120 pages of new matter and 110 superb cuts. The new matter relates to live subjects, such as, for example, the scientific use of the phonograph, optical projection of opaque objects, some new things in photography, how to color lantern slides, new electrical apparatus, systems of electrical distribution, the study of the stars, and a great deal of new material which is of interest to scientific readers.

**WILLIAM GILBERT OF COLCHESTER,** Physician of London, on the loadstone and magnetic bodies, and on the great magnet the earth. A translation by P. Fleury Mottelay. New York: John Wiley & Sons. 1893. Pp. xlv, 368. Price \$4.

Mottelay's translation of Gilbert's famous work on the magnet has been expected for some time by the public. It was in the beginning of 1889 that it was commenced, and it seems fortunate that a translator was found for it able to enter thoroughly into the spirit of his author. The difficulties of translating it are spoken of by the translator in his preface. He has been very successful in giving a spirited aspect to the book, which in less competent hands might have been very differently rendered. It is needless to enlarge upon the position of this work in the history of science, as that is known to all. No corner stone of a branch of science of greater interest than this one can well be found. The style in which the book is produced is unexceptionable, heavy paper and antique faced type being employed.

**INFANTRY DRILL REGULATIONS, UNITED STATES ARMY.** New York: Army and Navy Journal, D. Appleton & Co. 1893. Pp. 353, 44. Price 30 cents.

This edition of the drill regulation for infantry is identical with the copy issued to the army from the army headquarters. An interesting feature of it is the list of trumpet calls and drum and fife signals.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

## SCIENTIFIC AMERICAN BUILDING EDITION.

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