

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

**DRAFT-EQUALIZER.**—JOHN RUSK, Cheneyville, Ill. The draft-equalizer is particularly adapted for use on gang-plows, and serves the purpose of equalizing the strain and avoiding side draft. The whiffletree is so mounted that the pivot is located between the ends. With one end of the whiffletree, draft devices are connected. A second whiffletree is employed, pivotally mounted at one of its ends. With the other end of the second whiffletree, draft devices are also connected. A connection is formed between an intermediate point on the second whiffletree and on the end of the first whiffletree opposite the end bearing the draft devices. By this arrangement, the draft is effectively equalized, and the vehicle or other implement moved regularly and without uneven strains on the team.

Engineering Improvements.

**ROTARY ENGINE.**—SIRUS E. KOCHENDARFER and RALPH D. HUNTER, Hollidaysburg, Pa. This improved rotary engine includes a casing having a cylinder in which an eccentric piston works. The steam-chamber has a way for the abutment-valve. Steam-passages communicate with the way at their opposite ends and with exhaust-ports. The steam-passages are controlled by valves. In its opposite faces, the abutment-blade is provided with recesses for the passage of the steam, and is arranged at its inner end to bear against the eccentric piston. Two pistons are employed, so arranged that before one reaches its exhausting-point, the other is being acted on by live steam. Hence, there is a constant steam action on the engine and a constant, positive operation of the shaft.

**VALVE-GEARING AND REVERSIBLE VALVE.**—FRANK M. KENNEDY, Clarendon, Ark. It has been the inventor's purpose to devise a reversible valve suitable for employment in oil regions, where simplicity of construction, ease of operation, and minimum expense of manufacture are essential features. The valve is reciprocated by a rod having rotary movement. A pinion is secured on the valve-rod, and engages the gear on the valve. The valve is rotated from its operative position, and transposes the steam and exhaust ports to coincide with the steam and exhaust ports of the cylinder, admitting steam for either motion. A reverse movement can be given to an engine instantaneously. The relative movement of the slide-valve throttles the admission of steam into the cylinder, decreasing the air as desired, gaging and controlling the velocity.

Vehicle Appliances.

**WAGON-BRAKE.**—EDWARD L. MOORE, Sundance, Wyo. This brake is of simple construction, and can be readily applied to any wagon to act automatically while traveling down grades. The pressure of the brake on the wheels is regulated more or less by the degree of inclination and the load weight. When it is desired to back the vehicle, the brake is prevented from operating.

**MOVABLE VEHICLE-SEAT.**—JOHN C. LAMBERT, Tonica, Ill. It is the inventor's purpose to provide a third seat for one-seated vehicles, which is normally located in a central aperture in the main seat, but is so adjustable that it can be shifted in front of the main seat, opposite the aperture. Thus, a third passenger can be accommodated without crowding the other two occupants of the vehicle.

**BICYCLE-FRAME MEMBER.**—JAMES H. SUTHERLAND, Cairo, Egypt. This invention provides an improvement in forks for bicycles. Tubular lower members and tubular upper members comprise the fork. The upper members are semi-cylindrical. A clamping-crown or block engages the members at the lower side, and has collars at its ends to embrace the lower members of the forks. A sleeve engages the members at the bend, and has portions extended through the collars and then turned outward. A latch turns outwardly. By the method of fastening the members in the device as described, no brazing or soldering is necessary.

Mechanical Devices.

**ADDING APPARATUS.**—FREDERICK H. SANDHERR, St. Louis, Mo. Mr. Sandherr has invented an improvement in adding-machines having recording or printing devices co-operating with the printing device of a typewriter, and including in the embodiment a total mechanism. It therefore follows that the machine can be employed for ordinary writing, for ordinary adding, for tabulating the figures of addition and striking the total, and for producing the text, the tabulated figures, and the totals of such accounts as may be desired.

**AUTOMATIC ORDNANCE OF LARGE CALIBER.**—CONSTANTIN VON HANNEKEN, Berlin, Germany. The novel features of the invention are to be found in an ingenious arrangement of recoil and loading cylinders. When the gun has been fired and recoils, the piston of the recoil-cylinder is locked in place by a pawl, whereby the piece is prevented from returning to the firing position for the time being. The air compressed by the recoil-piston passes to a collecting-chamber, and is there imprisoned. In loading the gun, the collected compressed air is admitted simultaneously both to the loading cylinder and recoil cylinder; but the recoil-piston is still locked by the pawl, the

gun is held in the position into which it recoiled. When the loading-piston has reached the end of its stroke, and a projectile has been inserted in the breech, the pawl is automatically released, and the gun projected into battery by the pent air in the recoil-cylinder.

**PIPE-WRENCH.**—CHARLES M. INGERSOLL, Summithill, Pa. The purpose of the invention is to provide a wrench which will engage a pipe at opposite points and exert an equal strain to prevent the crushing of the metal. When the wrench is reversed to recover its hold on a pipe, the jaws yield slightly so that they may be moved loosely around the pipe without gripping.

**TILE-MACHINE.**—ALEXANDER H. MURRAY, Huntington, W. Va. Much difficulty has been experienced in the formation of fissures or cracks in the side edges of tiles, by reason of the fact that the clay is fed more rapidly at the center than at the sides of the mouth of the guide when discharged. To avoid this difficulty, the inventor has devised an improved means for regulating the feed of the clay, with minimum friction or resistance to its discharge from the guide. The novel feature of the invention is to be found in a tile guide or mold, having two or more retarders on opposite sides, the two sets having straight edges adjacent to the mouth.

**STAMP-AFFIXING MACHINE.**—ROBIE SEIDLINGER, Boston, Mass. By means of this machine, stamps are automatically separated from the strips and rapidly attached to envelopes and wrappers. The stamps are supported and separated by plates which are elevated with the stamps in the casing. A series of fingers or pawls, spaced apart, engage the perforations of the stamped strips, and are operated to move the strips forward. A projected stamp is severed and the plates discharged one at a time.

Miscellaneous Inventions.

**GAME.**—CLARENCE W. TARBET, Pomeroy, Wash. The game is an improved form of billiards or pool. The board employed is four-sided and has a plane surface provided with pockets at its angles, and also with three spots for a like number of balls, which are distinguished, like the spots, by marks, as red, white, blue. A raised, flanged, and cushioned frame surrounds the board, and each of its four sides is divided into three sections marked to correspond with the spots and balls in regular succession, as red, white, blue. The three balls are placed on the three corresponding spots. A fourth or cue ball is used for playing upon any one of the spot balls, its place in beginning the game being anywhere back of a "dead line" drawn transversely across the board.

**APPARATUS FOR PURIFYING WATER.**—OTTO F. BEHREND, Erie, Pa. This purifying apparatus is especially adapted for refining the feed-water of boilers and thus preventing the formation of scale. The apparatus comprises a water-receiving tank, a chemical-solution tank, and a mixing-tank having an overflow-pipe leading out through its bottom. Pumps deliver the impure water and chemical solution to the mixing-tank. The impure water and chemical solution are mingled in the mixing tank by means of steam. Below the mixing-tank is a precipitating-tank having a central open-ended pipe, into which the overflow-pipe of the mixing-tank discharges. A pipe leads from the upper end of the precipitating-tank, and is provided with a sprinkler at its discharge end. The sprinkler discharges on a filtering-bed in a filtering-tank. Below the filtering-bed is an outlet-pipe.

**TRAVELER FOR CURTAIN POLES.**—JOHN H. HILLIKER, Manhattan, New York city. The traveler for curtain poles can be easily moved within the slot of the pole. The construction is such that any irregularities in the path of the traveler will not appreciably interfere with its progress. The body and head of the traveler are so arranged that the body is free to move in any direction while the head is at rest.

**CUSHION FOR PACKING GOODS.**—FRANK B. READ, Manhattan, New York city. The inventor has devised a cover to be used in packing fruit. The body of the cover or cushion is corrugated on both sides. A plane face extends over the corrugations on one side of the body, and a yielding pad on the side of the facing opposite that on which the corrugated body is situated. The cushion by its elasticity yields enough to prevent injury to the fruit by the pressure of the barrel-head, yet holds the fruit with sufficient firmness to prevent shaking and rattling.

**EXTENSIBLE UMBRELLA HANDLE.**—PAUL P. I. FYFE, Concord, N. C. The handle can be adjustably secured upon the stick or rod of an umbrella or parasol and readily detached. The handle may contain a fan or similar article. When not in use, the umbrella or parasol can be conveniently supported. A receptacle can be attached to the handle, in which gloves or handkerchiefs can be carried so as to leave one hand free.

**GATE.**—OLAUS B. JACOBS, Roland, Iowa. The gate is a stock-gate provided with balancing and locking devices. Such is the construction, that the gate can be readily opened by persons walking or riding, and that certain parts can be adjusted to permit cattle to pass, and to bar the passage of hogs, sheep, or horses. The gate can be so adjusted that horses can be admitted to pass, but no small

animals. Or, if it be so desired, small stock, such as calves, may pass through, but large stock restrained.

**FENCE-POST.**—PAUL P. I. FYFE, Concord, N. C. In this invention Mr. Fyfe has sought to provide a means whereby a fence-post having a screw-base can be forced into the ground either by hand or by a draft-animal. One of the features of the invention is the provision of a support and guide for the post while it is being placed in position, which guide and support can be readily applied to the post and quickly removed.

**CAN-OPENER.**—WILLIAM A. HUNTER, Oneonta, N. Y. This can-opener can be used to open polygonal or round cans, the head being cut out close to the sides or at any distance from the sides. A right or left hand cut can be made on a prescribed circle at any place in a can. The pivot-point of the device can be extended to accommodate the opener to large-sized cans.

**RAILROAD-TICKET.**—GEORGE W. CRAIG, Provo City, Utah. Mr. Craig's present invention is an improvement upon a ticket, which he has already patented. In the former construction it was sought to provide a ticket-form available, by appropriate punch-marks, for travel between various points. The ticket-agent was able to give the passenger (with only one form of ticket) a choice of any of the routes available for the particular journey intended. The present invention has for its object mainly to facilitate the selection and designation of the railroad lines available, by grouping the names of the lines in the order in which they are used.

**VENDING-TRAY.**—FRANK B. CLAGGETT, Manhattan, New York city. Mr. Claggett's invention is a tray or receptacle for holding peanuts and for keeping them warm; and the object is to provide a simple means for drawing the nuts toward the outlet end of the tray or receptacle upon opening the cover. This object is attained by the employment of shafts extended across the tray or receptacle and provided with fingers. The shafts have connection with a swinging door, whereby they are rocked and then moved forward toward the opening of the tray.

Designs.

**SOUNDING-TOY.**—JAMES S. PATTEN, Room 400 Equitable Building, Baltimore, Md. The sounding-toy consists of a block or head of metal designed to be applied to the end of a cane and receive an explosive cap which may be exploded by striking the head against the pavement. The head is of a novel design, and includes a central seat for the cap and a number of lateral vents for the escape of the products of explosion, and also a tapering form of a cap seat with a countersunk upper wall to secure the ejection of the exploded cap by the force of the explosion.

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

NEW BOOKS, ETC.

**UEBER DIE ENTWICKELUNG DER EXAKTEN NATURWISSENSCHAFTEN IM 19. JAHRHUNDERT.** By J. H. van 't Hoff. Hamburg and Leipzig; Leopold Voss. 1900. Price 25 cents.

Physics and chemistry receive the largest share of Prof. van 't Hoff's attention, as was to be expected. While pointing out the fact that there is not always a clear line of demarcation between these two sciences, the author offers the very good definition that physics is the science of the transmutation of energy, while chemistry is the science of the transmutation of matter.

**DIE ELEKTRICITÄT.** Eine kurze und verständliche Darstellung der Grundsätze sowie der Anwendungen der Elektrizität zur Kraftübertragung, Beleuchtung, Elektrometallurgie, Galvanoplastik, Telegraphie, Telephonie und im Signalwesen. Sechste Auflage. Vollständig neu bearbeitet von Dr. Alfred Ritter von Urbanitzky. Ehemals von Th. Schwartze, E. Japing und A. Wilke. 163 Illustrationen. Vienna: A. Hartleben, 1900. Octavo. Pp. 160. Price 50 cents.

Dr. Urbanitzky seems to have given a very good elementary exposition of the various applications of electricity in modern industry. That the book has passed through six editions is in itself a sufficient recommendation.

**PRACTICAL COAL MINING.** A Manual for Managers, Under-Managers, Colliery Engineers, and Others. By George L. Kerr, M.E., M. Inst. Min. E. London: Charles Griffin & Company, Limited. Philadelphia: J. B. Lippincott Company. 1900. 520 figures and diagrams. Pp. 462. \$4.

In the present volume English practice is, of course, described, but the author has produced a book which will surely be valuable even to mining engineers in our own country. The subject is adequately treated in all of its phases, and especial attention is given to such subjects as timbering, winding coal, haulage, pumping, ventilation, safety lamps, surface arrangements, coal cleaning, surveying, leveling, etc. The book is profusely illustrated by 520 engravings.

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