

RECENTLY PATENTED INVENTIONS.
Pertaining to Apparel.

COMBINED BUTTON AND PIN FASTENER.—R. ELLIS, Niagara Falls, N. Y. The object had in view in this case is to provide an attachable button which shall be specially adapted for use as a skirt-supporter and fastening means for the skirt-placket, the device to be equally adapted for affording ready replacement of a detached suspender-button and for other obvious uses.

BELT.—J. ASKEW, West Point, Miss. The invention has reference to wearing-apparel, and its object is to provide a new and improved belt arranged to properly support the trousers or other garments without exerting undue pressure on the stomach of the wearer. The ends are connected in a manner to maintain the usual appearance of an ordinary belt and to serve as ornaments.

Of Interest to Farmers.

COMBINED HARROW AND CULTIVATOR. M. TRUE, Watervalley, Miss. This improvement comprises the combination, with two like triangular frames provided with teeth and spaced apart and flexibly connected and provided with pendent bars, of wheels having axles provided with sockets adapted to receive and slide upon the bars, and clamp-screws applied for securing the sockets in any required adjustment, the wheels being arranged parallel in the inner sides of the frames.

MACHINE FOR LOADING SHOCKS.—W. O. CRAWFORD, Beaver Creek, Minn. A purpose of this invention is to provide a portable and readily-operated machine for loading shocks of corn or cornfodder onto wagons or for stacking the shocks or for moving them from the stack to the wagon, which machine may be used with equally good results for loading and stacking manure, hay, straw, and all kinds of fodder.

Of General Interest.

EMBROIDERY-SILK HOLDER.—J. J. LAWLER, Winsted, Conn. In this case the object is to provide a new and improved embroidery-silk holder arranged to securely hold a skein of embroidery-silk and to allow convenient removal of a single thread from the skein without danger of tangling the threads forming the skein.

HOLDER.—J. P. MERLINE, Oconto, Wis. This holder is particularly adapted for the support of paper bags. The objects of the inventor are to provide a simple and convenient device. In use the bags are drawn from the bar and when all have been used the device may be conveniently removed by means of its center loop projection and another supply placed upon it.

SURGICAL APPLIANCE.—W. L. WOODRUFF, Troy, Arizona Ter. The purpose of the improvement is the provision of a hood or cover for the part, especially designed to be used as an aid in the cure of venereal diseases, and to so construct the device that it can be readily applied and removed and worn with comparatively little discomfort.

UNDERTAKER'S MITTEN.—F. J. PRUITT, JR., Appleton City, and J. N. UTTERSON, Montrose, Mo. The invention is a mitten for use to facilitate the dressing of corpses. In drawing a coat on a corpse the cuffs and shirt-sleeves slip back on the arms and are hence not in proper position when the operation is completed. By the aid of the mitten this result is avoided and the operation of dressing is more quickly performed.

KILN.—A. P. BROOMELL, York, Pa. The arrangement of the furnaces with respect to the stack provides for the efficient utilization of all the heat and for application thereof evenly throughout the extent of the interior of the stack, thus securing a uniform burning of the rock and consequently superior quality in the product. Means are provided to permit application of heat to the rock near the outer part thereof, and to avoid overburning of the central portion of the rock. At the same time, however, enough heat is directed upon the center to prevent formation of an unburned core.

Hardware.

COMBINED RATCHET WRENCH AND DRILL.—J. R. NEILSON, Union City, Tenn. The principal object in this case is to provide a device which affords a very positive grip upon the tool or other member gripped thereby, and which is provided with a reversible ratchet operating mechanism by means of which the wrench and drill may be positively rotated in either direction about its axis of rotation.

HOOK-LOCK.—F. LILIGER, St. Joseph, Mo. The invention relates to a device intended for locking or closing hooks, so that an article engaged therewith cannot be accidentally disengaged. The invention is particularly intended for use in connection with tackle-hooks, although it may be employed for other purposes.

CALIPERS AND DIVIDERS.—G. C. SMITH, St. Kilda, near Melbourne, Victoria, Australia. Mr. Smith has devised this invention in order to provide simple and inexpensive means for locking calipers and dividers in position and incidentally for enabling calipers to be used to measure accurately in positions from whence it is not possible to remove them in order to

transfer the measurement without slacking them back.

Household Utilities.

SHADE AND CURTAIN BRACKET.—W. J. CONNELL and L. C. LOWE, Huntington, W. Va. The invention pertains to improvements in shade and curtain brackets, and has for its object to produce a simple, cheap, and efficient bracket that can be readily and quickly applied to and removed from a window-casing and one from which a short ventilating-shade in addition to a lace curtain and window-shade may be suspended.

BED-RAIL JOINT.—J. MURPHY, Kenosha, Wis. In this instance the invention refers to improvements in corner joints or fastenings for the rails of metal beds, the object being the provision of a joint that will be comparatively cheap to manufacture because of the small amount of metal required for the desired strength. The rails readily engage without employing screws or bolts, forging, bending the rail, or without a casting on the rail.

Machines and Mechanical Devices.

WASHING-MACHINE.—G. H. WISNER, Pioneer, Mont. In this patent the invention relates to improvements in washing-machines, the inventor's object being to provide a machine by means of which garments may be rapidly and thoroughly cleaned. In operation the water is kept in practically constant agitation. Means are provided to relieve the turn-table from undue shock when it is moved by means of the springs.

CLUTCH AND TRANSMISSION-GEAR.—J. W. WALTERS, New York, N. Y. One object in view of Mr. Walters is to combine in one structure a two-speed or differential transmission-gear and a clutch device adapted to control the starting and stopping of the machine to which the new device is applied. A further object is to compactly arrange the several parts to make them take up a very small amount of space on a motor-vehicle or any other form of machine or apparatus.

FIBER-CLEANING MACHINE.—A. G. PONS, Mexico, Mexico. In this patent the purpose of the invention is to construct a machine for decorticating plants, especially sisal hemp, and to provide a machine which will expeditiously remove the pulp from the fiber in a thorough and cleanly manner and without detriment to the fiber. After material is fed thereto the machine is practically automatic in its action.

MEASURING-MACHINE.—S. O. MYERS, Mount Vernon, N. Y. The invention of Mr. Myers has reference to measuring-machines, and his more particular object is the provision of a coin-controlled machine for measuring the heights and for indicating the normal weights of persons. Repeated use upon payment of a single coin by a number of persons successively stepping upon the platform without allowing the movable parts to resume normal position, is prevented.

BALL-BEARING.—R. CONRAD, 248 Kurfurstendamm, Berlin, Germany. Provision is made in this invention for a ball-bearing having concentric-grooved rings, the sides of the grooves being uninterrupted throughout their circumference and the parts being so proportioned and designed that the balls may be admitted to grooved space by displacing the rings relatively to each other. The term ball-bearing is to be understood as including various other known equivalent devices rolling between the rings.

Prime Movers and Their Accessories.

CARBURETER FOR GASOLINE-ENGINES. R. A. MIDDLETON, Rexburg, Idaho. The essential object of the improvement is to provide devices for furnishing an auxiliary air-supply, so that when the engine runs at excessive speeds an increased quantity of air will be permitted to pass through the carbureter, thus maintaining the correct proportions of air and fuel. It is designed for use especially in connection with internal-combustion engines, but may be used for other purposes.

Railways and Their Accessories.

AIR-BRAKE SYSTEM.—A. I. PERRY, New York, N. Y. More particularly the invention relates to those systems in which the braking action is to be effective throughout a train consisting of a plurality of cars. Its principal objects are to provide means for simultaneously applying the brakes with a definite and controllable pressure and for securing an automatic application if the train parts.

METALLIC TRUCK FOR RAILROAD-CARS.—F. GERHARDT, Alliance, Ohio. In this patent the object of the invention is to provide a new and improved metallic truck for railroad-cars formed of comparatively few parts, readily assembled, and arranged to insure an easy riding of the car-body of an exceedingly strong and durable truck.

FOLDING AND EXTENSION CAR-STEP.—J. S. COXEY, Aberdeen, Wash. One purpose of the invention is to provide a simple and readily-applied means whereby to simultaneously operate a folding extension car-step from the platform of a car and raise and lower the temporary platform which normally covers the steps and open or close the gate at the platform when a gate is employed.

Pertaining to Recreation.

MERRY SKATING-RINK.—H. LOISELEUR, New York, N. Y. This invention has reference to amusement devices such as used at pleasure resorts; and the object of the inventor is to produce an amusement device of simple construction which will have the general characteristics of a merry-go-round or carousel, but which will be used by persons upon skates.

PARLOR GAME.—J. A. S. CHEVOLLEAU, Kingston, Jamaica, West Indies. In this instance the invention pertains to parlor games and resembles the games of billiards and pool. The intention of Mr. Chevolleau is to produce a table upon which an amusing and interesting game may be played, the rules of the game being designed to put a premium upon accuracy and judgment.

Pertaining to Vehicles.

MEANS FOR UNITING A PAIR OF BICYCLES TO FORM A QUADRICYCLE.—C. H. NICHOLAS, 34 Stroud Green road, Finsbury Park, London, England. The object here is to provide means for connecting together a pair of bicycles (of any usual construction and motor or pedal or otherwise driven) side by side in such manner that the combination may constitute a single vehicle capable of carrying more than two persons, the device so provided being designed to enable the cycles to be quickly and easily united to form a quadricycle and to be as readily detached from one another, so as to permit of the ordinary use of either machine alone when desired.

COUPLING.—G. LLOYD, Gananoque, Leeds, Ontario, Canada. In the present patent the invention has reference to a coupling useful in various connections, particularly as a means for joining the parts of vehicle-springs and for connecting the thills of a vehicle to the axle-clips. With this coupling the thills are free to swing vertically; but the parts are prevented from side play, and wear may be taken up quickly by tightening a bolt.

Designs.

DESIGN FOR A BADGE.—F. BUSSE, New York, N. Y. This ornamental design for a badge shows an outspread "base ball fan," with the ball in the center of the fan, the whole mounted on a stick-pin.

DESIGN FOR EIDER-DOWN CLOTH.—C. H. FRENCH, Canton, Mass. This ornamental design for eider-down cloth consists of rows of squares of confused texture against a plain field of cloth. These blocks are separated one from another at regular distances of half the width of each.

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(10016) O. M. S. asks: 1. How may opaque objects be seen under the microscope? A. By the use of the bull's-eye condenser. A lens which will focus the light of a lamp upon the upper surface of the object. One of these usually accompanies a microscope. 2. How can the glimmering of artificial light be overcome? A. If the light is too strong, turn the reflecting mirror till the field is illuminated to suit your eye. Shaded glasses can be had from dealers in microscopes which cut down and also color the light agreeably. These may be blue or gray. They are also made so that they are deeper in color in one portion than in another, and a nicer adjustment may be made of the illumination. 3. Will the best window or plate glass do for glass slips to use with a microscope of sixty-five diameters? If not, why? A. Any sort of glass will answer if it is smooth. It is better to buy the regular slips. These are 3 x 1 inch and are polished on the edges. They present a much better appearance than pieces of glass cut and left rough. 4. What proportion should the liquid, zinc and carbon be for a bichromate cell? A. A good bichromate mixture is composed of water 100 parts, potassium bichromate 17 parts, and sulphuric acid 10 parts, all by weight. The zinc and the carbon may be of any size which the battery jar will hold. It is better to have a carbon on each side of the zinc, two carbons to each zinc. This gives a larger current and utilizes the action on both sides of the zinc. 5. How to make an induction coil which will not induce a current strong enough to kill a person. A. A good induction coil is described in SUPPLEMENT, No. 160, price 10 cents. It is not necessary to injure one's self with a large coil. A simple rule for safety is to put the left hand in your pocket or behind your back when doing anything to the coil with the right hand, if the coil is running. 6. What are the preserving fluids used in the museums and laboratories? A. Alcohol is the fluid ordinarily used in museums for preserving specimens in jars and bottles.

(10017) L. F. S. writes to us as follows: I wish to know what horse power would be developed by a stream of water, which, if dammed would give a head of 130 feet or more. The amount of water flowing over a 4-foot weir is 8 inches, weir being rectangular 4 feet equals breadth, 8 inches equals depth. What size steel pipe or iron pipe would this water fill if it were to be carried to a turbine at distance of 1,200 feet? What is the cost of such pipe a running foot? Also, what would be the cost of a dynamo to utilize power thus developed by turbine? Suppose it were necessary to transmit power to a manufacturing plant at a distance of 4 1/2 miles from power house. What would be loss of power in transmitting and what approximate cost of motor and wiring for such a plant? Kindly tell me where price list of motors and dynamos may be obtained. A. The capacity of your weir is 432 cubic feet of water per minute. This with 130 feet fall will give a theoretical power of nearly 3 1/2 million foot-pounds or 112 horse-power. From this must be deducted the loss by friction and the water wheel which, if of the Pelton type, should net you 80 horse-power. The size of steel pipe for conveying this amount of water 1,200 feet with a loss of less than 2 feet head will be 24 inches in diameter and will cost about \$1 per foot. A Pelton wheel and connections will cost about \$400. The dynamo will cost about \$2,400. A motor on a 4 1/2-mile line will cost about \$2,000, and should net 60 horse-power at 4 1/2 miles distance. We refer you to the water wheel companies for estimates of a complete power plant.

(10018) Y. N. W. writes: As it is your aim to disseminate useful information we make the following statement which will interest all photographers: We recently purchased one of the new aluminium trays and lately undertook to intensify a negative in it, using a three-solution intensifier: Bromide of potassium, bichloride of mercury, and sulphite of soda, in the order named. Upon applying the mercury solution the chemical growth (which we had forgotten all about) of which a detailed description was given in the SCIENTIFIC AMERICAN was given in the SCIENTIFIC AMERICAN.