

RECENTLY PATENTED INVENTIONS.

Engineering.

STEAM STEERING GEAR.—John Russell, Long Island City, N. Y. In accordance with this invention a steam cylinder is held on suitable supports, which also serve as guides for piston rods, ports leading into opposite ends of the cylinder from a steam chest. The piston rods are each connected with a crosshead carrying a pulley over which a tiller rope extends, the tiller ropes being arranged at each end of the cylinder, so that both ropes will move together, while the steersman operates the wheel just as if he were steering by hand, it being necessary to keep throwing it in order to keep the steam port of the cylinder open for the inlet of steam.

BOILER AND PIPE COVERING.—Robert S. Miller, Wilmington, Del. This is an elastic composition, to be put on in two coats, made of refined or washed kaolin, cow or goat hair, asbestos fiber, feldspar, plaster of Paris, rag pulp, etc., with water. The making and application of the composition, as described by the inventor, varies somewhat, but full instructions are given. It is designed to be fireproof and to cling close where applied without straps, while it is also an anti-rust, odorless and waterproof covering, a good non-conductor, and takes a high polish.

COATING COMPOSITION FOR PIPES, ETC.—This is another invention of the same inventor for a coating or outside finish to various or any special plastic coverings of steam pipes, boilers, and other water-tight and non-conducting surfaces. This coating saves the expense of putting on canvas or other similar outside coverings, and can be washed clean and highly polished, not being affected by changes of temperature.

Railway Appliances.

CAR COUPLING.—Charles J. Knighton, Jr., Birmingham, Ala. The coupling hook, according to this invention, is pivoted within the drawhead, and has a curved rear end, upon which bears a cam-shaped block attached to a rock shaft journaled in lugs or brackets and extending across the end of the car, there being an arm near each end of the shaft on which is a weight. The improvement is designed to afford an automatic coupler of few and simple parts which can be employed with all varieties of link couplers, and with which uncoupling is effected from the sides of the car.

DUMPING CAR.—Paul E. Glafcke, Cheyenne, Wyoming. This car is arranged to dump automatically when the door is unlocked, discharging the load in any desired direction, while the construction is designed to be simple and durable. The wheeled truck has a notched circular plate, between which and the turntable turns a friction plate, the receptacle on the turntable having an inclined bottom and flaring sides, with a door at its open end, while an arm pivoted on the frame engages the notches in the plate. A rod extends from the door to the opposite end of the car, whereby the latch may be released and the door locked in open position from one end of the car.

FLOOR FOR CATTLE CARS.—Ferdinand M. Canda, New York City. This invention provides a floor constructed of alternating high and low boards, forming spaced raised parts integral with the flooring boards, in order to give a proper footing to the cattle, the raised parts thus formed not being liable to be broken off by the cattle, or by the use of the car for carrying miscellaneous freight.

Mechanical Appliances.

GRINDING MACHINE.—Ivor R. Titus, Huntington, West Va. This is a simple and efficient machine for grinding the peripheries of car wheels, and has a rigid frame carrying a spider provided with three guiding rolls, one of which is furnished with a clutch to engage the flange of a wheel and rotate it during the grinding, while the grinding mechanism has a laterally and vertically adjustable wheel. Combined with the grinding machine is a crane for lifting and placing the wheel in the machine, while the turret has a cover which excludes grit and dust from the gearing and the bearings of the shaft.

BALE TIE MACHINE.—Wilbur E. Glad-ding, Rantoul, Kansas. This is designed to be a durable and efficient machine for making bale ties of wire, also straightening the wire, and the bale ties being rapidly and nicely formed. The head stock of the machine has a bent arm extending above the machine frame, and a revoluble and longitudinally movable shaft is mounted in the stock, on an arm of which is pivoted a split lever adapted to swing over the shaft, while a pair of spring arms provided with guide feet is pivoted in front of the lever.

HAIR WORKING MACHINE.—George A. Williams, San Diego, Cal. This machine comprises a series of swinging needle bars having hooked needles at their lower ends, a series of movable shuttles arranged opposite the needles, a cloth-carrying carriage projecting between the needles and shuttles, and a lever mechanism for simultaneously actuating the needles, shuttles and carriage, with various other novel features. The machine is designed to automatically draw hair through a web of loose cloth or other material, and knot the hair so that it cannot get loose, while it may also be used for securing any fibrous material instead of hair to any suitable web or body.

Miscellaneous.

COIN OPERATED PHOTOGRAPH MACHINE.—Pierre V. W. Welsh, New York City. This machine has a vertically adjustable case to carry the lens, adjacent to which is a mirror, while there is a shutter for the lens, behind and below which are developing and fixing chambers, a swinging plate holder being pivoted behind the lens and above the chambers, at the bottom of which are slotted valves, and a coin-operated mechanism is provided for moving the shutter, plate holder and valves. One whose picture is to be

taken moves the case until his eyes appear in the mirror, then drops a coin in the slot, and a clockwork mechanism sets the machine in operation, the picture when completed dropping through a chute upon a tray. An electric light and flash light mechanism are also provided for taking pictures at night.

DENTISTS' RUBBER DAM CLAMP.—Christian A. Meister, Allentown, Pa. The jaws of the clamp to hold a rubber dam in position around a tooth are by this invention provided with simple levers or fingers, not pivoted together as a separate instrument, but arranged to project beyond the spring portion of the clamp, whereby the clamp may be readily opened or manipulated. These fingers may be either permanent attachments to the jaws of the clamp or removable, being in the latter case loosely connected by a light chain, so that they will not be lost.

SIPHON.—Jacob Singer, New York City. This is a simple device, automatic in operation, at all times ready for drawing liquids without requiring pumping or refilling. It consists of a bent tube having at each end a head adapted to form a liquid seal for the ends of the tube, a faucet being arranged in the discharge head to facilitate drawing off liquid by the siphon as desired, while the inlet head has perforations to admit the liquid. The latter head is removed when the siphon is filled with a liquid similar to that to be drawn, previous to placing it in position for use.

SEAL LOCK.—Sidney T. Nickerson, Topeka, Kansas. This invention relates especially to devices for locking and sealing railway car doors, and also applicable to other purposes, as the sealing of chests, room doors, lockers, etc. The ordinary wire and lead seal may be used and a frangible seal, with this improvement, or either may be used separately, and the seal applied in much quicker time than usual. The frangible seal, preferably bearing the initials of the company using it and a number, is more readily seen at night when taking car records than the lead seal, and the seal mechanism cannot be picked or the door opened without breaking the seal.

PERMUTATION PADLOCK.—William M. Brooke, Brooklyn, N. Y. This lock has a two-part case, one compartment of which is open at one side and at the top and has a series of tumblers, while the other has an internal shoulder, the staple to enter the case having one member provided with teeth to engage the tumblers and the other with a spring catch to engage the shoulder. When the locking staple is removed the cover can be easily taken off and the combination changed, but when the staple is in place the tumblers cannot be reached. To insert the staple and fasten the lock it is only necessary to push both members of the staple to place, regardless of the position of the tumblers. The construction is designed to be strong and inexpensive.

LOCK.—Alvin F. Harrison, Greeley, Kansas. In the case of this lock is a keeper plate having an outer and inner recess, a sliding latch bolt and a sliding supplementary bolt with fingers, one of which has a tooth to engage teeth on the lock case, while a link pivoted in the case has its ends pivoted to both bolts. The lock is designed to be simple and durable, operates without springs, and is adapted for use as night lock as well as a day lock, having means for being operated from the inside without a key.

SEWING MACHINE ATTACHMENT.—Anthony B. McDowell, Edna, Texas. This is a grinding attachment which can be quickly made fast to the fly or hand wheel of the machine, for the sharpening of needles, scissors, knives, etc. It has a barrel portion with a central socket into which the hub of the wheel fits and radial spring clamp arms with curved ends to slip over the edge of the wheel, the barrel forming a spindle for an emery or other grinding wheel. The attachment can be quickly put on and taken off, and is simple and cheap in construction.

TROUSERS PROTECTOR.—Oscar Jonach, New York City. This is a shield for the lower edges of pantaloons, adapted to be quickly attached or removed, none of the attaching devices being visible from the exterior, and the cloth fitting snugly to the shield. The shield is semicircular, made of sheet metal, celluloid, hard rubber, or other suitable substance, and has a slight flange at the bottom to extend below the lower edge of the garment, while at its ends are slightly curved needles to enter the hem at the inner sides, and at the center of the shield at the back is a hook, to be also attached to the hem. The natural elasticity of the cloth is not materially interfered with by the attachment of the device.

ROCKING CHAIR.—James T. Mitchell, Monticello, N. Y. This is a platform rocker designed to give a gliding rocking movement to the chair body and dispense with the use of springs. There are segmental surfaces on the lower edge of each side of the chair body and a pair of rollers on each side of the base, one for each segmental surface, while projecting up from the base between the rollers are brackets also carrying rollers traveling in tracks on the chair body. The chair and its platform are by this construction effectively connected, and the roller connection is such that the chair has an easy movement, with a minimum of friction.

SAND SCOW.—William Osborn, Duluth, Minn. This scow has hopper-like sand compartments at each end and between them a water compartment in which is located a suction device. The bulkheads which form the end walls of the water compartment have vertically sliding gates, a suction pipe being adapted to be moved through the gateway, while there may be a track on the deck of the scow to support a carriage on which the suction pipe is moved, although the improvement may be applied to a vessel without a deck. The suction pipe is connected to any approved pattern of sand or other pumps.

FLUSHING DEVICE.—John C. Spencer, Anniston, Ala. This is an automatically operating flushing arrangement, connected with the tank supplied with the water necessary for flushing, whereby, as the water rises in the tank, by means of floats, valves, and levers, a portion will be intermittently discharged suffi-

cient to do effective work in flushing. The construction is simple and the action positive, no matter what is the condition of the water in the tank, nor how slow the supply.

METAL SOIL PIPE.—Robert C. Black, St. Paul, Minn. This pipe has a cleaning chamber with annular shoulders at its ends and a lateral opening, a removable cover with a threaded aperture for connection with a test pipe, a detachable plug adapted to close communication between the chamber and one end of the pipe, and various other novel features. The construction is such that the pipe may be thoroughly, quickly and conveniently cleaned, and heavier rods and scrapers may be employed with it than has heretofore been customary.

HOE, PICK AND SHOVEL.—James W. Hurst, Hotchkiss, Col. This is a combination implement, embracing in one device all three of the tools named, the parts being so made that they can be conveniently and compactly arranged, and the tool quickly and easily changed from one implement to another, the devices not in use not interfering with the use of the one it is desired to employ. The lower end of the handle is bifurcated and in it is pivoted the tang of the shovel, the tang extending enough beyond the pivotal point to constitute a pick, and the arrangement being such that the shovel can be locked in position as a hoe, as its tang is fixed in the position of a pick.

HAM COVER.—Wilhelm Wohltmann, New York City. A covering sheet of suitable fabric is arranged to inclose the ham, the sides of the sheet overlapping one another, while a series of buckle straps is arranged on the back of the sheet to close it over the ham. On one end of the sheet is a draw string and on its other end is an elastic to close the ends of the sheet, to protect the ham from dust, insects, etc.

DESIGN FOR A BADGE.—George Big-nell, Cheyenne, Wyoming. This is a political design, consisting of a shield and superposed banner mounted on the face of the shield.

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10. View of the German House in Chicago.
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(3838) C. H. B. says: Supposing there to be a stream of water filling a 36 in. pipe, flowing from 40 ft. to 50 ft. per minute, and having a fall of 300 ft. approximately, what would be the relative power that could be developed by a single undershot wheel, and by a series of overshot wheels, say of 24 ft. diameter, so placed as to utilize as far as possible the entire fall of 300 ft.? A. The total value of your stream as stated is 157 horse power. You can utilize of this power by the best impact wheels about 130 horse power. With an overshot wheel of 24 ft. diameter, you have little or no benefit from the great height, and can realize little better than 15 horse power. With a common undershot wheel, in which you may make the impact from the pressure in the pipe available, you may realize 50 horse power.

(3839) H. A. asks: 1. If there is any one at present experimenting with casked cast iron pipes for the use of steam. If so, what is the result? A. Cast iron pipe with casked joints is not used for steam at any pressure. It does not remain tight but a short time, owing to expansion and contraction by the heat of the steam. 2. Will a 4 m. cast iron pipe as above stated stand a pressure from 10 to 25 lb.? If not, what is your idea of making use of the said pipes for the circulation of steam? A. The pipe will stand the pressure, but the joints work loose when made with lead. Would stand better, if with rust joints, for a short time. Thin cast iron pipe of this class with rust joints is used for hot water heating when there is but slight pressure.

(3840) J. Q. D. asks: 1. Have locks ever been constructed in the mouth of tidewater streams where the water was not at low tide sufficient for large vessels to navigate, in order to retain a uniform depth of water, and also to prevent the current that so much retards the speed of boats, both going in and coming