

RECENTLY PATENTED INVENTIONS.

Engineering.

FIRE ENGINE PUMP.—Truckson S. La France, Elmira, N. Y. A double-acting upright pump is, by this invention, provided with a novel casing and arrangement of the inlet and outlet passages with the pump barrel, double sets of valve chambers being arranged in the front or accessible side of the pump casing and closed by separate lids, with all the valves grouped in close relation with each other, and so that either end sets of valves are readily accessible without disturbing the end covers of the pump barrel and its casing. The valves and interior mechanism are thus made conveniently accessible when repair or adjustment is necessary. The invention also includes a solid head and bucket plunger.

BRIDGE.—Thomas H. Kosure, Farmersville, Texas. A suspension bridge, in which the principal members are constructed of wire cables under tension, is provided by this invention, the cables being made of straight strands of wire twisted at the time the bridge is constructed. The cables are run back and forth from one anchorage point to a turnbuckle until enough strands are laid for a cable for one section, and from that turnbuckle the strands are then laid to the next for the next section, etc., the screw-eyes of the turnbuckles being finally turned in opposite directions to twist the strands and tighten the cable between its anchorage points. The improvement is mainly designed for use in building small, light and strong bridges for public roads, etc.

SMOKE CONSUMING FURNACE.—Edward Cartwright, Wilber, Neb. This furnace has an outlet flue, curved from the side walls of the fire box through a horizontal arc of ninety degrees, and having greater vertical depth along the outer or longer arc than it has along the inner or shorter arc, the peculiar shape and arrangement of this discharge conduit making available the effects of reflection and concentration of heat in a manner designed to completely consume the smoke without the aid of a blast. This furnace is designed to be especially useful in heating steam boilers in smelting and other metallurgical operations.

Railway Appliances.

CAR AND HOSE COUPLING.—John H. Carroll, De Smet, South Dakota. This is a combination device in which the hose coupling for the air brake is united with an improved car coupling, the coupling together of two cars simultaneously effecting a coupling of the hose sections on the coupling heads. The car coupling head is pivoted to swing laterally and connect with a mating coupling head, while a hose coupling half section is positively held upon the car coupling head, and movable into position to couple in response to a corresponding movement of the car coupling head, being adapted to couple with a mating hose coupling section of the opposing car.

Mechanical.

DRIVE CHAIN.—West Dodd, Sac City, and Arthur T. Martin, Clinton, Iowa. The link of this chain has a hook at one end and an eye at the other, with radial flanges at the ends of its shank near the hook and eye. A chain made with these links is designed to be perfectly flexible, making a secure driving connection with the wheel or wheels, around which it may be passed in any direction. The chain can also be crossed to reverse the motion of the shafts, and can be conveniently used to connect wheels or pulleys at any desired angle by means of loose guide wheels or idlers.

EQUALIZING LINKS.—Thomas Murphy, Sewickley, Pa. This invention provides a method of and apparatus for equalizing the members or links used in deep well drilling machines, etc., to prevent the links from breaking when subjected to a heavy strain or sudden jerk. The lengths of two sides of a link are equalized by subjecting two connected links to the action of heat and at the same time straining the links apart until the two sides or members are of equal lengths, and then permitting the links to cool while under strain, the heating and stretching process being continued until the reins of each of the jars are of the same length.

WATER MOTOR.—Benjamin S. Partidge, Jacksonville, Fla. This is a device adapted for attachment to artesian wells, and designed, with a low pressure of water, to afford a high degree of power. Opposing cylinders, with pistons connected by a power rod, are arranged opposite spaced valve chests in which are oscillating valves connected with a spring-pressed and longitudinally movable rod operated from the power rod, there being spring catches for temporarily locking the valves, and means for operating the catches from the spring-pressed rod. The invention also includes various other novel features.

MACHINE FOR CARROTING FUR.—John H. Sanders, New York City, and James E. Carlin, Brooklyn, N. Y. This is a simple and rapidly operating machine adapted to fit furs for use in hat making more perfectly than the work can be done by hand, and which is also constructed to deliver a fine spray of the carrotting liquid upon the fur and save the surplus solution, so there will be no waste. The machine comprises a pair of feed rollers, adjacent to and parallel with which is a revolvable brush, an atomizer delivering between the brush and rollers, and a blower connected with the atomizer.

PUMP.—Robert H. Raprager, Lakota, North Dakota. All the pumping parts of this pump are designed to be below the surface of the water, and thereby be protected from freezing, the improvement being especially designed for double-acting pumps for use in a cold climate. The pump is very simple in construction and easy in operation, and has two plunger barrels connected with each other at their bottoms, inlet and outlet valves being arranged in the upper ends of the barrels, there being an outlet pipe formed with a casing, into which discharge the outlet valves, various other novel features being also included in the invention.

CLAY CONDUIT MACHINE.—James J. Powers and Robert Van Buren, New York City. The economical working of clay conduits for electrical wires and other uses is the purpose of the machine provided by this invention. The machine has a power cylinder, below which is a moulding cylinder, the pistons in the cylinders being connected, while a spider is locked to the lower end of the cylinder by a bayonet joint, there being means for releasing the spider by the descent of the pistons. An inclined filling cylinder, in which is a follower, communicates with the moulding cylinder. Longitudinal passages of the electrical conduit are formed in the compressed clay, which, when discharged from the moulding section, only requires drying, baking and glazing, to make a perfect conduit section.

WOOL WASHING MACHINE.—Walter T. Forbes, Atlanta, Ga. A box-like receptacle, with a feed opening at one end and discharge openings in the bottom of its opposite end, has suspended in it a perforated trough with discharge portions projected through the discharge openings in the box. A conveyor is journaled in the trough, to convey the wool from the feed end to the discharge end, there being also a spray pipe connected with a scour-holding tank, and the apparatus is designed to quickly and effectively separate dirt and greasy matter from wool without injuring it.

Agricultural.

POTATO DIGGER.—David Livingston, Thornville, Ohio. This machine has a shovel of novel construction, which, as the machine is drawn over the ground, clears itself in all kinds of soil, whether wet or dry or weedy, and enables the operator also to conveniently cut off weeds and tops and roots. The shovel lifts the potatoes with the dirt in such a way that the dirt loosens and falls away and the potatoes are left on top of the ground in a convenient position for the picker.

HAND CULTIVATOR.—Tyree T. Rodes, Paris, Mo. This is an implement of very light and simple construction, which can be operated to close its jaws or to open them any desired distance to cultivate at each side of small plants. The teeth are rigidly secured to the two jaws, which are opened and closed by a handle, and the teeth are long, sharp and hook-shaped at their outer ends. In spreading or opening the jaws, they open with mathematical precision, and the implement is very compact.

STOCK FEEDING RACK.—Henry G. Chamberlain, Ridgeway, Wis. This is an improved rack designed for use in the stable, or in the pasture or farm yard, for feeding grass, fodder, grain, roots, etc., permitting the stock to feed readily and at the same time preventing any waste. Sliding gates regulate the quantity of feed passed to the feed troughs, the gates being adjusted according to the nature of the material fed, while the arrangement is such that none of the feed is liable to be drawn out or dropped upon the ground. Continuations or extensions of the roof of the rack are also provided for as a protection to the stock from the sun and rain.

MILK COOLER.—Samuel W. Tobey, Fairfield, Neb. A tank is centrally arranged within a double-walled box having suitable covers, an inlet pipe having its inner end arranged transversely in the tank bottom and provided with a series of holes, while its outer end is provided with a funnel, there being discharge and overflow pipes leading from the tank, through which running water is allowed to pass. Provision is made for a free circulation of air around the tank, and there is no chance for impure air to come in contact with the milk or cream, while the milk is cooled from the bottom toward the top, thus insuring the rapid rise of the cream.

Miscellaneous.

SWING JOINT FOR BRACKETS.—Henry P. Drew, New York City. This is a cheap, substantial and shapely swing joint connection for gas pipes, adapted to pass a large volume of gas, and which may be readily converted into an electrically insulated swing joint for use where electric lights are combined with gas fixtures. It has two cupped sections with branches perforated and threaded to receive pipes, and further perforated to connect the threaded perforations with the cupped cavities of the joint sections, a headed coupling bolt loosely engaging one joint section and locked to the other joint section, a washer between the joint sections and one under the coupling bolt head, a clamping screw bolt, and a washer between the locked joint section and the head of the clamping screw bolt.

MINER'S LAMP.—Julius R. Watts, Springfield, Ill. This lamp has a spout provided with a wick raiser, and there is a guide between the spout and the body of the lamp, a wick-retaining device having an opening at its lower end freely embracing the spout and its base, and extending upward and outward through the guide to the upper edge of the spout. The lamp is simple, durable and inexpensive, and the miner can, without removing the lamp from its support, quickly and conveniently raise and lower the wick, to increase or diminish the light.

BALANCED STAGE.—Maurice Richter, Williamstown, W. Va. A gang plank, or balanced stage for ships, is provided by this invention, and one which can be easily operated by a single person, the main portion of its weight being supported by a spring mechanism upon the ship. A counterbalancing spring is arranged within a post, in the upper end of which is a sleeve carrying the tubular shank of a bracket on which is a pulley, a boom from the post also carrying a bracket and pulley, while the gang plank is connected by a rope with the balance spring. The tension of the spring is such that it nearly balances the weight of the gang plank, and but little manual force is required to raise or lower it.

CRADLE.—James H. and George W. Meek, Denison, Texas. This cradle is suspended from its supporting frame in such a manner as to render it

capable of vertical, lengthwise and sidewise movements, the cradle being given an easy, uniform and steady motion without the danger of tilting over. The construction is such, also, that the frame may be folded up to be set aside without the necessity of removing the cradle from the frame or detaching any of the parts.

NAILLESS HORSESHOE.—James McCaffrey, Philadelphia, Pa. A spring splice plate is riveted to and connects the front end of two clip plates, clamping arms being connected to the rear ends of the clip plates, connected by a screw and nut, in connection with detachable wearing plates. The improvement dispenses with the work of blacksmiths in shoeing horses, and avoids the necessity of driving nails into the horse's hoof.

DEVICE FOR ASCERTAINING GRADES, etc.—David C. Wolfe, Lyons, Kansas. A hollow case is provided with angle irons at the corners and spring clasps, in combination with a reversible base board bearing upon one side a set of graduated plates and scales, and having pins projecting in central position from the ends, there being also an adjustable carrier with graduated lever or rule. The improvement is designed to furnish an accurate and ready calculator in railroad work of the position and height of bed and slope stakes, and of the cubical contents of a cut or fill where the surface is level or has a regular and even slope.

DITCHING MACHINE.—John Cornelius, Oakland, Md. This is a simple and inexpensive machine, which may be used to cut ditches with parallel sides or with sides flaring outward, the machine being readily held at the desired depth in the ground, and prevented from running out or going in too deep. It has a sole piece in which is a base cutter, a central cutter held between the base beams, with side cutters, a partition plate, and turning wings. The dirt being equally divided and thrown half on each side. The machine may be pulled by a stump-pulling machine or other suitable pulling or power mechanism.

TO OPEN AND CLOSE COCKS, etc.—Oscar Loewe, Berlin, Germany. This invention provides a means for opening and closing gas taps, valves, the switches of incandescent lamps, etc., those which are ordinarily inaccessible being thus readily operated. It consists of a tubular key turner with a projecting arm, a rod extending through the body, and having at its lower end a handle, an inclined shaft journaled in the arm, bevel gears connecting the shaft and rod, and a key engaging a clip on the shaft. Connected with the device is a short tube containing igniting material, which may be used when the device is employed to turn on and light a gas jet.

HORSE COLLAR.—John B. Mueller, Streator, Ill. Two depending bails or links are provided at opposite sides of the upper end of the collar, a pad being pivotally connected with the lower ends of the bails, an easily operated coupling for the common form of horse coupler being also provided, whereby the two members of the collar may be secured together and held the desired distance apart. The pad is so connected with the collar that the movements of the latter will not be transmitted to the pad, which will lie still upon the neck of the horse.

WATER STILL.—Johannes Petterson and Louis H. Liebeck, New York City. In this apparatus a water tank having a filter is connected with a source of supply, and a boiler having a steam dome has a pipe connection with the filter, a steam filter being connected with the steam dome, and a cooling cylinder held within the tank, the cylinder having its upper end connected with the steam filter and its lower end provided with a discharge pipe. The apparatus is designed to distill a large and continuous supply of water, which is rapidly converted into steam, and the steam filtered and condensed, finally issuing in the form of pure water, for either drinking or medicinal purposes.

WHITE LEAD CORRODING PIT.—William H. Wetherill, Philadelphia, Pa. This invention provides an improvement in pits used for corroding lead, where the lead is placed in layers alternating with layers of wet, fibrous material, the heat generated in the process producing a column of heated air in a ventilating shaft, and causing fresh air to be drawn in through side pipes leading to the surface of the ground. These side pipes are embedded in the surrounding earth, and the fresh air thus supplied creates a rapid circulation, thus hastening the process.

MUSIC RACK AND STAND.—Henry W. Potter, Wellington, New Zealand. This is a folding rack with telescopic stand, the invention providing an article which, when not in use as a stand, may be made to assume the shape of and be employed as a walking cane, means being also provided whereby the rack may be quickly and conveniently spread for use and adjusted to the desired height. The device is simple, durable and light, and can be readily manipulated.

HORSESHOE.—John E. Jarvis, London, England. This is a combined metal and rubber horseshoe, in which the India rubber is combined with the metal in such a way that the weight shall be principally borne by the wall of the hoof, and the rubber, held in place by the metal shoe and its fastenings, constitutes an integral part of the wearing surface of the shoe, the sole of the foot being either uncovered or so far covered as to bring a part of the weight on to the frog. The improvement is designed to promote lightness and elasticity of tread, prevent slipping, cutting and clicking, protect the heels and feet from undue pressure, and obviate capped elbows.

SMOKE EXCLUDING HOOD.—Christian Herlick, Marquette, Mich. Firemen and others about to enter a burning building may protect themselves from the flame and smoke by the use of this device, which is a light and readily applied structure, permitting the wearer to see, and provided with means of obtaining air for breathing from the floor, below the level of the smoke. The hood has a pendant glazed door in front, air supply pipes supported by the frame bars, and an apertured bottom piece, below which drop hinged

doors. A fire-extinguishing apparatus may be carried upon the back, attached to the shield or hood.

TILL LOCK.—Hugo Brav, Berlin, Germany. Connected with the lock provided by this improvement is a device whereby the drawer to which the lock is applied may be opened by pressing with the foot on a foot lever, the movement of which is transmitted by a combination of levers to the drawer. The lever normally holds the drawer closed, so that it cannot be opened by a person at the side or front of the counter, and a hand inserted when the foot is not on the lever would be caught or jammed in the drawer.

ILLUMINATED ADVERTISING SIGN.—Charles R. McGimsey, New York City. A casing and illuminating mechanism are provided by this invention, designed to emit a steady or an intermittent light as desired, the stencil advertisement or notice to be backed with transparent colored and movable material, the latter having a backing of translucent material, whereby the matter upon the stencil will appear in illuminated colors without disclosing the mechanism within the casing. If the light is to be intermittent, a spring motor is preferably employed, the circuit of the light being then alternately opened and closed.

WOODEN PIPE.—Archie McL. Hawks, Tacoma, Washington. A new article of manufacture is afforded by this improvement, consisting of a pipe tube formed of staves, for use as conduits and for like purposes, the staves having transverse dovetailed grooves in their ends, the opposing grooved ends being united by double dovetail blocks fitting the grooves and serving to maintain the ends of opposing staves in close contact. The staves are tightened by bands, and the pipe is designed to have great strength and durability.

REGISTERING TOY BANK.—William R. Christie, New York City. This invention affords an improved bank of simple construction, into which coins of any predetermined denomination may be introduced, and the amount of coins placed in the bank being indicated by suitable dials, a gong or bell being sounded as each deposit is made. The construction is such also that the bank can be opened only when a predetermined amount has been placed in it, or it may be made to open at any time desired.

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SCIENTIFIC AMERICAN

BUILDING EDITION.

JULY NUMBER.—(No. 81.)

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