

IMPROVED STREET-CAR ENGINE.

Francis V. Mathews, New Orleans, La.—This invention relates to motors for driving street and other cars, and it consists of a pair of oscillating steam cylinders supported under the car by the truck, and provided with vertical shafts upon which are placed worm wheels that engage with wheels on the car axles. The frame of the engine is attached to and supported by the truck frame of the car. The cylinders are oscillating, and with their upper trunnions journaled in a support, and the lower trunnions are journaled in the main frame. These cylinders are provided with central ports at their ends, and with a face that is fitted steamtight to the part of the engine frame. Between the ports there is an exhaust port and a valve capable of covering either of the ports, and the exhaust port is pressed against the valve seat by a spring. The valve is provided with a rod that is connected with an arm on a rocking shaft that is connected with a suitable lever in the car by which it is moved. Vertical shafts are journaled in the frame and provided with crank disks at their upper ends, from which the crank pins project. The piston rods of the cylinders are connected with the crank pins. Upon shafts are endless screws or worms, which engage the wheels on the car axles. The engines run in opposite directions, which gives to both axles a motion in the same direction, the screws being placed on opposite sides of the axles. The valve is placed so that it covers one of the ports and the exhaust port when steam enters the exposed port and drives the engine, the used steam escaping through the covered port and the exhaust port. When it is desired to reverse the engine the valve is moved so as to admit steam through what was before the exhaust port, and to permit the used steam to escape through the other port. The crank pins may be connected by a rod when the cylinders will assist each other. The frame of the engine is constructed so as to inclose the cylinders, worm wheels, and other working parts of the engine, so that none of the parts are exposed to dust, and all noise is confined, so as to be unobservable.

IMPROVED FIRE ESCAPE.

Henry Elbe, Niagara Falls, N. Y., assignor to himself and Adolph Goldsmith, New York city.—This invention relates to means for removing persons and furniture from the windows of a building which is on fire. To the wall of a building a rail or track is strongly secured by means of brackets. This rail is set off a little from the wall, and, if desired, it may be inclosed inside of the cornice or a receptacle especially provided for it. A car is constructed to move up and down the track. To this car are attached chains of sufficient length to be controlled by persons on the sidewalk below. The chains are intended to enable a person to move the car at any desired point on the rail. The ladder is made of metal, and the side bars of short links pivoted together, which will allow the ladder to be rolled up when not in use. In combination with this apparatus is used a fender or shield, made of sheet metal plate, of suitable size to cover one or more windows, and it is perforated at different points for allowing the nozzle of a hose pipe to be inserted through it. The fireman will thus be protected from flame and smoke while playing on the fire.

IMPROVED HORSE POWER.

Edwin R. Lancaster, Alum Mills, Va.—The object of this invention is to furnish an improved horse power which shall be so constructed as to economize space without sacrificing power or effectiveness, and which shall be simple in construction and convenient in use. To the base frame of the machine is attached a large internally toothed gear wheel, the upper side of which is made wide and smooth, to serve as a way for the small wheels or rollers, pivoted to the corners of the frame. To the center of the frame is attached a post, the lower end of which revolves upon a pivot attached to the center of the frame. A small gear wheel meshes into the teeth of the large gear wheel. Another shaft revolves in bearings attached to one end of the frame, and to its upper end is attached a large gear wheel, the teeth of which mesh into the teeth of a small gear wheel attached to the upper end of the shaft, which revolves in bearings attached to the middle part of the frame, and to it is attached a large gear wheel, the teeth of which mesh into the teeth of a small gear wheel attached to another shaft, which revolves in bearings attached to the frame, and to its upper end is attached a grinding mill, which is thus carried around by and with the frame; no more space will be required than enough for the driving mechanism, and a neat and compact machine is produced. By this construction the machine will be evenly balanced, so that it will run steadily and easily.

IMPROVED CONNECTING ROD.

George W. Wilks, Roberson Fork, Tenn.—This invention consists in the arrangement in the straps of a connecting rod of side pieces between which are placed boxes, which are so proportioned that their surfaces that come into contact are reduced to a knife edge to admit of adjusting the boxes without filing, so that they may be forced together by the screws as the box becomes worn, and the necessity of filing the boxes is avoided. By means of this improvement the boxes of a connecting rod may be accurately adjusted without removing and filing them, and when adjusted cannot become accidentally loosened or disarranged.

IMPROVED WASHING MACHINE.

James H. Calvert, Princeton, Ky.—The object of this invention is to furnish an improved washing machine which shall be simple in construction, convenient in use, and effective in operation, washing the clothes quickly, thoroughly, and without injuring them. The invention consists in the combination of the crossbars, the pivoted bent levers, the connecting rods, and the springs with the suds box and the platform attached to said suds box, to form a yielding bed for the clothes while being operated upon. By this construction the clothes, while being operated upon, will be supported by a yielding bed, which will adjust itself to the varying thickness of the clothes being operated upon, so that the clothes may be operated upon evenly by the washing cylinder, thus protecting them from being cut or injured.

IMPROVED DOUBLE ACTING PUMP.

Riley I. Knapp, Guilford, Ill.—The object of this invention is to provide a simple and efficient pump that may be used either as a lift or force pump. To the cylinder a piston is fitted which is attached to parallel rods. This piston is provided with the usual leather packing, and with a central opening that is closed by a valve. In the cylinder a tubular piston is placed, which is provided with a valve and packing. To this piston, rods are attached which extend upward, and are pivoted to a lever that is pivoted to the standard. The piston tubular is fitted to a stationary hollow piston, which is attached to the standard by means of a strap. This piston is provided with packing and a valve, and to its upper end a pipe is attached. This hollow piston serves as an air chamber in equalizing the flow of water through the pipe.

IMPROVED BALING PRESSES ON WHEELS.

Michael McCarty, Pueblo, Col.—The object of this invention is to furnish an improved haling press, which shall be simple in construction, convenient in use, strong and durable, and so constructed that it may be readily moved from place to place. The baling box is made in two equal parts or halves connected together, held in position and strengthened to withstand the outward pressure of the bale while being compressed by three iron bands. The rear end of the baling box is closed by a door, which serves as a stationary follow block, and is hinged at its lower edge to the bottom of the box. The material to be pressed is introduced through a door formed in the forward part of the top of the baling box. A crossbar is attached to the outside of the movable follower, the ends of which project so as to pass through the spaces between the parts of the box, and to the projecting ends are attached the forward ends of rack bars, which pass back along the sides of the box. The racks are drawn back to compress the bale by gear wheels which mesh with them, and with which are rigidly

connected the wheels or pulleys around which are wound, and to which are attached, the draw ropes.

IMPROVED TRICYCLE.

Matthew E. Croft, Horicon, Wis.—The object of this invention is to furnish an improved tricycle designed for use by mechanics and others for going to and from their places of business, by merchants and others for sending small parcels from one place to another, and by youths and others for amusement and exercise, and which shall be simple in construction and easily operated. The invention consists in the combination of the arched bars, the block, the seat, the cord, the stirrups, the rods, and the stay bars with the wheels, the axles, the tubes, and the bolster. The rear ends of two arched bars are bolted to the end parts of the forward bolster. The arched bars incline toward each other, so that their middle parts may be near each other, and to said middle parts is secured a block, which gives strength and rigidity to the bars, and to which is secured the seat or saddle upon which the rider sits. Over the forward part of the seat passes a cord, to the ends of which are attached stirrups to receive the rider's feet. To these stirrups are pivoted the rear ends of two rods, the forward ends of which are pivoted to the forward axle, near its ends, so that the rider can guide and turn the machine with his feet. The rider propels the machine by means of two rods which he holds in his hands, and which he presses against the ground. In starting, the rider presses both rods against the ground at the same time, but after he has got up enough motion to give momentum to the machine he can use the rods alternately.

IMPROVED MACHINE FOR SEWING BUTTONHOLES.

Richard M. Melhuish, Hoxton, Eng.—This invention relates to mechanism adapted for sewing machines of the Thomas or Howe type, for the purpose of sewing straight buttonholes and fancy stitching. By this invention this is accomplished with ease and rapidity, it not being necessary to turn the fabric round in order to work the two edges and finish off the ends of the buttonhole. The mechanism is for imparting to a movable cloth plate, upon which the work is clamped, a vibrating and fro motion across the line of the hole, and also a traversing motion in the direction of the hole to feed the work as required. In sewing a buttonhole two parallel lines of stitches are made, the vibrating feed plate being caused to traverse first in one direction and then in the other by turning round a cam, each end of the intended buttonhole being barred as the needle arrives thereat, after which the hole is cut.

IMPROVED DEVICE FOR LOWERING FLUIDS INTO OIL WELLS.

Sebastian A. Fithian and Isaac N. Fithian, Karns City, Pa.—The especial object of this invention is to furnish an improved device for lowering fluids into the bottom of oil wells to cleanse them from obstructions, open the crevices, soften the paraffine so that it can be pumped out, etc., and which shall be simple in construction, convenient in use, and effective in operation. The invention consists in the combination of the barrel provided with the bail, the bottom at a little distance above its lower end, and the perforations in its sides below said bottom, the single or double valve, the spring catch, and the closely fitting cover. When the retaining valve is open the closing valve rests against and closes the lower end of the barrel, so that the fluid contained in the barrel will be forced out through the holes formed in the sides of said barrel below the bottom, and will thus be forced against and clean the sides of the well.

IMPROVED PISTON PACKING.

Isaac H. Congdon, Omaha, Neb.—This invention relates to an improved piston packing, by which the packing rings are evenly pressed against the cylinder, so as to wear in uniform manner; and the invention consists of a solid and annularly grooved ring resting against the lugs of the piston head, and having cylindrical pockets in which adjustable spiral springs are placed that press against an inner sectional ring and outer sectional packing rings. The packing is specially adapted for locomotive and stationary engines, and is cheaper than the semi-elliptic springs and brass packing in use. The pressure of the springs adjusts itself as the packing rings wear off, the springs being readily reset by taking out the follower bolts and head and turning the set bolts to the required degree of tension, the follower being readily replaced without interfering with the packing rings, as they remain in the solid and circumferentially grooved ring.

IMPROVED GRAIN SEPARATOR.

Reuben Sprengel, York, Pa.—The action of an oscillating rocker, made of longitudinal slots on the carrier, shakes the grain in effective manner out of the straw as it is conveyed up by the carrier, the grain being collected below the carrier in any suitable manner. The carrier shafts run slower than the rocker operating shaft, giving thereby the rocker a chance to take out all the grain. The straw passes slowly over the machine, being thoroughly agitated by the quick beats of the rocker, without throwing any grain off the shaker. The machine runs without jarring, and takes the straw as fast as it is fed from the cylinder, so as to obviate the choking of the same. The shaker is secured by end hooks to eye bolts of the thrasher, and readily connected or detached from the same, it being also so supported as to be raised or lowered at the upper end to provide for the condition of the straw.

IMPROVED STUMP EXTRACTOR.

Charles Tener, New Market, O.—This invention relates to machines which are designed for extracting stumps and stones, and the nature of the invention consists in a portable frame, which can be taken apart or erected at pleasure, and which affords a substantial support for two rack bars, spring pawls, a vibrating actuating lever, and a lifting link. A strong timber is secured midlength of beams, and constructed with openings through it to receive two rack bars, the teeth of which are pitched forward. The lower ends of these bars are slotted and pivoted to a long lever, which is made of sections secured together so that they can be readily detached. The operation of the machine is as follows: The link is made fast to a stump, and the lever is vibrated, which gives alternate upward movements to the two ratchet bars, the pawls holding them firmly after each upward stroke.

IMPROVED APPARATUS FOR STRETCHING FELT JACKETS FOR ROLLERS IN PAPER MACHINES.

Luther Cole, Corinth, N. Y.—This invention relates to apparatus for stretching felt covers for couch and other rolls in a paper machine, and it consists of two tapered bars and two oppositely arranged wedges placed between the tapered bars, and operated by a spindle having cut upon it a right and left hand screw thread for moving the wedges simultaneously in opposite directions, so as to spread the tapered bars upon which the jacket is placed. The felt jacket to be stretched is drawn over the bars when the instrument is contracted. The bars are spread by drawing between them the wedges by turning the threaded spindle. The bars, the outer edges of which are parallel, stretch the jacket evenly and uniformly throughout its length.

IMPROVED SAW FEEDER.

James G. Cofman, Pierpont, Mich.—This invention relates to devices which are designed to hold a hand saw down to its work during the operation of cross-cutting logs. The nature of the invention consists in combining, with a spike, an adjustable spring roller and one or more dogs, so arranged that, when the spike is driven into the ground alongside of a log, and the latter firmly secured thereto, one man can conveniently manage a hand saw in the operation of crosscutting. This roller is arranged a little to one side of the spike, and presses upon the bowed back of the saw, holding it down to its work and guiding it. The sawyer regulates the pressure of the roller on the saw by means of a crank and its attachments, which are just in front of him while at work. The spike is driven into the ground alongside of a log, the latter is firmly secured to the spike. The saw is then started into the log, and the roller adjusted down upon it, and kept down with the required pressure during the entire operation.

IMPROVED DOG FOR SHEET-METAL ROLLING MILLS.

Edward C. Hegeler and Frederick W. Matthiessen, La Salle, Ill.—This invention relates to the dogs (so called) that are placed at the rear side of the rolls used in the manufacture of sheet metal, and it consists in a jointed dog, provided with friction rollers, and with a tail piece or lever that sustains the weight of the dog, and also any pressure that may be exerted upon it by the sheets of metal passing through the rolls. A nose piece is jointed to the front end of the casting and rests upon the roll. The sheet metal, as it passes from the rolls, is received by a nose piece, and directed so that it will pass over the roll to the table of the rolling mill. The weight of the casting and friction rolls, and the pressure of the sheets, are sustained by the tail piece, and only a part of the weight of the nose piece rests upon the roll.

IMPROVED MACHINE FOR WELDING TUBES.

John French, South St. Louis, Mo., assignor to himself and James W. Hill, of same place.—The flue or tube to be welded is placed upon a mandrel which rests in semicircular notches in the ends of the arms of the holder, which is secured to the base, and the notch in its inner arm is made the same size as the cavity of the die, and is beveled so that, when the end of the tube or flue is placed upon the forward end of the mandrel and is slipped back, it can readily pass through the said notch. The forward end of the mandrel is tapered so that the flue or tube can be slipped upon it without its being necessary to take hold of the said mandrel. Upon the mandrel is formed, or to it is attached, a collar which is placed between the arms of the holder to prevent the mandrel from getting out of place.

NEW AGRICULTURAL INVENTIONS.

IMPROVED SULKY PLOW.

Roberson A. Renfro, Rockwall, Tex.—The object of this invention is to furnish an improved sulky plow, which shall be simple in construction and convenient in use, and which shall be so constructed that it may be adjusted to run level when used as a breaking plow, with one wheel in the furrow, and when used as a cultivator with both wheels upon the surface of the ground. The axle at the inner end of each journal is bent twice at right angles, the right-hand crank thus formed having a drop of six inches, and the left-hand crank having a drop of four inches. The right-hand wheel is made four inches more in diameter than the left-hand wheel, so that the frame of the sulky may be level when the right hand wheel is running in a furrow four inches deep. When the machine is to be used as a cultivator the wheels are exchanged, and the frame will then be level, with both wheels running upon the surface of the ground. The plow beams may be provided with breaking plows or with cultivating plows, according to the kind of plowing required to be done, and one or more plow beams may be used, as may be desired.

IMPROVED CALF MUZZLE.

Henry W. Fuller, Seneca, Kan.—This invention has reference to an improved anti-sucking bit and muzzle for calves, which may be attached without straps, so as to form an effective weaner; and the invention consists of a spiked and jointed noise piece, attached to a sidewire that is extended in bow shape over the head, and connected by an anti-sucking bit of spiral wire. The ends of the sections that enter into the nostrils are made of ball shape, and press lightly, without hurting the calf, on the nose by the flexible joint of the sections. The nose piece is provided with spikes, attached to the sections, that extend at right angles from the nose piece in forward direction. The bottom spikes act as guards to prevent the teat from coming into the mouth, while the front spikes are pricking the cow, so that she does not allow the calf to take hold of the teat.

IMPROVED ROTARY CHURN.

Jacob Wolf, Henderson, Minn.—This invention relates to rotary barrel churns, and the nature of the invention consists in a novel mode of applying the dashers inside of the churn barrel, whereby they can be easily removed for cleaning. There are three sets of dashers inside of the barrel, arranged equidistant apart. Each set of dashers consists of a bar, having broad tapered blades fixed into it. The bars are notched at their ends to receive shouldered cleats, and by means of turn buttons, pivoted to one of the blades, the bars are rigidly held in their places. Holes are made through the end and side of the barrel, and provided with plugs for drawing off fluids.

IMPROVED TOBACCO HARVESTER.

Horace Janes, Knobnoster, Mo.—The object of this invention is to provide an instrument for splitting and cutting tobacco stalks at one operation. The manner of using the instrument is as follows: The handle and the short arm of the lever are grasped by the hand, and the knife is forced downward through the stalk, splitting it as far as may be desired. The edge of the chisel stands in the same direction as the knife, and does not interfere with the leaf. After the stalk is split the knife is withdrawn by closing the short end of the lever and the handle together, which operation also turns the chisel a quarter of a revolution, bringing it into position to cut off the stalk. By an endwise movement of the chisel the stalk is easily severed.

IMPROVED HARVESTER RAKE.

George H. Goetze, Lake Creek, Mo.—The object of this invention is to furnish an improved machine which shall be so constructed that it may be readily adjusted for use as a reaper or mower, as required, and which shall be provided with an adjustable rake for sweeping the cut grain from the platform. The two rakes may be adjusted wider apart or closer together, according to the length of the grain, by adjusting bearing blocks upon the rake shaft. The rake shaft is secured adjustably in place in its bearings by one of bearing blocks, and by a collar secured to the shaft by a set screw. When the machine is to be used as a mower, the reaper rakes and their attachments and the platform are detached, and the cutter bar is shortened to reduce it to the proper length. The center bar is made in two parts, the adjacent ends of which are halved or bolted or otherwise secured to each other, so that it can be readily extended to adjust it for cutting grain, and shortened to adjust it for cutting grass.

IMPROVED ROTARY HARROW.

Cornelius Watson, Yanceyville, N. C., assignor to himself and James G. Gunn, of same place.—The object of this invention is to furnish an improved rotary harrow, which shall be simple in construction, strong and durable, effective in operation, and inexpensive in manufacture, being so constructed that it need not cost any more than an ordinary harrow. To the lower side of the beam is secured a plate, to the center of which is attached an axle which has a collar formed upon it at the lower side of the plate to prevent the upper end of the hub from rubbing against the plate. The axle passes down through a box inserted in the hub to prevent wear, and the hub is secured in place upon it by a washer and pin. To the hub are attached radial arms, the outer parts of which are held in position by a rim. The forward ends of the handles are inserted in a keeper attached to the beam, and are further secured in place by pins, which pass through them and into the beam, and which are covered by the keeper. By withdrawing the pin and detaching the keeper the handles and their standard may be detached when desired.

IMPROVED ADJUSTABLE WHEEL CULTIVATOR.

David Archer, Jr., Brier Hill, N. Y.—The object of this invention is to furnish an improved cultivator which shall be so constructed that it may be readily adjusted to work at any desired depth in the ground, which may be raised above the ground for convenience in passing from place to place, and which shall be simple in construction, convenient in use, and effective in operation. The frame of the cultivator is of a V form, the draft being applied at the apex. The frame is supported at front and rear on castor wheels, the supporting sides of which are so arranged that by raising a

depressing lever attached to the frame work the body of the cultivator containing the teeth is depressed or raised as it is desired to have the teeth work deeper or lighter in the ground. The retention of the frame containing the teeth at the proper elevation is easily effected by inserting bolts or pins in upright bars having corresponding holes, against which the levers have a bearing.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED DUMPING WAGON.

Thomas C. Duncanson, Jeffersonville, O.—The object of this invention is to furnish wagons which shall be so constructed that the box may be tilted to dump the load by the movement of the team, and which shall be simple in construction and convenient in use. When the load is to be dumped the wagon is brought to the desired place, a lever is operated to withdraw the bar from the king bolt, the brake is applied to the rear wheels, and the team is backed. This causes the forward part of the wagon gearing to move back towards its rear part, the box moving back upon rollers. As the center of gravity of the box passes the bolster the ox bolts, and the load is dumped. A hook prevents the box from sliding off the bolster. The box may then be tipped back, the team started forward, and the lever operated to lock the king bolt in place when it reaches the forward end of the slot in the reach. The end board is then secured in place, and the wagon is ready to receive another load.

IMPROVED HOOD FOR FIREPLACE.

Herbert Clayton, Lexington, Ky.—The object of this invention is to furnish an improved device for attachment to fireplaces to prevent smoke, heat, and ashes from rising up about the mantelpiece, and at the same time to reflect the heat downward and outward into the room. The fireplace is provided with a hood and reflector, which may be made of any sheet metal that will take a polish and reflect heat. The hood is arched, and its rear edge is concave to give the reflector an upward inclination. The surface of the reflector may be either plain or corrugated, and is so arranged as to reflect the heat below the eye while throwing it out into the room. It is so formed and arranged as not to be in the way of those performing any operation about the fire.

IMPROVED TIRE TIGHTENER.

Stephen Stout, Tremont, Ill.—This invention relates to a simple and readily operated device for expanding the felly and securing them tightly to the tire, and it consists of a standard or arm resting on the hub, and carrying, in slots and crosspin, a tube with top support bearing against the felly. The tube is spirally notched at its lower end, and turned by a wrench on the pin, expanding the felly, and admitting the springing in of the split leather rings around the tenons of the spokes. On to the tube is shrunk or otherwise attached a fixed nut, by means of which the tube may be turned by a wrench, so that its lower spirally notched end, which is seated on the crosspin, is raised thereon, and forces its upper support against the felly, expanding the same and pressing it tightly against the tire, so as to admit the springing on of split leather rings to the tenon of the spoke, and thus secure the tight fitting of the tire.

IMPROVED WAGON BOX CORNER.

William B. Botsford, Mill Port, N. Y.—The object of this invention is to furnish an improved metal corner for wagon, buggy, and sleigh bodies or boxes, and seats for trunks, chests, furniture, etc., which shall be simple in construction, strong, durable, inexpensive in manufacture, neat in appearance, and easily applied. The base or sill of the box is made hollow to receive the ends of the side and end sills of the box. Upon the upper side of the base or sill is formed a rib or lugs, to the opposite sides of which are secured by rivets, screws, or bolts, the ends of the side and end boards of the box. The space between the two plates is filled with wood, cut or bent into the required form.

NEW MISCELLANEOUS INVENTIONS.

IMPROVED REFRIGERATOR.

Edward Clark, New York City.—The object of this invention is to improve the construction of refrigerators, ice boxes, ice houses, and other receptacles for ice, or for things to be kept cool so as to make them more convenient in use and more effective in operation, while at the same time being less expensive in manufacture. The ice chamber is placed in the middle part of the box and provided with the openings in the lower, middle, and upper parts of its sides, and with the doors at its top and at the lower part of its front. The case has an open bottom, and the refrigerator box is provided with a door in its top with a detachable milk vessel. It is lined with a non-conducting lining consisting of charcoal, hydraulic cement, sawdust, plaster of Paris, sand and water, mixed in about the proportions specified.

IMPROVED STOP-COCK.

Samuel M. Denniston and Charles Simmons, Prescott, Arizona Ter.—This invention consists in the combination with a stop-cock of a split-threaded tube having a T-shaped head, which may be inserted in a hole in a can, and upon which the stop-cock may be screwed. The object of this invention is to provide a device by means of which stop-cocks may be readily attached to metallic cans. The tube is split longitudinally, so as to divide the T-shaped head transversely through its center. The head is placed inside the can by putting the two parts of it together parallel with each other, with the halves of the tube extending in a straight line in opposite directions, and inserting the parts of the head into the aperture in the can and bringing the parts of the tube together. A packing ring is placed on the tube, and a stop-cock, which is threaded internally and fitted to the tube, is screwed down firmly upon the packing, thus clamping the side of the can between the head and packing ring.

IMPROVED TONGUE CLEANER.

Lazarus Morgenthau, New York City.—The object of this invention is to furnish for the use of sick and healthy people an improved tongue-cleaning device, by which the layer or film settling on the tongue may be removed in perfect and easy manner. It consists a central scraper with concave knife edge, bush, and handles at both sides of the scraper, the sponge brush following the scraper over the tongue, and leaving the same perfectly dry and clean, as the sponge or other material absorbs the moisture and smaller particles not removed by the scraper. The sponge brush is attached to the rear edge of the scraper portion by being stitched to holes of the same, the flat sponge extending then forward to the edge of the scraper. The cleaner admits the quick and effective scraping of the tongue, so as to keep the same in clean and healthy condition, which is conducive to the preservation of the teeth when used by healthy persons, and of especial advantage for sick persons, for hospital and other uses.

IMPROVED PULLEY BLOCK.

Anton Bischoff, New York City, assignor to himself and Frederick Burger, of same place.—The invention is intended to furnish an improved pulley block for clothes lines, by which the annoying wedging in of the lines between pulley and cheek of block is fully avoided and a reliably working pulley block obtained; and the invention consists of a pulley block having cheeks with interior circular recesses fitting over the rim or flanges of the pulleys. The pulley revolves on a fixed shaft and projects, by its flanges or rims, into circular recesses at the inner side of the cheeks, which recesses extend in such a manner around the pulley that any possibility of wedging in the clothes line between block and pulley is entirely avoided.

IMPROVED OILING JOURNAL OF LOOSE PULLEYS.

Charles H. Weigle, York, Pa.—The object of this invention is to furnish a device for oiling the journals of loose pulleys while running. The invention consists in the combination of the receiver, provided with the discharge pipe and the screw cap, the piston, piston rod, and spring, the valve, fan, and spring, and the sleeve, having a right hand screw thread upon its inner surface, with each other, to adapt the device to be applied to the hub of a loose pulley. With this construction, when the pulley is revolved rapidly, the pressure of the air forces the fan back, opens the valve, and allows the oil to be forced out by the piston and spring. When the pulley ceases to revolve, the spring brings the fan to its former position, closes the valve, and prevents any more oil from being forced out.

IMPROVED BOTTLE STOPPER.

Carl E. G. Winter, Port Jervis, N. Y., assignor to himself and John G. Prutzner, of same place.—The object of this invention is to provide a bottle stopper that may be easily applied to ordinary bottles, and that operates quickly and easily in stopping and unstopping the bottle. A lever is so contrived that when the stopper is placed in the mouth of the bottle, and the lever is brought over in fastening the stopper, it carries the yoke wire past the pivot of the lever, thereby locking the stopper, and holding the arm of the lever in contact with the side of the stopper. To release the stopper, it is only necessary to raise the longer arm of the lever until the yoke wire passes the center of the pivot of the lever, when the stopper is thrown out by pressure from within bottle.

IMPROVED FOUNTAIN PEN.

Charles A. Atkinson, New York City.—The object of this invention is to furnish a writing instrument that shall possess all the features of a good fountain pen, and yet shall contain no fluid ink, which may be carried about the person without any danger of ink leaking out and staining the clothes, which may be readily replenished with a solid coloring substance, yielding a desirable ink when brought into contact with water. The instrument may be used in two ways: First, by dipping it in water to the base of the tongue, when it yields a perfect fluid ink. When through using it, it dries in a moment, and may be immediately placed in the pocket. The second way is to use the water reservoir, which is filled until the water trickles out through the valve a drop at a time, and that very slowly. The lower end of the reservoir is then inserted in the holder and the instrument is ready for use.

IMPROVED FIRE ESCAPE AND SPRING BED BOTTOM.

Joseph Kellner, Jersey City, N. J.—This invention consists in the combination of a number of spring sections and bars with two ropes, the sections forming a bed bottom when placed in a bedstead adapted to receive them, and in case of fire form an escape that may be instantly adjusted for use. These bars are arranged longitudinally in the bedstead, and the ropes that pass through the sections lie outside the said bars. When it is desired to use the fire escape, the frame containing the sections is removed and the end that is attached to the hook is removed and carried to the window and thrown out. The sections come out of the bedstead readily; and when the whole is out of the window, descent may be readily made, as it forms a strong and complete ladder.

IMPROVED TOBACCO PACKAGE.

Auguste Villaret, New York City.—This invention is intended for the purpose of packing chewing tobacco in such a manner that a single chew may be taken at any moment, in the most convenient manner, without interfering with or exposing in the least the remaining portions, which are fully protected, and the invention consists of placing a quantity of tobacco sufficient for a chew into a wrapper or shell of paper and tinfoil, or other material, of cylindrical or other shape, and connecting a number of such small packages by telescoping one within the other, and closing the end of top package. The wrapper is made of paper or tinfoil, or both, and of cylindrical or other shape, and is of such a size as to store a small quantity of chewing tobacco sufficient for one chew, both the wrapper and tobacco being pressed into the required shape by suitable machinery. The wrappers are closed at one end and left open at the other end to be inserted or telescoped one within the other. When required for use, the lowermost package or chew is first taken off, then the next, and so on, the remaining ones being always connected and closed, so as to be carried in the pocket without getting injured or soiled. The shell or wrapper is then readily removed from the chew, and the same thus obtained for use in a more convenient manner, preserving the remaining chews in a moist and fresh state, without the annoying drying out, as in the present packages.

IMPROVED VELOCIPEDE.

James Higgins and Patrick Traynor, Westfield, N. J.—The object of this invention is to furnish an improved velocipede, which shall be simple in construction, inexpensive in manufacture, and easily propelled and guided. To the axle are attached ratchet wheels the teeth of which engage pawls attached to the wheels and held against the ratchet wheels by springs. This construction causes the axle to carry the wheels with them in their revolution. To the center of the axle is attached a gear wheel, the teeth of which mesh into the teeth of a gear wheel pivoted to the frame, and its teeth mesh into the teeth of a gear wheel pivoted to the upper end of a slotted arm or standard attached to or formed upon the forward part of the frame. To the ends of the journals of this gear wheel are attached cranks for the rider to take hold of to propel the machine.

IMPROVED PERCUSSION FUSE FOR PROJECTILES.

Max Zeroni, Witten, Germany.—This invention consists of a bolt casing with suitable retaining base plate and priming device, in connection with a sliding needle bolt that is retained during the flight of the projectile by base pins, and forced into the priming the instant resistance is offered to the projectile. A frangible lead pin secures the needle bolt to the casing, together with a detachable safety wire that retains the needle bolt in position and prevents any danger of premature explosion until it is withdrawn. The fuse is set into each prepared projectile, and the safety wire passed through the bolt casing and needle bolt, and bent over at one end, so that the safety wire cannot drop out. The safety wire supports the frangible lead pin, and affords full security during transportation. Before setting the projectile into the gun the wire is simply drawn out, and thereby the projectile is made ready for use.

IMPROVED NUT LOCK.

Silas S. Crocker and Albert Wilcox, Clarence, Iowa.—The object of this invention is to furnish an improved lock or fastening for the nuts of bolts upon railroad machinery and other machinery subject to a constant or intermittent jarring, to prevent the said nuts from working loose, and which shall be simple in construction, easily and quickly applied and removed, and reliable in use. The invention consists in the lock, made of spring brass wire, having its outer part bent to form a spiral spring, in combination with the grooves formed in the bolt and nut across their threads, as hereinafter fully described. With this construction, when the nut is screwed up and one of the grooves brought opposite the groove of the bolt, the straight part of the lock or fastener is inserted in the hole formed by the said grooves, and the spiral spring of said lock is sprung into the thread of the said bolt.

IMPROVED MORTISING CHISEL.

Jasper S. Russell, Indiana, Pa., assignor to himself and James Feath, of same place.—This invention refers to an improved mortising chisel that moves the chips as fast as they are cut, and it consists of a mortising chisel having a spring piece attached to the tongue on the beveled shank piece of the chisel, said spring being extended forward to the cutting point of the chisel, and being pointed at the end and serrated at the under side,

where it forms contact with the fluted and serrated chisel. The serrations of the spring and chisel catch and hold the chips so as to pass them back between chisel and spring by the successive strokes, until they come in contact with the beveled deflecting shank piece, which throws the chips sidewise out of the chisel.

IMPROVED SPIRAL SPRING.

James Ludlum, Pompton, N. J.—This invention consists in the peculiar form of bar used in making the spring, whereby the line of greatest resistance may be brought into any required relation to the axis of the spiral; the object being to so dispose the metal of which the spring is made as to utilize it to the fullest extent, and also to economize space. This bar, from which the spring is made, differs from a round bar in having its inner surface flattened, and having the projecting rounded corners at opposite sides of the flattened portion, and in extending the side which is opposite the flattened side. The idea of the plan on which the bar is made is to bring the vertical diametrical line of a round bar nearer the axis of the spiral. To accomplish this the natural method would be to make one side of the bar flat, and add to the diameter of the bar to compensate for the deficiency in material due to flattening the side. This plan partly accomplishes the object; but it is more effectively accomplished by rendering it almond-shaped. The transverse section of the bar has the general form of a triangle having two similar curved sides and a right base, and having all of the corners rounded.

IMPROVED FILTER PRESS.

John Bowling, Cornhill, London, Eng.—This improved filtering apparatus is constructed in the following manner: A compound filtering chamber is made, or a series of chambers, by connecting a series of rings made of wood or other suitable material, which are bound together with iron hoops. The rings thus made are mounted on rollers which run on two suspended rails, so as to admit of their being easily moved, and when in contact the rings form a horizontal cylinder. The dimensions of these rings are determined by the amount and by the physical character of the matter to be operated upon in the filter. Between each two rings is suspended or otherwise placed a plate or disk of sheet metal, not less in diameter than the outer diameter of the rings. Each disk has one or more large holes cut in it, so that any dense fluid matter can flow readily from one side of the disk to the other, or from one of the series of chambers to the other. The disks are partly covered on both sides with canvas, cloth, linen, sacking, calico, felt, matting, or such like material, the holes being left uncovered. This form of filterpress is specially adapted to the treatment of very large masses of matter having very low comparative value, such as waters, sewage, cement, slurry, potter's clay, china clay, whitening, yeast, and the like. In the treatment of less bulks, or of delicate and costly bodies, such as chemicals, colors, wines, beers, sugars, and the like, the apparatus may be made of glass, porcelain, or other suitable material, and mounted in any other convenient manner.

IMPROVED HOSE COUPLING.

William H. Burden and Benjamin J. Pleasance, Cleveland, O.—Each portion of the coupling is provided with a sliding three-wing valve, of which the one in the male part is to be forced open and held in this position by the valve stem of the female portion, admitting the passage of steam or water when the parts are uncoupled. By uncoupling the parts the pressure of the water would close the parts automatically. The valves stand in opposite directions to each other, and slide against cross pins that retain the valves in one direction, the conical seats retaining them when closed, they closing when the parts are uncoupled by their own weight or pressure without allowing waste of water or steam, and providing thus a very useful automatic valve action in connection with the coupling.

IMPROVED SLED.

Charles D. Hinman, Moses Ladd, and William W. Ladd, St. Johnsbury, Vt.—This invention has reference to an improved sled for coasting purposes, the same being provided with a simple and effective brake device. The front part of the brake lever swings in a central longitudinal slot of the seat, and terminates with a button, to which the cord for pulling the sled may be attached, and which increases the weight of the front part of the brake lever, so that it overbalances the rear part, and rests on the front cross brace when not in use. When the brake is used the front part is raised, so that the rear end forms contact with the ground, the brake action being the stronger the more the lever is forced back. Thus a strong and neat sled for coasting purposes is provided, which is fully within control of the rider by the brake arrangement.

IMPROVED KETTLE COVER.

Agide J. Beaudette and Louise L. Beaudette, Fond du Lac, Wis.—This invention consists of a kettle cover, one half of which is perforated with holes of suitable size, and which is provided with a cover that is capable of turning on a central pin, so as to cover the perforations, or leave them exposed, the object being to provide a cover that will permit of turning water off from articles in the kettle without danger of losing the articles or burning the hands. The advantages claimed for this cover are that it will retain articles in the kettle while the water can be readily poured off. It also prevents the escape of the main volume of steam, thus preventing the burning of the hands. It can be used to advantage when meats are cooked, as it permits the escape of steam, but prevents the spattering of grease.

IMPROVED WAGON JACK.

Amiel Bratschi, Portersville, Pa.—The object of this invention is to furnish a wagon jack that is adapted to raise wagon axles and other objects to any height, and rigidly support the same for oiling and other purposes. The invention consists of a rigid vertical guide post, secured to a suitable base, and of a sliding post, with central groove and cross pins, raised by a hand lever with hook-shaped end. The hand lever is fulcrumed to a swinging rod, and made to engage one of the cross pins of the sliding post and lock the latter, in connection with the swinging brace rod, into raised position. By raising the hand lever the sliding post is lowered, and the hook of the hand lever disengaged from the pin. The locking of the sliding post to any required height by the joint action of the hand lever and pivot rod forms the essential feature of this jack, and furnishes a simple and effective implement for the raising of axles and similar purposes.

IMPROVED TORPEDO FOR OIL WELLS.

Arannah M. Smith, Edenburg (Knox P. O.), Pa.—The object of this invention is to improve the torpedoes or cartridges used for scattering the rock in artesian wells, for the purpose of increasing the production of oil or other mineral substances, they being so constructed that they may be handled without danger of explosion until they are at the proper point; and the invention consists of a shell, with a bail made of two parts, one part being stationary, the other working upon side pivots, to swing down for inserting or removing the hammer, with the percussion caps, without interfering with the charge of nitro-glycerin. In case the explosion does not take place for some reason or other, the torpedo has to be raised for examination. By using this torpedo it is not necessary to take the same out of the well and empty the nitro-glycerin out of the shell, which is an extremely hazardous performance; but it is stopped and made fast in the same position as when it was being filled, the swinging part of the bail is opened, the hammer removed from the shell, the caps examined or replaced with new ones, when the hammer is ready to be replaced, the bail closed, and the torpedo lowered again, to be exploded, when arriving at the bottom, by the sudden dropping of the hammer.