

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.