passing through said steam-chamber, substantially as described. 12th. The combination, with the draw-bars F attached to the engine-truck, and side bars of the traction propelling attachment, of clips I applied to the opposing ends of said bars, and hinges, such as set forth, connecting the bars of the traction propelling attachment with the draw-bars. 13th. The combination, with the engine-truck, of the springs having sliding connections therewith, and a bar, for the purpose set forth, secured to the springs, substantially as described.

No. 32,423. Pipe Wrench. (*Clé à tuyaux.*)

Beverly Reagan, Ouachita, La., U.S., 2nd October, 1889; 5 years.

Claim.—1st. In pipe-tongs, the combination, with a fixed jaw formed with a handle, and a serrated or toothed shank, of a block through which said shank passes, a pawl carried by the block and arranged to engage the serrated shank, a handle pivotally connected to the block, and a movable jaw also pivotally connected to the block, and provided with a projection located so that it will be borne upon by the pivotally-mounted handle, substantially as described. 2nd. In pipe-tongs, the combination, with a jaw 10 having a shank 12, and a handle 11, the shank being formed with teeth 13 of a block 14, a pawl 15 pivotally mounted within the block and provided with teeth adapted to engage the teeth 13, a handle 16 also pivotally mounted within the block and formed with bearing-faces 4 and 5, which operate in connection with the pawl, a jaw 17 studded or pivotally connected to the outer face of the block 14, an arm 23 extending from said jaw, and a projection 22 carried by the arm, said projection being arranged so that it will be borne upon by the handle 16, substantially as described. 3rd. In pipe-tongs, the combination, with a jaw 10 formed with a handle 11, and a shank 12, which shank is provided with teeth 13, of a block mounted upon the shank 12, a pawl 15 pivotally mounted within the block and formed with a recess 3, and teeth 2, a handle 16 also pivotally mounted within the block, said handle being formed with bearing-faces 4 and 5 which operate upon the pawl 15, a jaw 17, a serrated faced block 18 pivotally connected to the jaw, and an arm 23 formed upon the jaw, and provided with a projection 22 which extends inward to be borne upon by the handle 16, substantially as described.

No. 32,424. Means for Propelling Vessels.

(*Moyens de propulser les vaisseaux.*)

Clifton Vose, Brooklyn, N.Y., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The combination, with the hull or shell of a vessel, of a water-tight compartment or chamber, secured to the bottom of the same, wherein the cranks of the propeller shaft are located, substantially as specified. 2nd. In combination, with the hull or shell of the vessel, and the compartment or chamber secured thereto, of the longitudinal propeller shaft journalled in bearings at each end of the compartment or chamber, substantially as specified. 3rd. The combination, with the propeller shaft in sections, as described, of the hangers having divided bearings or boxes for the reception of said shaft, substantially as and for the purposes specified. 4th. The combination, with the propeller shaft, of the propeller blades constructed in two parts, with semi-circular hubs adapted to embrace and be bolted to the shaft, substantially as and for the purposes specified. 5th. The combination, with the vessel having an ordinary rudder, of the supplementary rudder, whereby the forward movement of the vessel may be retarded or the turning of the vessel accelerated, substantially as specified. 6th. The combination, with the vessel having a water-tight compartment below and the propeller shaft thereof constructed of sections of successively decreasing diameters, of the worm or screw-threaded propeller on said shaft extending to the front or rear of said compartment, substantially as specified.

No. 32,425. Steam Injector. (*Injecteur de vapeur.*)

The Hayden & Derby Manufacturing Company, (assignee of John Desmond), Brooklyn, N.Y., U.S., 2nd October, 1889; 5 years.

Claim.—1st. The herein-described improved steam-injector, having a continuous communication between the mouth of the combining tube and the overflow chamber, substantially as set forth. 2nd. A steam-injector having an overflow chamber, and the lifting and combining tubes opening thereinto, and having a continuous passageway or communication therewith, as set forth. 3rd. As an improvement in steam-injectors, the sliding valve having grooves or recesses, as set forth. 4th. As an improvement in steam-injectors, having an overflow chamber, and the lifting and combining tubes opening thereinto, the sliding valve located at said opening of the tubes, and having holes or ports forming a continuous passageway, substantially as set forth. 5th. As an improvement in steam-injectors, having the overflow chamber, the combining tube having holes or ports at or near its rear end, and the sliding valve located on said combining tube for closing said holes or ports in the starting of the injector, and having grooves or recesses for forming a continuous passageway between the mouth of said combining tube and the overflow chamber, substantially as set forth. 6th. The herein-described improvement in steam-injectors, comprising the lifting and combining tubes, and the valve sliding on said combining tube, and having its normal position against said lifting tube, as set forth. 7th. As an improvement in steam-injectors, having a water inlet arm, the water inlet valve located in said arm, and having two heads or disks fitted on disimilar screws, and the spindle carrying a finger or pointer, substantially as set forth, said heads or disks being movable in opposite directions, as stated. 8th. As an improvement in steam-injectors, the water inlet valves having the two heads or disks, and the spindle provided with right and left hand screw-threads upon which said heads or disks are disposed, substantially as set forth. 9th. As an improvement in steam-injectors, the water inlet valve having the two heads or disks, the spindle provided with opposite screw-threads, the plug through which said spindle is passed, and the guide rod projecting from said plug through said heads or disks, substantially as set forth. 10th. In a steam-injector, the combination, with the water inlet arm, of the valve having oppositely movable heads or disks, the plug, the graduated scale, and the spindle having a finger or pointer, substantially as set forth. 11th. In a steam injector, the combination, with the water inlet arm having the opposite circular extension of the plug having a flange provided with a scale, the heads or disks, the spindle having right and left hand screw-threads, the guide rod projecting from said plug, and the finger or pointer, substantially as set forth.

No. 32,426. Lock or Fastening for Doors.

(*Serrure ou fermeture de portes.*)

Edward Wright, Southend, Eng., 2nd October, 1889; 5 years.

Claim.—1st. A door fastening having a bolt with a double incline, substantially such as hereinbefore described, moving in a plane at right angles to the plane of the door when closed, and suitably mounted for fitting on a door frame, so as to engage with a suitable catch on the door, and operating substantially as hereinbefore described, to secure the door, but at the same time to permit the door to be opened or closed by a simple push or pull. 2nd. A lock adapted to be secured to a door-frame having a pivoted or articulated bolt, engaging with a suitable catch, adapted to be mounted on the door, arranged and operating substantially as hereinbefore described. 3rd. A door fastening having a bolt with a double incline, substantially such as hereinbefore described, moving in a plane at right angles to the plane of the door when closed, and suitably mounted for fitting on a door frame, so as to engage with a suitable catch on the door, and operating, substantially as hereinbefore described, to secure the door, but, at the same time, to permit the door to be opened or closed by a simple push or pull, in combination with a locking bolt or bolts to secure the lock bolt, whether such locking bolt or bolts be operated by hand or by a key, and whether the locking bolt be adapted to the door or to the door-frame portion of the apparatus or to both. 4th. A lock adapted to be secured to a door-frame, having a pivoted or articulated bolt engaging with a suitable catch, adapted to be mounted on the door, in combination with a locking bolt or bolts to secure the lock bolt, whether such locking bolt or bolts be operated by hand or by a key, and whether the locking bolt be adapted to the door or to the door-frame portion of the apparatus or to both. 5th. In a lock adapted to be applied to a door-frame or casing, the combination of a pivoted or articulated lock bolt adapted to engage with a catch fixed to a door, and a supplementary bolt or stop adapted to lock the pivoted lock bolt, when operated for that purpose whether by a key or otherwise. 6th. In a lock adapted to be applied to a door-fame or casing, the combination of a pivoted or articulated lock bolt, adapted to engage (when the door is closed) with a catch fixed to the door, a bolt or stop by which the lock bolt can be locked, and a handle arranged to serve both to operate the bolt or stop and to move the door itself, substantially as described. 7th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door and having a cam-shaped edge 5, substantially as herein described for the purpose specified. 8th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door, and having a cam-shaped edge 5 and a locking bolt 7 arranged to move in said lock case and engage with said bolt 1, substantially as herein described for the purpose set forth. 9th. The combination of a lock case 3 adapted to be applied to a door-frame, a lock bolt 1 pivoted or articulated in said case and formed with double inclined edges, and a catch 4 adapted to be mounted on a door and having a cam-shaped edge 5, and a locking bolt 9 carried by the door to which said catch is applied.

No. 32,427. Air Brake Signal.

(*Signal de frein atmosphérique.*)

Allen B. Collins, Burlington, Iowa, U.S., 2nd October, 1889; 5 years.

Claim.—1st In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, cocks for closing such pipe, and whistles located above the roof of the car connected to the cocks by means of tubes, and adapted to be blown whenever the cocks are turned to close the main air pipe, substantially as described. 2nd. In an air brake signal, the combination of the signal pipe and main train pipe extending lengthwise of the train beneath the cars, cocks for closing such pipes, tubes running from the cocks in the main air pipe through the car roof, and connected with the cocks in the signal pipe, whistles located at the upper end of such tubes, and adapted to be blown when the cocks are turned to close the pipes, or either of them, substantially as described. 3rd. In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, cocks for closing the same, a branch pipe leading from one of said cocks up into the tender, and provided with a whistle at its upper end, and adapted to be blown when the cock is closed, substantially as described. 4th. In an air brake signal, the combination of the main air pipe running lengthwise of the train beneath the cars, valves situated inside the cars and connected with the main air pipe, and whistles attached to the valves and adapted to be blown when the valves are opened, substantially as described.

No. 32,428. Inserted Saw Tooth.

(*Dent de scie mobile.*)

Frederick W. Cook, San Francisco, Cal., U.S., 2nd October, 1889; 5 years.

Claim—The inserted saw tooth herein described, consisting essentially of the holder B, oblong in shape and having a spring *b* to hold the cutting bit in place, a cutting bit C inserted in the upper forward corner of the holder, and a saw-plate with recesses to receive the bit holders, all combined as and for the purpose described.