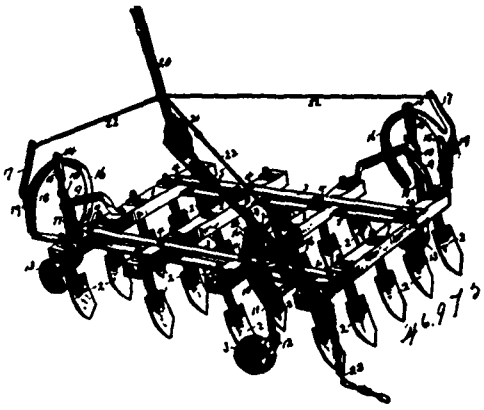
F, formed with the openings B, A, in combination with the detention link D, substantially as shown and described, and for the purpose specified. 2nd. The hub H, the ratchet-wheels *r*, R, and the frame F, formed with the notches N, M, in combination with the detention link D, substantially as shown and described, and for the purpose specified. 3rd. A lever L, formed with the sockets S, S, in combination with a gripping link G, substantially as shown and described, and for the purpose specified. 4th. The hub H, the ratchet-wheels R, R, the frame F, formed with the openings B, A, and the detention link D, in combination with a lever L, and means for engaging said lever with the ratchet-wheels R, substantially as shown and described, and for the purpose specified. 5th. The hub H, the ratchet-wheels R, R, the frame F, and the detention link D, in combination with a lever L, formed with the sockets S, S, and the gripping link G, substantially as shown and described, and for the purpose specified. 6th. A hub H, formed with an opening O, and the projections T, T, the ratchet-wheels R, R, the frame F, formed with the openings B, A, and the detention link D, in combination with a lever L, formed with the sockets S, S, and the gripping link G, substantially as shown and described, and for the purpose specified.

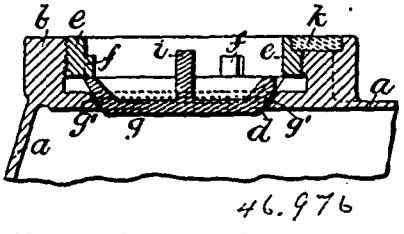
No. 46,975. Cultivator. (*Cultivateur.*)



Joseph L. Staley, and Lee Radcliff, both of Donvers, Illinois, U.S.A., 6th September, 1894; 6 years.

Claim.—1st. In a cultivator, the combination with shovel bars and transverse strips pivotally connected thereto, and an extensible diagonal adjusting part, of a lever located at the rear end of the extensible part operatively connected with mechanism adapted to raise or lower the frame to facilitate such diagonal adjustment, substantially as specified. 2nd. In a cultivator, the combination with a frame composed of shovel bars and transverse strips, of vertically adjustable-wheel shafts and independent bell-crank levers operatively connected to each of the shafts, respectively, and to an adjustable lever adapted to actuate them simultaneously, substantially as and for the purpose specified. 3rd. In a cultivator, the combination of the frame and vertically adjustable-wheel shafts, of yokes upon the wheel shafts, elevator arms passing through the yokes, bell-crank lever arms connected therewith, a pivotal support for the same, and adjustable lever and rods connecting the adjustable lever with each of the bell-crank arms, substantially as and for the purpose specified. 4th. In a cultivator, the combination with shovel bars provided with angular recesses, and transverse strips pivoted therein, of an extensible diagonal adjusting part, vertically adjustable-wheels, and an adjustable lever operatively connected with each of the wheel shafts, respectively, and adapted to actuate them simultaneously to raise or lower the frame to admit of the desired adjustment, substantially as and for the purpose specified.

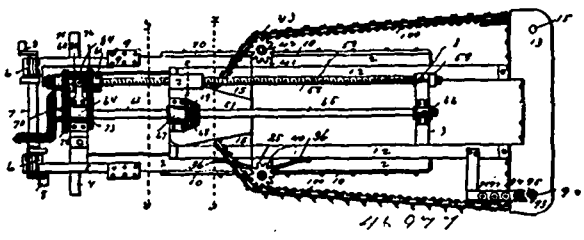
No. 46,976. Bungs, Valves, Stoppers and Their Seatings. (*Bonde, soupape, bouchon, etc.*)



Thomas Critchley Barraclough and Thomas Tannett Heaton, both of London, England, 6th September, 1894; 6 years.

Claim.—1st. For closing or opening a bung hole or other aperture, a fixed internally threaded bush, and a fixed valve seat, in combination with a valve fitting and engaging said seat, and a hollow screw-threaded nut fitting and engaging the screw threads of said bush, said nut having projections which, when in one position relatively to said valve give passage to the valve, and when in another position relatively to said valve engage with and hold said valve on said seat, whereby the valve can be passed through said nut to the valve seat, and can be engaged and held down upon the seat by said nut when a partial turn is given to the latter in one direction, and when the nut is given a partial turn in the reverse direction the valve is released and can be withdrawn through the said hollow nut, all substantially as set forth. 2nd. In a stopper, a screw-threaded bush and a valve seat fixed relatively thereto, in combination with the hollow screw-threaded nut *c*, engaging said bush, and having projections *f*, *f*, and the valve *g*, having corresponding gaps *h*, *h*, said valve movable through said nut when in one position and engaged thereby when in another position, and when so engaged held by said nut against said seat, substantially as set forth. 3rd. In a stopper, a screw-threaded bush, and a valve seat fixed relatively thereto, in combination with the hollow screw-threaded nut *c*, engaging said bush and having projections *f*, *f*, and the valve *g*, having corresponding gaps *h*, *h*, and a narrow circumferential band g^1, said valve movable through said nut when in one position and engaged thereby when in another position, and when so held by said nut against said seat, substantially as set forth. 3rd. In a stopper, a screw-threaded bush and a valve seat fixed relatively thereto in combination with the hollow screw-threaded nut *c*, engaging said bush and having projections *f f* and the valve *g*, having corresponding gaps *h h* and a narrow circumferential band g^1, said valve movable through said nut when in one position and engaged thereby when in another position and when so held by said nut against said seat, substantially as set forth. 4th. In a stopper, a screw-threaded bush, and a valve seat fixed relatively thereto, in combination with the hollow screw-threaded nut *c* engaging said bush and having projections *f f*, and the valve *g* having corresponding gaps *h h*, said valve movable through said nut when in one position and engaged thereby when in another position, and when so engaged held by said nut against said seat, said valve having also the shank *i* projecting within said hollow nut, substantially as and for the purpose set forth. 5th. In a stopper, a screw-threaded bush *b* having a recess *k* at top, a valve seat, and a valve engaging said seat in combination with a screw-threaded nut entering and engaging the screw-threads of said bush holding said valve on said seat and having notches *m m* in its top edge coinciding with said recess in said bush, substantially as and for the purpose set forth. 6th. In a stopper, a screw-threaded bush *b*, having a recess *k* at top, a valve seat, and a valve engaging said seat and the undercuts *l l* in said recess, in combination with a screw-threaded nut holding said valve on said seat entering and engaging the screw-threads of said bush and having notches *m m* in its top edge coinciding with said recess and said undercuts in said bush, substantially as and for the purpose set forth.

No. 46,977. Mining Machine. (*Machine pour mines.*)



Francis Marion Lechner, and Mark E. Gallimore, both of Columbus, Ohio, U.S.A., 6th September, 1894; 6 years.

Claim—1st. In a mining machine, the combination with a stationary frame, a side cleat 10 thereon, a sliding frame mounted on said stationary frame, sprocket-wheels mounted on said sliding frame, and a chain cutter carried by said sprocket-wheels, of a bracket 25 having parallel arms 26, which terminate in a hook-shaped extension 28 as described, said extension engaging with the under side of said cleat 10, a sliding block 30, supported between said arms 26, a spring strip 36, bearing between said sliding block and the machine frame and a pin 32, supported from said sliding block upon which one of said sprocket-wheels is loosely mounted, substantially as and for the purpose specified. 2nd. In a mining machine, the combination with a stationary frame, sprocket-wheel carrying shafts 15, on the forward portion of said sliding frame, a cutter-head on the end of one of said shafts, a following bar supported in rear of said cutter-head, and rollers journalled on said bar and projecting therefrom, substantially as and for the purpose specified.

No. 46,978. Aerating Distilled Water.

(*Aération d'eau distillée.*)

James E. Thomas, and Elisha P. Grow, both of Bay City, Michigan, U.S.A., 6th September, 1894; 6 years.

Claim.—The process herein described for producing distilled and