

combination, with the case having the form of a spherical segment, of a similarly shaped piston filling said case partially, and provided with ports for the actuating fluid, and rocking abutments extending across the space between the piston and case, seated in one of said parts and entering recesses in the opposite part, substantially as set forth. 4th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston filling said case partially and provided with ports for the actuating fluid, abutments extending across the space between the piston and the case, and an induction valve seated in the piston, substantially as set forth. 5th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston filling said case, and provided with ports for the actuating fluid, abutments extending across the space, between the piston and the case, a shaft arranged in line with the axis of the case, a crank-pin connecting said shaft with the piston in the axis of the piston, and an induction valve seated in the piston and connected with said crank pin, substantially as set forth. 6th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston filling said case partially, and provided with ports for the actuating fluid, abutments extending across the space between the piston and the case, a supply chamber arranged at one end of the case, and a shaft and hollow crank arranged in said chamber, substantially as set forth. 7th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston arranged obliquely in said case, a shaft and crank connected with the convex back of the piston, and a pivot secured to the flat head of the case and supporting the piston centrally, substantially as set forth. 8th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston arranged obliquely in said case, and provided with ports for the actuating fluid, and a reversible valve seated in said piston, substantially as set forth. 9th. The combination, with the case having the form of a spherical segment, of a similarly shaped piston arranged obliquely in said case, and provided with ports for the actuating fluid, a supply valve and an automatic cut-off valve, substantially as set forth. 10th. The combination, with the case A having the form of a spherical segment, of a similarly shaped piston B arranged obliquely in said case, a chest C arranged at the convex end of the case A, a shaft D, disk D and hollow wrist pin E arranged in said chest, a valve E arranged in said piston and connecting with the hollow wrist-pin, and a hollow knuckle I secured to the case and communicating with said valve, substantially as set forth. 11th. The combination, with the case A, having the form of a spherical segment, of a similarly shaped piston B arranged obliquely in said case, and provided in its face with a spherical cavity c, and a spherical knuckle I entering the cavity c, and made adjustable in the case toward and from the piston, substantially as set forth. 12th. The combination, with the spherical case A, and a similarly shaped piston B arranged obliquely in said case, and provided with a spherical cavity c and a valve communicating therewith, of the knuckle I provided with a bore j and passages p, a chamber J formed on the case around said knuckle, and a passage J' connecting with said chamber, substantially as set forth. 13th. The combination, with the spherical case A, and the similarly shaped piston B, of movable abutments t and cylindrical packing strips h bearing against opposite sides of the abutment, substantially as set forth.

No. 29,096. Alarm Water Gauge.

(Indicateur d'eau à sonnerie.)

George Fisher and Peter Rappold, Toledo, Ohio, U.S., 7th May, 1888; 5 years.

Claim.—1st. In an alarm water gauge, a well, a float adjustably secured to a vertical rod within the well, having a flexible connection with an alarm and indicator, as and for the purpose set forth. 2nd. In an alarm water gauge, a well, a float rod therein having a float adjustably secured thereon, as and for the purpose set forth. 3rd. In an alarm water gauge, a revoluble disk connected with a float and indicator thereon, and an alarm mechanism caused to sound by the rise of the float as and for the purpose set forth. 4th. In an alarm mechanism, a well, a float rod and a hollow float secured thereon, in combination with an alarm and indicator connected with the float rod, as and for the purpose set forth.

No. 29,097. Auger Bit. (Mèche de tarière.)

Charles H. Irwin, Martinsville, Ohio, U.S., 7th May, 1888; 5 years.

Claim.—In a central stem auger bit, the central stem A provided with an extended convoluted blade B, made concave, as at c, on its upper or back surface, and having a cutter c on one side of the stem at its advance end, and a short convoluted blade B' at the advance end of the stem, terminating in another cutter c' on the opposite side of the stem, substantially as shown and described.

No. 29,098. Saw Hammering Machine.

(Machine à marteler les scies.)

William Gowen, Wausau, Wis., U.S., 7th May, 1888; 5 years.

Claim.—1st. The combination, in a saw hammering machine, of saw supporting pulleys, the hammer and anvil supported in proper position to operate upon the saw carried by said pulleys, and a reciprocating pawl arranged to work with the teeth of said saw and feed the same between said hammer and anvil, substantially as and for the purposes set forth. 2nd. The combination, in a saw hammering machine, with supporting pulleys, of a slide adjustable transversely to the saw, a hammer and anvil mounted upon said slide, and mechanism for feeding the saw between said hammer and anvil, substantially as and for the purposes set forth. 3rd. The combination, in a saw hammering machine, with saw supporting pulleys, of a fixed supporting standard, a slide movable vertically in ways on said standard, a screw arranged to adjust said standard vertically, and a hammer and anvil mounted upon said slide, substantially as and for the purposes set forth. 4th. The combination, in a saw hammering machine, with horizontal saw supporting pulleys, having flanges about their lower edges, of a vertically adjustable slide, a vibrating hammer arm journaled therein and provided at its free end with a

hammer arranged to work with an anvil also mounted upon said slide, a cam supported upon said slide and arranged to work with a projection of said hammer arm, and an adjustable spring connected with said hammer arm, substantially as and for the purposes set forth. 5th. The combination, in a saw hammering machine, with saw supporting pulleys, of a fixed standard, a slide vertically adjustable thereon, means for raising and lowering said slide, a vibrating hammer arm provided with a hammer and a right angled projection and supported upon said slide, a cam also supported upon said slide and arranged to work with the projection on said hammer arm, a leaf spring secured to said slide and connected with said hammer arm, and a screw or screws arranged to adjust the tension of said spring, substantially as and for the purposes set forth. 6th. The combination, in a saw hammering machine, of saw supporting pulleys, a hammer and anvil adjustable transversely to said saw, a pawl arranged to work with the teeth of the saw and connected with a vibrating arm of a rock shaft, and a cam arranged to oscillate said rock shaft, substantially as and for the purposes set forth. 7th. The combination, in a saw hammering machine, of saw supporting pulleys, a vertically adjustable hammer and anvil, a hammer actuating cam movable with said hammer, and a counter shaft provided with a wheel, connected by a belt with a similar wheel on the cam shaft, substantially as and for the purposes set forth. 8th. The combination, in a saw hammering machine, with saw supporting pulleys, of a vertically adjustable slide and hammer and anvil mounted on, and movable with said slide, and mechanism for feeding the saw between said hammer and anvil, substantially as and for the purposes set forth. 9th. The combination, in a saw hammering machine, with a hammer and anvil, of saw supporting pulleys and a wheel or gear mounted upon the shaft of one of said pulleys, and arranged to work with another continuously rotating wheel or gear, substantially as and for the purposes set forth.

No. 29,099. Saw-Mill Carriage.

(Chariot de scierie.)

William Gowen, Wausau, Wis., U.S., 7th May, 1888; 5 years.

Claim.—1st. The combination, with a guiding track, of a sawmill carriage having its supporting wheels mounted upon said track, a log frame movable upon the axles of said wheels transversely to the line of travel of said carriage, screws acting transversely to said track on said axles and on said log frame, internally threaded boxes or nuts working with said screws and secured to said log frame or to said axles, and means for turning said screws and thereby moving said frame lengthwise of said axles, substantially as and for the purposes set forth. 2nd. The combination, with a guiding track, of a sawmill carriage having its supporting wheels mounted upon said track, a log supporting frame mounted upon and movable lengthwise of the axles of said wheels, connected screws acting simultaneously transversely to said guiding track on said axles and on said log frame, threaded boxes or nuts secured to said axles or frame, and means for turning said screws and thereby moving said frame laterally lengthwise of said axles, substantially as and for the purposes set forth. 3rd. In combination with a saw and track by the side thereof, a log carriage movable upon the track past the saw, a rack or rail set parallel with said track, offsetting mechanism for moving the log frame toward and from the saw, and an arm connected with the offsetting mechanism journaled on the carriage and movable in the direction of its travel and working with said rack or rail, whereby when the travel of the carriage is reversed, said arm is caused to swing to one or the other side of its journal to actuate the offsetting mechanism, substantially as and for the purposes set forth. 4th. The combination, in a sawmill carriage, of the log support laterally movable with reference to the line of travel of said carriage, screw E applied thereto and arranged to shift said log support laterally, and an automatic trip arranged to operate said screw alternately in opposite directions whenever the movement of said carriage is reversed, substantially as and for the purposes set forth. 5th. The combination, in a sawmill carriage, of the wheels C, C' and axles O, O', the log supporting frame A laterally movable thereon with reference to the line of travel of said carriage, screws E, E', mounted upon axles O, O' and working in internally screw-threaded boxes D, D', which are secured to said frame A, and mechanism for operating said screws, substantially as and for the purposes set forth. 6th. The combination of the log supporting frame A, mounted and laterally movable upon wheels C, C' and axles O, O', brackets B, B' secured to said frame A and provided with internally screw-threaded boxes D, D', screws E, E' mounted upon said axles and working in said boxes D, D', cranks g, g', and connecting rod t, substantially as and for the purposes set forth. 7th. The combination, in a sawmill carriage, of the log supporting frame A laterally movable upon its trucks with reference to the line of travel of said carriage, shifting screws E, E' applied thereto, tooth a and rack I arranged to operate said screws when the movement of the carriage is reversed, substantially as and for the purposes set forth. 8th. The combination, in a sawmill carriage, of the log supporting frame A laterally movable upon its trucks with reference to the line of travel of said carriage, shifting screw E applied thereto, tooth block I pivoted to said screw, gravitating tooth a pivoted to said block, and rack I substantially as and for the purposes set forth. 9th. The combination, with a saw and guiding carriage track, of a carriage arranged to travel upon said track past the saw and movable transversely to said track, automatic offsetting mechanism arranged to move said carriage towards and from the plane of the saw, and a hand lever fulcrumed upon said carriage and connected with said offsetting mechanism so as to disconnect said offsetting mechanism or operate the same, substantially as and for the purposes set forth.

No. 29,100. Music and Book Holder.

(Serre-feuille de musique et de livre.)

Herbert O. Brown, Auckland, N.Z., 7th May, 1888; 5 years.

Claim.—1st. A book and leaf holder consisting of a pivoted weighted finger, substantially as described. 2nd. In a book and leaf holder the combination, with the pivoted and weighted finger D, of the clip A adapted to embrace the edges of the music rack shelf, substantially as described.