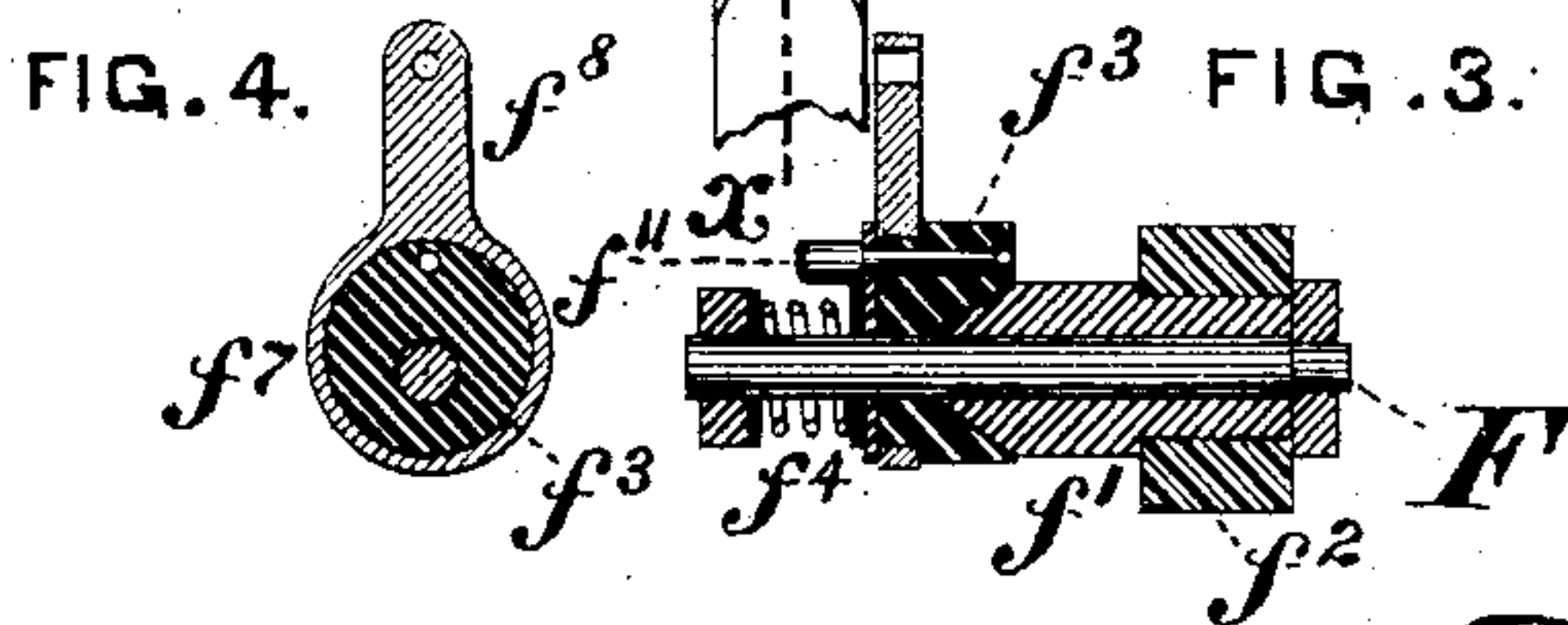
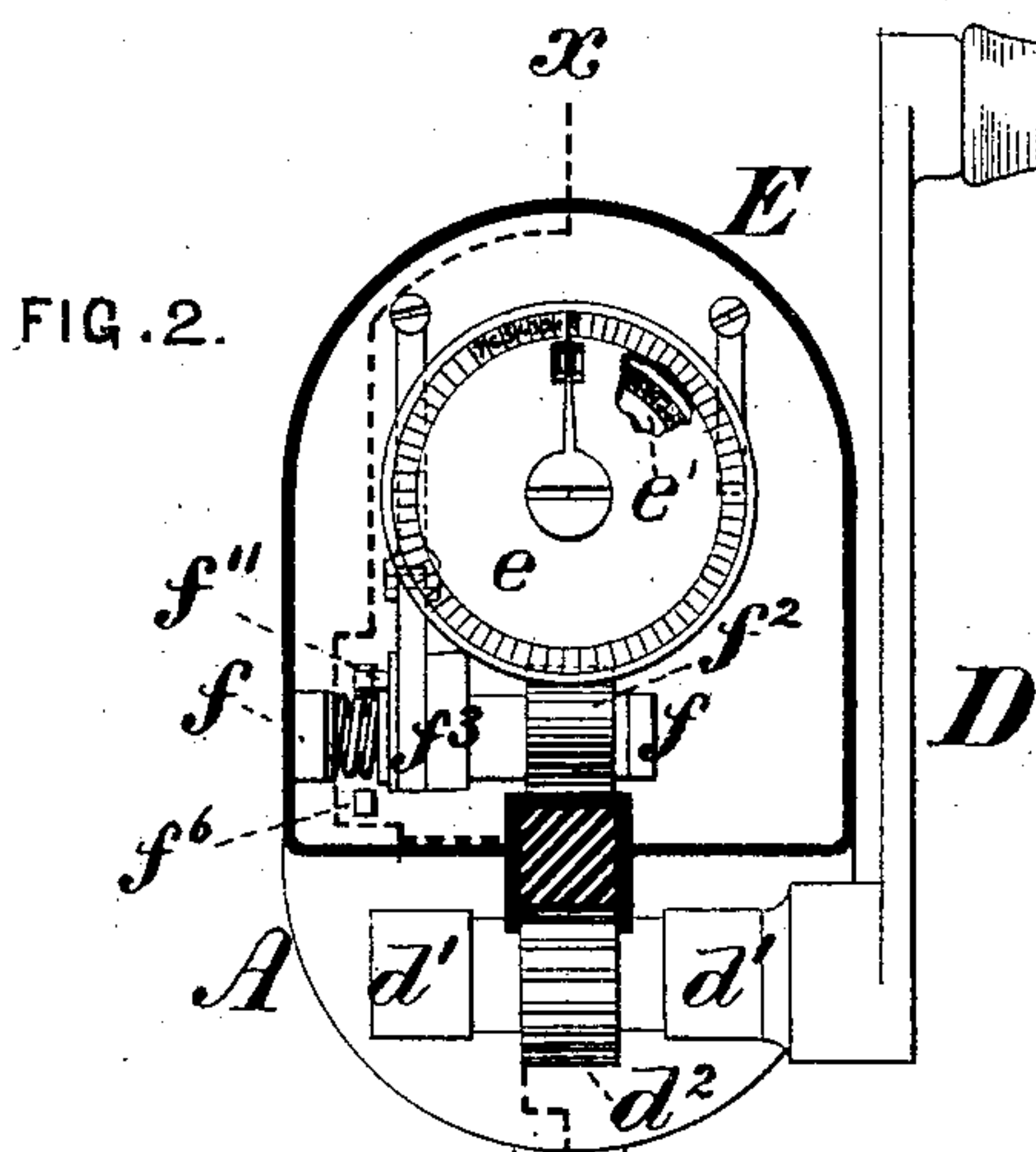
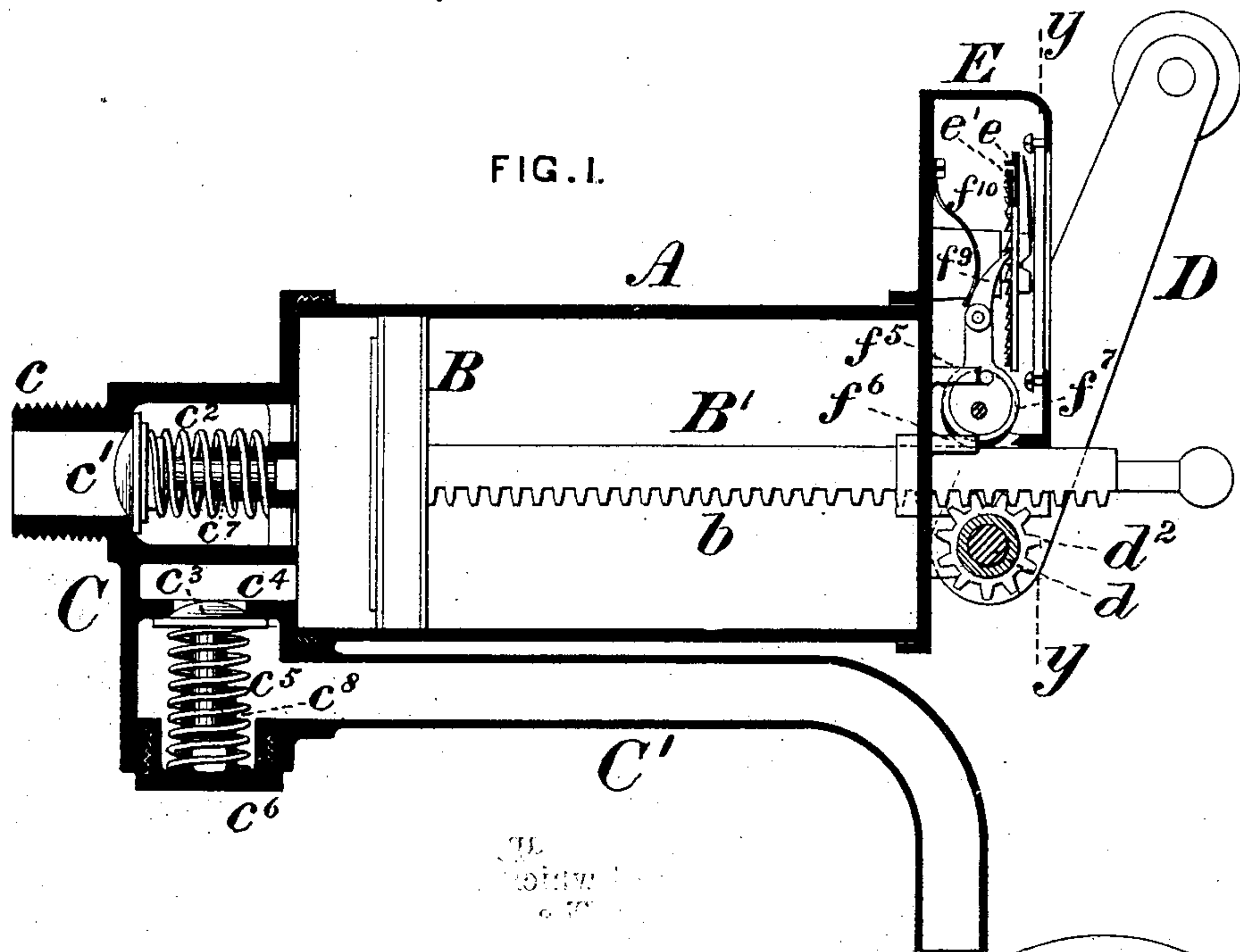


E. J. SHAW.
 Measuring and Registering Tap for Barrels.
 No. 225,170. Patented Mar. 2, 1880.



WITNESSES:
Wm. E. Morgan.
Geo. A. Vaillant.

INVENTOR
Elias J. Shaw.
 By *J. Snowden Bell*
 ATTORNEY.

UNITED STATES PATENT OFFICE.

ELIAS J. SHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
MICHAEL C. HIRSCH, OF SAME PLACE.

MEASURING AND REGISTERING TAP FOR BARRELS.

SPECIFICATION forming part of Letters Patent No. 225,170, dated March 2, 1880.

Application filed January 2, 1880.

To all whom it may concern:

Be it known that I, ELIAS J. SHAW, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Measuring and Registering Taps for Casks, Barrels, &c., of which improvements the following is a specification.

My invention is an improvement upon that for which Letters Patent of the United States No. 218,292 were granted and issued to Wm. S. Lynn and M. C. Hirsch (assignee of said Lynn) under date of August 5, 1879; and its objects are to simplify the construction and perfect the operation of the valve and registering mechanism, and to provide a more convenient application of the power of the operation of the apparatus.

To these ends my improvements consist in the combination, with a barrel or cylinder and a piston reciprocating therein, of an end casing having supply and discharge valves, each held in position by a spring and provided with a guide to insure rectilinear movement, a threaded nozzle for connection to a barrel, bushing, or spigot, and a discharge-pipe.

My improvements further consist in the combination of a cylindrical barrel, a piston reciprocating therein, a squared or flat-sided piston-rod having a rack formed upon one of its sides, and a pinion meshing with the rack of the piston-rod and rotated by a crank on a shaft mounted in bearings on one end of the barrel.

My improvements further consist in the combination, with the cylindrical barrel and its flat-sided piston-rod, of a friction-roller rotated by the reciprocation of the piston-rod, a loose eccentric, to which oscillatory movements are imparted by the rotation of the friction-roller, fixed stops limiting the traverse of the eccentric, and a registering-pawl actuated by the oscillations of the eccentric.

The improvements claimed are hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a longitudinal section through a measuring and registering tap embodying my improvements, the section being partly central and partly upon the line *xx* of Fig. 2; Fig. 2, a vertical transverse section through the same at the

line *yy* of Fig. 1; Fig. 3, a longitudinal central section through the friction-roller and eccentric of the registering mechanism, and Fig. 4 a vertical transverse section through the eccentric and its strap.

To carry out my invention I provide a cylindrical barrel, A, the capacity of which is regulated to conform to the quantity of liquor desired to be taken at each draft from a cask or other receptacle. A suitably-packed piston, B, fits the barrel A and is secured upon a piston-rod, B', which is squared or made flat upon its upper and lower sides, upon the latter of which is formed a rack or series of teeth, *b*. The piston-rod B' passes through a guide in one of the heads of the barrel A, and the opposite end of the barrel is closed by being screwed or otherwise secured to a casing or chest, C, having a threaded nozzle, *c*, in line with the axis of the barrel, and serving to secure the apparatus to a bushing or spigot inserted in the cask. A circular supply-valve, *c'*, opening inward or toward the barrel, fits over the inner end of the nozzle *c*, and is retained in position against the pressure of the liquor in the cask by a spring, *c''*. A discharge-valve, *c'''*, opening outward, covers an opening in a diaphragm or valve-face, *c''''*, extending across the casing C near the lower side of the barrel A. The discharge-valve *c'''* is held up to its seat by a spring, *c'''''*, and may be removed at any time by unscrewing a bonnet, *c''''''*, in the bottom of the casing. Each of the valves *c'* and *c'''* is secured upon a central stem, said stems fitting and being guided so as to insure rectilinear movements of the valves by guides *c''''''* and *c'''''''*, respectively. A curved discharge-tube, C', is connected to the casing C below the discharge-valve *c'''*.

The piston-rod B' is reciprocated by the revolutions of a crank, D, upon one end of a shaft, *d*, mounted in bearings *d'* on the outer head of the barrel A, and carrying a pinion, *d''*, which meshes with the rack *b* on the piston-rod, and the number of double strokes of the piston and rod corresponding with the number of drafts of liquor taken from the cask is recorded by a register placed within a closed or locked case, E, secured to the outer head of the barrel A.

The register, being similar to that shown in the Letters Patent No. 218,292 aforesaid, and not constituting, *per se*, part of my present invention, need not be herein described, further than as relates to the mechanism for communicating movement to its ratcheted dials *ee'*, which mechanism is as follows: A shaft, *F*, mounted in bearings *f* within the register-case *E*, has secured upon it a sleeve, *f'*, one end of which carries a rubber or rubber-faced friction-roller, *f²*, the periphery of which bears upon the flat top of the piston-rod *B'*. The opposite end of the sleeve *f'*, which is of conical form, fits within a similarly-formed recess in an eccentric, *f³*, mounted loosely on the shaft *F*, and caused to bear against the conical end of the sleeve *f'* by a spring, *f⁴*, so as to be oscillated within the limits allowed by two fixed stops, *f⁵ f⁶*, by its frictional contact with the sleeve. The strap *f⁷* of the eccentric *f³* has an arm, *f⁸*, formed upon it, the outer end of which arm is connected to a pawl, *f⁹*, which engages the ratchet-teeth of the registering-dials *ee'*, and is maintained in contact therewith by a spring, *f¹⁰*. A pin, *f¹¹*, projects from the side of the eccentric, and, abutting against the stops *f⁵ f⁶*, arrests the oscillation of the eccentric at the extremities of its traverse at each stroke of the piston-rod. The traverse of the eccentric in one direction causes the pawl to advance the dials the distance between two teeth, and during the traverse of the piston-rod and eccentric in the opposite direction the pawl rides over, without actuating, the ratchet-teeth, so that one registration is thereby made for each double stroke of the piston.

In the use of my improvements a considerable simplification and resultant economy is effected in the construction of the apparatus, and the operator can apply his power conveniently and with advantage to the movement of the rod. The mechanism for actuating the register is such as to insure registration, even if only a partial stroke of the piston has been made, and the valves being always held to their seats, except during the withdrawal of liquor from the cask, the access of air thereto is prevented, and the contents can be kept in good condition until entirely withdrawn.

I am aware that faucets having pistons reciprocated by means of racks and pinions have been heretofore known, and do not, therefore, broadly claim such device.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, in a measuring and registering tap, of a cylindrical barrel and a piston and rod reciprocating therein, an end casing provided with rectilinearly-moving spring supply and discharge valves mounted independently in guides in said casing and alternately operated by the reciprocation of the piston-rod, a nozzle for connecting said casing with a cask or barrel, and a discharge-tube, these members being combined for joint operation, as and for the purposes set forth.

2. The combination, in a measuring and registering tap, of a cylindrical barrel having rectilinearly-moving spring supply and discharge valves located within a casing connected to one of its ends, a piston secured upon a rod having a rack formed upon one of its sides, and a pinion which meshes with the rack of the piston-rod and is secured upon a crank-shaft mounted in bearings upon the head of the barrel opposite that to which the valve-casing is connected, substantially as set forth.

3. The combination, in a measuring and registering tap, of a cylindrical barrel having a register-case secured upon one of its ends, a flattened piston-rod reciprocating within said barrel, a roller rotated by frictional contact with the piston-rod, and an eccentric mounted loosely on the shaft of said roller and having its strap connected with the pawl which rotates the registering-dials, substantially as set forth.

4. The combination of the roller-shaft, the sleeve carrying the friction-roller on one end and having a cone formed upon the other, the eccentric mounted loosely on the roller-shaft and having a pin on one of its sides, the spring for maintaining the eccentric and coned end of the sleeve in contact, and the fixed stops, substantially as set forth.

5. The combination of the roller-shaft, the eccentric mounted loosely thereon, the fixed stops, the eccentric strap and arm, the pawl, and the ratcheted registering-dials, substantially as set forth.

ELIAS J. SHAW.

Witnesses:

J. SNOWDEN BELL,
GEO. A. VAILLANT.