

No. 614,213.

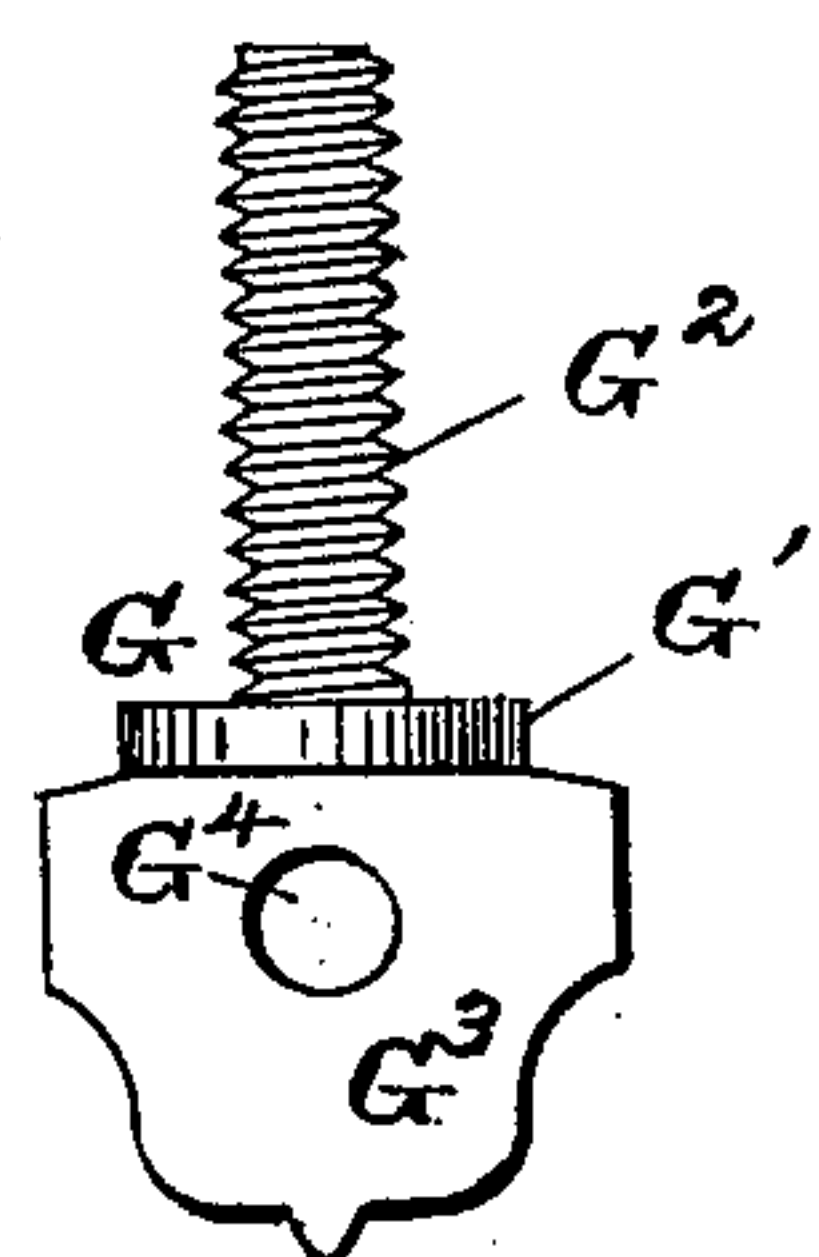
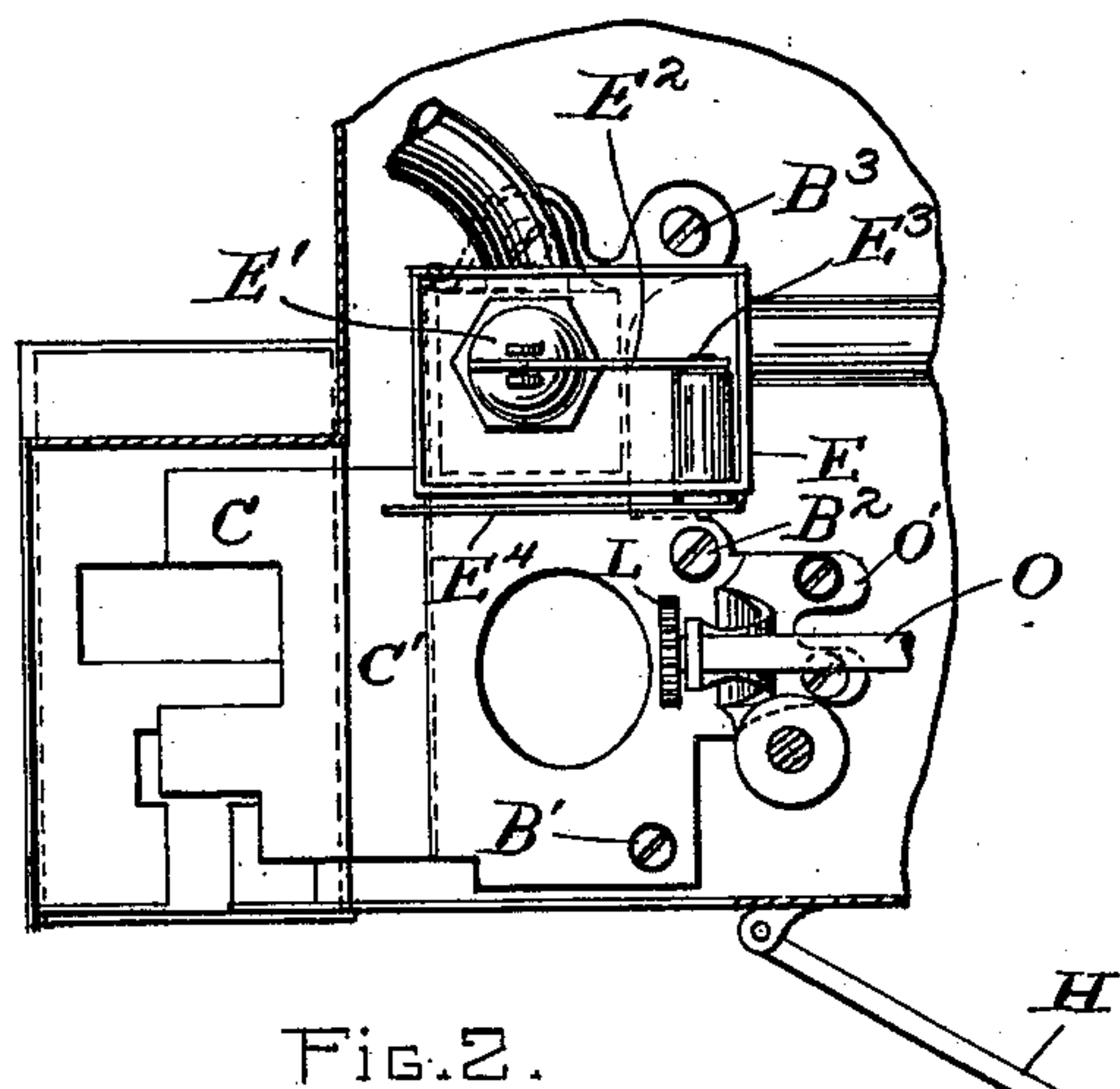
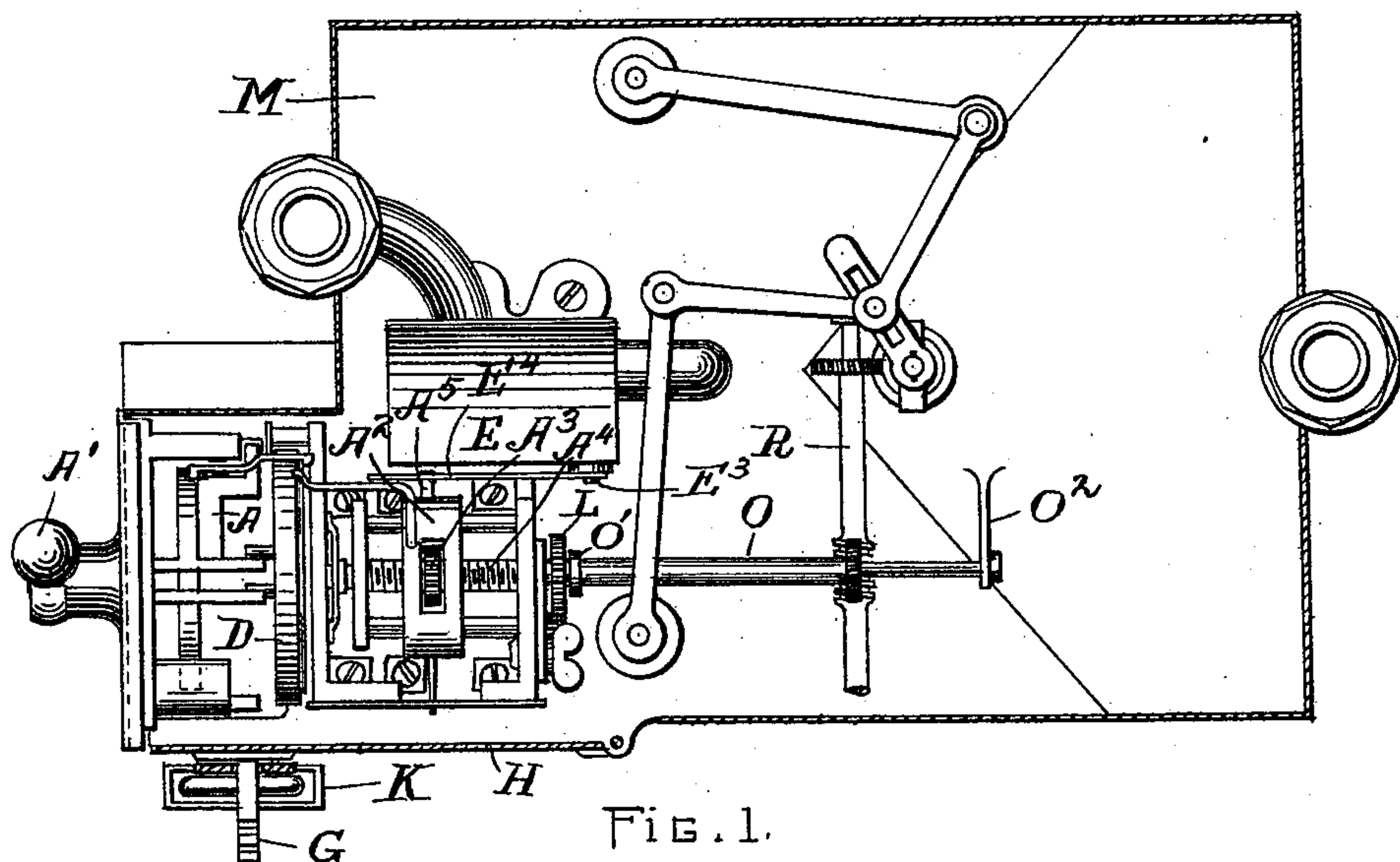
Patented Nov. 15, 1898.

J. NASMITH.
COIN FREED GAS METER.

(Application filed July 28, 1898.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES

A. D. Harrison.

C. W. Pezzeth

INVENTOR

Joseph Kasmith

by Night Brown & Quincy
Attys.

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3 Sheets—Sheet 2.

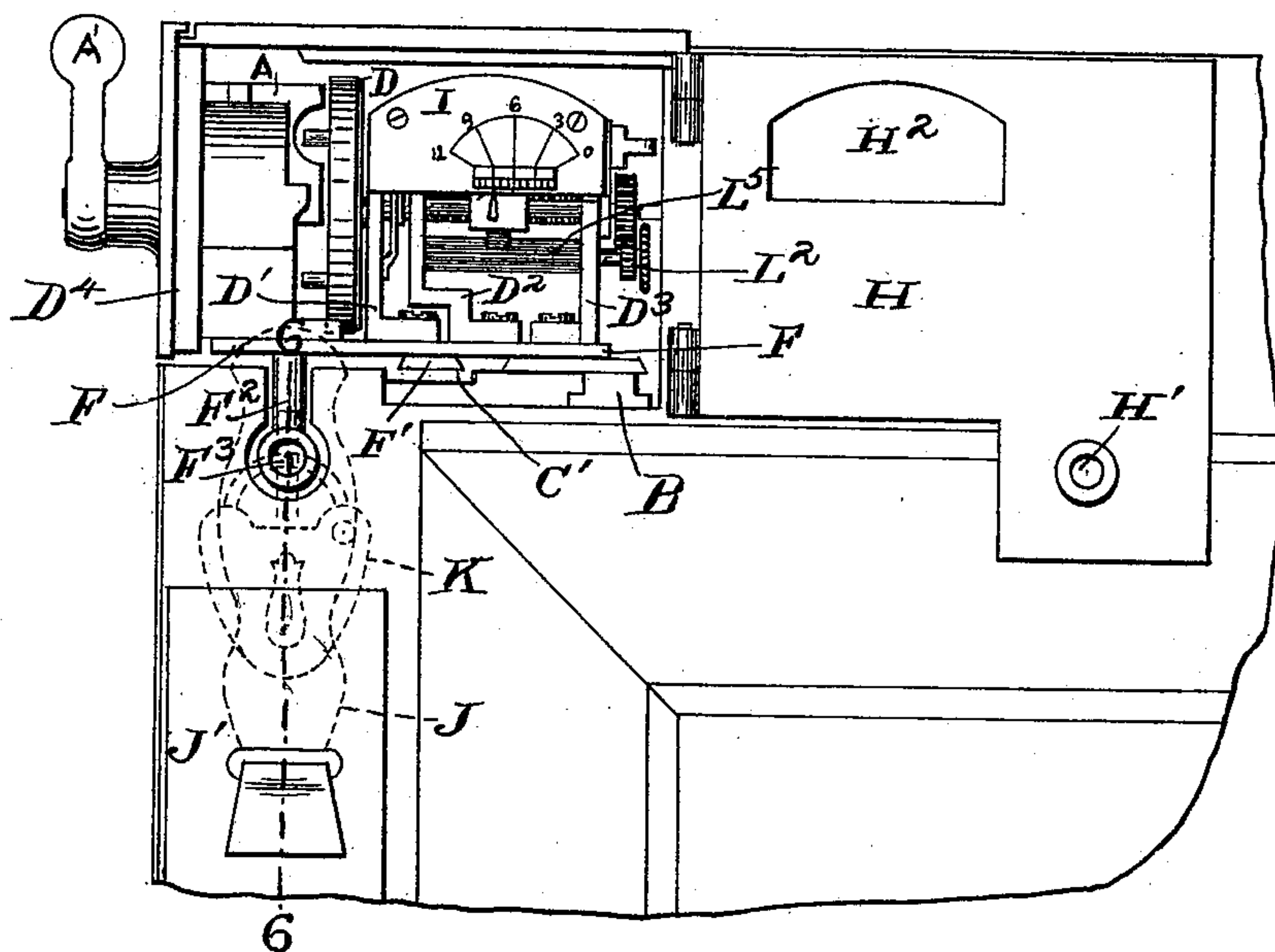


Fig. 4.

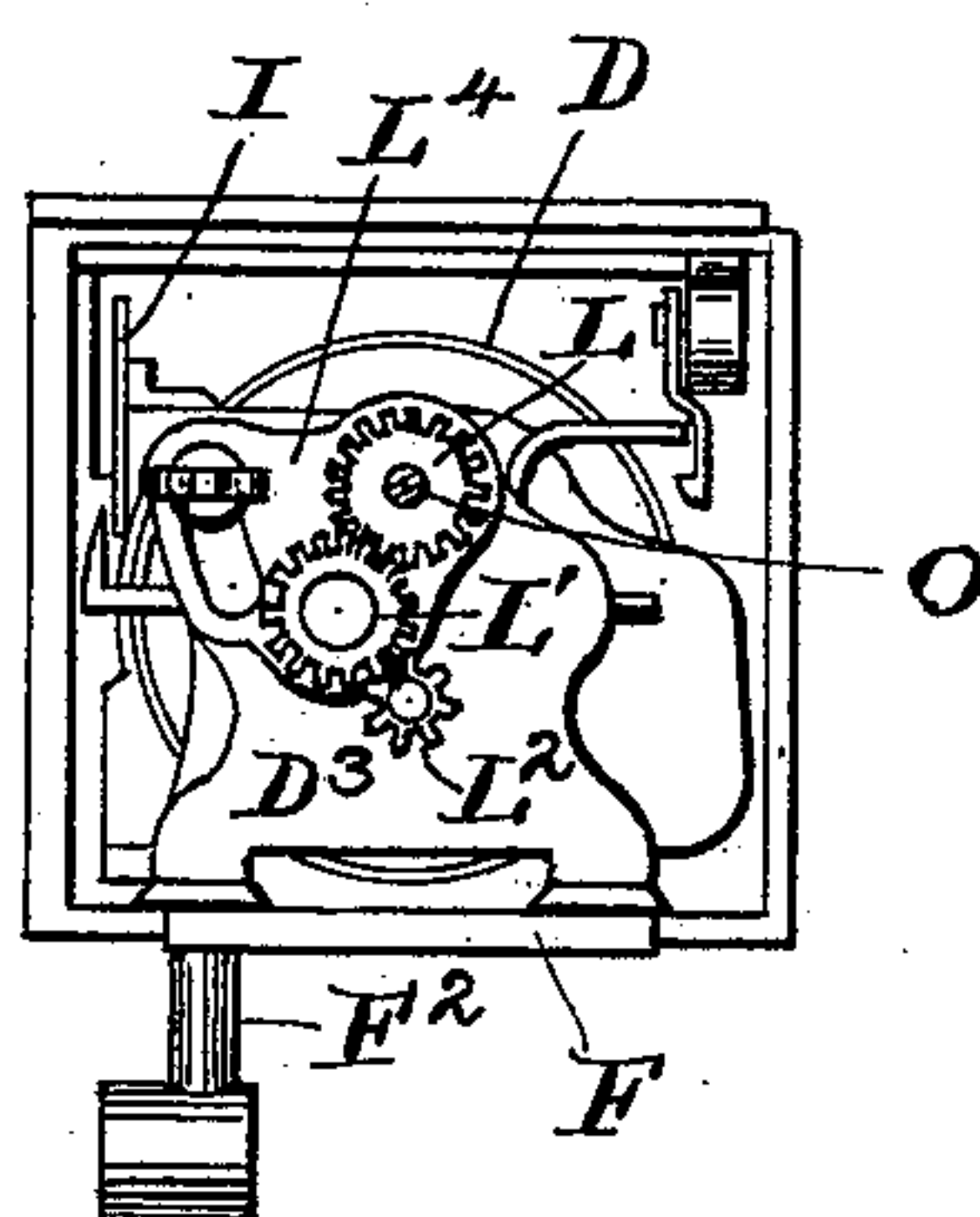


Fig. 5.

WITNESSES

A. S. Harrison

P. W. Pezzetti

INVENTOR

Joseph Nasmith
by Night-Born & Dumbly
Atty.

No. 614,213.

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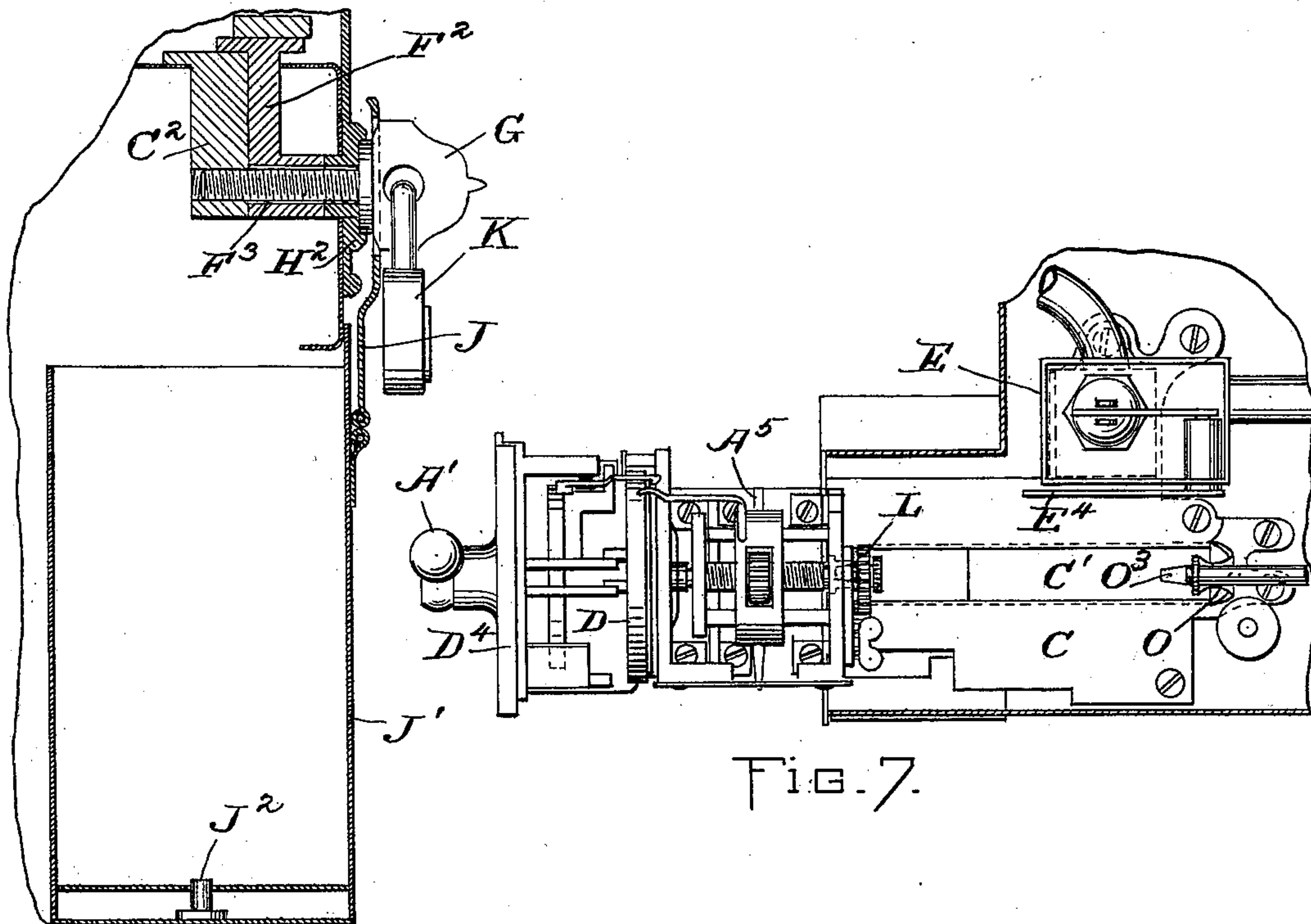


FIG. 7.

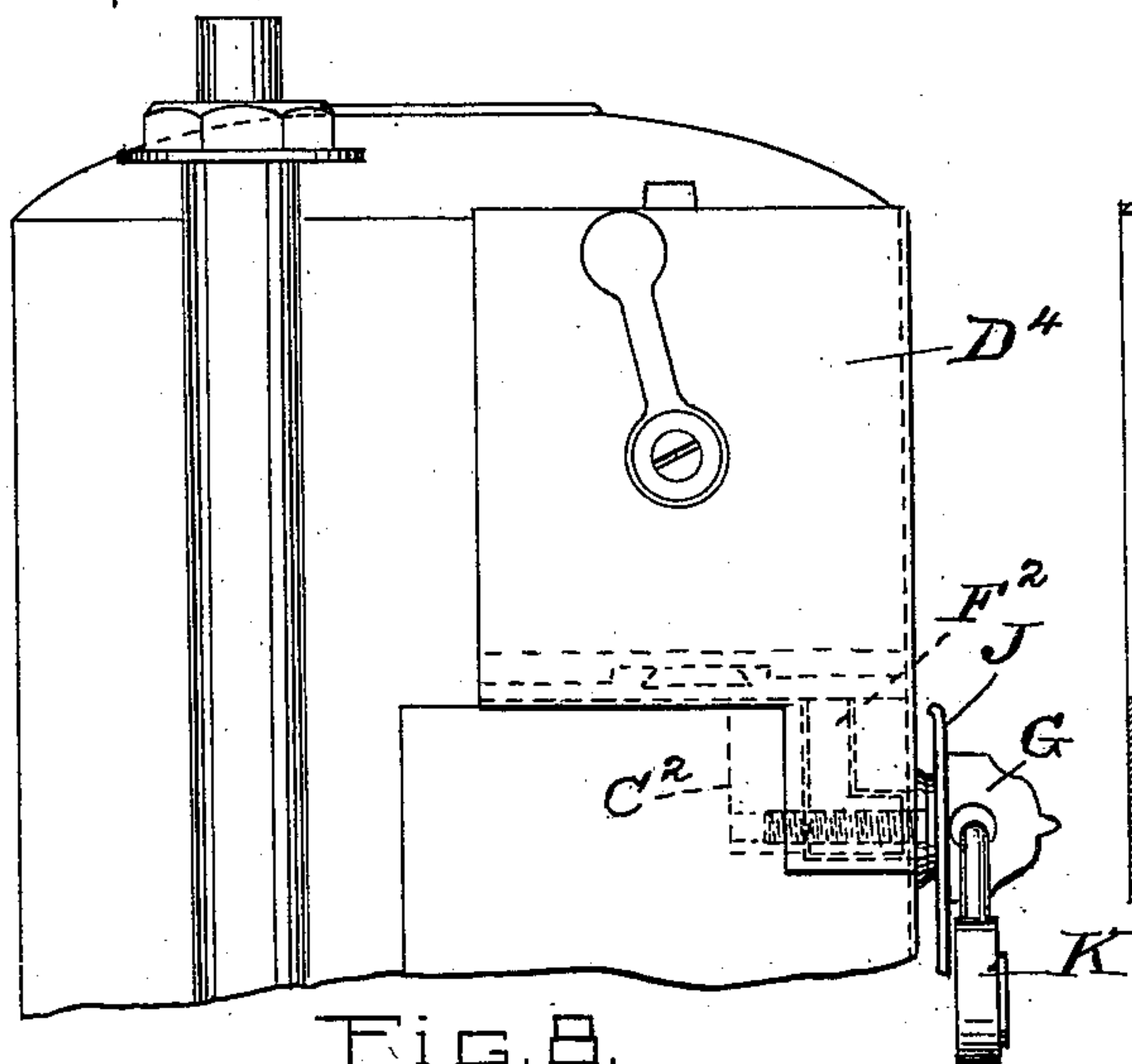


FIG. 8.

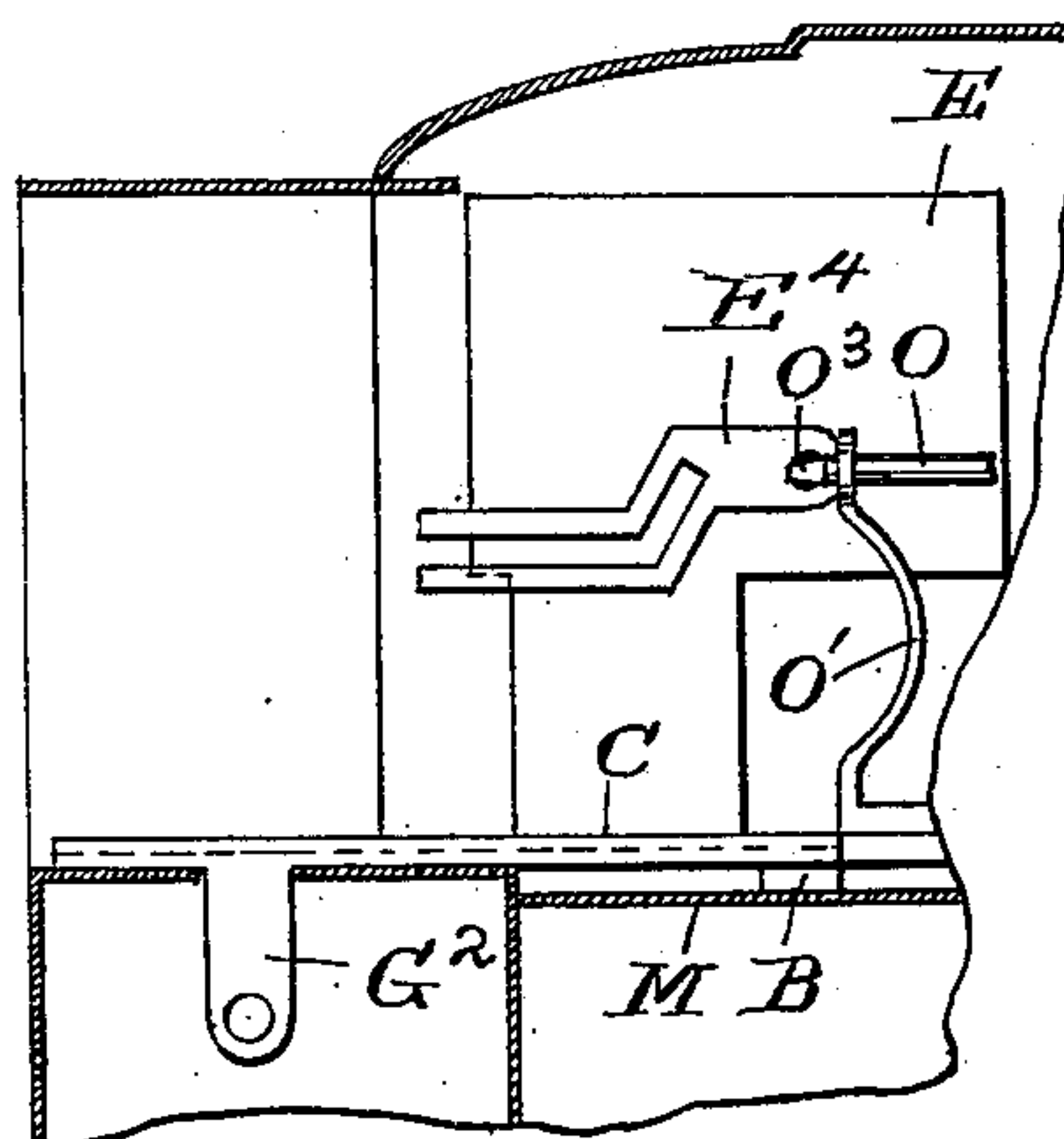


FIG. 9.

WITNESSES

A. D. Harrison
P. W. Pezzetti

INVENTOR

Joseph Nasmith
by Wright Brown Quincy
attys.

UNITED STATES PATENT OFFICE.

JOSEPH NASMITH, OF MANCHESTER, ENGLAND.

COIN-FREED GAS-METER.

SPECIFICATION forming part of Letters Patent No. 614,213, dated November 15, 1898.

Application filed July 28, 1898. Serial No. 687,070. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH NASMITH, of Manchester, in the county of Lancaster, England, have invented certain new and useful
5 Improvements in and Relating to Coin-Freed Gas-Meters, of which the following is a specification.

This invention relates to that class of prepayment mechanism which is used in connection with gas-meters, but is also applicable to
10 other purposes.

It has for its object the provision of facilities for the removal of the prepayment attachment for examination, adjustment, or correction, or for the alteration of the change-wheel when it is desired to increase or diminish the number of cubic feet of gas given in exchange for one coin. Hitherto this has been a work of considerable difficulty, involving the removal of the meter from its working position and of part of the case to permit of access to the mechanism. In addition to this the prepayment mechanism is usually affixed to the meter-case by screws, which must be withdrawn before the mechanism can be removed.
15 This involves a considerable expenditure of time and much inconvenience, the practice having been to remove the meter and in many cases to replace it by another during the period in which it was being repaired. By my invention the prepayment attachment can be removed without any disturbance of the meter or of its case, so that it can be adjusted or corrected on the consumer's premises.
20 35

In the drawings and description hereinafter given I have shown the application of my invention to a mechanism similar to that described in United States Letters Patent No. 468,999, dated February 16, 1892, and No. 524,511, dated August 14, 1894, granted to James F. Sawyer and James L. Purves; but it is equally applicable to other forms of prepayment mechanism.
40

Reference is to be had to the accompanying drawings, forming a part of this application, in which—

Figure 1 represents a plan view of the upper part of a meter equipped with my invention, the top of the meter-case having been removed. Fig. 2 represents a plan view of
50

one end of said portion of the meter after the removal of the prepayment mechanism. Fig. 3 represents an elevation of the securing-staple employed. Fig. 4 represents a side elevation of the prepayment mechanism as exposed by the opening of the door provided in the front of the meter-casing. Fig. 5 represents an end view of the prepayment mechanism, looking from the right in Fig. 4. Fig. 6 represents a section on line 6 6 of Fig. 4 with the door closed. Fig. 7 represents a plan view of a modification, showing the prepayment mechanism partially withdrawn from its operative position. Fig. 8 represents
55 60 65 an end view of the upper portion of such modification. Fig. 9 represents a sectional view of the casing in said modification after the removal of the prepayment mechanism.

The same reference characters indicate the same parts in all the figures. 70

In carrying my invention into effect I affix to the top partition M of the meter-case a plate B by soldering said plate to the case, the said plate having three projections and
75 said projections being bored and tapped for the reception of attaching-screws B¹ B² B³. To the plate B is affixed by the said screws a base-plate C, and to the plate C is attached the valve-box E by the screw B³, which passes
80 through the plate C and the plate B. The box E is divided into two compartments by a transverse diaphragm, substantially as described in the specification of Patent No. 468,999, hereinbefore alluded to, and in said
85 diaphragm is an orifice surrounded by a valve-seat. The top compartment of the valve-box contains a valve E', mounted at the end of an arm E², which is attached to a spindle E³, passing through a stuffing-box in the side of
90 the valve-box and carrying at its outer end a slotted operating-lever E⁴. The valve-box is closed by a suitable cover, soldered or otherwise affixed to it, said cover being removed in Figs. 2 and 7. 95

The plate C is provided with a groove C', which is undercut or dovetailed. The prepayment mechanism is provided with a base F', supporting the three frames D' D² D³, and to said base-plate is cast or otherwise affixed
100 a bar F', which is shaped to correspond with the dovetail groove C' and adapted to engage

the same. This construction adapts the prepayment mechanism to be slid endwise into and out of engagement with the base-plate C.

In Figs. 1 to 6, inclusive, a form of the invention is shown in which the bar F' and groove C' extend transversely of the meter-case, so that the prepayment mechanism is slid in and out from the front, and in this case a hinged door H is provided to cover the opening in the casing through which said mechanism is introduced. Referring particularly to this first form, a gear-wheel L is shown attached to a spindle O , mounted in brackets O' O^2 and actuated from the spindle or shaft R , which operates the index mechanism of the meter. This gear-wheel L remains permanently in position upon the spindle O when the prepayment mechanism is removed, as represented in Fig. 2. When the said mechanism is slid into place, the gear-wheel L engages with an idler-gear L' on the prepayment mechanism, said idler being mounted upon a swinging quadrant L^4 , which is held in place at any desired adjustment by means of a thumb-nut engaging a stud which passes through a slot in the quadrant. The said idler-gear L' meshes with a pinion L^2 , mounted on the shaft of the long pinion L^5 , which forms part of the prepayment mechanism. The pinion L^2 is detachably mounted and may be changed for one of a different number of teeth when it is desired to vary the amount of gas delivered in payment for one coin, the quadrant being shifted in position to correspond.

Other parts of the prepayment mechanism are a rotary coin-receiving member A , with its external operating-handle A' , and a traveling carriage A^2 , embracing a gear A^3 , which operates on a screw A^4 and is rotated from the long pinion L^5 . Said carriage has a stud A^5 projecting into the slot in the operating-lever E^4 . D is a second rotary member mounted on the end of the screw A^4 . The prepayment mechanism is provided with a dial I , visible through an opening H^2 in the door H .

J' represents the money-box ordinarily found in machines of this character. J represents the hasp which is used to secure said box in place, and J^2 represents the holding-stud projecting up from the bottom of the meter-case through an aperture in the bottom of the box J' . On the under side of the base-plate C is formed a lug C^2 , having a screw-threaded eye.

F^2 is a lug projecting downwardly from the under side of the plate F and having an eye F^3 , which registers with the screw-threaded eye in the lug C^2 when the prepayment mechanism is in operative position. The door H is provided with a boss H' , apertured in a similar manner and abutting the lug F^2 when the parts are in place.

G is a staple having a screw-threaded stem adapted to pass through the apertures in the boss H' and the lug F^2 and screw into the threaded aperture in the lug C^2 . Said staple

is provided with a tongue or head G^3 and an intermediate flange or collar G' . The tongue of the staple is bored with an aperture G^4 , adapted to receive the bow of a padlock K .

In securing the prepayment mechanism and the money-box in position to prevent the removal thereof from the meter the staple G is screwed into the apertured lug C^2 through the lug F^2 and boss H' , as represented in Fig. 6. The hasp is then passed over the tongue of the staple when the latter is in a vertical position, and the padlock is finally secured to the staple, as shown. In opening the meter to remove the mechanism for inspection or correction the foregoing operations are reversed and the mechanism is slid out through the door-opening. In sliding the mechanism back into position the lug C^2 forms a stop against which the lug F^2 may abut to determine the limit of inward movement of the mechanism, and, if desired, a further stop may be provided upon the base-plate C at a convenient place.

When the prepayment mechanism is slid in longitudinally from the side of the meter, as represented in Fig. 7, some modifications in structure are necessary, which are represented in Figs. 7, 8, and 9. The dovetail slot C' in this instance extends longitudinally of the base-plate C , as shown in Fig. 7, and the dovetail bar on the plate F extends in a corresponding direction. With this arrangement the door H in the front of the casing may also be dispensed with and the end frame D^4 of the prepayment mechanism utilized to close the opening in the meter-case. The operating-lever E^4 is also formed with an open-ended slot, as shown in Fig. 9, to permit the endwise entrance and removal of the stud A^5 ; and I prefer, furthermore, in carrying out this modification to mount the gear L permanently at the pivotal point of the quadrant L^4 , in mesh with the idler L' , and provide a tapered and squared end O^3 for the spindle O , said end portion entering a correspondingly-shaped socket in the center of the gear L . When the prepayment mechanism is withdrawn, the said gear becomes disengaged from the end of the spindle, and when the mechanism is slid into place the gear and its spindle engage without difficulty. Lugs C^2 and F^2 are provided, as before, on the base-plate and on the prepayment mechanism, and a securing-staple G is passed through said lugs and an aperture in the front of the meter-case, the hasp J and padlock K being employed, as before, to lock the staple in place.

It is clear from the foregoing description that I have provided simple and inexpensive improvements whereby the prepayment mechanism may be removed without disturbing the meter. Any equivalent of the dovetail slot and bar will of course answer the purpose of engaging the prepayment mechanism with the base-plate.

I claim—

1. In a prepayment gas-meter, the combi-

nation of a base-plate secured to the meter, a prepayment mechanism having provisions for engaging the base-plate, a staple engaging the frame of the prepayment mechanism and serving to fasten said mechanism to the meter, and means for locking said staple in place.

2. In a prepayment gas-meter, the combination of a suitable base secured to the meter-case, a prepayment mechanism having a dovetail connection with said base-plate, provisions in the meter-case for permitting the insertion and removal of the prepayment mechanism, and means for fastening the prepayment mechanism in the meter-case in its operative position.

3. In a prepayment gas-meter, the combi-

nation with the meter-case and the money-box and its hasp, of a suitable base secured to the meter-case, a staple adapted to be engaged by the hasp and having provisions for engaging the base, a prepayment mechanism supported on said base and having a member engaged by the staple, whereby said mechanism is secured in its operative position in the meter, and means for locking the hasp and staple together.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH NASMITH.

Witnesses:

JOHN P. PARRISH,
GEORGE R. DAVIS.