

(No Model.)

3 Sheets—Sheet 1.

J. TOURTEL  
GAS METER.

No. 597,484.

Patented Jan. 18, 1898.

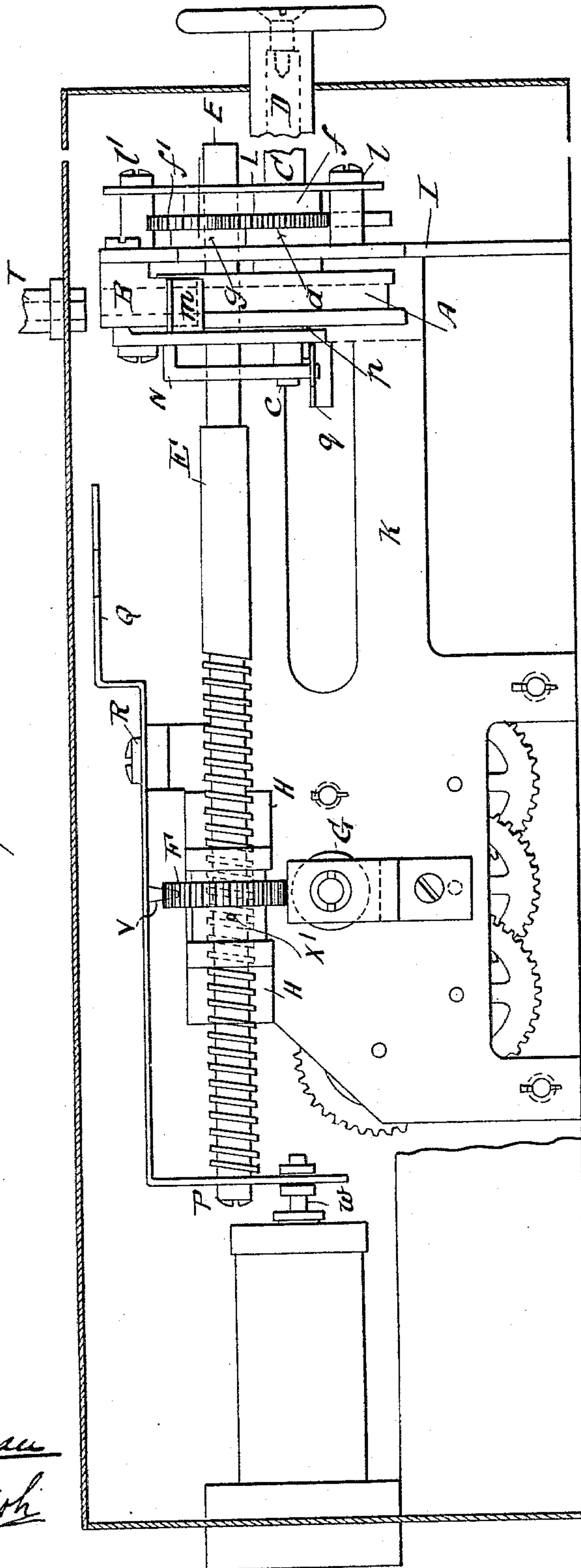


Fig. 1.

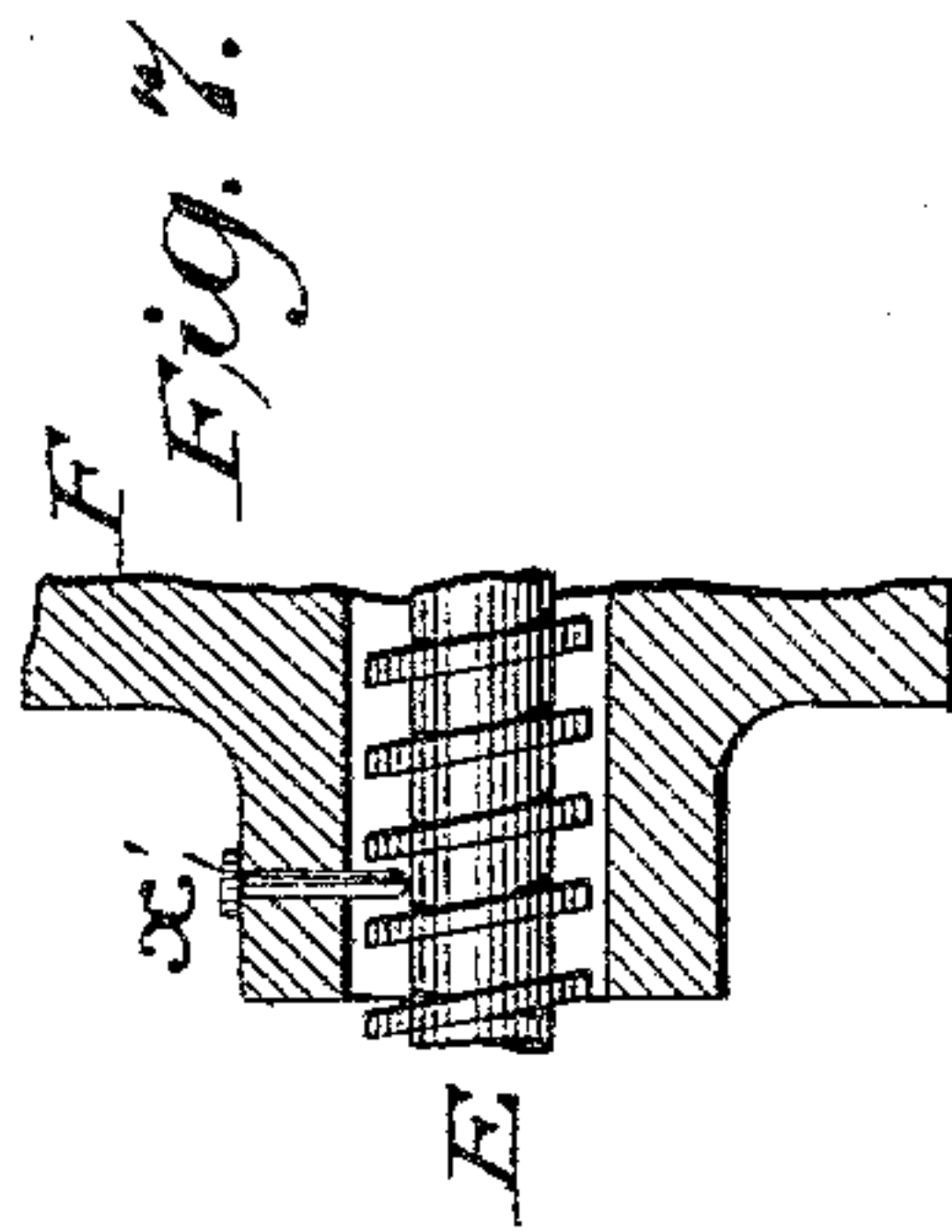


Fig. 2.

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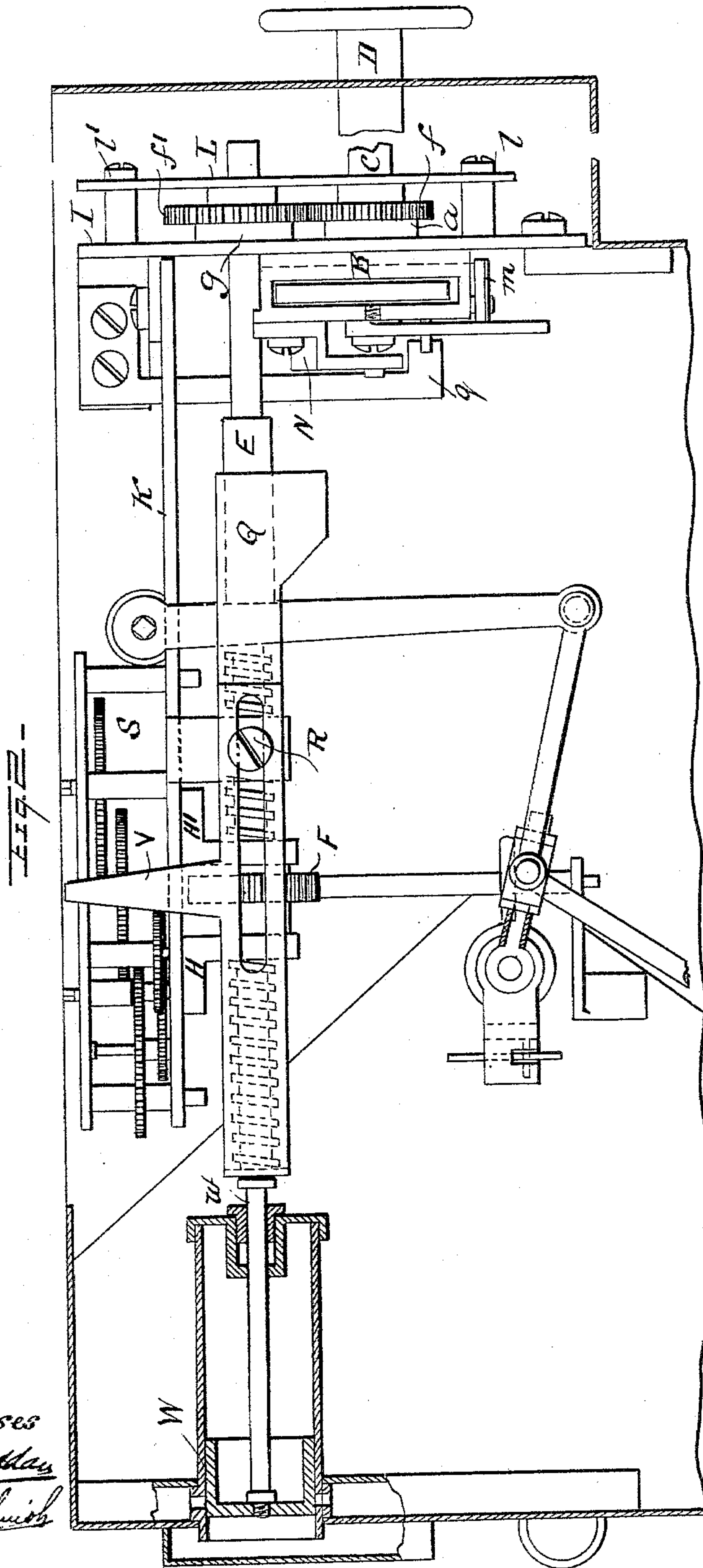
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3 Sheets—Sheet 2.

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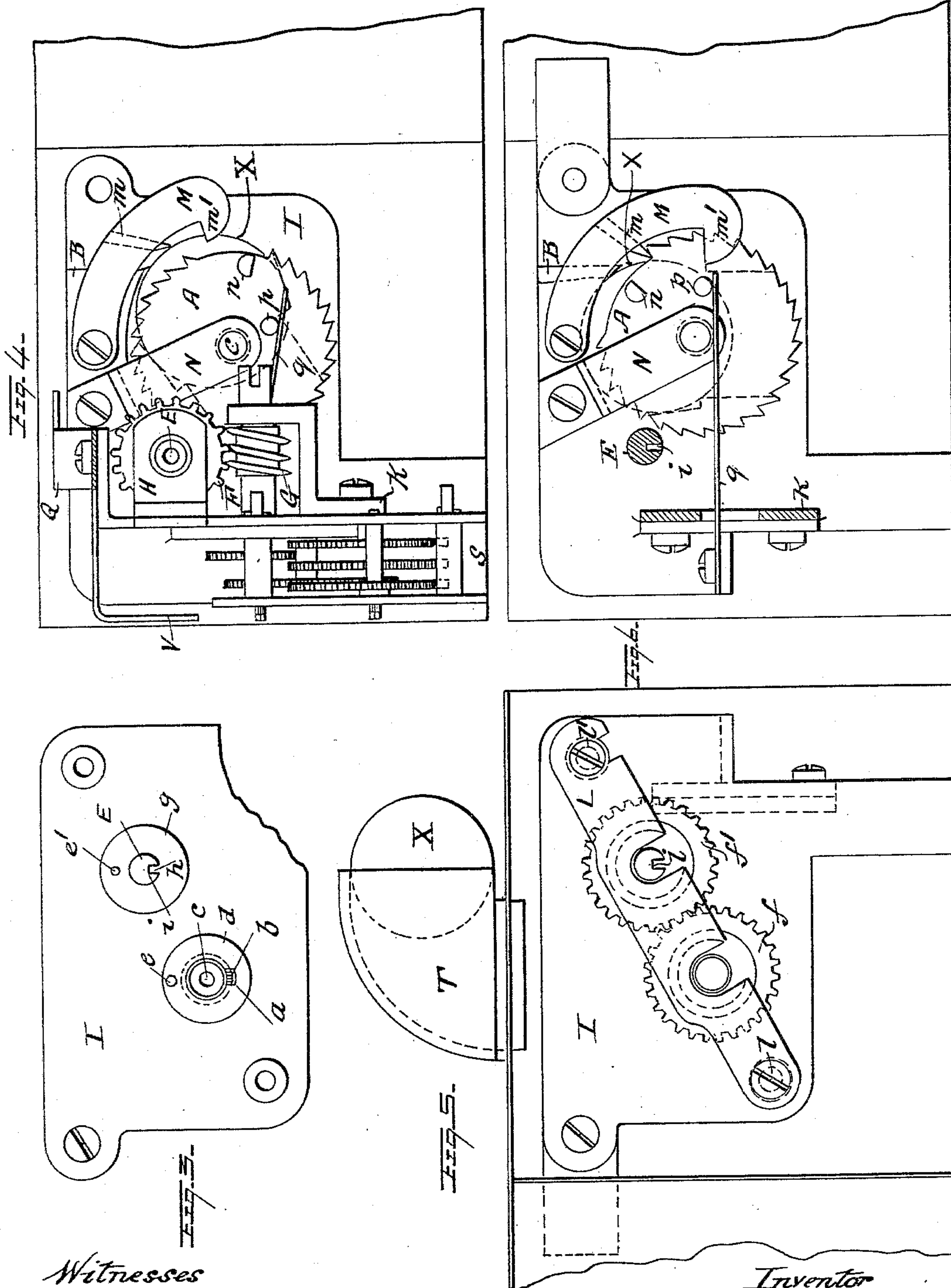
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3 Sheets—Sheet 3.

J. TOURTEL.  
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No. 597,484.

Patented Jan. 18, 1898.



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# UNITED STATES PATENT OFFICE.

JOHN TOURTEL, OF LONDON, ENGLAND.

## GAS-METER.

SPECIFICATION forming part of Letters Patent No. 597,484, dated January 18, 1898.

Application filed July 9, 1896. Serial No. 598,602. (No model.) Patented in Belgium May 9, 1896, No. 121,275.

*To all whom it may concern:*

Be it known that I, JOHN TOURTEL, a subject of the Queen of England, and a resident of London, England, have invented certain new and useful Improvements in Gas-Meters, (for which I have obtained a patent in Belgium, bearing date May 9, 1896, No. 121,275,) of which the following is a specification.

This invention relates to prepayment gas-meters in which each inserted coin releases a locked mechanism in order that it may be moved by hand until again locked—for instance, after the completion of one revolution, the number of which consecutive revolutions causing a valve to be moved from its closing position in order that the operation of the meter-train by the passage of gas or equivalent fluid through the meter, may be adapted to return the valve to its closing position and close the passage sooner or later in proportion to the number of aforesaid revolutions—that is to say, according to the number of coins that have been consecutively inserted.

In the present invention I use a rotary coin-receiving disk having suitable indentations in its periphery to engage a pawl and having a lateral or other projection to engage a lever-catch, the lever-catch and pawl being in one piece. The rotation of the coin-disk is caused to set forward by suitable gearing a screw working in a threaded pinion or equivalent means and governing the valve, and the ordinary meter-index is adapted to set back said screw by turning the threaded pinion or the like.

In the accompanying drawings, Figure 1 is an elevation, Fig. 2 is a plan, and Figs. 3, 4, 5, and 6 are sectional end elevations, of the apparatus constituting my invention. Fig. 7 is a sectional view illustrating a modification of construction hereinafter described.

In all the figures similar letters denote similar parts.

A is the coin-disk, through the center of which is a slot so formed that a coin of the required size will rest in the slot and project beyond the periphery of this disk, as shown in Figs. 4 and 6, but smaller coins will drop right through the slot into the coin-receptacle underneath.

c is the axle of the disk, which is supported

by the plate I and the bracket N. Above A and fixed to the plate I is a coin-guide B, and above this is fixed in the meter-case a second coin-guide T, these guides being so disposed that upon the insertion of the coin into the slot of T it will pass through chute B and fall into the slot of disk A.

Pivoted upon B is a lever M, having a hooked end  $m'$ , against which a stop-pin  $n$  on the disk A is brought when the disk is turned by means of the handle D without the previous insertion of a coin; but upon a coin being inserted and the handle turned the coin, projecting beyond the periphery of the disk, is brought to bear against a pawl  $m$  on the lever M, and thus lifts the said lever and moves the projection  $m'$  from the disk before the stop  $n$  can engage with it. This position of the apparatus is shown clearly in Fig. 4. Upon continuing the rotation of the disk the coin will eventually be moved clear of the pawl  $m$ , and this pawl will then engage with the ratchet-indentations in the periphery of the disk A and will thus prevent the return of the disk. During the course of the rotation of the disk the coin will drop out into the coin-receptacle below, and the rotation can be continued until the stop is brought against the projection  $m'$  of the lever M; but as the normal position of the stop  $n$  should be at a certain distance from the projection  $m$  (this position being shown in Fig. 6) a spring  $q$  is arranged to engage with projection  $p$  on the disk A, and a sufficient number of teeth are removed from the periphery of the disk A to permit of its assuming this position under the influence of the spring  $q$ .

Upon the axle  $c$  is provided an annular disk  $d$ , Fig. 3, having a projecting pin  $e$  and a slot  $a$  to admit a stop-pin  $b$ , fixed upon the axle  $c$ , the purpose of the said stop-pin being to mechanically connect the axle  $c$  and the disk  $d$ . A similar annular disk  $g$  is fitted on a spindle E, (which is also supported by the plate I;) but in this case the spindle E is slotted at  $i$ , and the annular disk is provided with a tongue  $h$ , engaging in the said slot. The spindle E and axle  $c$  are connected by the gearing-wheels  $f f'$ , which are provided with holes into which fit the pins  $e$  and  $e'$  of the annular disks  $d$  and  $g$ , respectively. In this



manner the rotation of the disk A is communicated to the screwed spindle E, Figs. 1 and 2, which is thus turned in the threaded pinion F, and as the said pinion is prevented from moving endwise by the brackets H and H', fixed to the plate K, and from rotating by the worm G the screwed spindle E is protruded through the pinion F in the direction of the plate I. This motion of the spindle E causes the slide Q (which is attached to it at P and is slotted, as shown in Fig. 2, in order to be guided by or upon the screw R) to move with it in the same direction, and thus opens the valve W, which is connected to the said slide Q by the rod w, and at the same time causes a pointer V, attached to the slide, to indicate upon a scale the quantity of gas prepaid. Every operation of the coin-disk A moves the slide Q a similar distance toward the plate I, and eventually when a sufficient maximum amount of gas has been prepaid the free end of the slide Q is brought between the coin-guides B and T, and thus prevents any further coins being introduced into the coin-disk.

The worm G, fixed upon one of the spindles of the ordinary meter-index S, is arranged to gear with the pinion F, and the motion of the meter is thus caused to turn the said pinion, and as the pinion cannot move laterally because of the brackets H H' the screwed spindle E is withdrawn in the direction of the valve, which is eventually closed by the slide Q unless in the interval further coins are placed in the apparatus.

To enable the quantity of gas supplied for a given coin to be readily changed, the wheels *f f'* are made easily removable, it being only necessary to lift the plate L, which is pivoted at *l* and supported at *l'*. This plate L, when in position with its hooked end under the head of the screw *l'*, lies across the wheels *f f'*, it being, if necessary, slotted or recessed to pass the axles of these wheels. By swinging it upward about its pivot *l* it may be brought clear of the wheels *f f'*, which can then be lifted off. A suitable change in the numbers of the teeth *f f'* will give the requisite alteration.

The valve W is not an essential portion of the apparatus, as any other valve can be operated by the slide Q, either through the intermediary of suitable levers or direct, and after the valve has been opened the mechanism may move away from it in place of carrying the valve with it throughout its whole movement, and the mechanism will be then returned by the meter-train into con-

tact immediately before closing the valve during the final part of its movements.

It is not necessary that the boss of the pinion F should be internally screw-threaded, as a pin, such as X', passed from outside through the nave of the pinion and meshing with the thread of the screw, would have a similar effect, as illustrated in Fig. 7, which is a longitudinal section in the plane of the axis of the screw-spindle E, (the latter being, however, in elevation,) showing the nave of pinion F and the pin X' passing through it to engage the screw-thread of spindle E.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a prepayment gas-meter, the combination with a valve and means for removing same from its seat of a rotary disk A for operating said means having a chamber adapted so to hold a coin that part of its periphery extends laterally from the disk in a plane parallel to the face of the disk, ratchet-teeth around part of the periphery of said disk, a stop-pin projecting from said disk a lever adapted to be displaced by said coin on the rotation of said disk and having a hook adapted to fall into the path of said pin, and a pawl for said ratchet-teeth.

2. The combination with a valve and means for removing same from its seat of a rotary disk A for operating said means and having a chamber adapted to so hold a coin that part of its periphery extends laterally from the disk in a plane parallel to the face of the disk, ratchet-teeth around part of the periphery of said disk, pins *n* and *p* on said disk, spring *q*, lever M having a hook *m'* and a projection *m* on said lever M constituting a pawl for said ratchet-teeth and a dog for displacing the lever M by passage of the coin.

3. The combination with a meter-train and a valve of a slide Q adapted to remove said valve from and replace it on its seat, a screw-threaded spindle E connected to said slide, a rotary sleeve engaging with the threads of said spindle, means for limiting the end movement of said spindle, a worm-wheel on said sleeve, a worm G connected to be revolved by the meter-train, mechanism for revolving said spindle E by hand and a coin-displaced detent for said mechanism.

In witness whereof I have signed this specification in presence of two witnesses.

JOHN TOURTEL.

Witnesses:

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A. J. HADDAN.