

No. 660,940.

Patented Oct. 30, 1900.

J. ZANDER.  
PREPAYMENT GAS METER.

(Application filed Oct. 16, 1999.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 2.

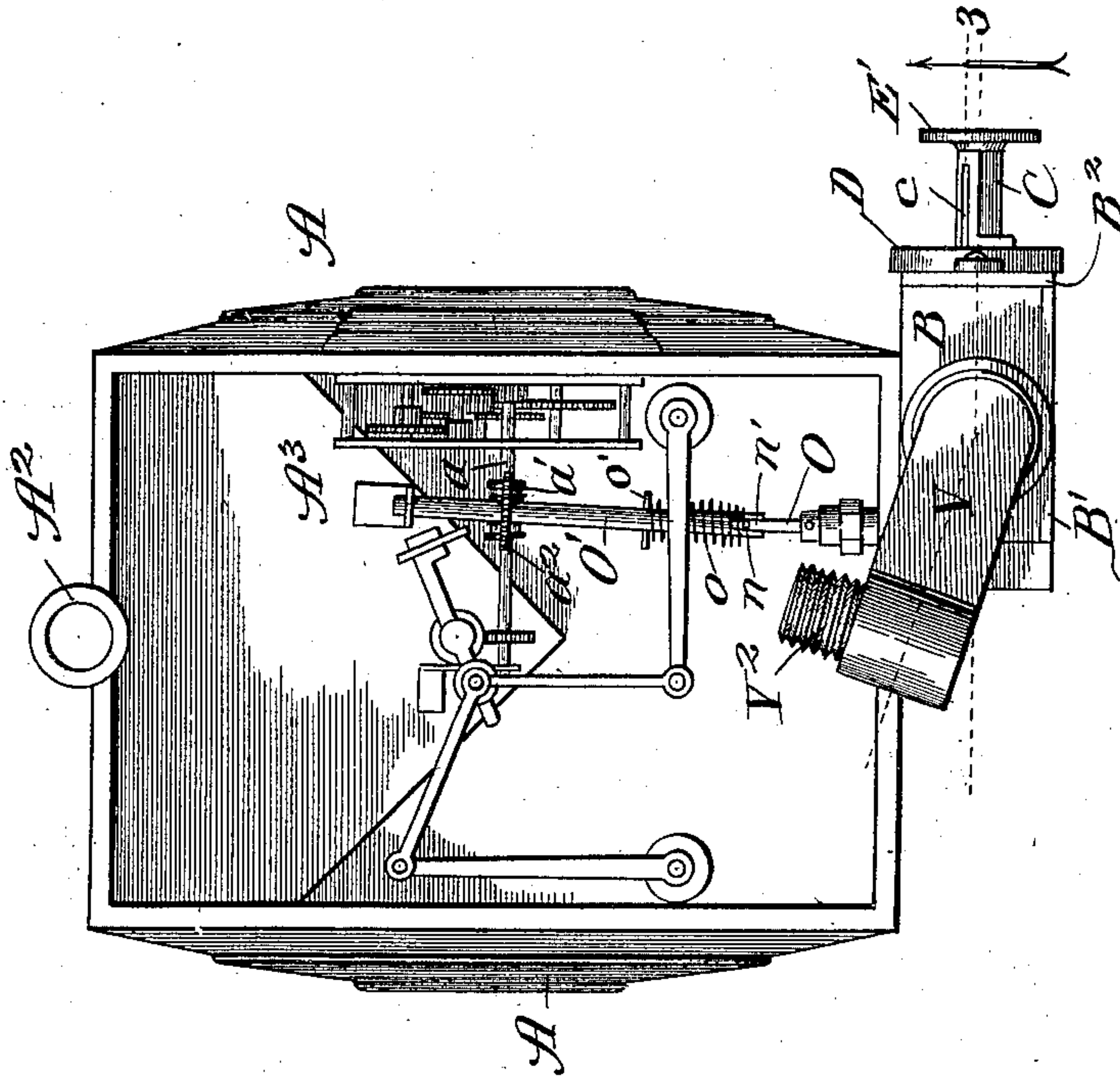
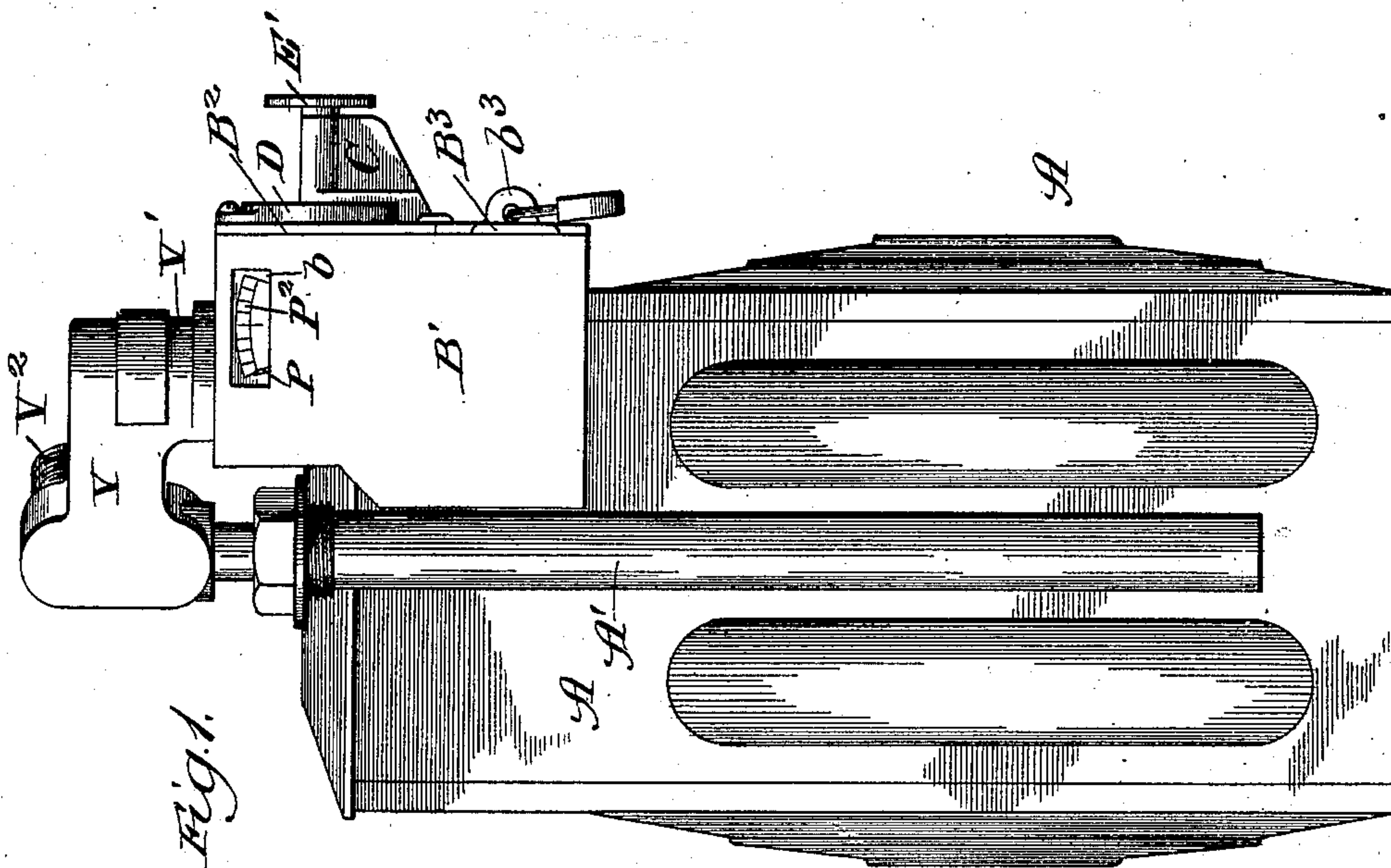


Fig. 1.



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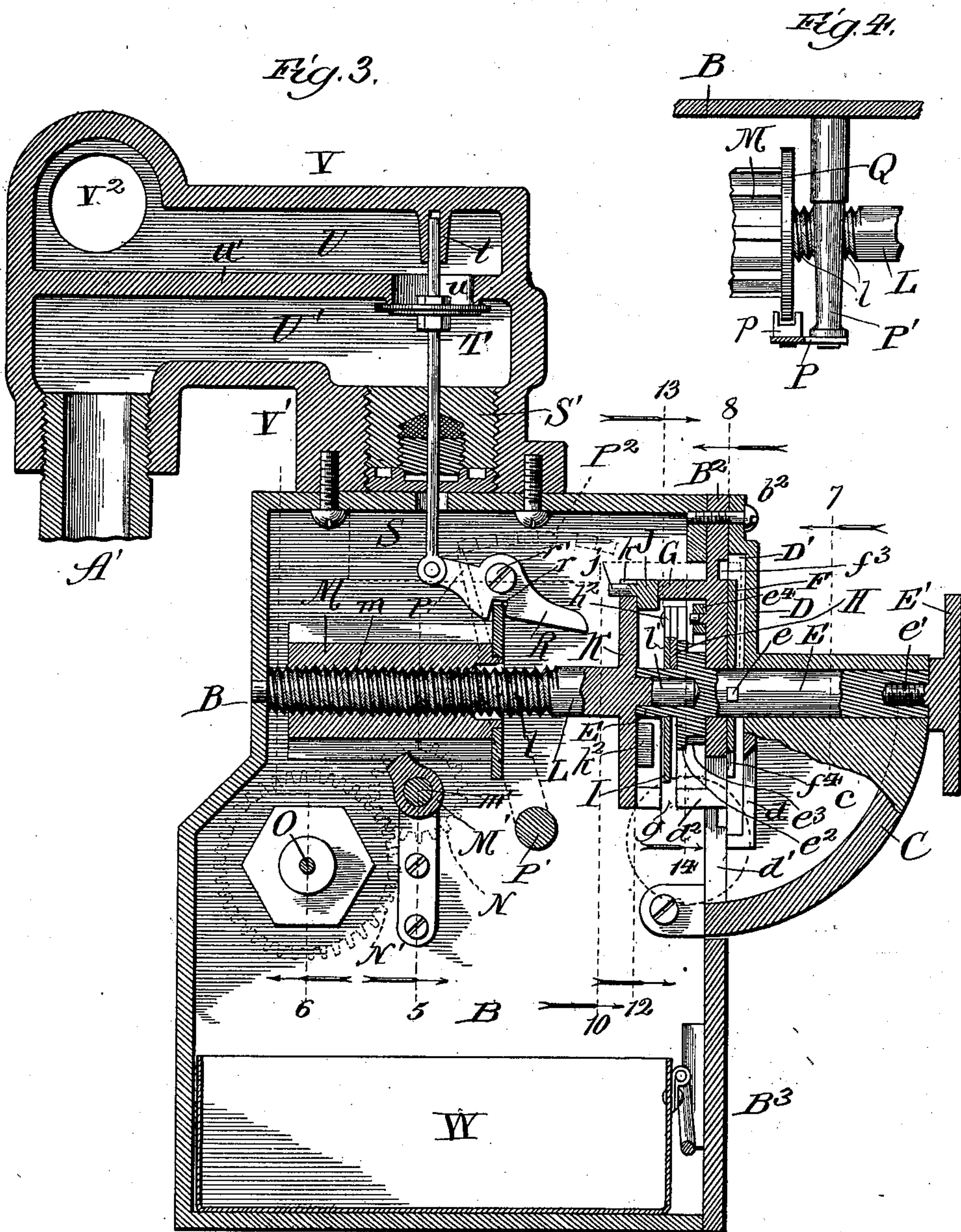
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4 Sheets—Sheet 2.



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4 Sheets—Sheet 3.

Fig. 5.

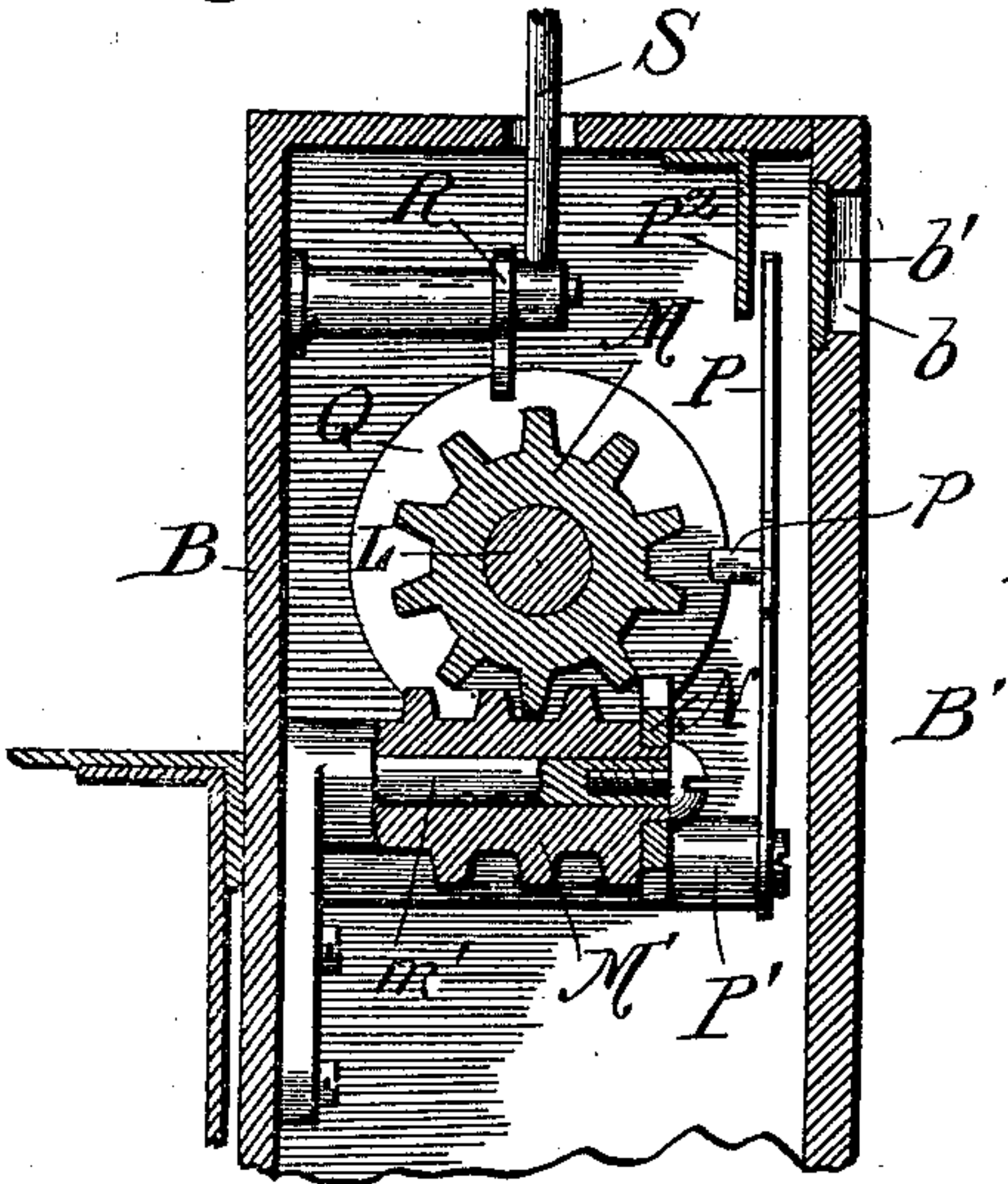


Fig. 6.

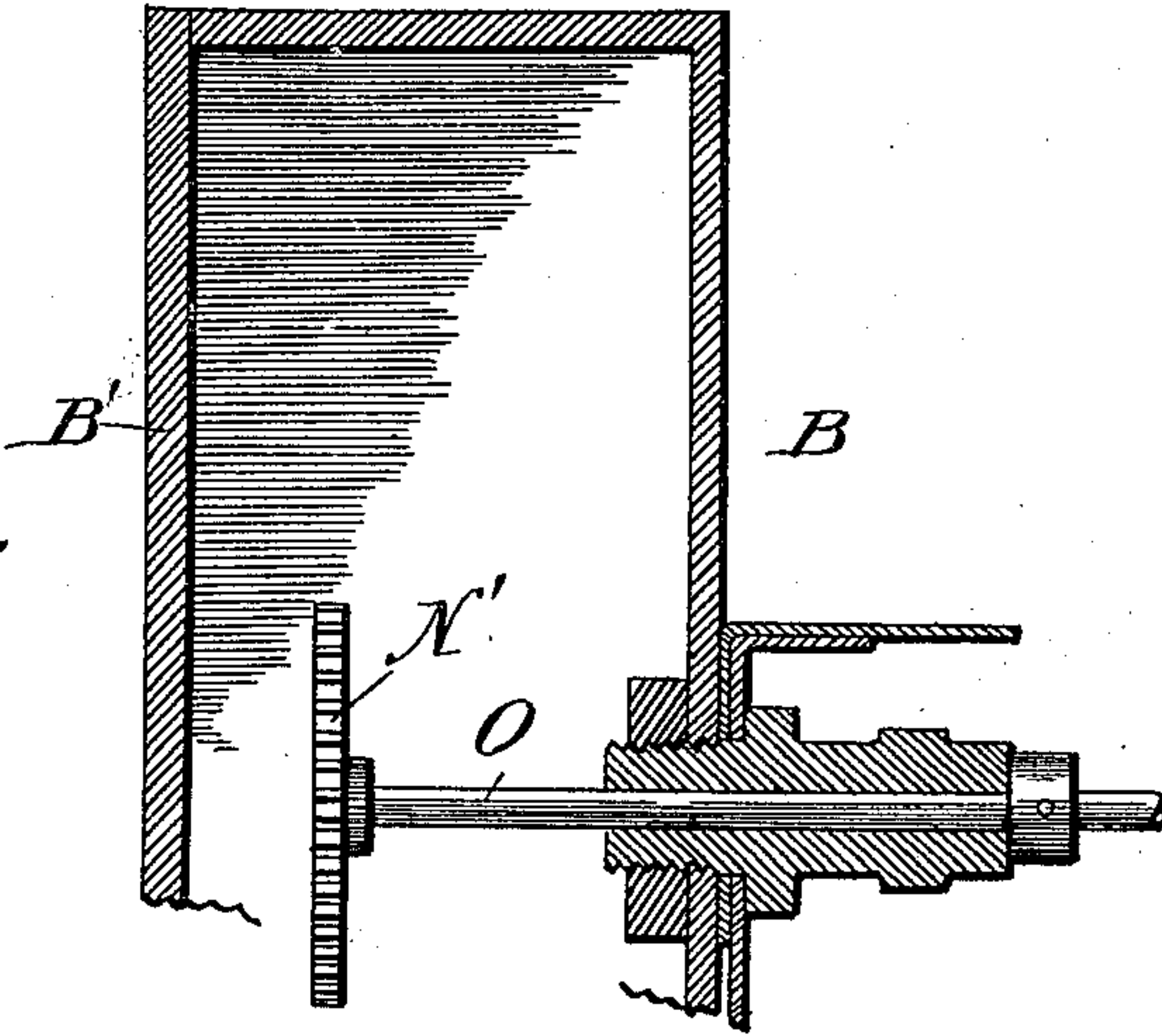


Fig. 7.

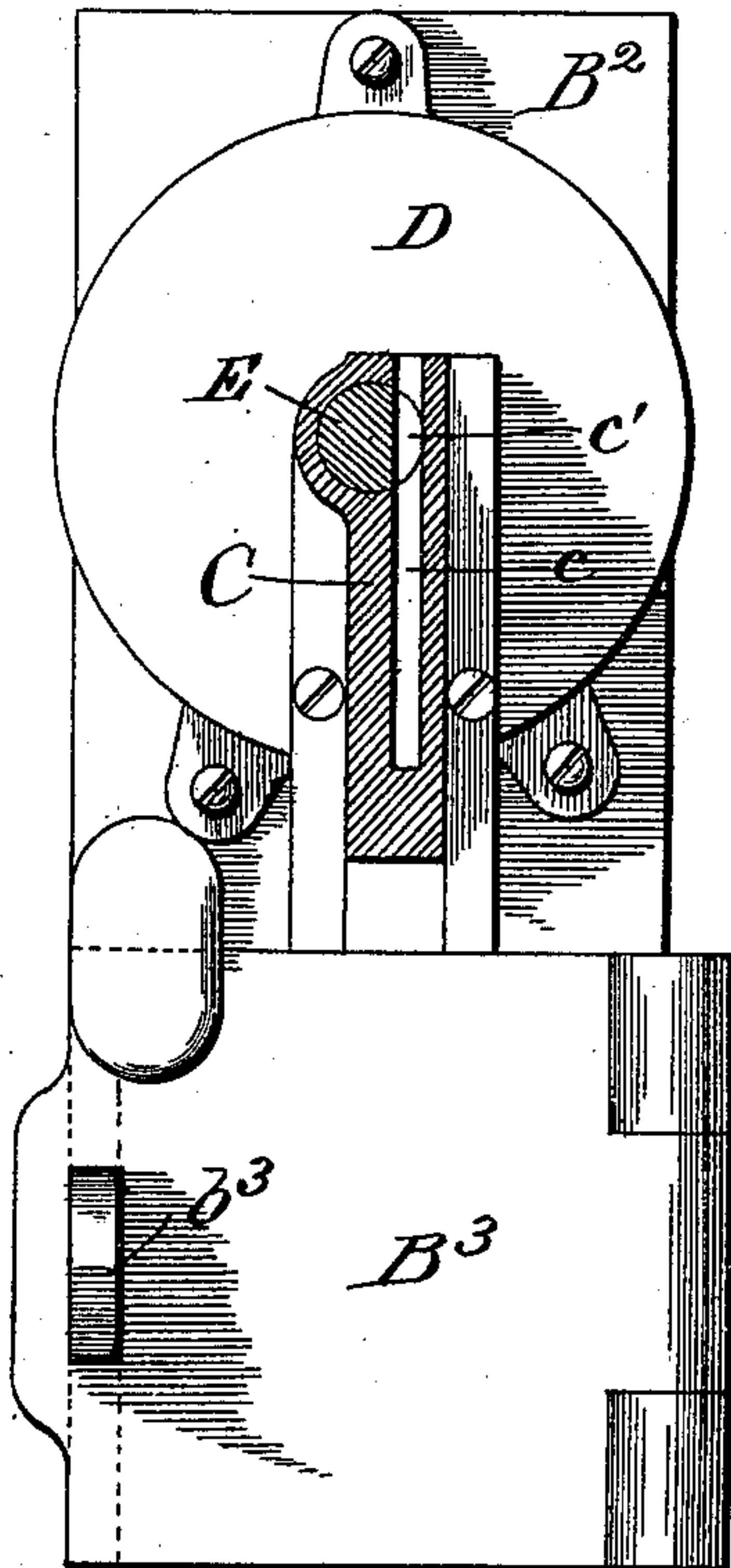


Fig. 8.

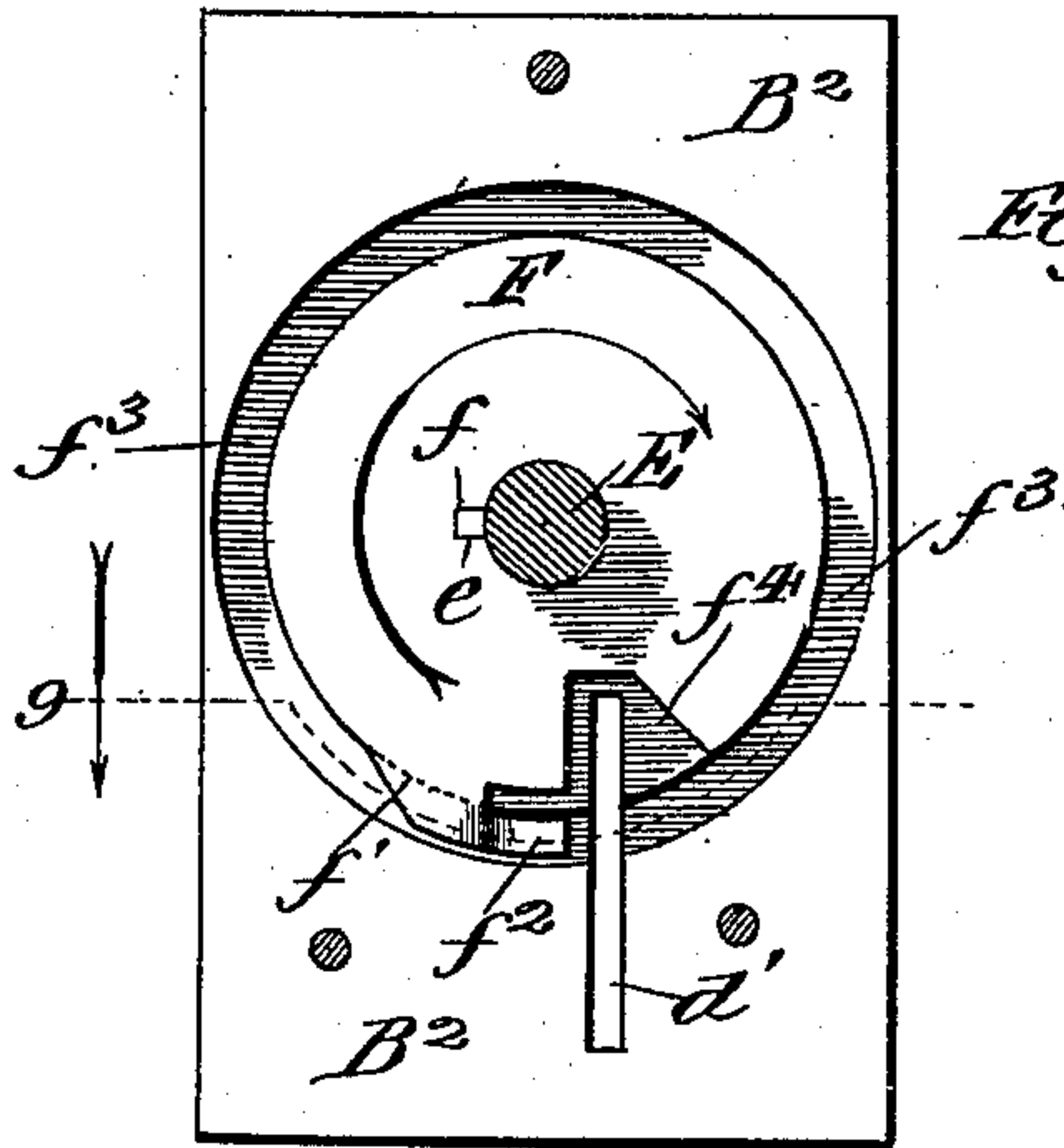
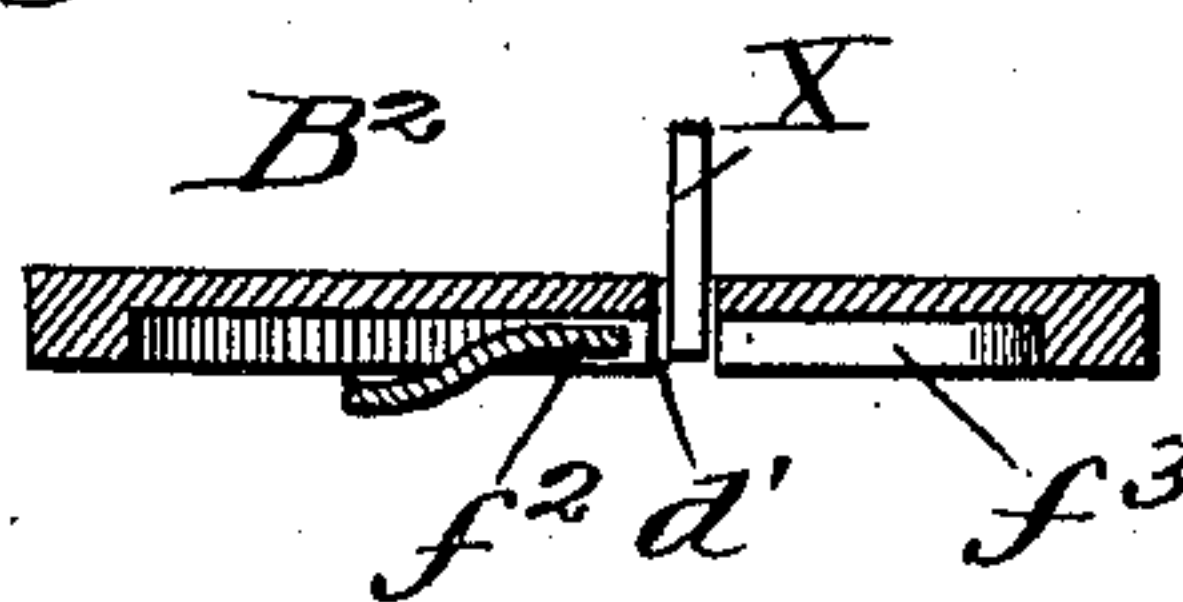


Fig. 9.



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4 Sheets—Sheet 4.

Fig. 10.

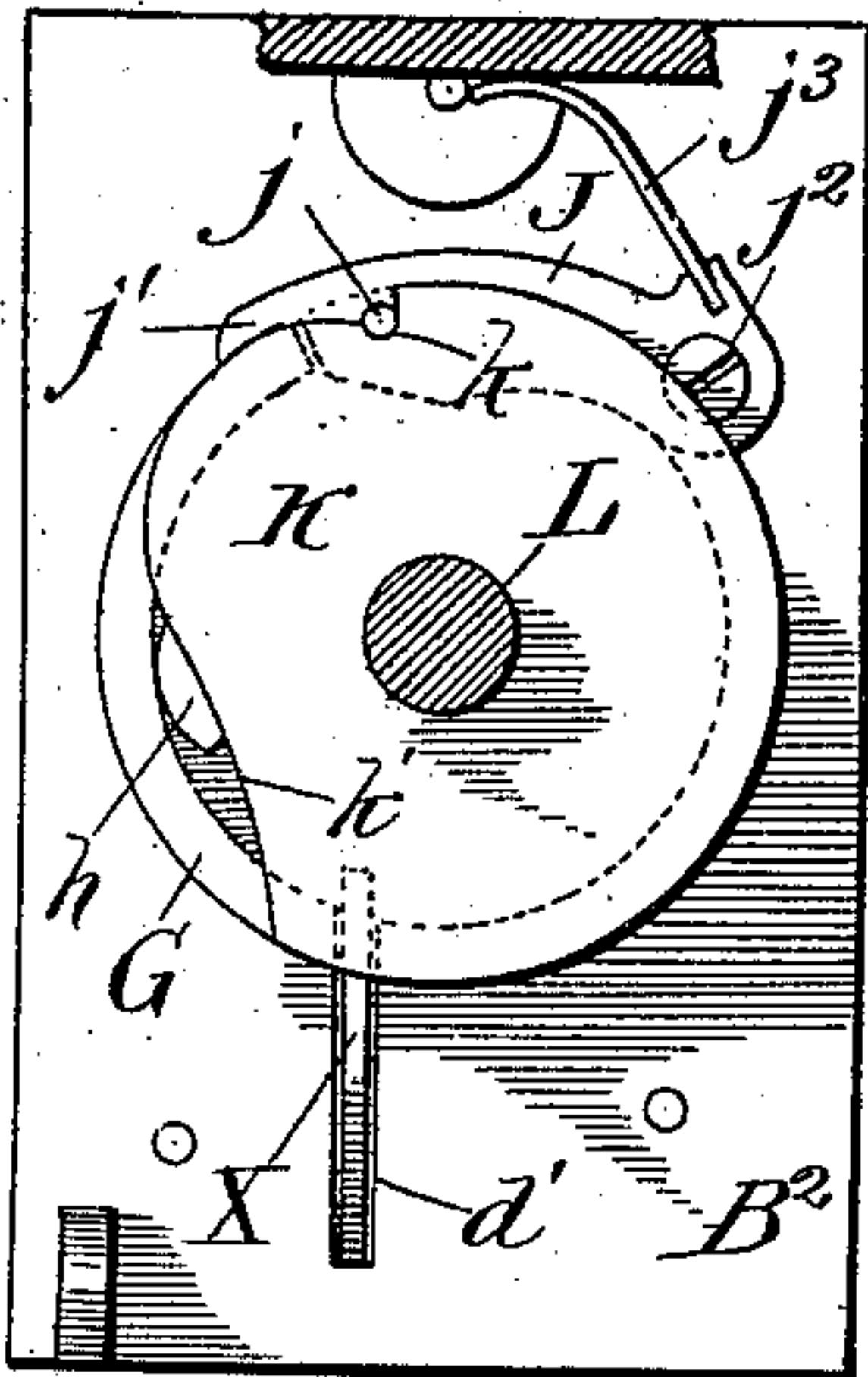


Fig. 12.

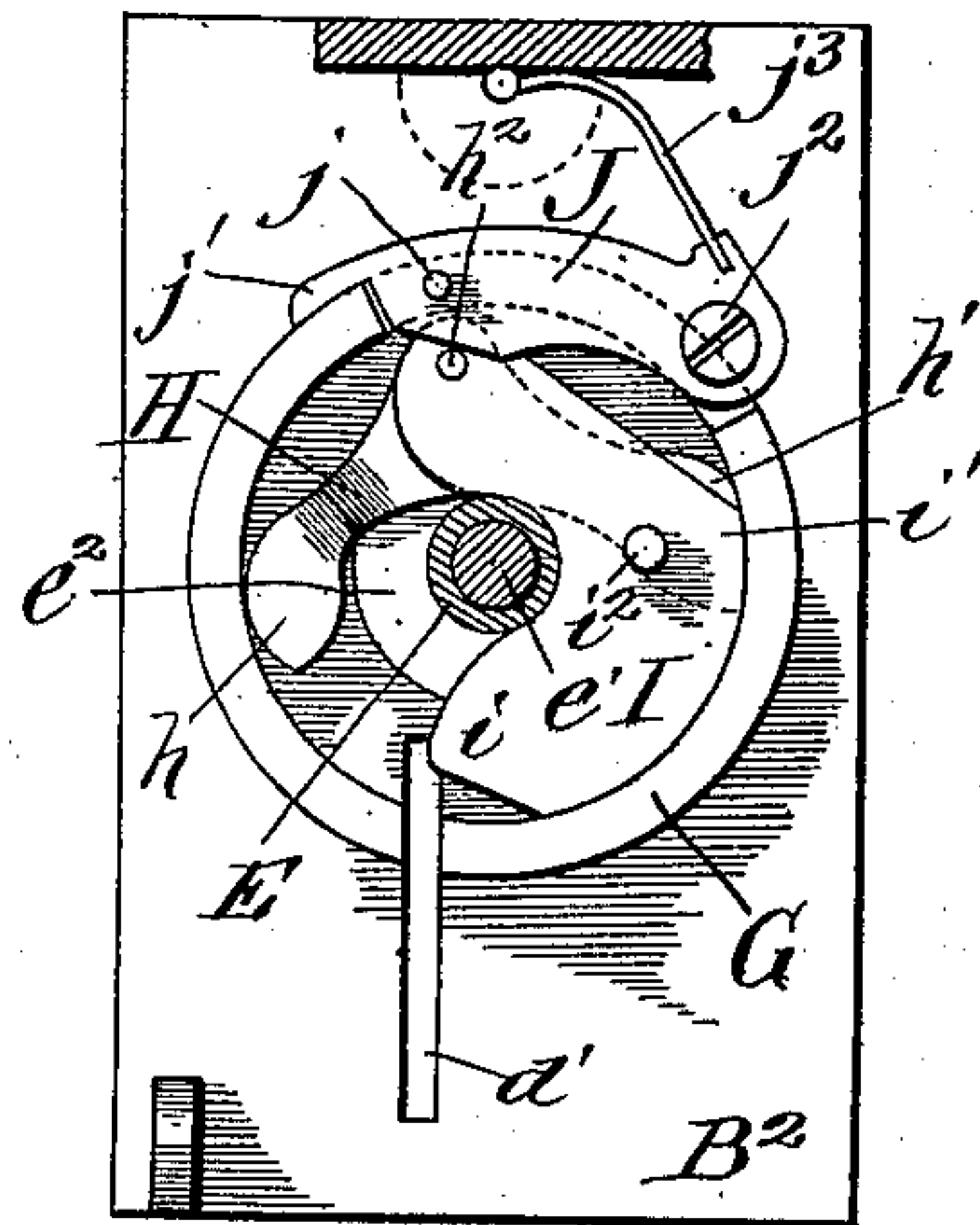


Fig. 11.

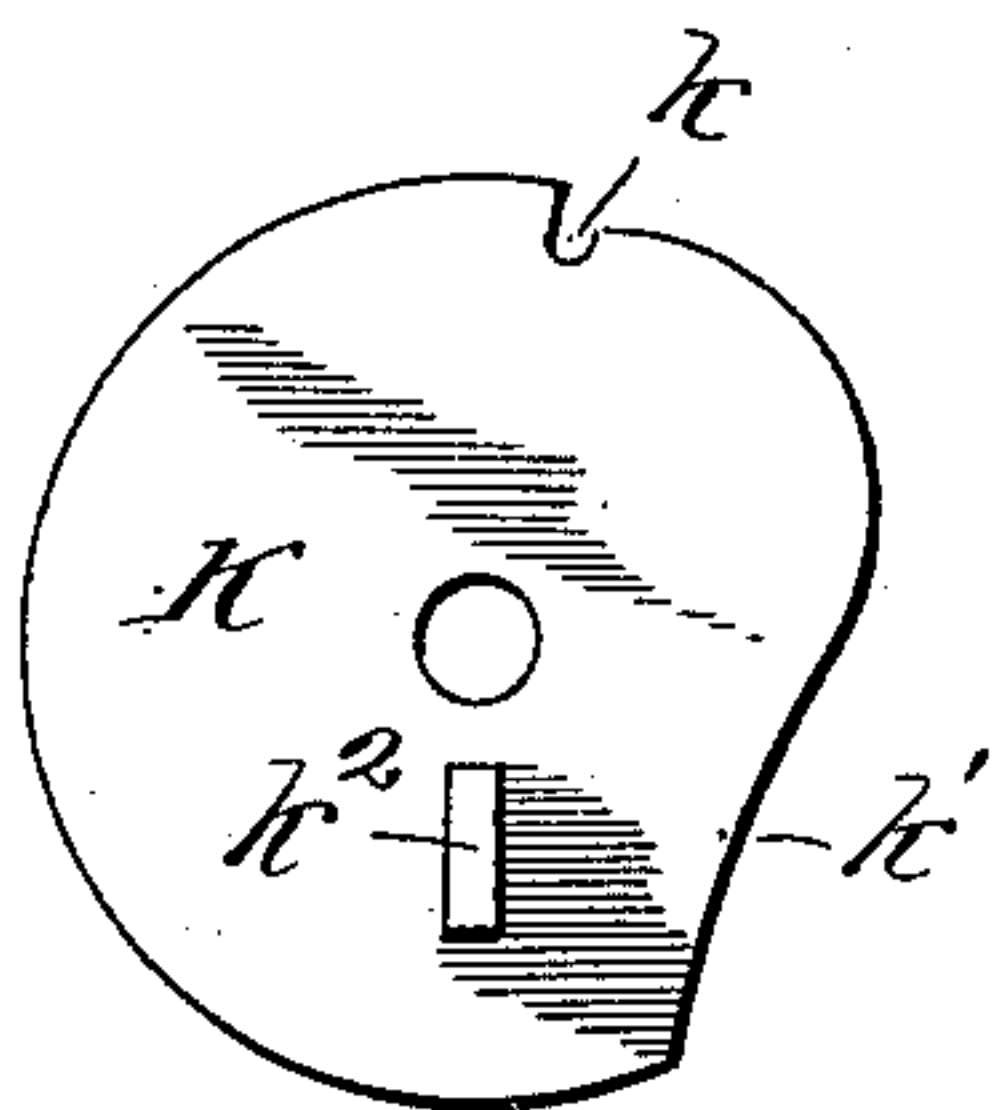


Fig. 13.

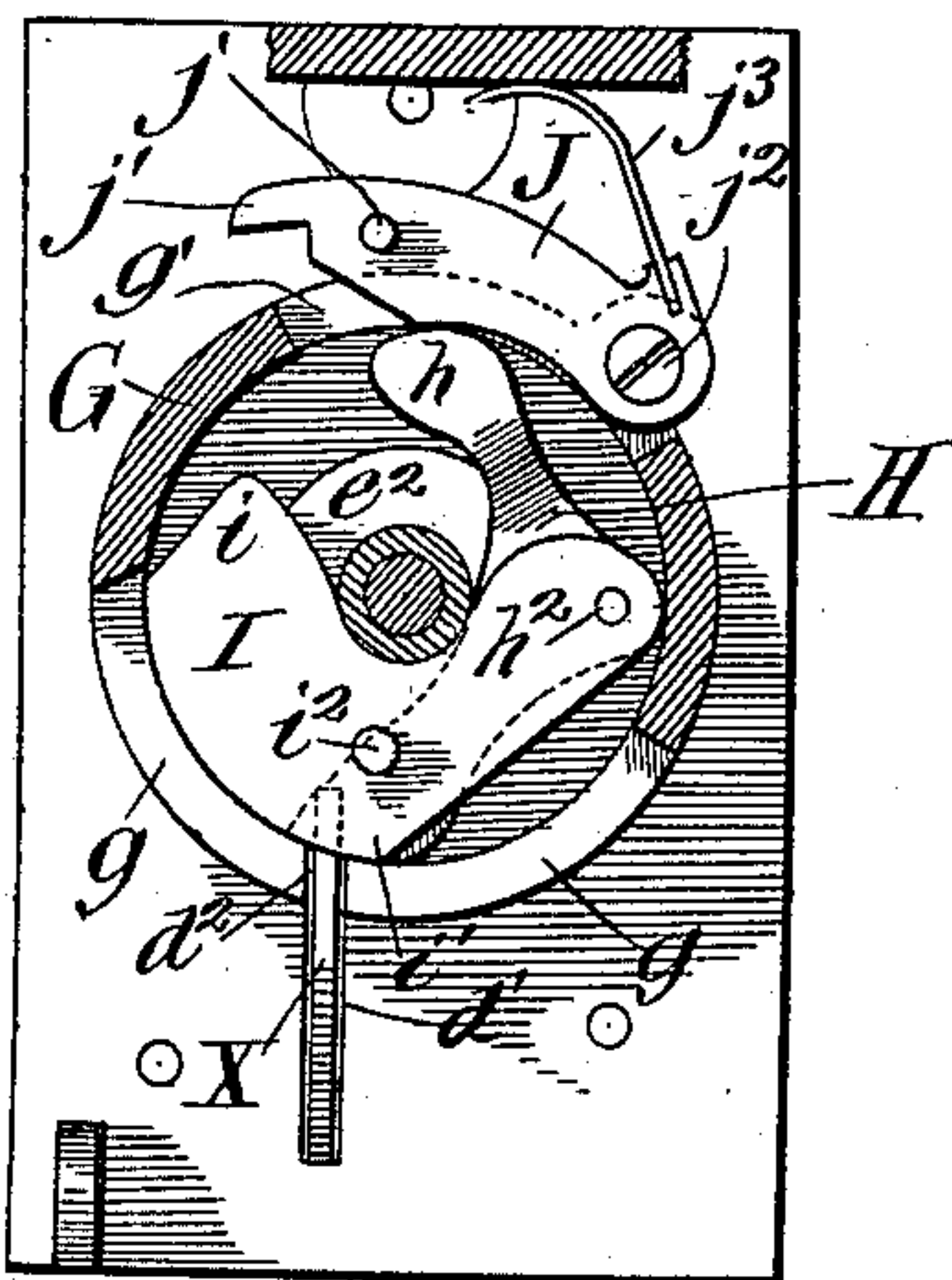


Fig. 14.

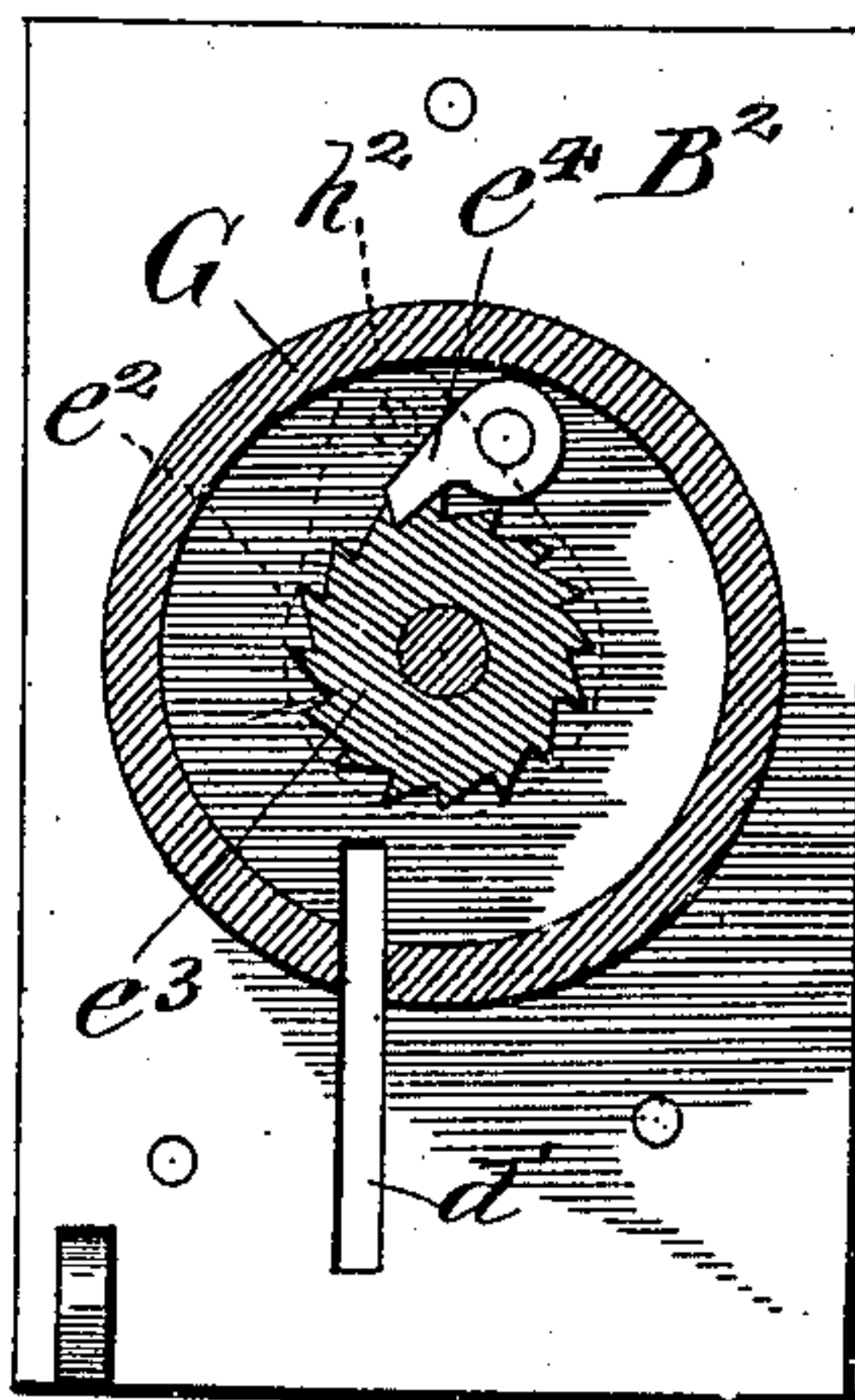
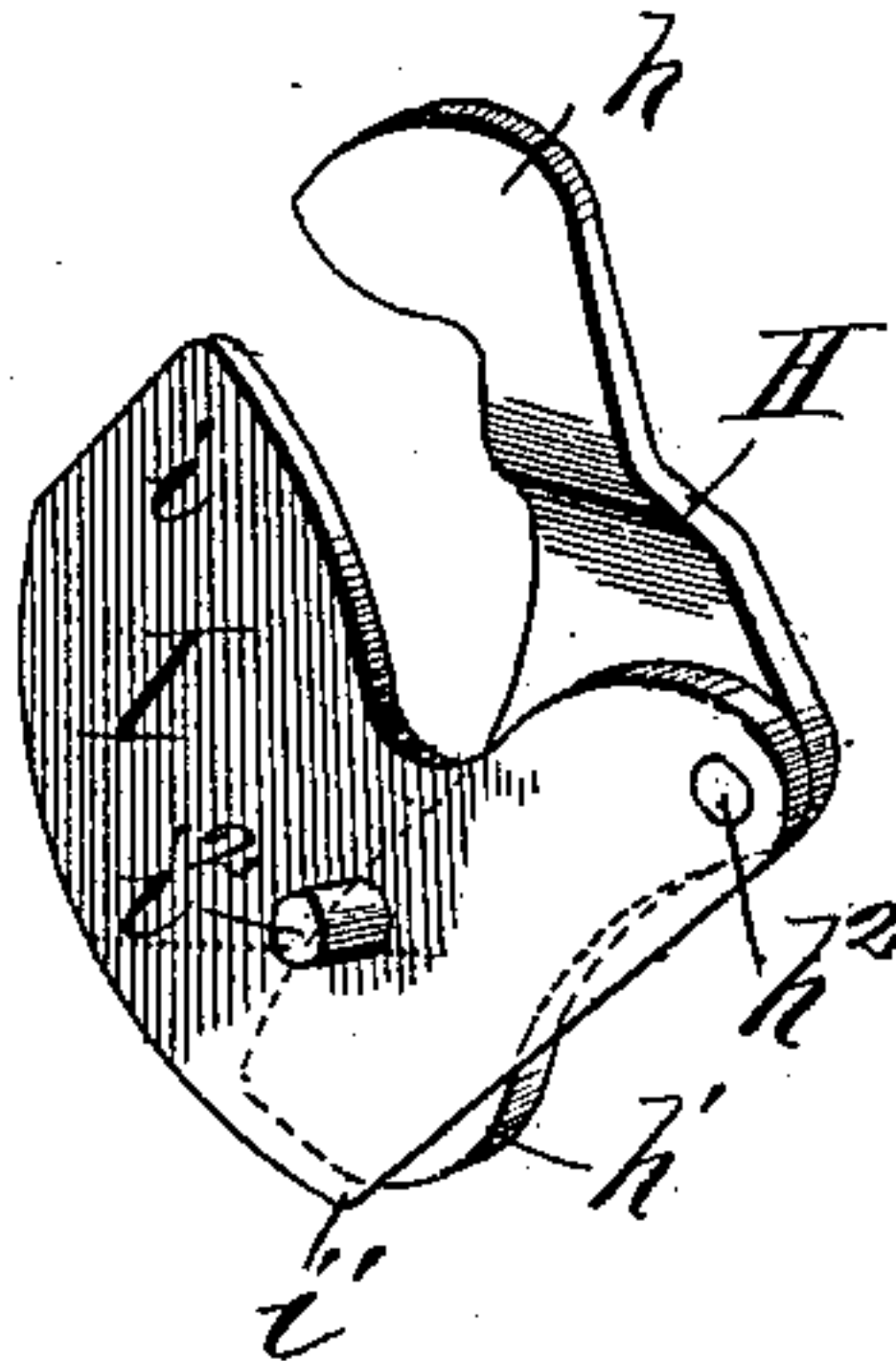


Fig. 15.



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# UNITED STATES PATENT OFFICE.

JOHN ZANDER, OF CHICAGO, ILLINOIS.

## PREPAYMENT GAS-METER.

SPECIFICATION forming part of Letters Patent No. 660,940, dated October 30, 1900.

Application filed October 16, 1899. Serial No. 733,751. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ZANDER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have  
5 invented a certain new and useful Improvement in Prepayment Gas-Meters, of which the following is a specification.

The object of my invention is to construct a coin-controlled mechanism which can be ap-  
10 plied to an ordinary gas-meter, so that by depositing one or more coins of a given denomination the mechanism can be set so as to permit the quantity of gas thus paid for in advance to flow through the meter; and the in-  
15 vention consists in the several parts and combinations of elements hereinafter described and claimed.

In the drawings illustrating my invention, Figure 1 is a side elevation of an ordinary gas-  
20 meter, showing my invention in coin-controlled mechanism applied thereto; Fig. 2, a top or plan view of the parts shown in Fig. 1 with the top of the meter removed; Fig. 3, a sectional elevation on the dotted lines 3 of  
25 Fig. 2 looking in the direction of the arrow and showing only the coin-controlled mechanism; Fig. 4, a detail of the movable gear and the registering-pointer; Fig. 5, a sectional elevation on line 5 of Fig. 3 looking in the  
30 direction of the arrow, showing the movable gear and the registering-pointer; Fig. 6, a sectional elevation on line 6 of Fig. 3 looking in the direction of the arrow and showing the driving shaft and gear driven from the meter-  
35 register shaft; Fig. 7, a sectional elevation on line 7 of Fig. 3 looking in the direction of the arrow; Fig. 8, a sectional elevation on line 8 of Fig. 3 looking in the direction of the arrow; Fig. 9, a detail in section on line 9 of  
40 Fig. 8; Fig. 10, a sectional elevation on line 10 of Fig. 3 looking in the direction of the arrow; Fig. 11, a detail of the cam-plate of Fig. 10; Fig. 12, a sectional elevation on line 12 of Fig. 3 looking in the direction of the arrow;  
45 Fig. 13, a sectional elevation on line 13 of Fig. 3 looking in the direction of the arrow; Fig. 14, a sectional elevation on line 14 of Fig. 3 looking in the direction of the arrow, and  
50 Fig. 15 a perspective view of the levers actuated by the cams for releasing the parts so as to set the mechanism.

My invention is applicable to an ordinary

gas-meter, embodying in its construction an outer casing A, an induction-pipe A' for connection with the service-pipe from the street, 55  
an eduction-pipe A<sup>2</sup> for connection with the service-pipes for the house or building, and a register A<sup>3</sup>, with the usual devices for operating the register, some of which are shown, but are not described, as they are of any usual 60  
and well-known form of construction and operation for such parts. The only change from an ordinary gas-meter is in providing the shaft a of the register with a worm-gear a' to en-  
65 gage with a gear a<sup>2</sup> on a cross-shaft for a purpose hereinafter described.

The coin-controlled mechanism is located in a casing B, having its back, both ends, and one side formed integral, if so desired, and having a front B', capable of removal, and a 70  
side B<sup>2</sup>, detachably secured in place by screws b<sup>2</sup> or otherwise. A hinged door B<sup>3</sup> is provided below the side B<sup>2</sup> for access to the interior of the casing, which door, as shown, has a slot for the passage of a lug or staple b<sup>3</sup> on the 75  
front of the casing, so that by inserting the hasp of a suitable lock through the lug the door can be locked and the casing entirely closed against admission therinto except by the one having the key for the lock. 80

A wall C, having a coin chute or passage c, is attached to the side B<sup>2</sup> of the casing in connection with a plate D, which plate on its rear face has an annular chamber D'. The wall C may be attached to the plate D by screws 85  
passing through flanges on the inner edge of the wall, as shown in Fig. 7, and the plate may be attached to the side B<sup>2</sup> by screws passing through lugs on the plate, as shown in Fig. 7. The wall C has a hole for the passage 90  
of a shaft E at one side of the coin channel or chute, and this shaft is cut away on one side, so as to have a flat face forming an opening c' for the shaft in line with the coin-channel when the parts are in normal position, as 95  
shown in Fig. 7. The outer end of the shaft has attached thereto by a screw-threaded stem e' a disk or head E', so that by turning the head the shaft can be rotated.

The shaft E passes through the plate or side 100  
B<sup>2</sup> of the casing, and on the shaft between the casing-plate and the plate D and within the chamber D' is a guard-plate F, connected with the shaft by a slot f in the plate, which en-



gages a pin  $e$  on the shaft, so that the rotation of the shaft rotates the plate. The guard-plate has a projecting portion forming an incline or cam face  $f'$  and terminating in an end or tongue  $f^2$ , having an inward bend, so as to lie within an annular channel  $f^3$  in the plate  $B^2$ . The guard-plate adjacent to the end  $f^2$  has a recess or notch  $f^4$  cut into its periphery, which recess or notch is of a sufficient depth to clear the end of a coin-slot  $d'$  in the plate  $B^2$ , which slot lines with the coin channel or chute  $c$ , and the plate  $D$  also has a coin-slot  $d$  in line with the channel  $c$  and the slot  $d'$ , so as to furnish an uninterrupted passage for a coin through the channel and coin-slots when the guard-plate is in the position shown in Fig. 8, with its recess  $f^4$  in line with the coin-slots, the guard-plate obstructing the passage of a coin except as the recess is in line by closing the upper ends of the coin-slot as the plate rotates. The end or tongue  $f^2$  prevents backward rotation of the guard-plate after a coin has passed through the slot  $d'$  with its rear edge still in the slot, and this end or tongue, in connection with the incline or cam face  $f'$ , with the forward rotation of the plate by engaging the edge of the coin will insure the deposit of the coin in case of the sticking of a coin from any cause in the slot, which would prevent its natural deposit by gravity.

On the inner face of the plate  $B^2$  is an annular wall  $G$ , and on the shaft  $E$  within the chamber formed by this wall is a plate or flange  $e^2$ , and on the shaft between the flange and the plate  $B^2$  is a ratchet  $e^3$ , engaged by a gravity or other form of pawl  $e^4$ , so as to prevent backward rotation of the shaft. The flange or rim  $e^2$  has pivoted thereto a lever  $H$  and a lever  $I$ , both levers swinging or oscillating on a common pivot  $h^2$ . The lever  $H$  has an arm  $h$  and an arm  $h'$ , and the arm  $h$  is bent inward, so as to stand in a different plane from the arm  $h'$ . The lever  $I$  has an arm  $i$  and an arm  $i'$ , both in the same plane and parallel with the plane of the arm  $h'$  of the lever  $H$ . The arm  $h'$  and the arm  $i'$  are in a plane with a lateral slot  $g$  in the wall  $G$ , and transverse of this slot in the wall is a slot  $d^2$  in line with the slot  $d'$  for the passage of the coin into the slot  $d^2$  for its edge to lie across the slot  $g$  to be engaged by the edges of the arms  $h'$  and  $i'$  of the levers  $H$  and  $I$ .

The arm  $h$  is outside of the plane of the slot  $g$  and in line with the under face of a pawl  $J$ , so as to strike such face and raise the pawl when the arm  $h'$  of the lever engages the edge of the coin and raises the arm  $h$ . The pawl  $J$  enters an opening  $g'$  in the edge of the annular wall  $G$  and has a pin  $j$  on its inner face. The pawl is pivoted by a suitable pin or pivot  $j^2$  and has a nose or point  $j'$ , which when the pawl is down rests on the wall  $G$ , and the pawl is returned after being raised by a spring  $j^3$ , which spring also holds the pawl against being raised except by the contact of the arm  $h$  with its under face.

The pin  $j$  projects over the edge of a plate  $K$ , so as to engage a notch  $k$  on such plate and hold the plate against rotation from the shaft  $E$  until the pin is raised from the notch by the raising of the pawl from the arm  $h$ . The plate  $K$  is cut away at one side, so as to leave an edge  $k'$ , which will clear the coin-slot  $d^2$  when the plate is in position for the cut-away edge  $k'$  to be transversely over the slot.

The plate  $K$  is formed with or rigidly secured to a shaft  $L$ , which shaft has an end  $l'$  entering into a socket in the end of the shaft  $E$ , so as to form a journal for the shaft. The plate has on its face a lug  $k^2$ , which is engaged by a pin  $i^2$  on the lever  $I$  when such lever is held in a raised position by the engagement of its arm  $i'$  with the edge of a coin in the slot  $d^2$  for the lever as it is rotated by the shaft  $E$  to revolve the shaft  $L$  through the engagement of the pin  $i^2$  and lug  $k^2$ . The rotation will continue one complete revolution or until the pin  $j$  again drops into the notch  $k$ , the pin having been released from the notch just prior to the engagement of the pin  $i^2$  and lug  $k^2$ , leaving the plate  $K$  free to be revolved.

The edge of the plate except at the cut-away portion overlies the coin-slot, and the coin will thus be held in the slot during the revolving of the plate  $K$  until the cut-away edge  $k'$  comes over the slot, when the coin is free to drop from the slot by gravity and pass into the coin-receptacle or other place of deposit, and with the release of the coin from the slot the continued revolution of the shaft  $E$  carries the levers around, so that the arms or ends  $h'$  and  $i'$  can again drop into the slot  $g$ , disengaging the plate  $K$  from the lever  $I$  and locking the plate with the pawl  $J$  until the introduction of the next coin to again release and connect the parts for another operation.

The shaft  $L$  has a screw-thread  $l$ , which engages a screw-thread  $m$  on the hub of an elongated gear  $M$ , which gear meshes with a worm  $M'$  on a shaft  $m'$ , which worm has a pinion  $N$  meshing with a gear  $N'$  on a shaft  $O$ , passing through a suitable stuffing-box on the casing of the meter and connecting with a shaft  $O'$  within the body of the meter by means of a pin  $n$  and a slot  $n'$  or in any other yieldable manner, and, as shown, the engagement is maintained by means of a spring around the shaft  $O'$  and between the pin  $n$  and the pin  $o'$  on the shaft. This connection permits the shaft  $O$  to be moved inward, so as to disengage the gear  $N'$  from the pinion  $N$  and allow the meter-register to be turned back when so desired. The shaft  $O'$  has thereon the gear  $a^2$ , which meshes with the worm  $a'$  on the shaft  $a$  of the meter-register, so that with the operation of the meter-register the shaft  $O'$  will be rotated, rotating the shaft  $O$  and through the gear  $N$  and pinion  $N'$  operate the worm to advance the gear  $M$  on the shaft  $L$  from its receded position.

The elongated gear  $M$  is receded on the



shaft L by the screw-threads  $l$  and  $m$  and the rotation of the shaft through the means already described by the insertion of a coin in the coin channel or chute, and the length of recession will depend upon the number of coins deposited, each deposited coin enabling the gear to be receded a given distance. A pointer P is mounted on a pin P' for its end to coact with a scale P<sup>2</sup>, located in line with a sight-opening  $b$  in the front of the casing, which opening may be protected by a glass  $b$  or otherwise. The pointer is engaged with a rim or flange Q on one end of the elongated gear by a slotted head or pin  $p$ , so that with the receding movement of the gear the pointer will be advanced, and its end will indicate on the scale the number of coins deposited, for which purpose the scale is provided with spaces, each space indicating the deposit of one piece of money. The flange or rim Q engages a rocking arm or lever R, connected at one end with the stem S of a valve. The lever has a notch  $r$  to receive the edge of the disk or flange at the terminal of the return of the gear for the engagement to raise the arm or lever and close the valve, the valve being opened by the passage of the rim out of the notch and along the under face of the lever. The valve T, carried by the stem S, closes a port  $u$  between a passage U and a passage U' in a casing V, the two passages being separated by a partition  $u'$ , having the port therein. The passage U communicates with the opening of a coupling V<sup>2</sup> for attachment to the street service-pipe, and the meter service-pipe is attached so as to communicate with the passage U'. The casing V is attached to the top of the casing B by a neck V', in which is a stuffing-box S' for the passage of the valve-stem S, so as to prevent leakage of gas around the stem into the coin-actuating mechanism. A removable receptacle W for the deposited coin may be provided at the bottom of the casing.

The operation is as follows: With the parts in their normal position and without a coin in the coin channel or chute the rotation of the shaft E does not affect the actuating means of the controlling-valve, as the two levers H and I drop into the slot  $g$ , preventing the disengagement of the plate K from the holding-pawl and also preventing the engagement of the lever I with the plate K. The deposit of a quarter or such other denomination of coin as the chute is adapted to receive and transmit, for the coin to pass down the channel and through the coin-slots to lie across the slot  $g$  in position for the arms  $h'$  and  $i'$  of the levers H and I to engage the edge of the coin with the rotation of the shaft E and operate the levers to disengage the plate K from the pawl J and engage the plate K with the lever I, permitting the rotation of the shaft E to rotate the shaft L and recede the elongated gear M. The receding of the gear operates the pointer, through the engagement of the head or pin  $p$  with the

flange or rim on the gear, to indicate the number of coins deposited. This receding movement also operates the rocking arm or lever, the end thereof engaged by the rim or flange and depressing the opposite end, drawing down the valve-stem, and opening the valve for the admission of gas through the passages U and U' from the street service-pipe into the meter. The gas will continue to flow until the number of feet paid for by the deposited coin has been reached, at which time the elongated gear has been returned to its normal position through the operation of the register A<sup>3</sup> and the shaft and gearing connecting such register with the gear. The return of the gear to its normal position causes the flange or rim to engage the edge of the rocking arm or lever at the notch and raise the stem end of the rocking arm or lever and the valve-stem to close the supply-valve between the chambers U and U' and shut off the gas. Each deposit of a coin produces an engagement for the rotation of the shaft L to open the supply-valve; but after the coin leaves the holding-slot and one complete revolution of the levers has been made no further receding movement of the elongated gear can take place until another coin has been deposited. It is to be understood that a single coin can be deposited, or a number of coins one after another can be deposited, each deposit being after one complete revolution for the preceding coin has been made, the deposit of each coin permitting the operation of the shaft to recede the elongated gear. Each additional deposit will not effect a further opening of the supply-valve other than the opening had by the first coin, as with the deposit of the first coin the rocking lever or arm is operated to its full extent for opening the supply-valve. The shaft E, located to one side of the coin chute or channel, prevents the withdrawal of a coin after it has been deposited and before an operation has been had, because with the turning of the shaft to produce the operation the opening  $c'$  thereof is carried away from its alinement with the coin channel or chute, closing the channel or chute and preventing any withdrawal of the coin. The coin does not drop through the slot in which it is held until the levers have been operated, at which time the plate F has passed over the rear edge of the coin and presents a solid face against any backward withdrawal until the plate has made a complete revolution for the recess therein to align with the coin-slots, before which time the incline or cam face will have struck the edge of the coin in case the coin does not drop naturally and force it inward and out of the coin-slot. The coin is held in the slot until after it has operated the levers by the edge of the plate K and remains so held until the cut-away portion  $k'$  comes to a point where a clear passage is left for the coin to drop from the slot. It will thus be seen that any withdrawal of a deposited coin is pre-



vented after once deposited, and no operation can occur until a coin has been deposited to actuate the levers, making the operation dependent solely on the deposit of a proper coin.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a prepayment gas-meter, the combination of a coin-channel, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, and a guard-plate carried by the shaft and crossing the mouth of the coin-channel, substantially as described.

2. In a prepayment gas-meter, the combination of a coin-channel, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, a guard-plate carried by the shaft and having a projecting portion provided with a cam or inclined edge and a depressed end or tongue to overlies the mouth of the coin-channel and a recess to aline with the coin-channel, substantially as described.

3. In a prepayment gas-meter, the combination of a coin-channel, a plate having an annular chamber on its inner face and a coin-slot, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, and a guard-plate carried by the shaft and located within the annular chamber and provided with a projecting portion having a cam or incline edge and a depressed end or tongue crossing the mouth of the channel, and a recess in line with the coin-channel, substantially as described.

4. In a prepayment gas-meter, the combination of a coin-channel, a plate having an annular chamber on its face, and provided with a coin-slot in line with the coin-channel, a second plate having on its outer face an annular groove or recess and provided with a slot in line with the coin-channel, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, a guard-plate carried by the shaft and located in the annular chamber and having a projecting portion with a cam or incline edge, and a depressed end or tongue entering the annular channel or recess, and a recess in line with the coin-slots of the two plates when in normal position, substantially as described.

5. In a prepayment gas-meter, the combination of a revoluble shaft, an annular wall within the casing of the mechanism, a trip-lever and an engaging lever both carried by the shaft and revoluble within the annular wall, substantially as described.

6. In a prepayment gas-meter, the combination of a revoluble shaft, an annular wall within the casing of the mechanism, a lateral slot in the wall, a trip-lever having a trip-arm and an arm entering the lateral slot, and an engaging lever having an engaging arm and an arm entering the lateral slot, both le-

vers carried by the shaft and operating within the annular wall, substantially as described.

7. In a prepayment gas-meter, the combination of a coin-channel, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, an annular wall within the casing of the mechanism, a lateral slot in the wall, a trip-lever having a trip-arm and an arm entering the lateral slot, and an engaging lever having an engaging arm and an arm entering the lateral slot, both levers carried by the shaft and operating within the annular wall, substantially as described.

8. In a prepayment gas-meter, the combination of a coin-channel, a revoluble shaft overlying the coin-channel and having one side cut away to form an opening to aline with the channel, a guard-plate carried by the shaft, an outer and inner plate between which the guard-plate is located, the outer and inner plates each having a slot to aline with the channel, an annular wall within the casing of the mechanism, a lateral slot in the wall, a transverse slot in the wall in line with the coin-slots of the plates, a trip-lever having a trip-arm and an arm entering the lateral slot, and an engaging lever having an engaging arm and an arm entering the lateral slot, both levers carried by the shaft and operating within the annular wall, substantially as described.

9. In a prepayment gas-meter, the combination of a coin-controlling and coin-controlled outer revoluble shaft, a revoluble inner shaft having a screw-thread thereon and actuated from the coin controlling and controlled outer shaft, an elongated gear movable by and on the screw-thread of the inner shaft, a flange or rim on the gear and a rocking arm or lever contacted by the flange or rim and operated by the travel of the gear for opening and closing the gas-supply valve to a gas-meter, substantially as described.

10. In a prepayment gas-meter, the combination of a coin-controlling and coin-controlled outer revoluble shaft, a revoluble inner shaft having a screw-thread thereon and actuated from the coin controlling and controlled outer shaft, an elongated gear movable by and on the screw-thread of the inner shaft, a flange or rim on the gear, a rocking arm or lever contacted by the flange or rim and operated by the travel of the gear, and a valve-stem pivotally connected with the rocking arm or lever and provided with a valve, for the movement of the rocking arm or lever to open and close the port of a gas-supply passage to a gas-meter, substantially as described.

11. In a prepayment gas-meter the combination of a coin-controlling and coin-controlled outer revoluble shaft, a revoluble inner shaft having a screw-thread thereon and actuated from the coin controlling and controlled shaft, an elongated gear movable by and on the screw-thread of the inner shaft, a flange or rim on the gear, a rocking arm or le-



ver contacted by the flange or rim and operated by the travel of the gear, a valve-stem, a valve on the stem, a gas-induction passage, a gas-eduction passage, and a port between the passages opened and closed by the valve from the movements of the rocking arm or lever, substantially as described.

12. In a prepayment gas-meter, the combination of a coin-controlling and coin-controlled outer revoluble shaft, an inner revoluble shaft having a screw-thread thereon and actuated from the coin controlling and controlled outer shaft, an elongated gear movable by and on the screw-thread of the inner shaft, a worm coacting with the gear, and means for revolving the worm from the shaft of a gas-meter register and returning the elongated gear to normal position, substantially as described.

13. In a prepayment gas-meter, the combination of a coin-controlled outer revoluble shaft, an inner revoluble shaft actuated from the coin-controlled outer shaft, an elongated gear movable by and on the inner shaft, a worm coacting with the gear, a pinion on the worm, a gear engaging the pinion, a divided driving-shaft for the gear, a gear on the divided shaft and a worm on the shaft of the gas-meter register for returning the elongated gear with the passage of gas through the meter, substantially as described.

14. In a prepayment gas-meter, the combination of an outer revoluble shaft having formed therein a portion of a coin-deposit channel for opening and closing the coin-channel by the shaft itself, an inner revoluble shaft actuated from the coin-controlled outer shaft, and a coin-controlled connection between the two shafts for engaging and disengaging the shafts with the deposit of a coin, substantially as described.

15. In a prepayment gas-meter, the combination of a coin-controlling and coin-controlled outer revoluble shaft, an inner revoluble shaft having a screw-thread thereon and actuated from the coin controlling and controlled outer shaft, an elongated gear movable on and by the screw-thread of the inner shaft, a rocking arm or lever actuated by the movable gear and directly operating a valve controlling the gas-passage into a gas-meter, and coin-controlled means between the outer and inner shafts for connecting and disconnecting the shafts and controlling the supply of gas passing through the meter, substantially as described.

16. In a prepayment gas-meter, the combination of a coin-controlling and coin-controlled outer revoluble shaft, an inner revoluble shaft having a screw-thread thereon and actuated from the coin controlling and controlled outer shaft, an elongated gear movable on and by the screw-thread of the inner shaft, a rocking arm or lever actuated by the movable gear and directly operating a valve controlling the gas-passage into a gas-

meter, coin-controlled means between the two shafts for connecting and disconnecting the shafts and operating the movable gear, and means for revolving the movable gear from the shaft of a gas-meter register and returning the gear and its cooperating parts to normal position, substantially as described.

17. In a prepayment gas-meter, the combination of a coin-controlled outer revoluble shaft having its body operating to in and of itself open and close a coin-deposit slot forming a portion of the shaft, a coin-controlled engaging lever carried by the shaft, normally inoperative and made operative by engagement with a deposited coin, an inner revoluble shaft having a screw-thread thereon, a head or disk on the inner shaft engaged and disengaged by the lever of the outer shaft for connecting and disconnecting the two shafts, an elongated gear movable by and on the screw-thread of the inner shaft, and a rocking arm or lever actuated by the movements of the gear and operating a valve controlling the gas-passage into a gas-meter, substantially as described.

18. In a prepayment gas-meter, the combination of a coin controlling and controlled outer revoluble shaft, a coin-controlled trip-lever and a coin-controlled outer engaging lever both carried by the outer shaft, an inner revoluble shaft, a head or disk on the inner shaft engaged with and disengaged from the outer shaft through the medium of the coin-controlled levers of the outer shaft, an elongated gear movable by and on the inner shaft, and a rocking arm or lever actuated by the movements of the gear and operating a lever controlling the gas-passage into a gas-meter, substantially as described.

19. In a prepayment gas-meter, the combination of a coin controlling and controlled outer revoluble shaft, a coin-controlled engaging lever, and a coin-controlled trip-lever both carried by the shaft, an inner revoluble shaft, a head or disk on the inner shaft engaged by the coin-controlled levers of the outer shaft, a pawl engaging the head or disk and engaged by the trip-lever of the outer shaft, an elongated gear movable by and on the inner shaft and a rocking arm or lever actuated by the movements of the gear and operating a valve controlling the gas-passage into a gas-meter, substantially as described.

20. In a prepayment gas-meter, the combination of a revoluble shaft, an engaging lever and a trip-lever both carried by the shaft and both normally dropping out of operative position and brought into operative position with the insertion of a coin into the coin-channel for its edge to engage the levers, substantially as described.

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Witnesses:

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