

No. 618,928.

Patented Feb. 7, 1899.

J. ZANDER.

COIN ACTUATED ATTACHMENT FOR GAS METERS.

(Application filed Sept. 24, 1898.)

(No Model.)

4 Sheets—Sheet 1.

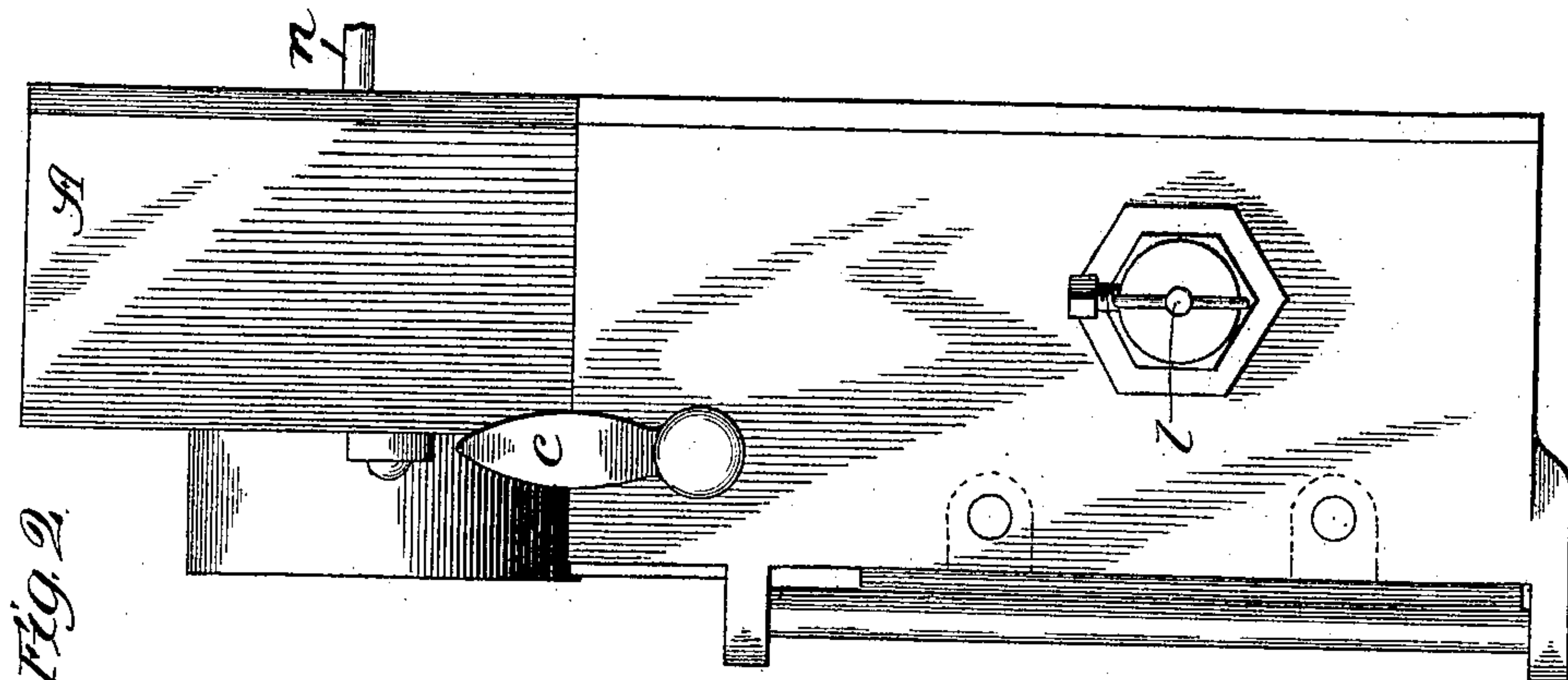


Fig. 2.

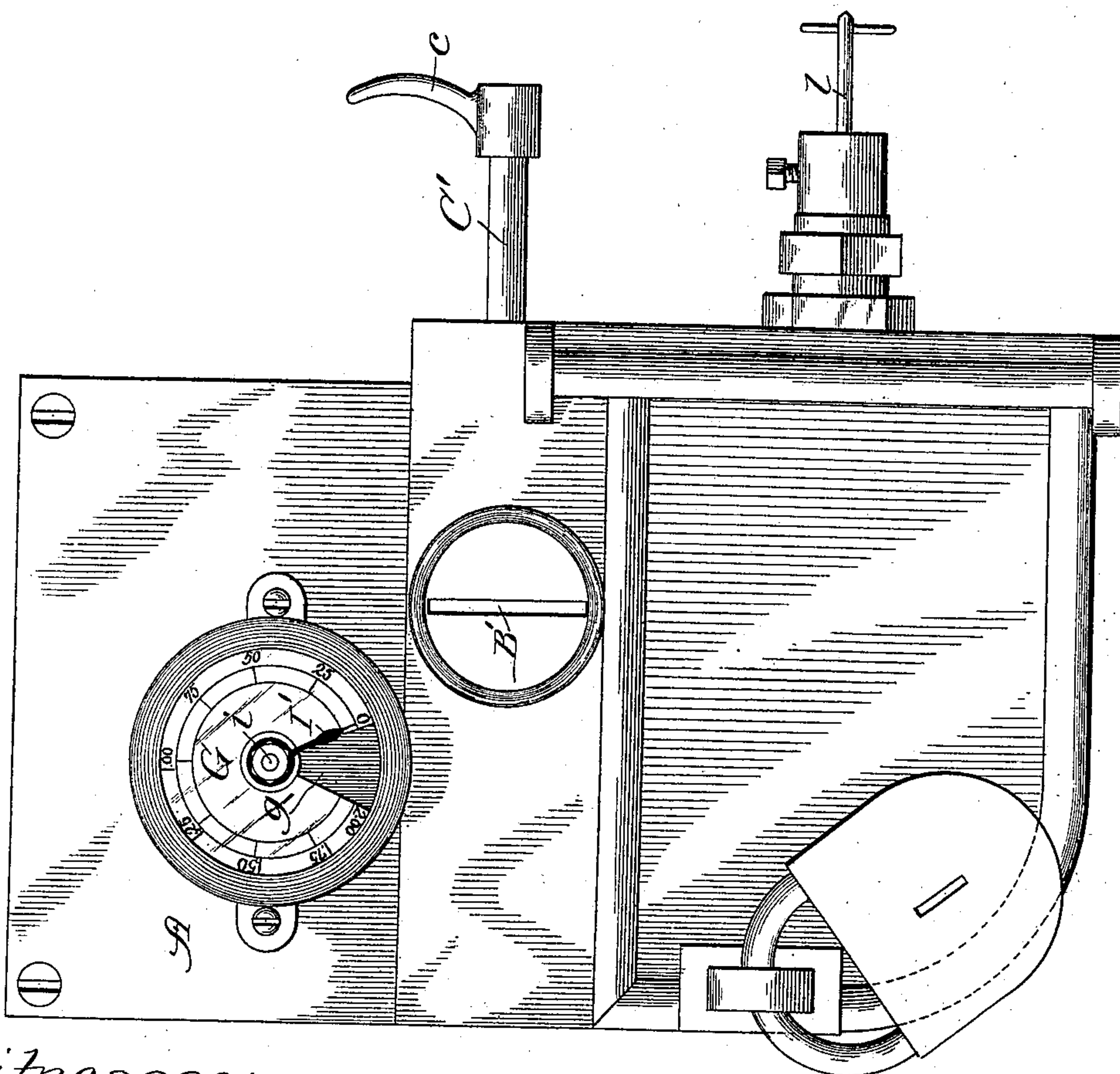


Fig. 1.

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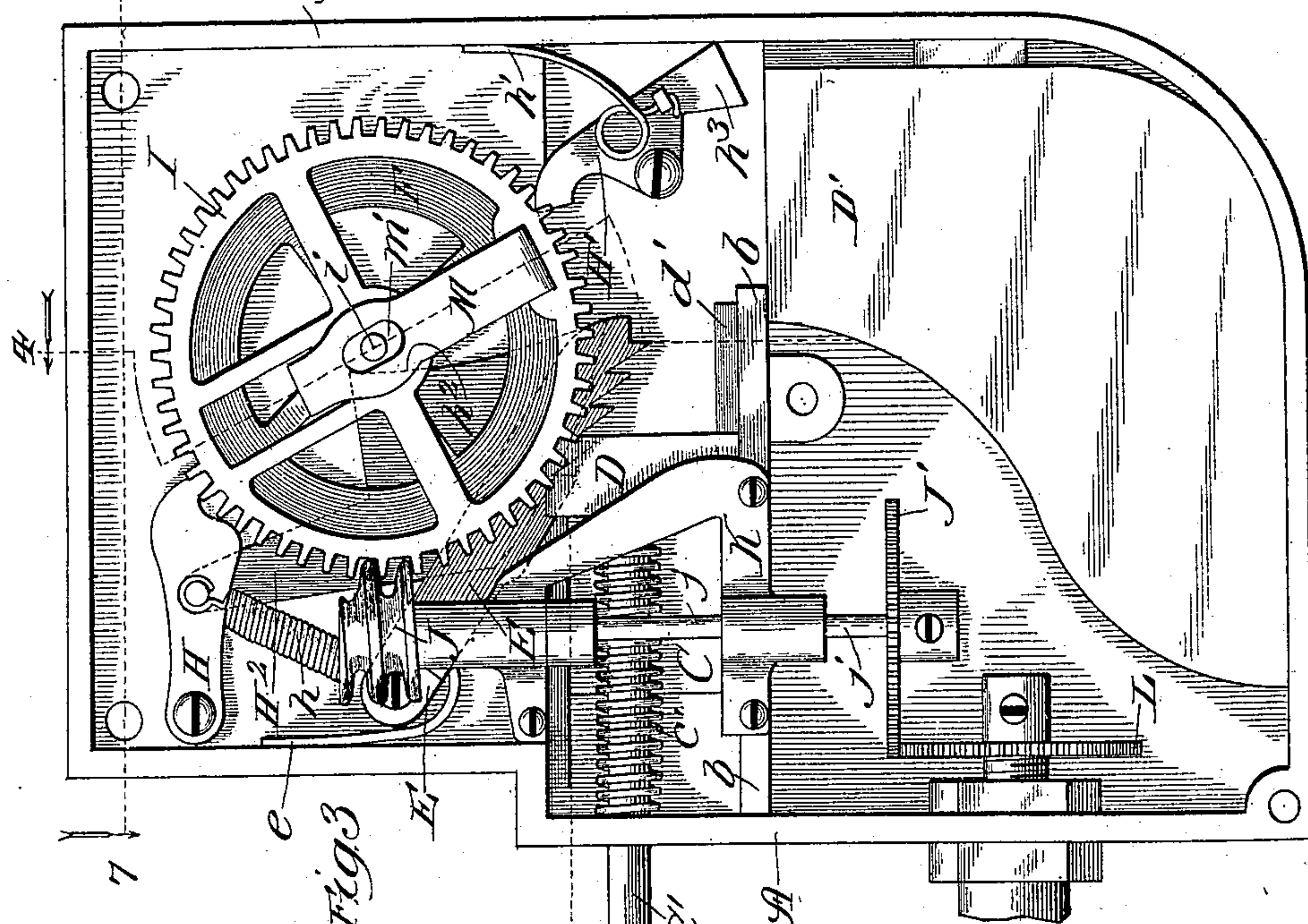
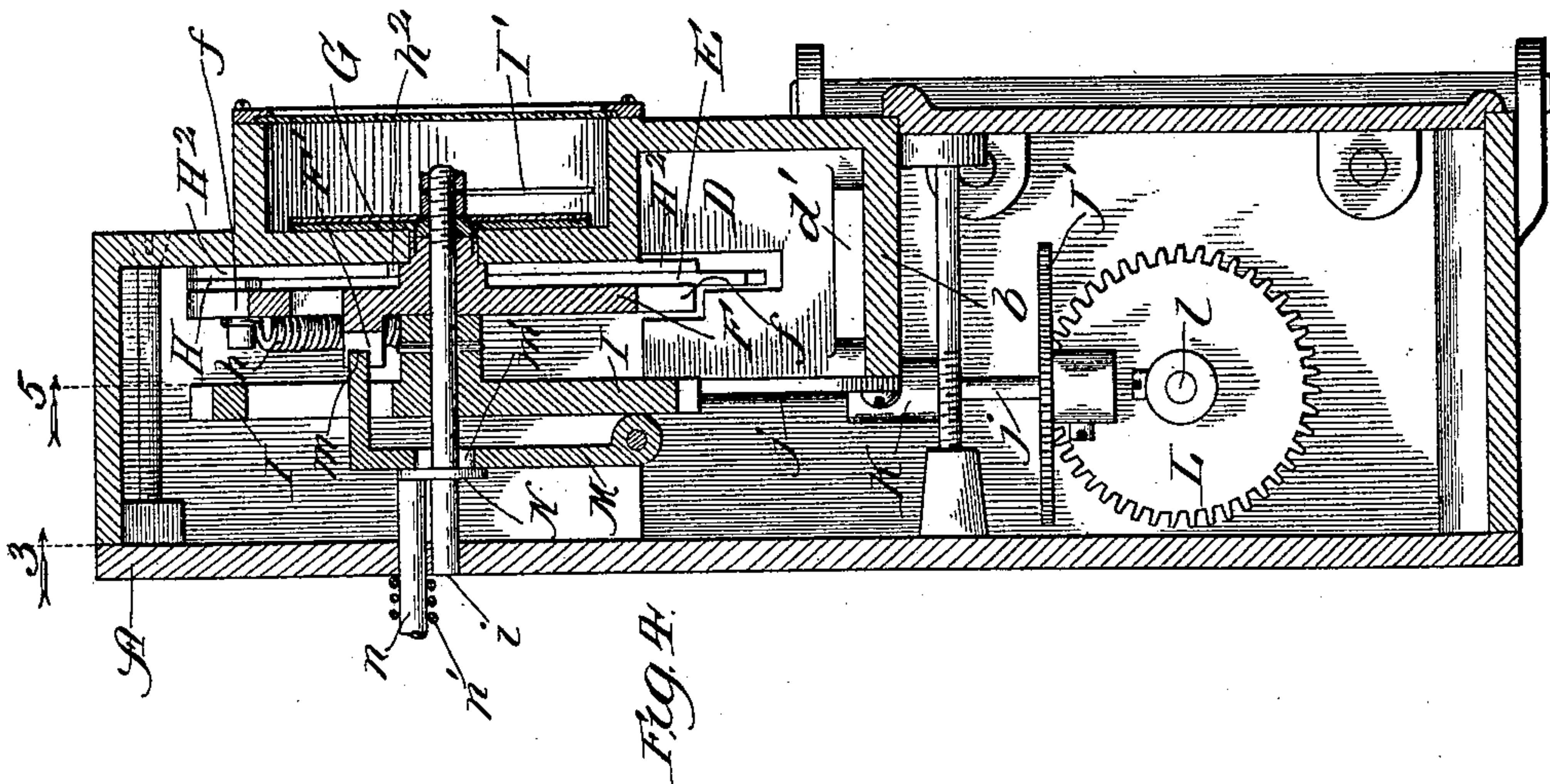
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4 Sheets—Sheet 2.



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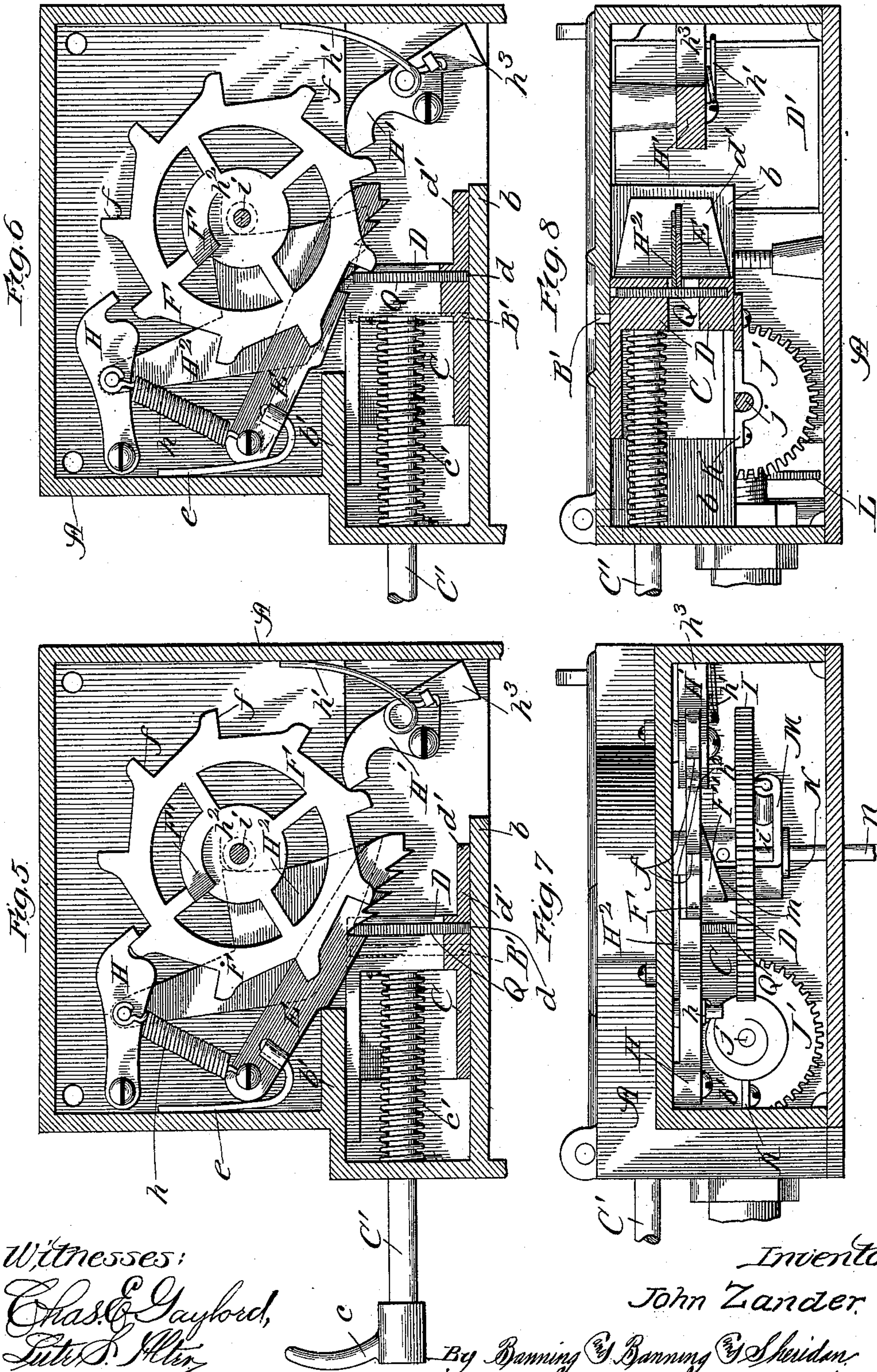
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Fig. 10.

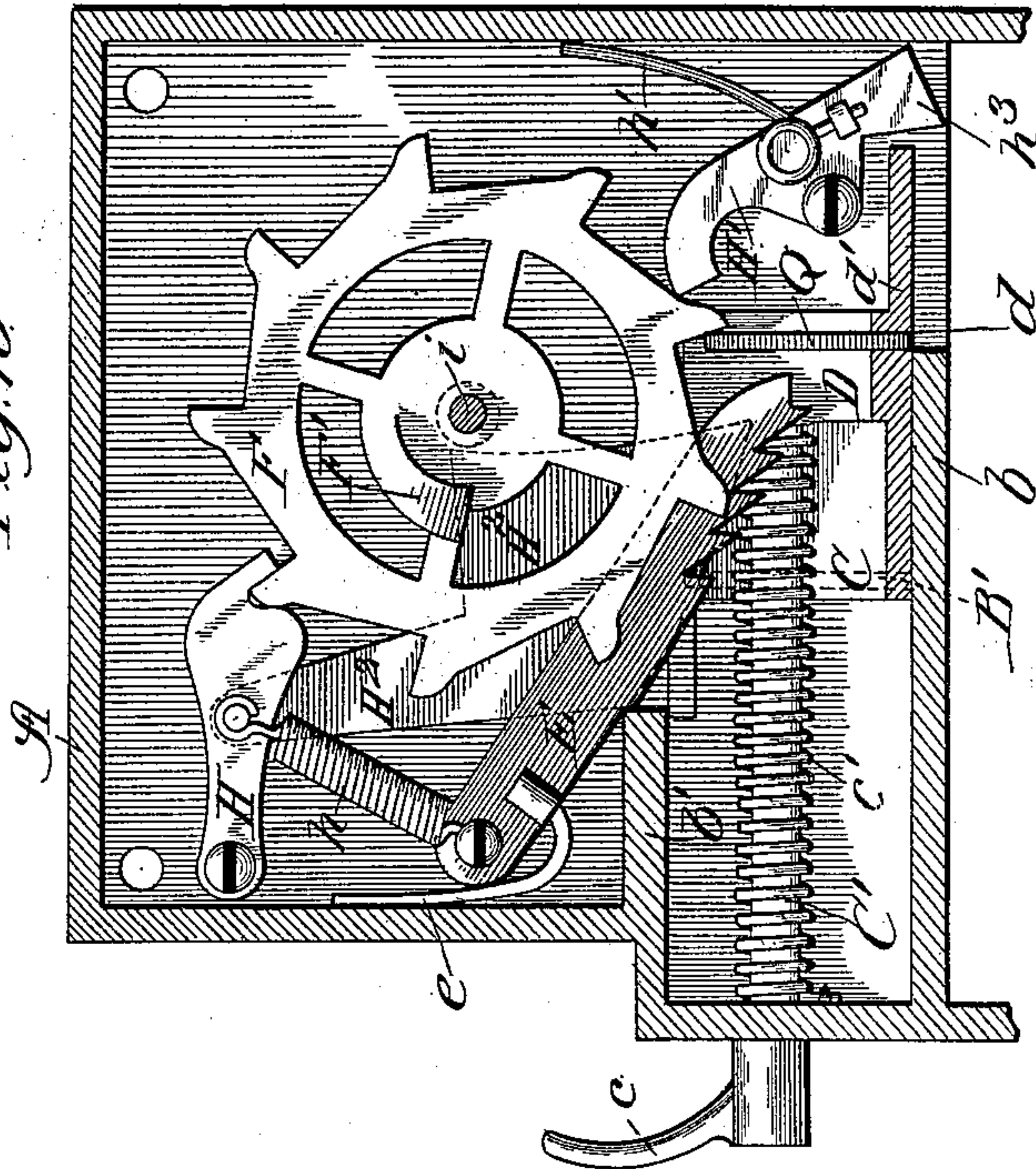


Fig. 14.

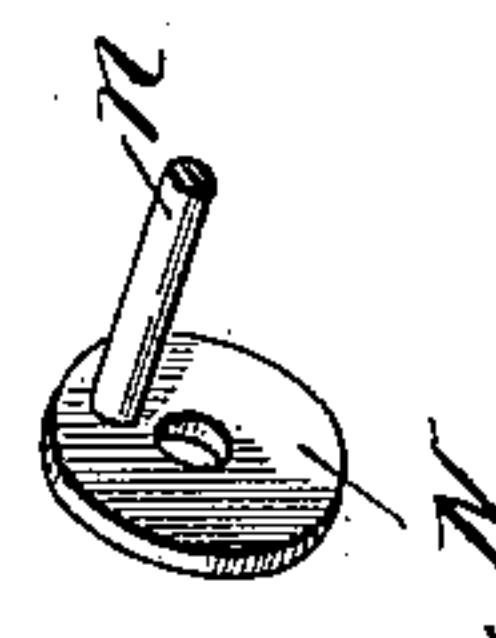


Fig. 13.

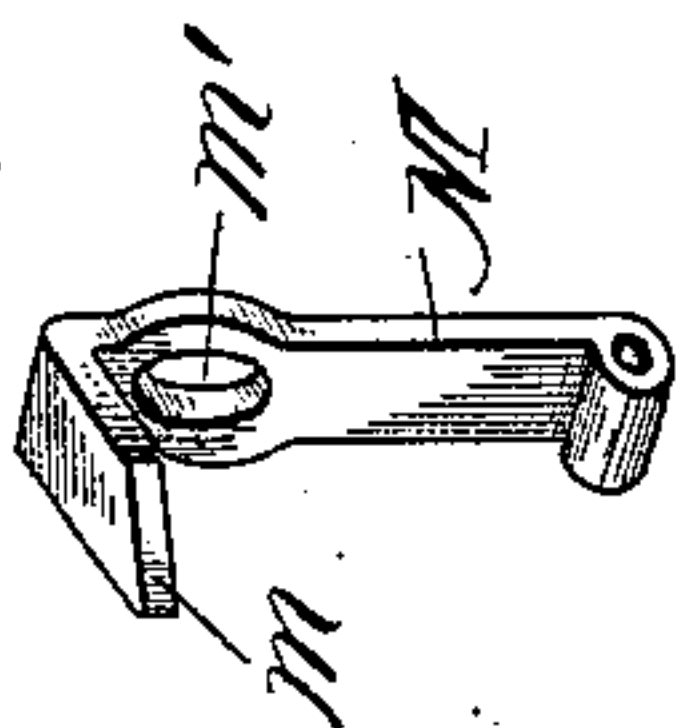


Fig. 12.

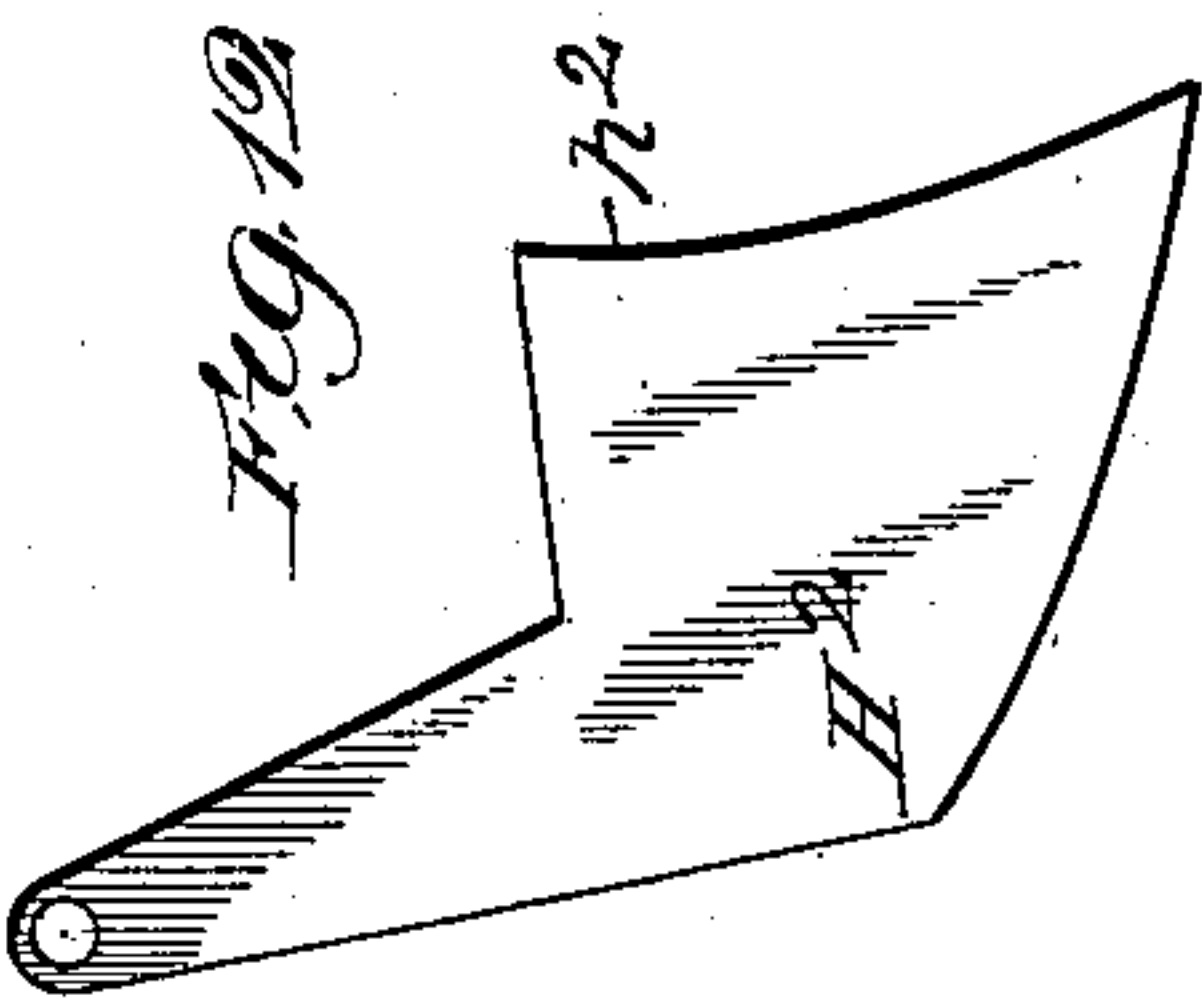


Fig. 9.

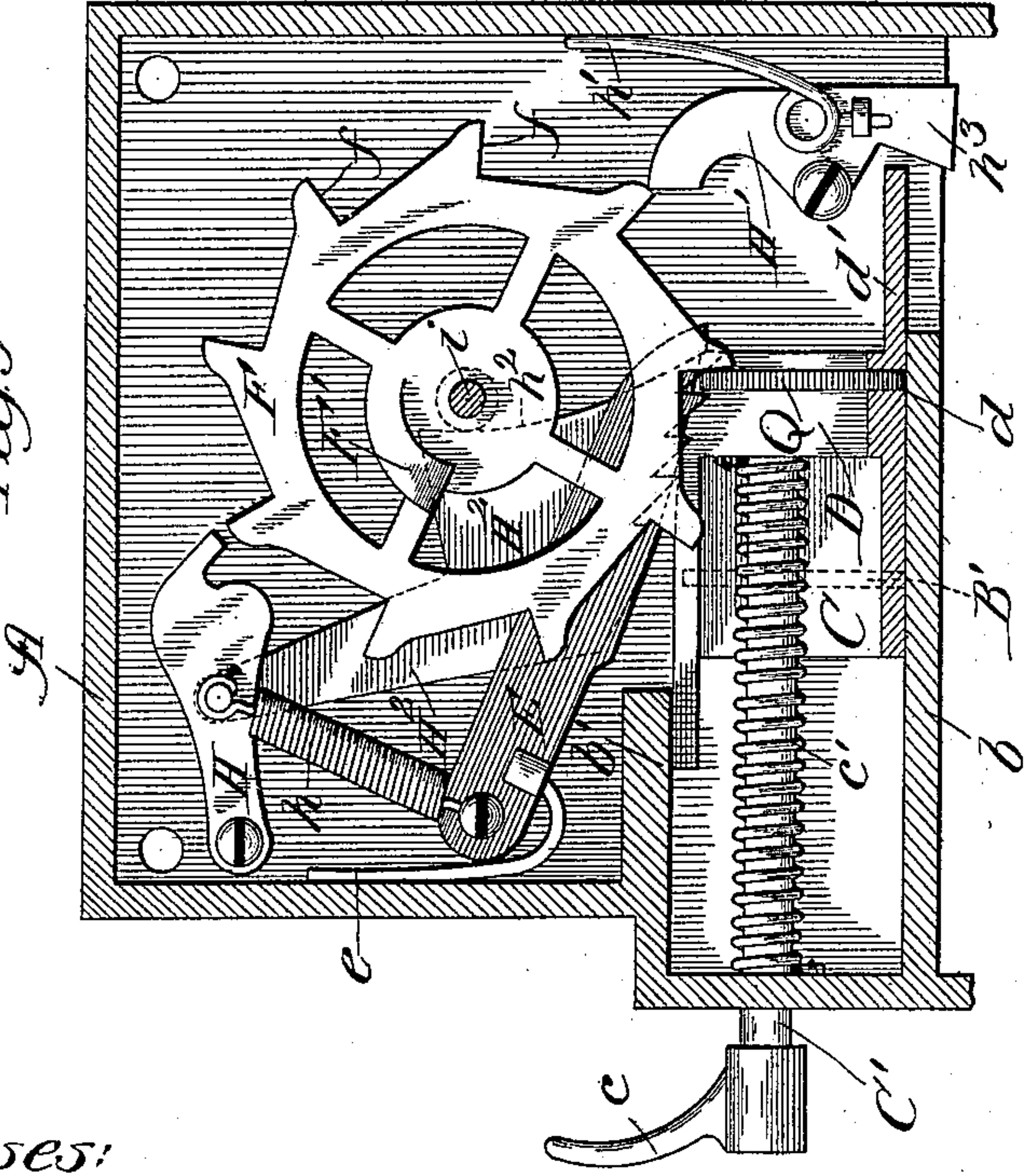
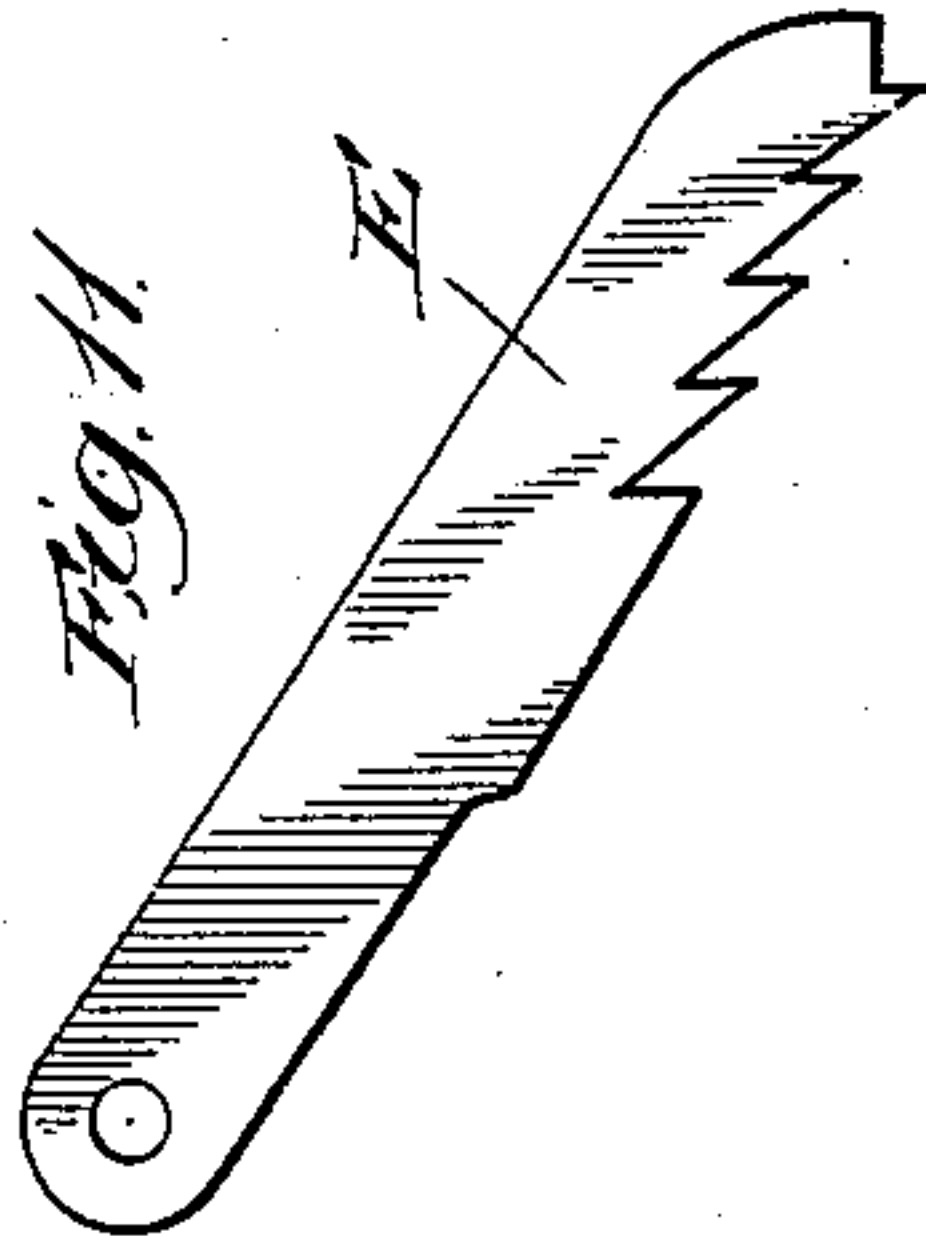


Fig. 11.



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UNITED STATES PATENT OFFICE.

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COIN-ACTUATED ATTACHMENT FOR GAS-METERS.

SPECIFICATION forming part of Letters Patent No. 618,928, dated February 7, 1899.

Application filed September 24, 1898. Serial No. 691,767. (No model.)

To all whom it may concern:

Be it known that I, JOHN ZANDER, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Coin-Actuated Attachments for Gas-Meters, of which the following is a specification.

The object of my invention is to make an attachment for gas-meters that will enable a consumer to pay for his gas in advance and in such desired quantities as he may prefer by depositing a coin of a certain denomination—say a quarter—or any number of such coins in such attachment as may be provided for, whereby mechanism is set into operation to open the valve, permitting the flow of gas through the meter, and to close the valve when the quantity of gas for which payment has been made has passed through the meter; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of my gas-meter attachment; Fig. 2, a side elevation of the same; Fig. 3, a rear elevation, with the rear plate or cover removed, taken on line 3 of Fig. 4, looking in the direction of the arrow; Fig. 4, a section on line 4 of Fig. 3, looking in the direction of the arrow; Fig. 5, a section taken on line 5 of Fig. 4, looking in the direction of the arrow; Fig. 6, a view on the same line with the parts in different position; Fig. 7, a plan section taken on line 7 of Fig. 3, looking in the direction of the arrow; Fig. 8, a plan section taken on line 8 of Fig. 3, looking in the direction of the arrow. Figs. 9 and 10 are the same as Figs. 5 and 6 with the parts in different positions, and Figs. 11, 12, 13, and 14 are separate views of details to be described in connection with the other parts.

In making my improved coin-actuated attachment for gas-meters I make an inclosing box or case A, intended to receive and support the various operative parts. This box may be of cast-iron or of any other desired metal suitable for the purpose and should be of a size in length and breadth to properly receive and accommodate the various parts intended to be inclosed in it. I also prefer to provide the box on its inside with a shelf *b* and shoulder *b'*, which may be formed

integral with the other parts when so desired. I arrange in the face of the box a slot *B'*, which may be made of a size to receive a coin of any predetermined denomination, although I prefer to make it of a proper size to receive a silver quarter of a dollar. Within the box and immediately in front of the slot I arrange a sliding piece *C*, which obstructs the slot and prevents a coin from being introduced until it is drawn out to its limit of out movement. To draw this slide out, together with the other parts, I arrange a rod *C'*, terminating in a handle or finger-piece *c*. I also surround the rod with a coiled spring *c'*, which operates to push or move the slide in, so as to obstruct the slot, as soon as the rod is released and the spring free to act. At the front of this slide is arranged a coin-receiver consisting of a narrow box *D*, having room or capacity to receive but one coin at a time. This box is open at its bottom, as at *d*. This bottom opening is closed by the shelf *b*, above which the coin-receiver slides, until the opening passes beyond the shelf, when the coin contained in the receiver is allowed to drop down into the lower part of the box into a coin-drawer *D'*, where the coins may accumulate until the proper party having the key of the case comes and opens the box and takes them away.

In order to hold the coin after it has been inserted or pushed in through the slot and prevent it from being retracted or shaken out, I arrange a coin-holder consisting of a saw-plate *E*, so termed because it has teeth like a saw, which receives the coin between its teeth and bears down on its rim or edge, so as to hold it firmly in place in the coin-receiver. To make the coin-holder bear down on and hold the coin, I arrange a spring *c'*, whose tension constantly tends to draw the holder down and thus hold it in firm engagement with the coin, though the shoulder *b'* prevents it from being pushed down below a desired position. As soon as the handle is released after a coin has been inserted the spring *c'* moves the coin-receiver in enough to cause the slide *C* to close the slot and the teeth of the saw-plate to engage the quarter *Q*, as shown in Fig. 5. I arrange within the box a coin-wheel *F*, mounted on a spindle which extends through the front of the box

and on the outer end of which is mounted a dial G. This dial is provided with figures or characters, preferably figures, running from "0" up to any desired number—say "200"—
 5 and also preferably with a segmental notch *g* between the figures "0" and "200," which represents the unused portion of the dial. The coin-wheel F is provided with ratchet-teeth *f*, which in the revolution of the wheel pass
 10 through a slot in the coin-receiver D. The ratchet-teeth extend down in the coin-receiver far enough to be engaged by the upper edge of the coin and to be carried forward or around as such coin is pushed in to enable it to drop
 15 down past the end of the shelf *b*. The coin-wheel is intended to be moved the extent of one tooth with each coin inserted, and as it turns or moves it turns or moves the dial G a proportionate part of a revolution. To hold
 20 the coin-wheel from being rotated except in the way intended by the insertion of a coin, I provide two pivoted dogs arranged at opposite sides of the wheel and bearing against the opposite faces of the ratchet-teeth. One of these
 25 dogs, H, is held in engagement with one face of a ratchet-tooth by a spring *h*, and the other, H', is held in engagement with the opposite face of a tooth by a spring *h'*. To lift the dog H out of engagement and permit the coin to be
 30 turned, I arrange a dog-plate H², that lies alongside of the saw-plate and which is pivoted at its upper end to the same pin or stud to which the spring *h* is attached and which when the dog is in its engaging position rests
 35 against the shoulder *b'* as a stop. The lower end of this dog-plate extends down within the path of the coin, so that as the coin is pushed forward or advanced it bears against the lower edge of the dog-plate, which is in-
 40 clined, as shown in the drawings, so that the dog-plate is forced or lifted up, and as it rises it forces or lifts the dog H out of engagement with the ratchet-teeth and permits the coin-wheel to be rotated, as shown in Fig. 6. In
 45 order to insure the proper action of the dog-plate, its front edge *h*² bears against the hub of the coin-wheel, so that as the coin forces it up it is obliged to pursue a desired invariable path of movement to do the work in-
 50 tended for it. The dog H' is provided with a depending tail *h*³, and the coin-receiver D is provided with an extension *d'*, which when the coin-receiver is in its full in position engages the tail of the dog, so that it cannot be
 55 thrown back far enough to permit a ratchet-tooth of the coin-wheel to move past its engaging face, as shown in Fig. 10. The dog H prevents the coin-wheel from being turned backward, and the dog H' prevents it from being
 60 turned forward except when it is being forced or moved forward by a coin which is being pushed in to enable it to drop past the end of the shelf *b* into the coin-drawer. At such times the dog H is lifted and the dog H' may
 65 be oscillated enough to permit the passage of a tooth. As soon, however, as the coin is in the extension *d'* on the coin-receiver prevents

sufficient oscillation of the dog H' to permit a tooth to pass its engaging face. The coin-wheel is provided with an inclined cam F', 70 which extends in a desired distance. I arrange a gear or index wheel I on a shaft *i*, which passes through the hub on the coin-wheel and which carries on its outer end an index-finger I'. This gear or index wheel 75 has its teeth in engagement with a worm J, mounted on a worm-shaft *j*, contained in suitable bearings arranged within the box. I prefer, however, to mount the worm-rod in a bearing-plate K, which may be fastened by 80 screws or otherwise to the shelf *b* and which extends up a desired distance and is attached at its upper end by a screw or other convenient means to the shoulder *b'*. As shown in the drawings, the bearing-plate projects a 85 sufficient distance above the top of the shelf *b* to form a guide for the coin-receiver and the plate or base on which it is mounted. The lower end of the worm-shaft is provided with a gear-wheel or pinion J', engaging with 90 a gear-wheel or pinion L, mounted on a rod or shaft *l*, which connects with the operative mechanism of the gas-meter and which is rotated as the gas passes through the meter. Mounted on the gear or index wheel I is a 95 pivoted arm M, provided with an incline or cam-face *m*. This arm is also provided with a hole *m'*, which receives or encircles the shaft *i*. The hole is large enough to permit the arm to play freely up and down such 100 shaft. On the outside of the arm is arranged a washer N, carrying a pin *n*, which extends through the back or rear of the box into the meter and which connects with the valve, permitting the ingress of gas. A coil-spring 105 *n'* tends to hold the pin and washer in their in position, and they can only be forced out against its tension.

In operation the index-finger is arranged to point to "0" on the dial. At this time the 110 cam on the coin-wheel holds the pivoted arm out against the tension of the spring *n'*, so that the valve permitting the ingress of gas is closed. The rod C' is drawn out, so as to draw the plate C back enough to open the 115 slot. A coin—say a quarter—is inserted into the box through the slot and is received in the coin-receiver. As the rod is pushed in and the coin-receiver advanced the coin-wheel is rotated to the extent of one tooth, which 120 carries its cam away from the pivoted arm controlling the ingress of gas. This permits the spring *n'* to push in the rod *n* and the washer N, and with them the free end of the pivoted arm, which is now out of engagement 125 with the cam on the coin-wheel. Gas immediately passes into the meter, and as the burners are lighted it passes through the meter and rotates the shaft *l*, with its pinion L, and through them the pinion J', the worm-rod *j*, the worm J, and the index-wheel I. 130 As the index-wheel rotates it gradually carries the index-finger I' toward the figure "0" on the dial and the free end of the pivoted arm

M toward the cam F' on the coin-wheel. As its inclined surface or end *m* comes into contact with the inclined surface of the cam the arm is gradually raised, and raises with it the washer N and forces back the rod *n* until when the index-finger has come opposite the figure "0" the parts have reached a position which closes the valve permitting the ingress of the gas and the mechanism comes to a standstill. Of course the operation will be precisely the same where several coins are put in one after the other at the same time successively; but I have only deemed it necessary to describe the operation where one coin has been inserted into the coin attachment of the gas-meter.

The box should be provided with a door at its front side, which is locked by a key and which can only be opened by a proper messenger or official who comes from time to time to collect the coins accumulated in the coin-drawer. The dial and indicating-finger should also be inclosed, so that they cannot be tampered with from the outside, although in such a way as to leave them exposed to view, so that they can be observed from time to time by the consumer. This will inform him when his supply of gas is on the point of being fully consumed, so that if he desires to prevent his light from going out he can insert another quarter or coin of the proper denomination.

While I have described the parts with considerable detail and minuteness, yet I desire it to be understood that I intend to be limited to details and specific features of construction only so far as I shall specify the same in my claims. I also desire to state that while I have described and shall claim my invention in connection with gas-meters or as an attachment to gas-meters, I do this merely as a matter of convenience, as I do not intend to

limit myself to gas-meters alone, but contemplate the use of my invention in connection with other meters, as water, steam, and other fluid-meters generally.

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

1. In an attachment for gas-meters, the combination of a coin-wheel adapted to be rotated a predetermined distance by the insertion of a coin and carrying a cam-surface on its face, an index-wheel adapted to be rotated by means actuated by the passage of gas through the meter, a pivoted arm carried on the index-wheel having a cam-surface at its free end adapted to engage the cam-surface of the coin-wheel and to be moved thereby, and means actuated by the movement of the pivoted arm to close the valve controlling the passage of gas through the meter, substantially as described.

2. In an attachment for gas-meters, the combination of a coin-wheel adapted to be rotated a predetermined distance by the insertion of a coin and carrying a cam-surface on its face, means for holding the coin-wheel from rotation adapted to be released as the coin advances toward its destination, an index-wheel adapted to be rotated by means actuated by the passage of gas through the meter, a pivoted arm carried on the index-wheel having a cam-surface at its free end adapted to engage the cam-surface of the coin-wheel and to be moved thereby, and means actuated by the movement of the pivoted arm to close the valve controlling the passage of gas through the meter, substantially as described.

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