

(No Model.)

W. R. SMITH.
COIN OPERATED INDICATING MECHANISM.

No. 440,728.

Patented Nov. 18, 1890.

Fig. 1.

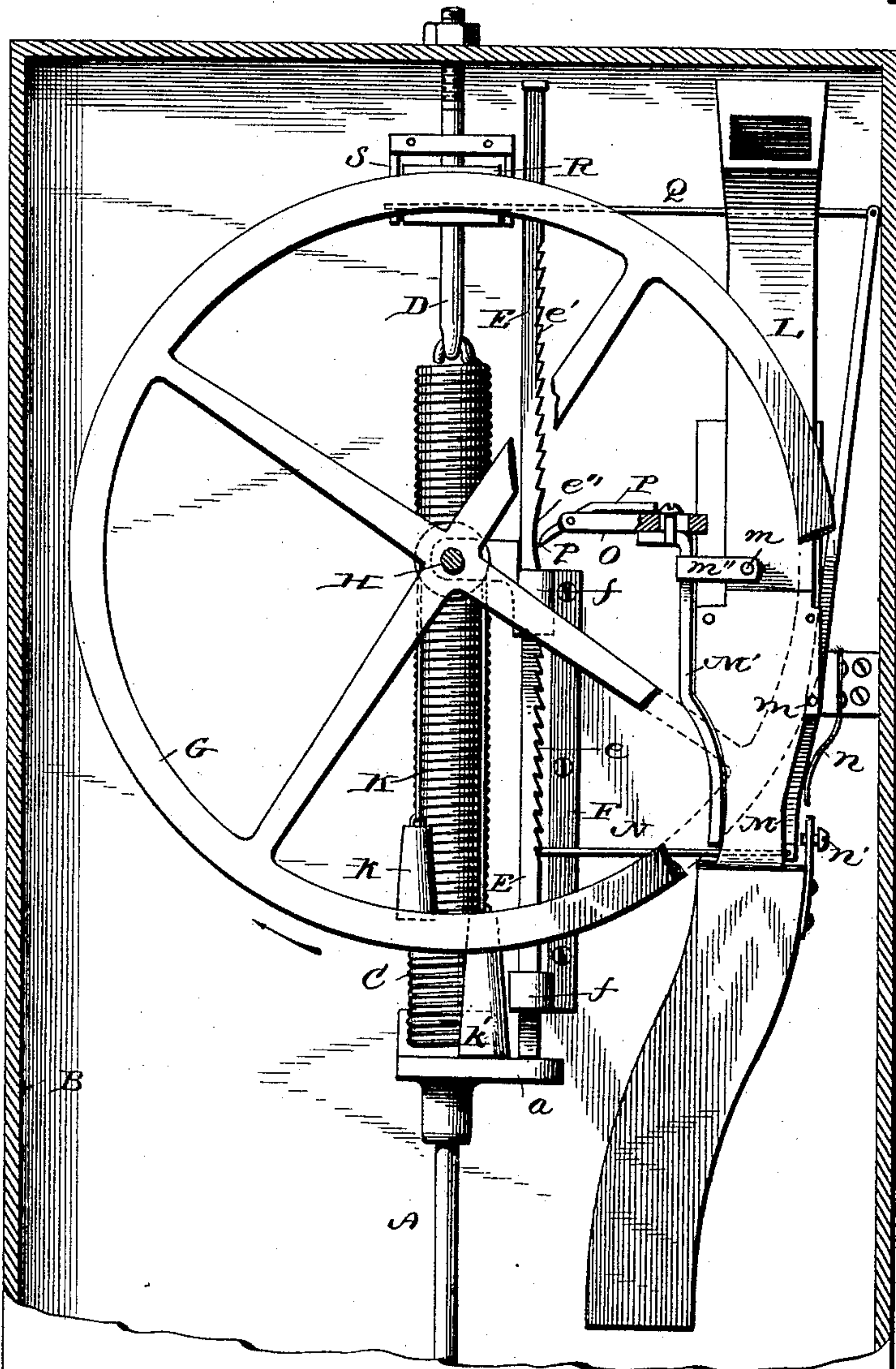


Fig. 2.

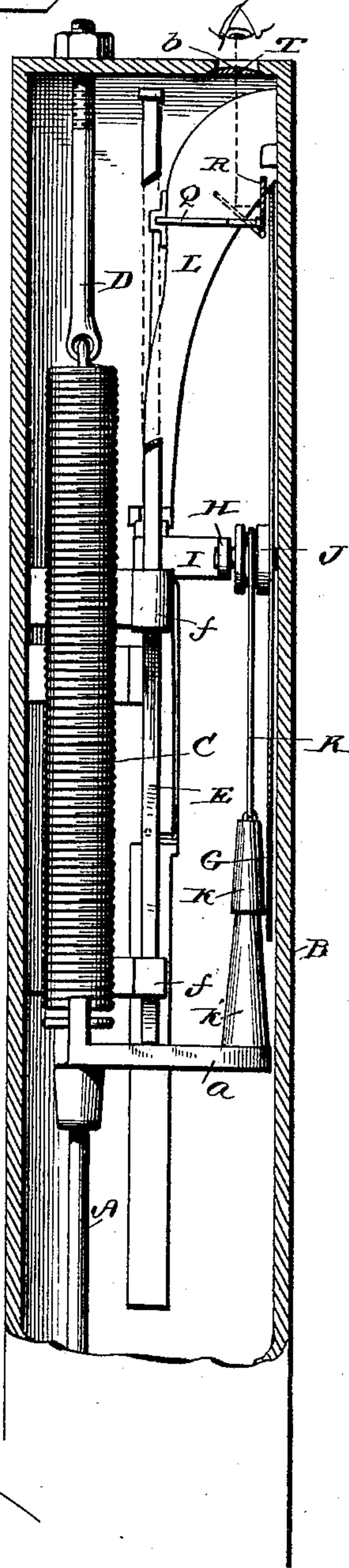
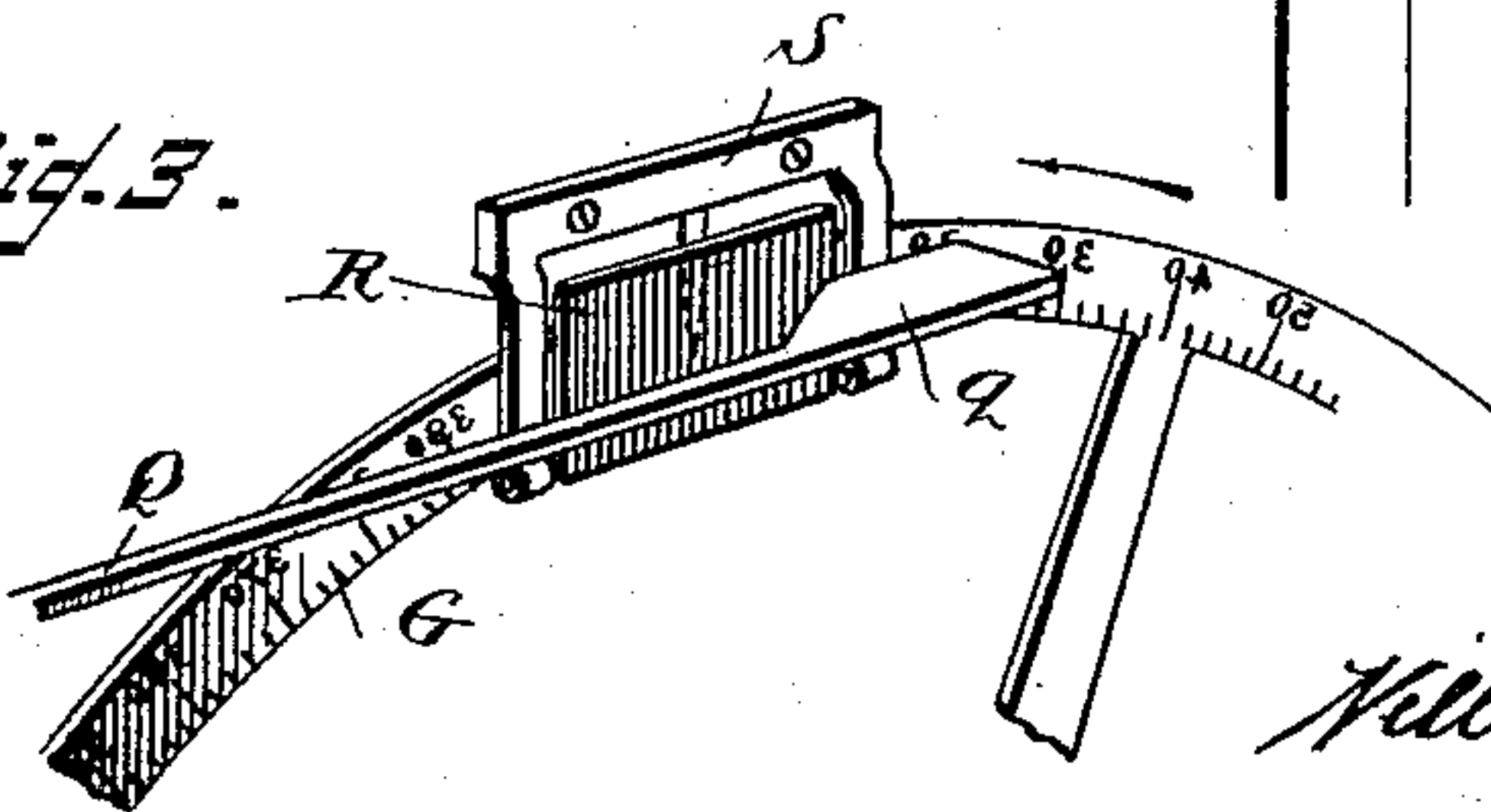


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM ROBERT SMITH, OF NEW YORK, N. Y., ASSIGNOR TO THE STANDARD AUTOMATIC SCALE COMPANY, OF SAME PLACE.

COIN-OPERATED INDICATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 440,728, dated November 18, 1890.

Application filed December 12, 1889. Serial No. 333,442. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROBERT SMITH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Coin-Operated Indicating Mechanism, of which the following is a specification.

My invention consists in a novel device for displaying the concealed indications on a registering or indicating machine operated by a coin dropped into the coin-chute of the machine, in which a mirror is caused to reflect and render visible the figures or other symbols marked upon the dial or other register, and in means for actuating the same.

In the accompanying drawings I have illustrated my device as applied to a coin-operated weighing-machine; but I do not limit myself to its use in such combination, as it can be advantageously employed in other coin-operated devices in which it is desired to display a concealed mechanism or record on the insertion of a coin into the chute.

Figure 1 is a front elevation of so much of a coin-operated weighing-scale, with the front of the case removed, as is necessary to the understanding of my invention. Fig. 2 is a vertical cross-section of the same; and Fig. 3, an enlarged view, in perspective, of the reflecting device and of the rear of the dial-wheel, showing the numerals reversed.

A is a rod, to the lower end of which the lever of the platform-scales is attached. It is suspended from the frame or case B by a spring C, attached to a rod D, passing through the case.

a is a stop or shelf on the lever-rod A, against which the independent locking and coin-releasing rack-bar E abuts. The rack-bar E slides in bearings *ff* on back plate F, and is provided with teeth *e e'*, which engage with the locking and coin-releasing mechanism.

G is a revolving dial-wheel having on the rear side of its rim the usual numbers or symbols, and is mounted upon a shaft H, projecting from the standard I, attached to the back plate F. The dial-wheel G is revolved by means of a pulley J, forming part of the dial-wheel, over which passes the cord K, hav-

ing the weights *k k'*. The heavier of the two weights *k'* rests upon the stop *a* of the lever-rod A, so that with the descent of the latter the dial-wheel is revolved in the direction of the arrow, and with its ascent the direction is reversed.

L is a coin-chute having two pivoted sides M M', forming in their normal position a receptacle of sufficient dimensions only to retain the coin.

Side M is pivoted at *m* to the chute L, and carries at its lower end a latch-bar N, which engages with the teeth *e* on the latch-bar E, locking the latch-bar from descent, but passing freely over the teeth on the rise of the rack-bar. A spring *n*, attached to the case, holds side M in its normal relation to side M' and the latch N in engagement with the teeth *e*. The rearward movement of latch-bar N is limited by the set-screw *n'*. The upper end of side M is prolonged and pivoted to an arm Q, the cam-shaped end *q* of which normally holds a mirror R in such relation to the numbered face of the dial-wheel G that the reflecting-surface of the mirror is not visible through the aperture *b* in the top of case B. The mirror R is hinged to a standard S, fastened to the frame, (see Fig. 3,) and the cam *q* of the arm Q has part of its edge supporting the mirror beveled off in such wise that when the arm is thrust forward the mirror is allowed to fall back against the beveled face of the cam at such an angle as to reflect upward through aperture *b* the number on the dial-wheel. The other side M' of the chute L is also pivoted at *m'* by means of a lug *m''* near its upper extremity, which extremity has a fork-shaped extension O, between the prongs of which is pivoted a weighted lever P, the end *p* of which rests in its normal position in the notch *e''* in rack-bar E. The lever P is arranged to tip up and yield to the teeth *e'* of the rack-bar on the descent of the latter, and to engage with them on the ascent of the rack-bar. The locking of the weighted lever P and the teeth *e'* of the rack-bar on the ascent of the latter tilts outwardly the side M' of the chute at its lower end, and thus enlarges the space between the sides M and M'.

The operation of my invention is as follows:

The mechanism being in the normal position shown in Fig. 1, on placing a weight upon the platform of the scales the lever-rod A descends, and with it the weight k' , which revolves the dial-wheel G, bringing the number indicating the weight opposite the mirror R. The rack-bar E remains in place, being locked by the latch N. The weight is next indicated by introducing a coin into the chute L, which in its fall pushes back the side M against the spring n , releases the latch N from the rack-bar E, and allows the latter to fall until it abuts against the stop a on the lever-rod A. Simultaneously with the backward movement of the latch N, the arm Q, attached to the prolonged upper extremity of the side M, is thrust forward, the mirror R falls back against the beveled face of the cam q , and the number on the dial-wheel G is seen through the aperture b reflected in the mirror. The coin meanwhile remains in the chute-receptacle. On a partial removal of the weight the lever-rod A begins to ascend, lifting with it the rack-bar E and causing the weighted lever P to engage with the teeth e' on the rack-bar. The further rise of the rack-bar then causes the side M' of the chute L to turn on its pivot and release the coin in the chute-receptacle by enlarging the space between the sides M and M' , allowing the coin to fall through. This in turn releases the side M of the coin-chute, which is then pushed back into position by the spring n , causing the latch N to lock the rack-bar against any further descent and at the same time closing the mirror R by drawing back the arm Q and its cam q . The rise of lever-rod A also carries with it the weight k' of the dial-wheel G and revolves the latter away from the mirror. On the entire removal of the weight from the platform the dial-wheel, rack-bar, and connecting mechanism all return to their first position, with the end p of the weighted lever P resting in the notch e'' of rack-bar E and the mirror R out of view.

In order to greatly reduce the size of the machine and the consequent expense of manufacture, I have located the mirror, as shown in the drawings, to reflect the figures on the dial-wheel through the aperture b in the top of case B, so that the figures are seen on looking down in the machine in place of requiring the aperture to be brought to the level of the eye on the face of the machine; but I do not limit myself to this particular location of the aperture in respect to the mirror. By the insertion of a magnifying-lens T in the aperture b , as shown in Fig. 2, or by employing a convex mirror, or by using both, I am further enabled to reduce the size of the indicating mechanism, although they are not essential to the operation of the same. It is also evident that the mirror may be fixed in such relation to the concealed face of the dial or register as to permanently reflect the figures on the latter, the release of the dial in order to bring the proper number in front of the

mirror being effected by means of a coin and coin-chute in a well-known way. Neither do I limit myself to the tilting of the mirror by the coin-receptacle, as other means may be employed for tilting it, the essence of my invention consisting in the employment in a coin-operated device of concealed indicating mechanism and a mirror, so that on the introduction of a coin into the chute the register on the indicating-register is made visible in the mirror.

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

1. The combination, with a coin-operated device, of a concealed indicating mechanism and an automatically-coin-operated mirror, whereby the indication on the indicating mechanism is reflected.

2. The combination, with a coin-operated device, of indicating mechanism, a case inclosing said mechanism and having an aperture, and an automatically-coin-operated mirror, whereby the symbols on the indicating mechanism are reflected in the mirror.

3. The combination, with a coin-operated device, of a concealed registering mechanism, an automatically-coin-operated mirror, a coin-chute, and suitable connections whereby on the introduction of a coin into the chute the symbols on the registering mechanism are reflected in the mirror.

4. The combination, with a coin-operated device, of registering mechanism, a case inclosing said mechanism and having an aperture, an automatically-coin-operated mirror, a coin-chute, and suitable connections whereby on the introduction of a coin into the chute the symbols indicated on the register are reflected in the mirror.

5. The combination, with a coin-operated device, of concealed registering mechanism, an automatically-coin-operated mirror, a coin-chute, and suitable connections between said mirror and coin-chute, whereby on the introduction of a coin into the chute the mirror is caused to reflect the register of the registering mechanism.

6. In a coin-operated weighing-scale, the combination of a concealed weight-register, an automatically-coin-operated mirror, a coin-chute, and connecting mechanism whereby on the introduction of a coin into the chute the weight is reflected in the mirror.

7. In a coin-operated weighing-scale, the combination of a vertical weight-register dial, an inclosing-case having an aperture in the top, a coin-chute, an automatically-coin-operated mirror, and suitable connections whereby on the insertion of a coin into the chute the mirror is caused to reflect the weight recorded through the aperture in the top of the case.

8. In a coin-operated weighing-scale, the combination of a registering device, an inclosing-case having an aperture, an automatically-coin-operated mirror in which the register is

reflected, and a magnifying-glass in said aperture, whereby the reflected image of the indication is seen, substantially as described.

9. In a coin-operated weighing-scale, the combination of a revolving dial-wheel having reversed symbols on the side of its rim, and a mirror so located with respect to the rim as to reflect the symbols in their proper position.

10. In a coin-operated weighing-machine, the combination of the case B, having the aperture *b*, the weighing mechanism consisting of the lever-rod A, its platform-connections, and the weighing-spring C, the registering device consisting of the dial G, having reverse symbols on the side of its rim, the shaft H, the pulley, cord, and weights J K *k k'*, the stop *a*, and the mirror-operating device consisting of the coin-chute L, having the pivoted side M, cam-arm Q, cam *q*, and the hinged mirror R, whereby on the descent of the scale and the introduction of a coin into the chute the dial is revolved and the weight indicated in the mirror is seen through the aperture.

11. The combination, with a coin-chute, of the pivoted side M, the cam-arm Q, having the

beveled cam *q*, and the hinged mirror R, whereby on the insertion of a coin into the chute the mirror is tilted, substantially as described.

12. The combination, with a coin-chute, of the pivoted side M, the cam-arm Q, having the beveled cam *q*, the hinged mirror R, and the spring *n*, whereby on the introduction of a coin into the chute and its exit therefrom the mirror is exposed.

13. The combination, with a coin-chute having the pivoted side M, the cam-arm Q, having the cam-head *q*, the hinged mirror R, and the spring *n*, of an inclosing-case B, having an aperture *b* in its top provided with a magnifying-glass T, whereby an enlarged view of the mirror when exposed is obtained through the aperture.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM ROBERT SMITH.

Witnesses:

O. F. HIBBARD,

H. A. B. KELLY.