

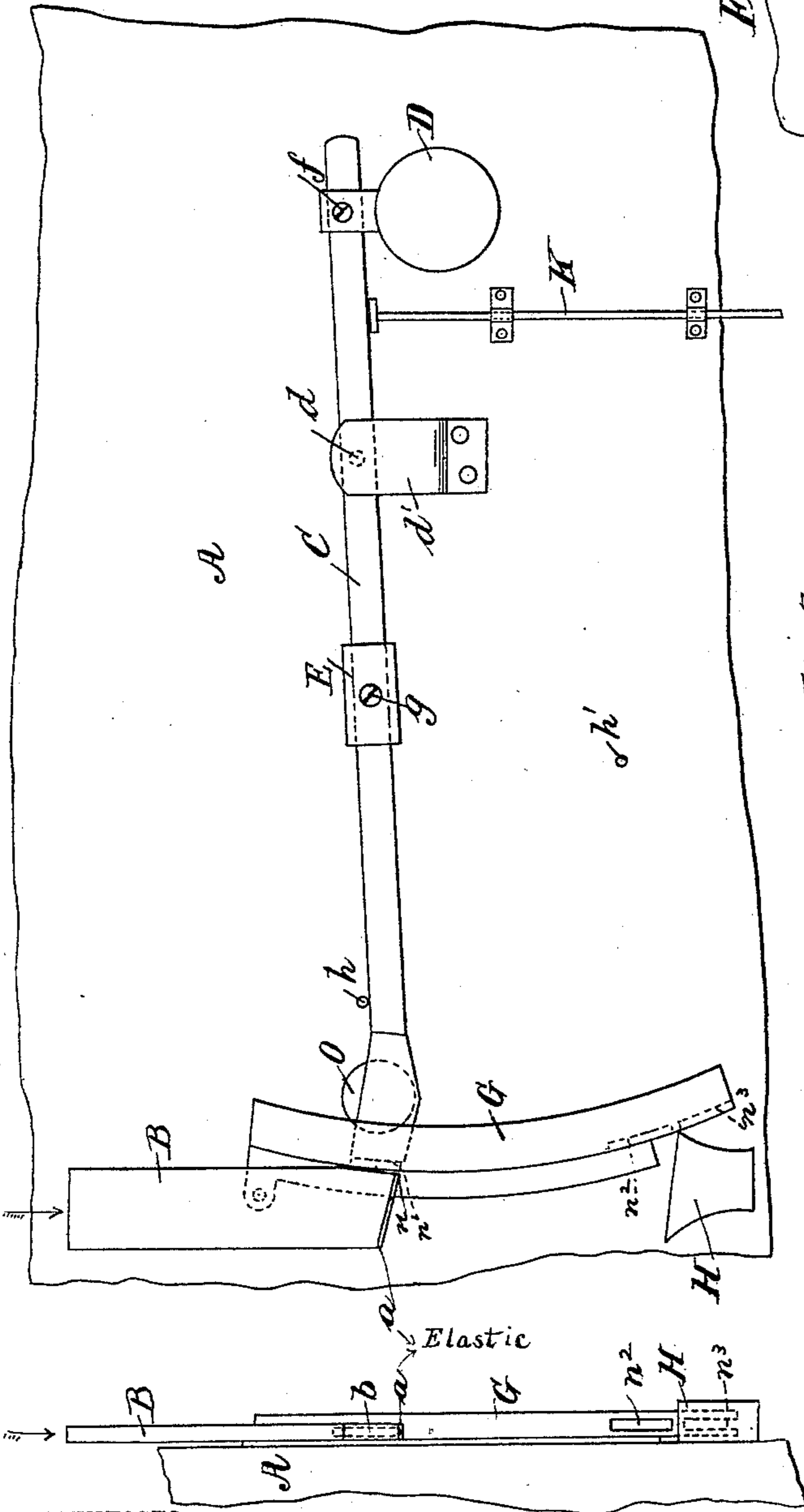
(No Model.)

C. S. BATDORF.  
COIN OPERATED APPARATUS.

No. 424,593.

Patented Apr. 1, 1890.

Fig. 1



WITNESSES:  
C. W. Benjamin  
Edmond H. Tourtellotte.

Fig. 2

Fig. 4

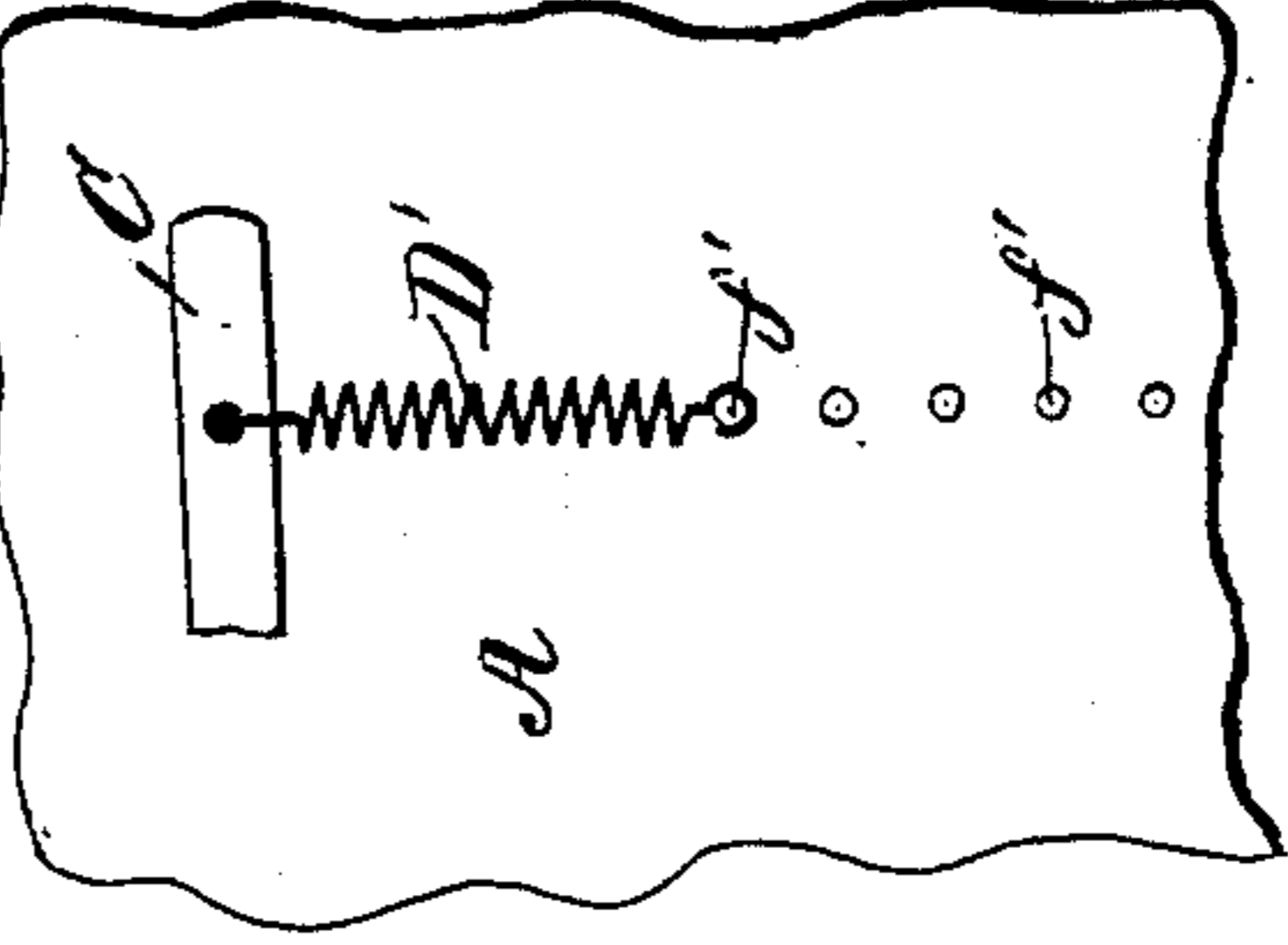
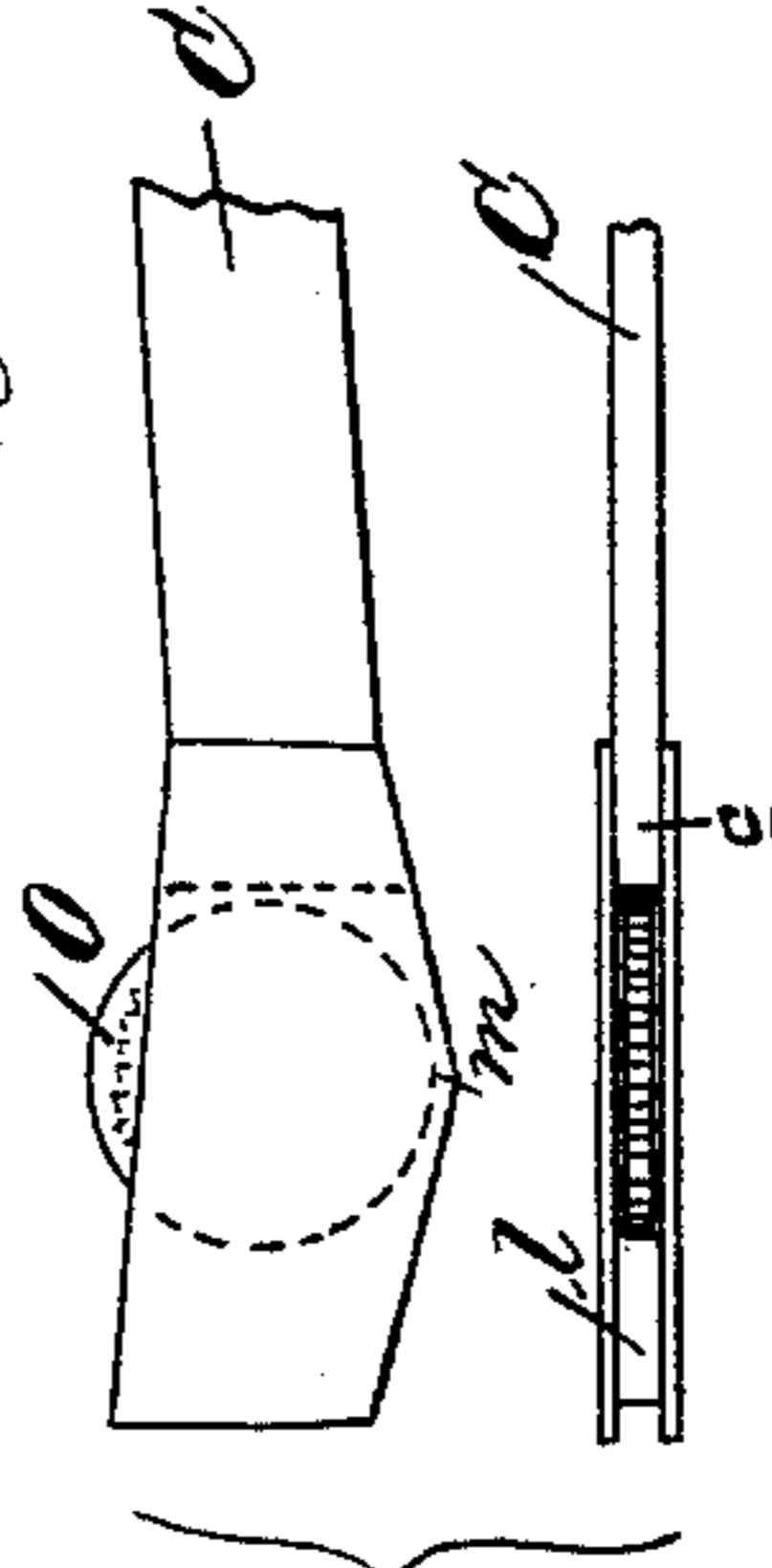


Fig. 3



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# UNITED STATES PATENT OFFICE.

CHARLES S. BATDORF, OF BROOKLYN, NEW YORK, ASSIGNOR TO HELEN G. BATDORF, OF SAME PLACE.

## COIN-OPERATED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 424,593, dated April 1, 1890.

Application filed September 23, 1889. Serial No. 324,715. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. BATDORF, of Brooklyn, county of Kings and State of New York, have invented certain new and  
5 useful Improvements in Coin-Operated Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This improvement relates to that class of vending apparatus in which the coin is received by a weighing-lever and transferred by said weighing-lever to another part of the apparatus if of the proper weight; and the  
15 invention consists of the peculiar construction, arrangement, and combinations of parts, hereinafter more particularly described, and then definitely claimed.

Reference is to be had to the accompanying  
20 drawings, forming part of the specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved lever, coin-entrance chute, guard, and certain  
25 auxiliaries. Fig. 2 is an end elevation of the same. Fig. 3 shows an enlarged side elevation and a plan of the coin-receiving end of said lever. Fig. 4 shows a coiled spring substituted for a weight at the short end of the  
30 lever.

In the drawings, A represents a part of the case of a coin-operated apparatus.

B represents a coin-entrance chute, which differs from those commonly applied, in that  
35 it is closed at the bottom, which may be lined with an elastic substance, if desirable, to deaden the force of the fall of the coin, as best shown at *a*, Fig. 2, that said bottom is inclined from rear to front, as shown in Fig.  
40 1, and that it has a coin-delivery opening in its front edge near the bottom, as shown best at *b*, Fig. 2.

The lever C is pivoted on a stud *d*, that is supported by case A, and a lug *d'*, fixed thereon.  
45 Suspended on the short arm of said lever is an adjustable weight D, that may be moved at will along said arm and be secured in place by a set-screw *f*, or, as indicated in Fig. 4, an adjustable spring, as D', may be substituted  
50 for the weight D, the tension of said spring

being varied at will by securing its lower end over one or the other of the pins *f'*, fixed in the case A, or being varied by other suitable device. A sliding weight E is preferably fixed  
55 on the long arm of the said lever and held in desired position by set-screw *g*, so that by the careful adjustment of one or both of these weights the lever may be adapted to perform its desired functions of automatically weighing and testing whatever coin or token may  
60 be introduced upon it, and of transferring only the proper coin from the coin-entrance chute B to the conductor H, down which the coin is designed to pass to its operative position. The extreme limit of the upward swing  
65 of the long arm of the said lever is defined by a stud *h*, fixed in the case A, against which stud the upper edge of said lever normally rests, and the extreme limit of the downward swing thereof is defined by stud *h'*, as shown  
70 in Fig. 1. The free end of this lever is forked or mortised or fashioned into a trough, as *l*, open at top and extreme end and having a closed bottom deepest at center and sloping upward from thence in both directions, as shown at  
75 *m*. The inner inclined part of the bottom is not actually necessary, as its only practical effect is to form a stop to prevent the coin traveling too far toward the center of the lever, whereby its apparent weight would be  
80 changed, as it would have less effect in overcoming the force of the weight D. If the bottom between the point *m* and the body of the lever C were removed, the device would work just as well as the end *c* of the lever would  
85 form a stop, as shown in Fig. 3. The free end of this lever moves up and down as it operates in a guard G, that is secured on the case A with its concave edge in contact at one point with the chute B, and at this point of  
90 contact *n*, Fig. 1, said guard is provided with an opening *n'*, which exactly registers with the opening *b* in the chute B, and the free open end of the lever when in its normal position, as shown in Fig. 1, registers exactly  
95 with these openings *b n'*, so that a coin introduced into the chute B will roll thence into the forked or trough end of the said lever. Besides this opening *n'* in the otherwise-closed edge of the guard G is an elongated opening  
100

or slot  $n^2$  near its lower end, and at a slight interval below that is another slot  $n^3$ , open at bottom, as indicated in Fig. 2, and a coin conductor or chute H is fixed, with its upper edge touching the said guard at the point between the slots  $n^2$   $n^3$ , as best shown in Fig. 1. It will be observed that the weight D is of such shape that nearly all of its substance is below the fulcrum  $d$  of the lever C. This is important, as it is upon this that the operation of the lever in separating bad coins or false tokens from the good coins depends. The weight being hung low changes its effective power as it rises, and is thus capable of detecting and separating bad from good coins. If, for instance, a disk of metal of less weight than the coin for which the lever is balanced is inserted, the coin will not be sufficiently heavy to raise the weight D but a short distance, because, as before stated, the effective force of the weight is increased as it swings around the circle, of which the fulcrum is the center. If, however, a coin, such as the machine is set for, is dropped in the machine, it enters the trough at the end of the lever and rests in the position shown until the lever descends to a certain point, when the incline on the bottom of the trough becomes inclined in the opposite direction, allowing the coin to pass through the opening  $n^2$ , the lever stopping at that point. Should a heavier disk be dropped in, it would carry the lever down so fast that it would pass the slot  $n^2$  before the disk could reach it and would enter the opening  $n^3$ .

The operation of this improved device is as follows: A coin, as O, being introduced edgewise into the chute B, falls upon the sloping bottom thereof, whereby the force of its fall is broken, and then because of the slope of said chute-bottom the coin rolls easily through apertures  $b$   $n'$  into the mortised or trough end of the lever, stopping in the deepest and central part thereof, as indicated in Figs. 1 and 3. If the said coin be a proper one designed for operating the apparatus—a coin of the kind for which the said lever has been adjusted by proper setting of the lever-weights—the long arm of said lever will swing downward until its open end comes opposite the aperture  $n^2$  in the guard G, and no farther, and at this point the inclination of the bottom of the lever trough or mortise from center outward will have become such that the said coin will at once roll from the lever into the conductor H, that is designed to convey it to its operative position, and then said lever will swing back to its normal position. In this case the conductor H simply indicates a passage-way to the point where the coin is to operate the apparatus; hence it may be termed the operating "position" or "place" of the coin. Another advantage of this inclined bottom of the lever-trough, or, rather, of the slope from the center outward, is that keeping the coin in the center of the trough until the latter coincides with the slot  $n^2$  it pre-

vents the advancing of the said coin against the outer edge of the guard as the lever swings down, for even so slight a friction or impediment as would result from the contact of the coin with the guard would defeat the successful operation of the lever that must be so nicely adjusted.

Recurring to the coin-entrance chute B, with its closed inclined bottom, it is obvious that were the bottom not so inclined the coin would not roll into the lever, and if there were no chute-bottom or its equivalent—such as a shelf or other obstruction—to break or retard the momentum of the falling coin before it reached the lever the operation of the latter would never be exact, as coins might be dropped upon it from various heights, or even be thrown down upon it through the chute. This lever is designed, as before said, to be adjusted for the proper coin that is to be used for operating the apparatus to which the lever is attached. If a heavier coin or token is introduced therein, the lever will more quickly swing down and past the slot  $n^2$  to opposite the slot  $n^3$ , through which the coin will be discharged into space below the mouth of the conductor H. If a lighter coin or token be introduced on the said lever, the latter will not swing down to deliver said coin or token, but will hold said coin or token until it is jarred off by the vertical reciprocation by the operator of a rod K, (shown in Fig. 1,) with its head in contact with the short arm of the lever, or by other suitable mechanism.

I deem it important that the trough in the lever should have substantially the shape shown, inasmuch as the coin is always in the same position with respect to the fulcrum and weight, no matter what its size or weight may be.

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

1. The combination, with a receiving-chute, as B, of a freely-moving lever having a coin-seat at one end and a weight at the other arranged, when said lever is in a certain angular position, to exactly counterbalance a predetermined coin, said coin-seat having its bottom inclined upward and outward and provided with a stop to prevent the coin traveling too far toward the fulcrum of the lever, the outward inclined part of said seat having an inclination such that the proper coin will roll down said inclined part when said coin reaches a certain designed position under the weight of the coin, substantially as described.

2. The combination, with a receiving-chute, as B, of a freely-moving lever having a coin-seat at one end and a weight at the other, arranged when said lever is in a certain angular position to exactly counterbalance a predetermined coin, said coin-seat having its bottom inclined upward and outward and provided with a stop to prevent the coin traveling too far toward the fulcrum of the lever,

the outward inclined part of said seat having an inclination such that the proper coin will roll down said inclined part when said lever reaches a certain designed position under the weight of the coin, and a guard curved to correspond with the curve described by the end of the lever arranged between the coin-receiver and the receiving-chute and provided with an opening leading from said chute to the coin-receiver and from the coin-receiver to a delivery-chute, substantially as described.

3. The combination, with the coin receiving, transferring, and delivery lever, of a fixed coin-guard provided with coin receiving and delivery apertures or slots, substantially as described.

4. The combination, with the coin receiving

and testing lever, of the coin-entrance chute having a closed inclined bottom, and side coin-aperture near the bottom, substantially as herein shown and described.

5. The combination of the coin receiving, weighing, transferring, and delivery lever, coin-entrance chute having closed inclined bottom and coin-delivery aperture and guard, substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand, in the presence of two witnesses, this 20th day of September, 1889.

CHARLES S. BATDORF.

Witnesses:

JACOB J. STORER,  
CHAS. H. LOTT.