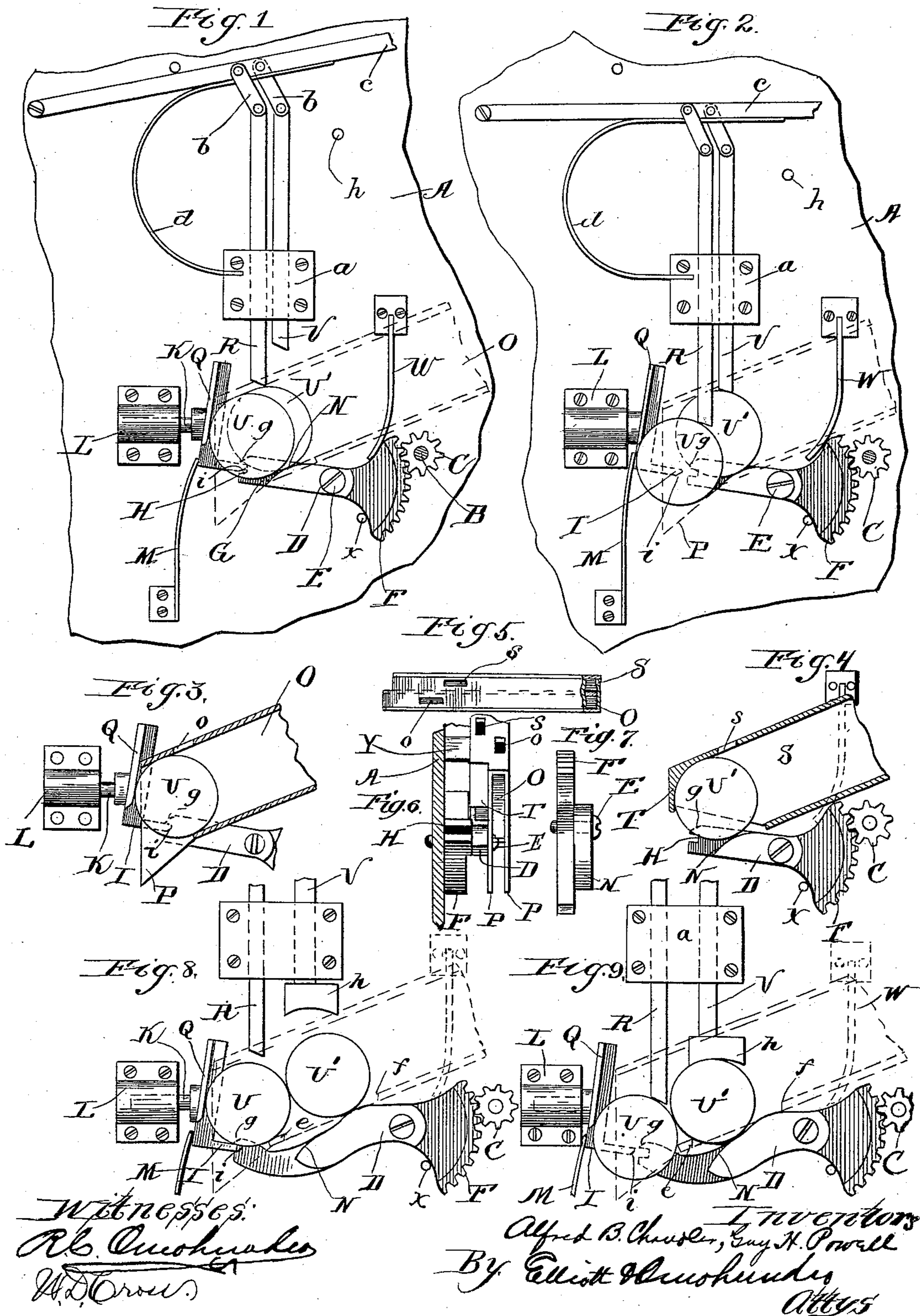


(No Model.)

G. H. POWELL & A. B. CHANDLER.
COIN CONTROLLED MECHANISM.

No. 477,871.

Patented June 28, 1892.



UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 477,871, dated June 28, 1892.

Application filed March 11, 1892. Serial No. 424,503. (No model.)

To all whom it may concern:

Be it known that we, GUY H. POWELL and ALFRED B. CHANDLER, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Controlled Mechanism, of which the following is a full, clear, and exact specification.

Our invention relates to coin-controlled mechanisms for general purposes, but is more particularly designed and adapted for use in connection with automatic vending-machines, and of that class it has more especial reference to the machines which can be operated only after a number of coins have been deposited at one time.

The prime object of our invention is to provide a machine of this character which will necessitate the insertion of a number of coins at once and which will hold these coins in such a manner that the mechanism will be unlocked through the medium of one and actuated through the medium of the other.

Our invention consists in certain novel features in the construction, combination, and arrangement of parts by which the said object and certain other objects of minor importance are attained, fully described herein-after with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of our improved mechanism, illustrating the positions the two coins assume immediately after being dropped into the coin chutes or slots, which latter are represented in dotted lines. Fig. 2 is a similar view illustrating the positions of the coins after the mechanism has been unlocked through the medium of one of them, but before it has been actuated through the medium of the other. Fig. 3 is a detail view showing the coin-chute through which the coin for unlocking the mechanism travels in vertical sections. Fig. 4 is a similar view of the coin-chute through which the coin for actuating the mechanism travels. Fig. 5 is a plan view of the two coin-chutes. Fig. 6 is a detailed view of the mechanism, partly in section, looking into the lower ends of the coin-chutes. Fig. 7 is a plan view of the segment-lever hereinafter described;

and Figs. 8 and 9 are views corresponding to Figs. 1 and 2, but illustrating a form in which but one chute is employed for both coins.

In the drawings, wherein like signs of reference indicate like parts throughout the several views, A represents the wall or side plate of any suitable box or casing in which the mechanism might be located, and B is a shaft through the medium of which any desired form of vending mechanism or other mechanism (not shown) may be operated. Formed upon or suitably secured to this shaft B is a pinion or spur wheel C, which is engaged by a toothed lever D, pivoted at E in any suitable manner to the side of the casing or plate A. The end of this lever is formed on the arc of a circle struck from the pivot-point E, and it is provided with a number of teeth F, which are complementary to and engage with the teeth of the spur C, and the segment-rack thus formed is of sufficient length to cause the rotation of the shaft B the desired number of times for actuating whatever mechanism to which it may be connected. The other end G of this lever D is provided with a notch H, with which engages a latch or catch I when such lever is in its normal position, as shown in Fig. 1.

The latch I is provided with a stem K, which is held by and adapted to slide in a box or guideway L, suitably secured to or formed on the end of the casing or plate A or other fixed portion of the apparatus, and the latch is impelled toward the lever D by means of any suitable spring M, so that when the end G of such lever rises a beveled portion g, formed thereon just above the notch, will engage the end of the latch I and force it backward against the action of the spring M until the notch has risen sufficiently far to receive the end of the latch, the under side of the latch being also beveled, if desired, as shown at i.

The lever D is provided on the upper side of its end G with a rounded or beveled ledge or shoulder N, thus forming a reduced or thin portion on the end G of the lever, and arranged just above this shoulder N and in front of the reduced portion of the lever is one of the coin-chutes O, which is arranged, preferably, on an incline and is provided at its lower

end with two depending lips P, which cover the latch I, and thus prevent the coin which is dropped into this chute from striking against such latch or against the shoulder N, the bottom of the chute O being extended beyond such shoulder N, as more clearly shown in Fig. 3. The latch I, however, is provided with an upright flange or shoulder Q, which partially closes the lower end of the chute O, so that when the coin U is dropped into such chute it will descend against the shoulder Q and be held in the position more clearly shown in Fig. 3 between such shoulder and the bottom of the chute.

The upper side of the chute O just above the point where the coin lodges is provided with an opening o, and arranged above this opening is a plunger R, which is coincident with such opening. The lower end of this plunger is preferably inclined or beveled, so that when the plunger moves downward through the opening o it will impinge the coin resting in the chute O and force the same outward and downward toward the latch I and the mouth of the chute, thereby disengaging the latch against the influence of the spring M and permitting the lever D to be actuated through the medium of the other coin U', the mechanism for co-operating with which will now be described.

Arranged behind and preferably in a plane parallel with the chute O is a second chute S, whose lower end falls a little short of the lower end of the chute O and is provided with a stop T for arresting the downward movement of the coin U'. The shoulder N on the lever D is so disposed with relation to the stop T as to prevent such coin from slipping between the shoulder and such stop until the lever has been depressed, the lower corner of the chute S being cut away in the manner shown in Fig. 4. The chute S likewise is provided in its upper side just above the point where the coin U' lodges with an opening or slot s, and over this opening s and coincident therewith is arranged a plunger V, which, like the plunger R, is preferably provided at its lower end with a bevel or incline for the purpose of guarding against an upward movement of the coin when the plunger descends thereon. This plunger V, however, is shorter than or has its lower end otherwise arranged normally above the lower end of the plunger R, so that the plunger R will first descend and through the medium of the coin U unlock the lever D before the plunger V has reached or acted upon the coin U' in the chute S, it being of course understood that the plunger V will strike the coin U' and partially depress the lever D before the coin U has been entirely dislodged, thus avoiding the possibility of the latch I slipping back into place in the notch H before the lever has been depressed sufficiently to actuate the mechanism connected with the shaft B. When the coin U' has been dislodged by means of the plunger V in the act of depress-

ing the lever D, such lever will be returned to its normal position by means of any suitable spring—such as W—bearing against the segment end of the lever, and this return movement of the lever, if desired, may be limited by a stop X.

It will of course be understood that the chutes O S are situated a short distance from the plate A, they being mounted upon any suitable blocks, such as Y, and that the segment end of the lever D is cut away, as shown more clearly in Fig. 7, so that when the lever is moved downward by the coin U' the segment end will pass upward between the inner chute S and the plate A. This particular form, however, may be varied at pleasure without departing from the spirit of our invention.

The plungers R V may be mounted in and guided by any suitable box or strap a, and they are preferably connected at their upper ends by means of short links b with the pivoted actuating-lever c, which, as is of course understood, is accessible to any party operating the machine. This lever and the plungers may be returned to their normal positions by any suitable means, such as the blade-spring d.

Referring now more particularly to Figs. 8 and 9, representing the form in which a single chute is used for both coins, it will be seen that the chute is similar to the chute O, with the exception that its bottom is provided with an opening between the points e f for the passage of the second coin U', a small stop at the extreme end of the chute being left at the point e for supporting the inner edge of the coin U. The lever D is so constructed and arranged as to close the opening between the points e f when in its upper position. When a coin is dropped into the chute, it will roll down over the lever D and lodge between the stop at e and the flange or shoulder Q on the latch I. If now, as in the form before described, the lever c should be depressed, the coin U would be simply dislodged by the plunger R, and as soon as it had passed the shoulder Q the spring M would immediately return the latch to its former position into engagement with the lever D, and the plunger V would descend through its opening in the chute without affecting the lever D, it being limited in its downward movement by a stop similar to the stop h, (shown in Figs. 1 and 2,) and thus preventing it from reaching the lever D. If, however, two coins should be dropped into the chute at one time, the second will lodge against the first in the manner shown in Fig. 8, and when the lever c is depressed the plunger R, being longer than the plunger V, will first unlock the lever D through the medium of the coin U, and before such coin U is entirely dislodged the plunger V will descend upon the coin U' in the manner shown in Fig. 9 and force it downward through the opening e f in the bottom of the chute and in doing so of course imparting the desired oscillation to the lever D. In this in-

stance, however, the plunger V is provided with a broad head or shoe *h*, whose lower edge is curved so as to approximately fit the edge of the coin, and it is so formed for the purpose of impinging the coin on the left of its vertical diameter during the first movement of the coin and on the right of such diameter during its final movement. The reason of this is obvious, for if it were otherwise the coin might, on the one hand, be wedged between the plunger V, the stop at *e*, and the plunger R, while, on the other hand, after the downward movement of the plunger V had advanced about half-way the coin might slip upward past the end of the plunger into the upper portion of the chute.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a coin-actuated mechanism having a latch for locking such mechanism, the combination of a plunger for disengaging said latch through the medium of one coin and a second plunger for operating the mechanism through the medium of a second coin, substantially as set forth.

2. In a coin-actuated mechanism, the combination of a lever, a latch for locking said lever, a plunger for disengaging said latch through the medium of one coin, and a plunger for operating or oscillating said lever through the medium of a second coin, substantially as set forth.

3. In a coin-actuated mechanism having a latch for locking it against movement, the combination of means for holding the coin against said latch, means for disengaging said latch through the medium of said coin, means for holding a second coin, and means for operating the mechanism through the medium of said second coin, substantially as set forth.

4. In a coin-actuated mechanism having a latch for locking it against movement, the combination of a lever, means for lodging a coin upon said lever, means for lodging a coin against said latch, and plungers for operating upon said coins successively, substantially as set forth.

5. In a coin-actuated mechanism, the combination of the lever D, having a shoulder N, means for lodging a coin upon said shoulder, a latch for locking said lever, having a shoulder Q, means for lodging a coin against said shoulder Q, a second lever, and plungers con-

nected with said second lever and being adapted to impinge said coins successively, substantially as set forth.

6. In a coin-actuated mechanism, the combination, with the shaft B, having a pinion C, of a toothed lever engaging said pinion, said lever having a shoulder N, adapted to support a coin, a latch for locking said lever, having a shoulder Q, adapted to support a second coin, and plungers having their ends arranged at different distances from said coins and adapted to impinge the latter successively, substantially as set forth.

7. In a coin-actuated mechanism having a latch for locking it against movement, the combination of means for supporting a number of coins and means for disengaging said latch through the medium of one and operating the mechanism through the medium of another of said coins, substantially as set forth.

8. In a coin-actuated mechanism having a latch for locking it against movement, the combination of a number of coin-chutes and means for disengaging said latch through the medium of a coin in one of said chutes and operating the mechanism through the medium of a coin in another of said chutes, substantially as set forth.

9. In a coin-actuated mechanism having a latch for locking it against movement, the combination of a coin-chute adapted to lodge a coin against said latch, a lever, a second coin-chute adapted to lodge a coin against said lever, and means for actuating said latch and lever through the medium of such coins, respectively, substantially as set forth.

10. In a coin-actuated mechanism, the combination of a lever having a shoulder, a latch adapted to engage said lever, having a flange or shoulder Q, a coin-chute having a stop at one end and an opening through its bottom for the passage of a coin, arranged over the shoulder on said lever, a second coin-chute adapted to lodge a coin against said shoulder or flange Q, the lip or projection P, extending between said second chute and latch, and means for applying pressure to coins while lodged against said lever and latch, respectively, substantially as set forth.

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Witnesses:

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W. D. CROSS.