

No. 612,020.

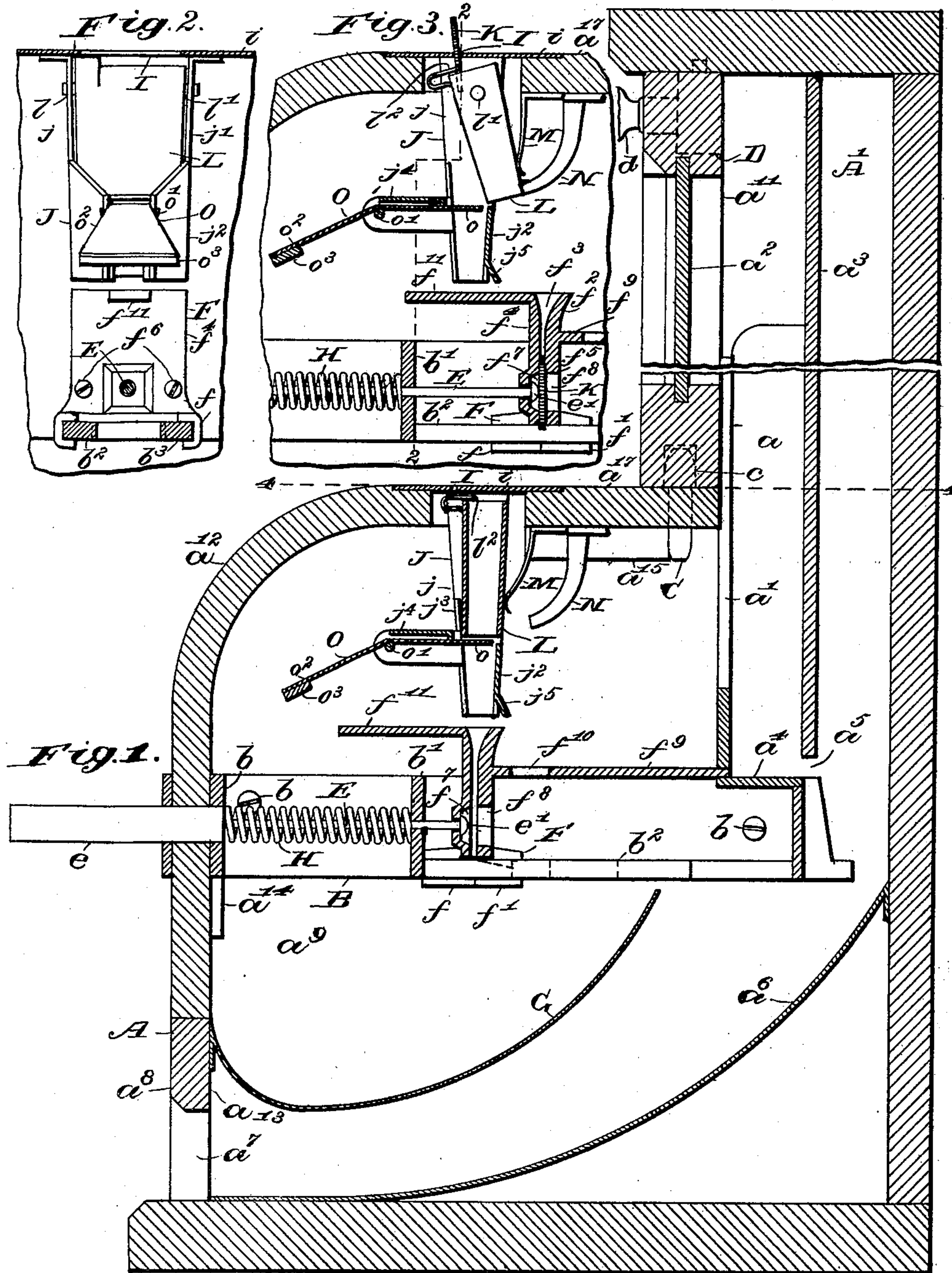
Patented Oct. 11, 1898.

T. J. CONWAY.
COIN CONTROLLED MACHINE.

(Application filed July 1, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

Kirkley Hyde.
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His ATTORNEY.

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Fig. 4.

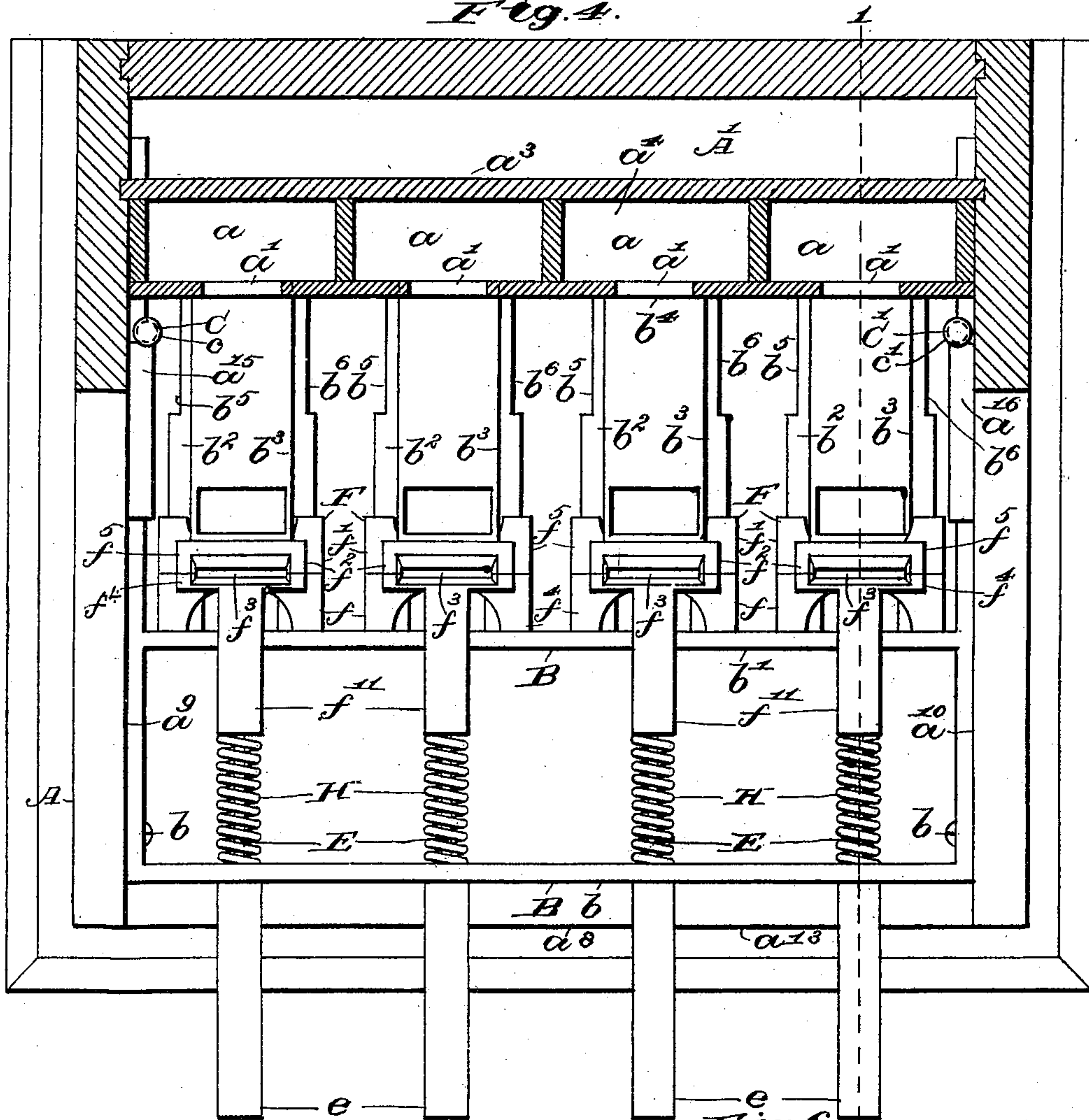


Fig. 6. 

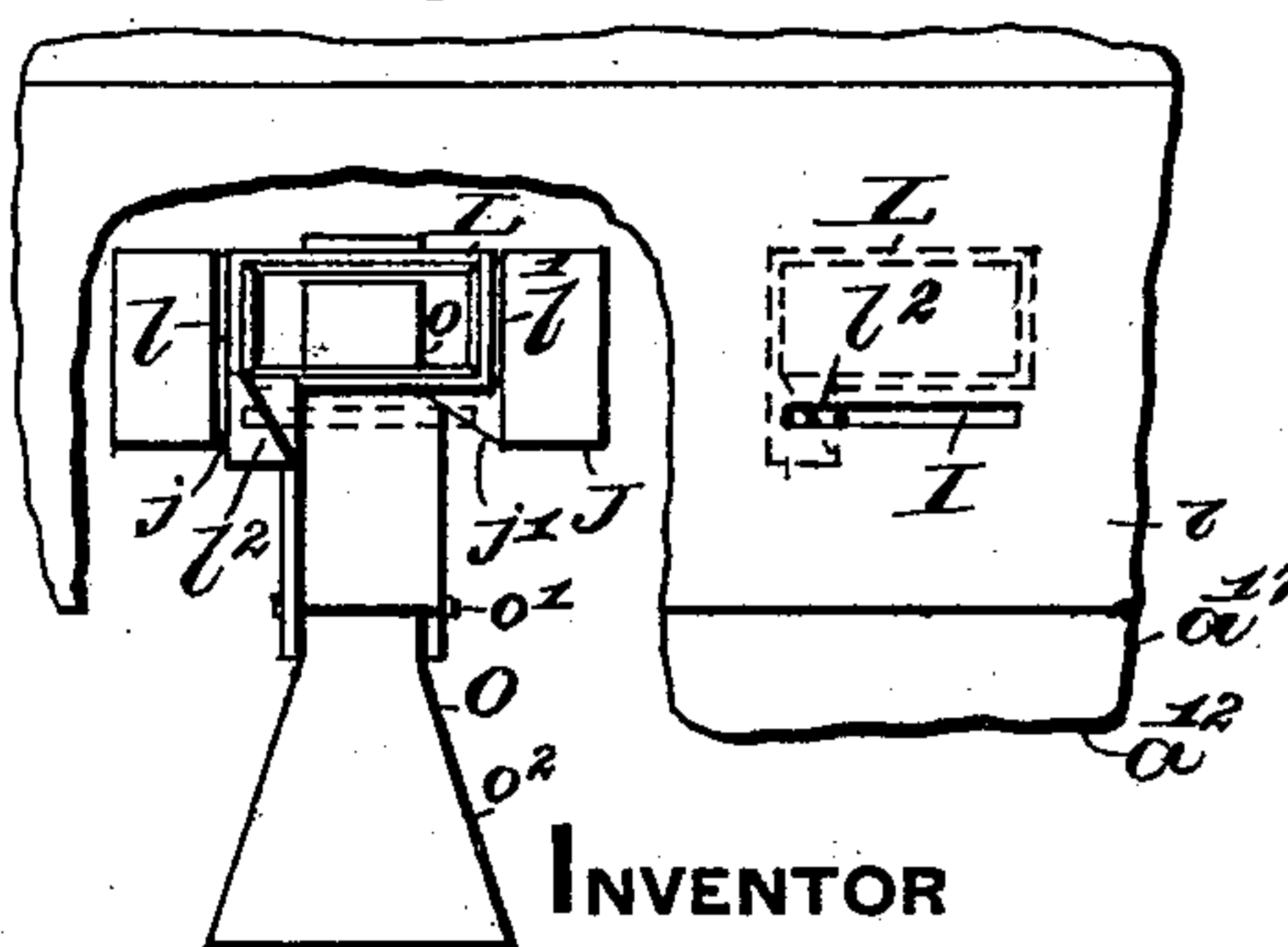


Fig. 5. R

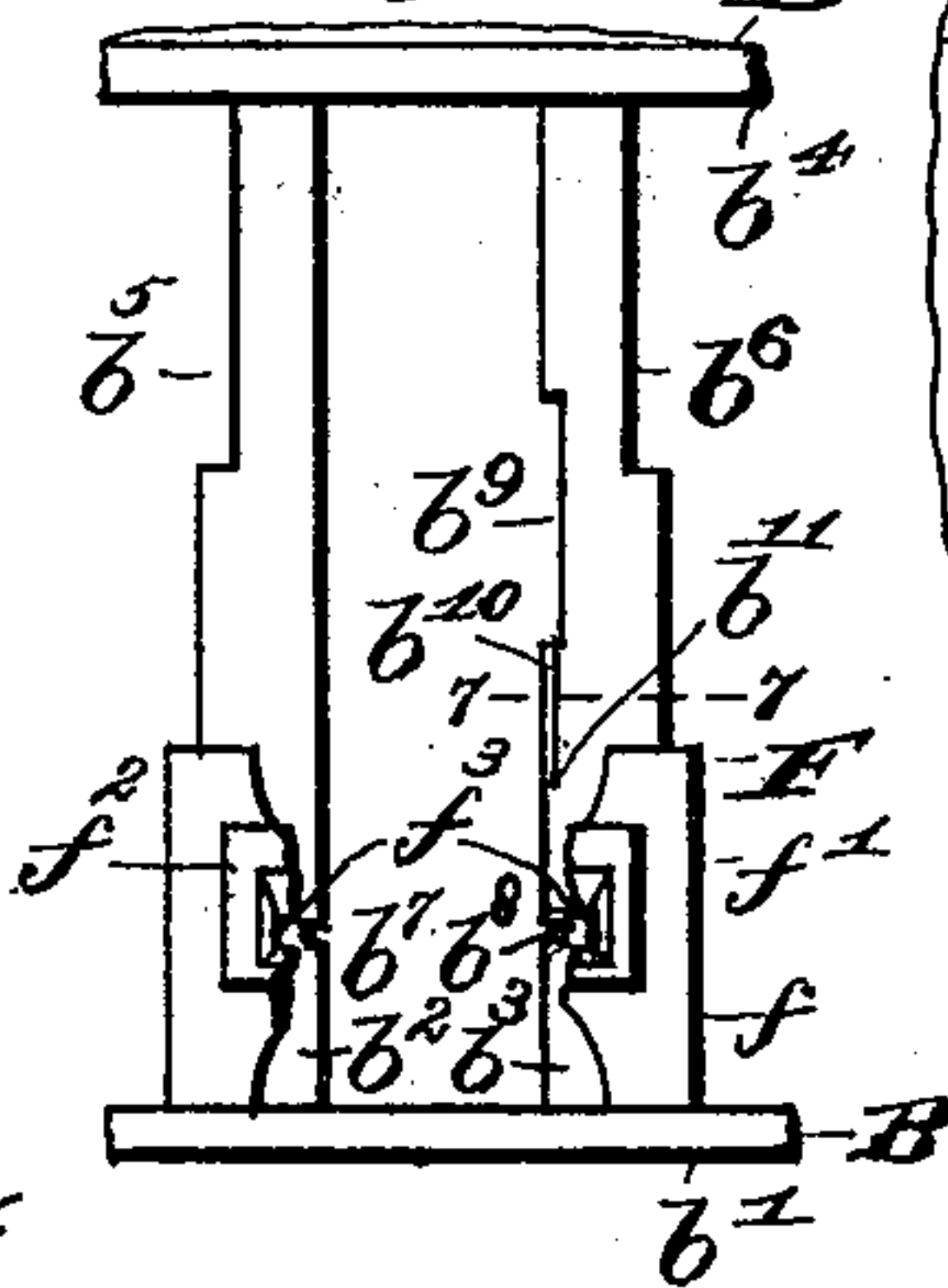
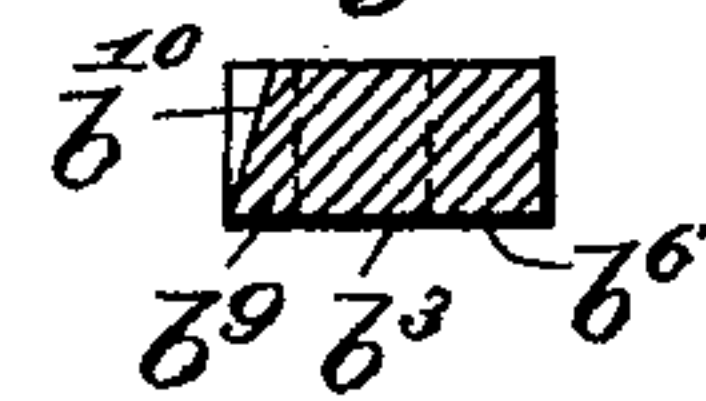


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS J. CONWAY, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO JOHN A. MCGUIRE AND JOHN P. CONWAY, OF SAME PLACE.

COIN-CONTROLLED MACHINE.

SPECIFICATION forming part of Letters Patent No. 612,020, dated October 11, 1898.

Application filed July 1, 1897. Serial No. 643,050. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. CONWAY, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Coin-Controlled Machines, of which the following is a specification.

My invention relates to coin-controlled machines or vending-machines such as are used for delivering small articles or packages when a coin equivalent to the price of the article or package is placed in the machine and an actuating rod or plunger is operated.

The object of said invention is to prevent the machine being actuated by the use of worthless substitutes for a coin of the required denomination, to prevent the machine being clogged by substitutes, and to prevent the same coin being used to actuate the machine two or more times in succession.

Said invention consists in the construction, devices, and combinations hereinafter described and claimed.

In the accompanying drawings on two sheets, Figure 1 is a vertical section of the machine from front to back on the line 1 1 in Fig. 4, the parts being in normal position; Fig. 2, a vertical transverse section on the line 2 2 in Fig. 3 of the case, the actuating-rod, and the slideways, showing in front elevation the swinging coin-hopper, the coin-guide, the coin-testing lever, and the slide; Fig. 3, a section in the same plane as that of Fig. 1 of a part of the case, the coin-guide, the coin-testing lever, and the slide, showing in side elevation the swinging coin-hopper, its stop and spring, and a part of the actuating-rod and its restoring-spring, the slide containing a coin and being moved back of its normal position and the hopper being swung backward by another coin which is represented as being inserted in the coin-slot; Fig. 4, a horizontal section of the machine on the line 4 4 in Fig. 1; Fig. 5, a plan of the slideways and parts of the slide; Fig. 6, a plan of the lower front part of the case which contains the coin-slots, showing one of said slots and being broken to show one of the coin-testing levers, a hopper, and a coin-guide, which also serves as a hanger to support said

hopper and lever, another hopper being indicated in dotted lines; Fig. 7, a section on the line 7 7 in Fig. 5 of one of the guides.

The case A is of any usual material and has a tall rear portion A', containing suitable vertical or nearly vertical pockets a , in which are placed the articles or packages to be sold, said pockets being open in front at a' in order that the articles or packages may be seen from the front of the machine through a window or glazed opening a^2 in the front of this part A' of the case.

The pockets a are closed in the rear by a false back a^3 and at the bottom by a shelf a^4 , on which the pile of articles or packages is supported. There is a space a^5 between the lower edge of the false back and the shelf a^4 large enough to allow a single article or package to be pushed backward off the shelf, which article or package falls onto and slides down the inclined chute a^6 to an opening a^7 in the front a^8 of the case large enough to admit the fingers of the purchaser.

The above-described parts may be of any usual construction and operation, except as hereinafter stated.

The frame B of the machine is preferably rectangular and of metal, as cast-iron, and is rigidly secured, as by screws b^{12} , Figs. 1 and 4, to the inner faces of the sides a^9 a^{10} of the case A, the frame serving to stiffen said sides and to assist in locking up the case, as described below.

The front of the case reaches across the space between the sides a^9 a^{10} and is formed in two removable parts, one of which is the window a^2 , above mentioned, (including its sash a^{11}), and the other a^{12} of which parts supports the lower end of said window-sash and extends from the pockets a forward and downward, Fig. 1, to a rigid rail or horizontal strip a^{13} , which forms the top of the opening a^7 , above mentioned. A cleat a^{14} , secured to the inside of the front part a^{12} , bears against the under side of the frame B and prevents said part a^{12} from being lifted without being first drawn forward until said cleat is out from under said frame. The front part a^{12} when in position is prevented from being drawn forward by two pins C C', Figs. 1 and 4, which pass down through the rear upper

end of said part a^{12} behind ledges $a^{15} a^{16}$, secured to the inner faces $a^9 a^{10}$ of the sides of the case and supporting the upper horizontal portion a^{17} or table of said part a^{12} . The pins $C C'$ are provided with enlarged heads $c c'$, which prevent said pins from falling through said table a^{17} , and holes in the bottom of the sash a^{11} receive said heads and prevent the lower end of said sash from being drawn forward. The upper end of the sash is locked by a lock D and key d of any ordinary construction adapted to throw a bolt into the under side of the top of the case.

The back and sides of the case are rigidly secured to each other, and the top and bottom are rigidly secured to said sides and back.

To open the case, the lock D is unlocked, the top of the sash drawn forward to clear the top of the case, the sash lifted off the pins $C C'$, and the pins drawn up out of the part a^{12} and said part drawn forward, as above described, and until said part is free of the handles e of the actuating-rods E, hereinafter described.

The frame B is provided with a cross-girth b' , from which guides $b^2 b^3$ extend to the back b^4 of the frame, said guides being preferably cast or otherwise made integral with said cross-girth and back. On each pair of guides $b^2 b^3$ is arranged a slide F, provided with lugs ff' , which reach below and under said guides, Fig. 2, the outer sides of the guides being narrowed or partly cut away at $b^5 b^6$ to allow said lugs to pass down outside of said guides in setting up the machine. In the operation of the machine the slide does not move far enough back to allow the lugs to rise through the cuts $b^5 b^6$.

The slide F is supplied with a vertical throat-piece f^2 , provided with a vertical coin passage, throat, or slit f^3 large enough to allow a coin K of the proper denomination to pass entirely through said throat, which is, however, narrow enough from front to back to cause the coin to remain nearly vertical while in said throat. When the slide is in its normal position, a coin placed in the throat f^3 drops upon the guides $b^2 b^3$, which at this point are at a distance from each other which is less than the diameter of the coin, except that there are notches $b^7 b^8$ extending through the inner or adjacent sides of the same pair of guides in line with each other, which will permit a circular piece of the same diameter as the proper coin, but of less thickness, to fall through the guides into the coin-pocket or coin-chute G below. For convenience the throat-piece is formed in two parts $f^4 f^5$, secured to each other by screws f^6 , the dividing plane being transverse and vertical.

The actuating-rods E are equal in number to the slides, and each such rod passes horizontally through the front part b of the frame and through the cross-girth b' and slides freely therein.

The rear end of each rod E passes through

the front part f^4 of the throat-piece and terminates in an enlarged head e' , and the front end portion of said rod is provided with a concentric cylindrical enlargement or handle e . Between such handle and the cross-girth b' a spiral spring H is compressed in such a manner as normally to draw the head e' forward out of the throat f^3 into a recess f^7 in the inner or rear face of said front part f^4 . The rear part f^5 of the throat-piece is provided with a perforation f^8 , concentric with the rod E and larger than the head e' of said rod and smaller than a proper coin K, Figs. 1 and 3, so that when a coin is in the throat-piece pushing said rod backward against said coin will force the slide F backward; but when said throat is empty the throat-piece will not be moved by said rod. When the slide is back of its normal position and the rod is relieved from pressure, said rod and slide are drawn forward by the expansion of the spring H, the rod moving first until the head e' strikes the front wall of the recess f^7 and then drawing the throat-piece forward.

On the rear part f^5 of the throat-piece is cast or otherwise rigidly secured a backwardly-extending horizontal pusher or arm f^9 , which when the slide moves backward crowds the lowest article or package in the corresponding pile or pocket back off from the shelf a^4 through the space a^5 , said article or package falling on and sliding down the chute a^6 and being removed by the purchaser through the opening a^7 , as above described.

When the slide is moved far enough back to remove from the shelf a^4 the article or package, as above described, the throat-piece is over a part of the corresponding pair of guides, which are sufficiently separated to allow the coin to fall between them, one of the guides b^3 being cut away for this purpose at b^9 on the side next the other guide of the same pair, Figs. 4 and 5, so that when the pressure of the head of the actuating-rod upon the coin is relieved said coin, being unsupported, will fall between the guides into the coin-chute G.

To prevent the operator by carefully-diminished pressure on the actuating-rod from bringing the slide back to normal position without discharging the coin, the upper inner corner of one, b^3 , of the guides is beveled off at b^{10} , Figs. 5 and 7, leaving a vertical shoulder b^{11} , against which the coin in passing forward with the returning slide will catch and prevent the slide from moving forward sufficiently to draw the attached pusher from under the corresponding pocket a and allow the pile in said pocket to settle behind said pusher.

The coin K is introduced into the throat-piece through a coin-slot I in a plate i , secured on the table a^{17} , there being as many such slots as there are slides F and said table having openings below said slots in the usual manner; but the coin does not pass directly from said slot I into the throat-piece.

A combined hanger and coin-guide J, Figs.

1, 2, 3, and 6, is secured to the under side of the plate *i*, the upper part of said hanger having depending arms *j j'* and the lower part thereof being a rectangular tube *j²*, through which the coin passes into the throat-piece of the slide. Between the arms *j j'* is pivoted at *l l'* the swinging coin-hopper L, the normal position of which is shown in Fig. 1, where the lower end of said hopper is pressed forward against a stop *j³*, secured to the hanger J by a spring M, represented as a leaf-spring, secured to the under side of the table *a¹⁷* and pressing against the back of said hopper. The backward swing of said hopper is limited by another stop N, secured to the under side of the table *a¹⁷*.

The hopper L is a tube approximately rectangular in cross-section large enough to allow the coin to slide freely through it in an approximately vertical position and provided on top at one side with a lip *l²*, which extends forward across the coin-slot I and is arranged at one side of said hopper and is inclined laterally forward toward the other side of said hopper. The top of the hopper is normally a little back of the coin-slot I; but said lip reaches across said slot, Fig. 6, so that a coin inserted in the coin-slot strikes the inclined side of said lip and draws the top of the hopper forward under the coin, Fig. 3. As soon as the coin has passed entirely through the coin-slot into the hopper said hopper is restored to its normal position by the spring M, and the coin is discharged from the bottom of said hopper upon the rear arm *o* of a coin-testing lever O, pivoted at *o'* on a bracket *j⁴*, supported on the hanger J. The front arm *o²* of the lever O is weighted at *o³*, and the upward movement of said rear arm *o* is stopped when it arrives at a horizontal position by the under side of the top of the bracket *j⁴*.

The weight of an unmutilated coin of the proper denomination is sufficient to depress the rear arm of the coin-testing lever O sufficiently to allow the coin to slide off from said lever, down through the coin-guide *j²*, and thence into the throat-piece, after which the slide may be operated as above described.

If a substitute (as a piece of tin) smaller in diameter than the proper coin is inserted in the coin-slot I, it will pass down without properly acting upon the lip and without drawing forward the top of the coin-hopper sufficiently to receive said substitute, which will therefore fall in front of said hopper upon the top of the bracket *j⁴* and roll off into the coin pocket or chute G directly without ever entering the throat of the slide. If the substitute be of the same diameter as the coin, but of substantially less weight than the coin, the hopper will be properly actuated, but the substitute will stop on the coin-testing lever and remain there until the lower end of the hopper is again swung backward by the insertion of another coin or substitute, and such backward movement will throw the first-

named substitute off from said lever behind the coin-guide *j²* and allow said substitute to fall through a hole *f¹⁰* in the pusher *f⁹* into the coin-chute G, the lower end of the coin-guide having on the rear an incline or fender *j⁵* to prevent the substitute from striking on the top of the throat-piece *f²*, Fig. 1.

To prevent the customer from losing his money when he places a coin in the coin-slot and the throat-piece is out of its normal position, an arm *f¹¹* extends from the throat forward under the coin-guide and prevents said coin from dropping until the throat-piece returns to its normal position.

I claim as my invention—

1. The combination in a coin-controlled machine of the guides and a coin-carrying slide, movable thereon and having ears adapted to reach below and under said guides, said guides being narrowed or partly cut away to allow said ears to be passed below said guides.

2. The combination of a stationary pair of guides, and a slide, movable thereon and having a throat-piece provided with a vertical coin-passage extending entirely through the same and adapted to allow a coin of the proper size to pass entirely through said throat-piece, the distance between said guides below said throat-piece when said slide is in its normal position being less than the diameter of said coin and said guides being arranged at right angles to said coin-passage and having in their adjacent sides notches of a width less than the thickness of said coin, below said coin-passage when said throat is in normal position, to allow a substitute thinner than said coin to fall through said guides.

3. The combination of guides, a slide, movable thereon and having a vertical throat, through which a coin may pass, said guides normally supporting said coin in said throat and allowing said slide with said coin to move freely in its operative direction and said guides having a stationary stop-shoulder to engage said coin before said operative movement is completed and prevent the return movement of said slide until said operative movement is completed and said coin is discharged therefrom.

4. The combination of the case having a coin-slot, and a swinging coin-hopper, arranged out of line with said slot and having a lip, arranged at one side of the top thereof and extending across said slot, said lip having its inner side inclined toward the middle of said slot, to cause the upper end of said hopper to swing under said coin-slot when a coin of sufficient diameter is passed through said slot and against the inclined side of said lip.

5. The combination of the case having a coin-slot, a swinging coin-hopper, arranged out of line with said slot and having a lip, arranged at one side of the top thereof and extending across said slot, said lip having its inner side inclined toward the middle of said slot, to cause the upper end of said hopper to

swing under said coin-slot when a coin of sufficient diameter is passed through said slot and against the inclined side of said lip, stops to limit the swinging of said hopper, and a
5 spring, to restore said hopper to normal position.

6. The combination of the case having a coin-slot, a swinging coin-hopper, arranged out of line with said slot and having a lip, ar-
10 ranged at one side of the top thereof and extending across said slot, said lip having its inner side inclined toward the middle of said slot to cause the upper end of said hopper to swing under said coin-slot when a coin of
15 sufficient diameter is passed through said slot and against the inclined side of said lip, stops to limit the swinging of said hopper, a spring to restore said hopper to normal position, a lever, having an arm arranged below said
20 hopper when the latter is in its normal position, and having its other arm weighted, to raise said first-named arm, a stop to limit the upward movement of said unweighted arm, and a coin guide or passage, arranged below
25 said lever and said hopper, whereby a coin of full weight will be delivered to said guide

from said hopper, while a coin or substitute therefor of lighter weight will be retained by said lever until a subsequent swinging movement of said hopper.

7. The combination of the case, having a back and sides rigidly secured to each other, a frame, secured within said case, said case having a front formed in two parts, one of which is provided on its inner face with a
35 cleat arranged to bear against the under side of said frame, and with a horizontal portion adapted to be supported on ledges, secured to the inner faces of the sides of said case, pins passing through said horizontal portion be-
40 hind said ledges, said pins having enlarged heads, arranged above the top of said horizontal portion and a sash, having holes to receive said heads and provided with a lock.

In witness whereof I have signed this speci-
45 fication, in the presence of two attesting witnesses, this 26th day of June, A. D. 1897.

THOMAS J. CONWAY.

Witnesses:

ALBERT M. MOORE,
JOHN A. MCGUIRE.