

No. 658,828.

Patented Oct. 2, 1900.

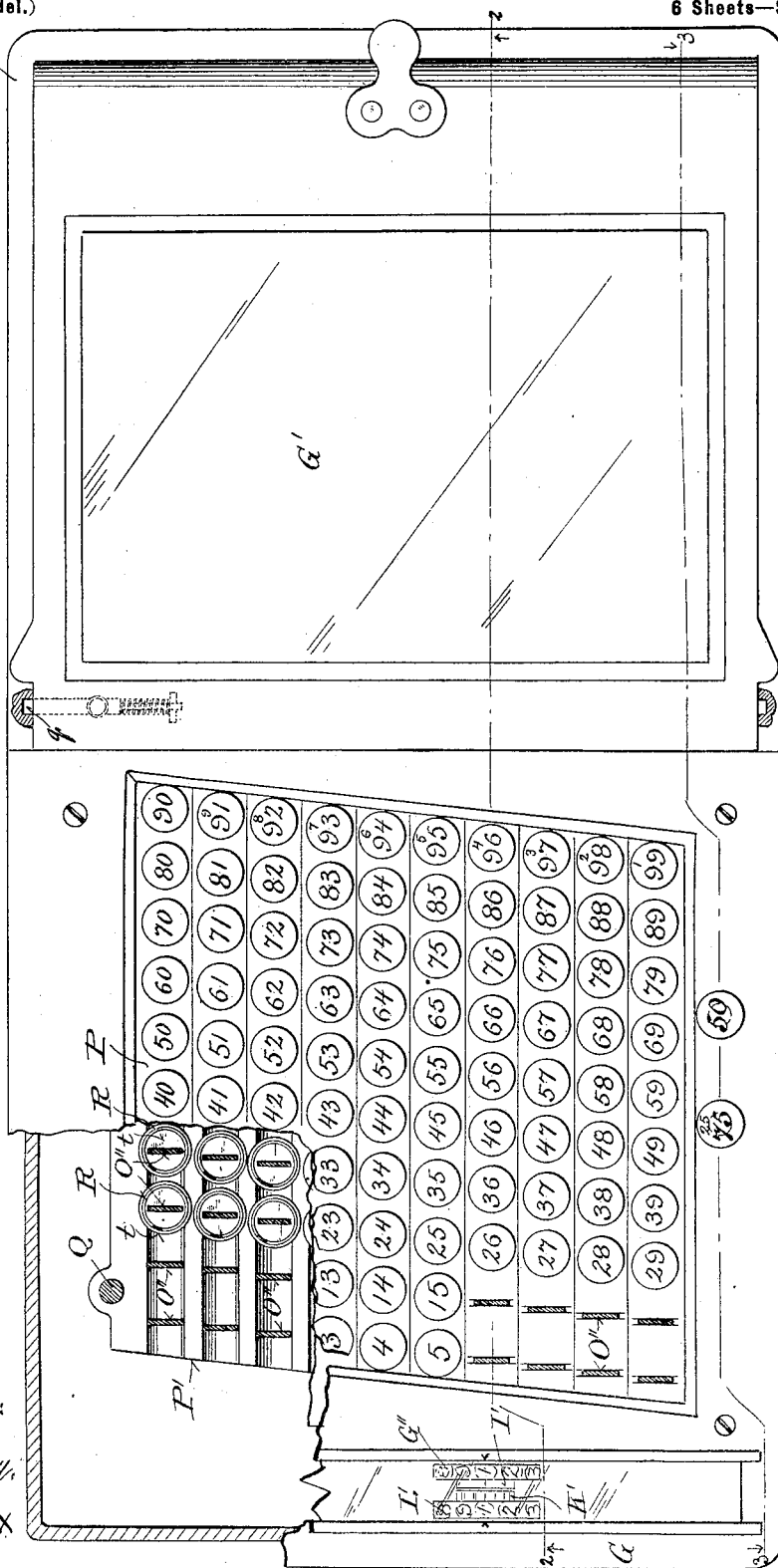
E. J. BRANDT.
COIN DELIVERY MACHINE.

(Application filed June 18, 1899.)

(No Model.)

6 Sheets—Sheet 1.

Fig. 1.



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E. J. BRANDT.
COIN DELIVERY MACHINE.

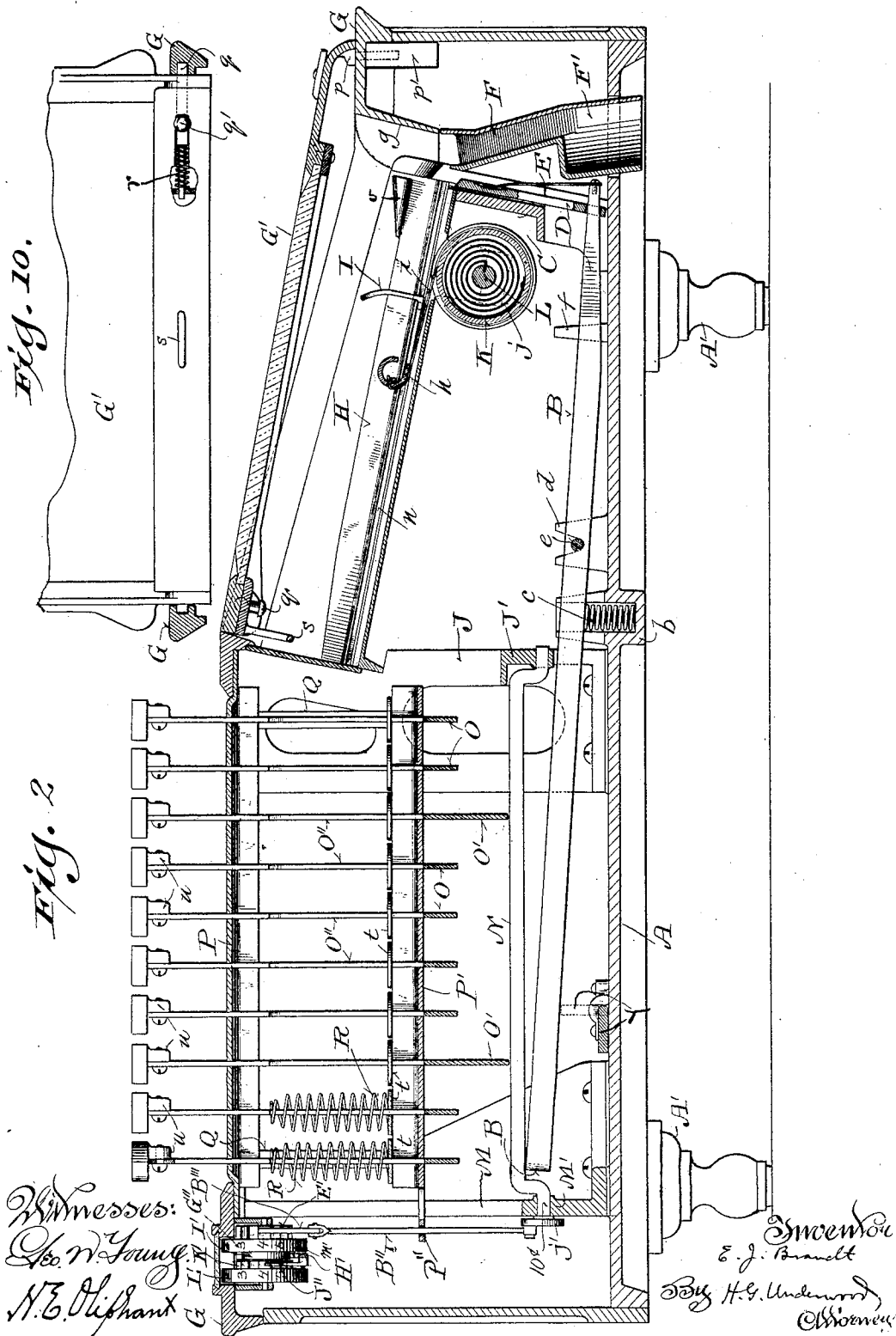
(Application filed June 16, 1899.)

(No Model.)

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Fig. 10.

Fig. 2.



No. 658,828.

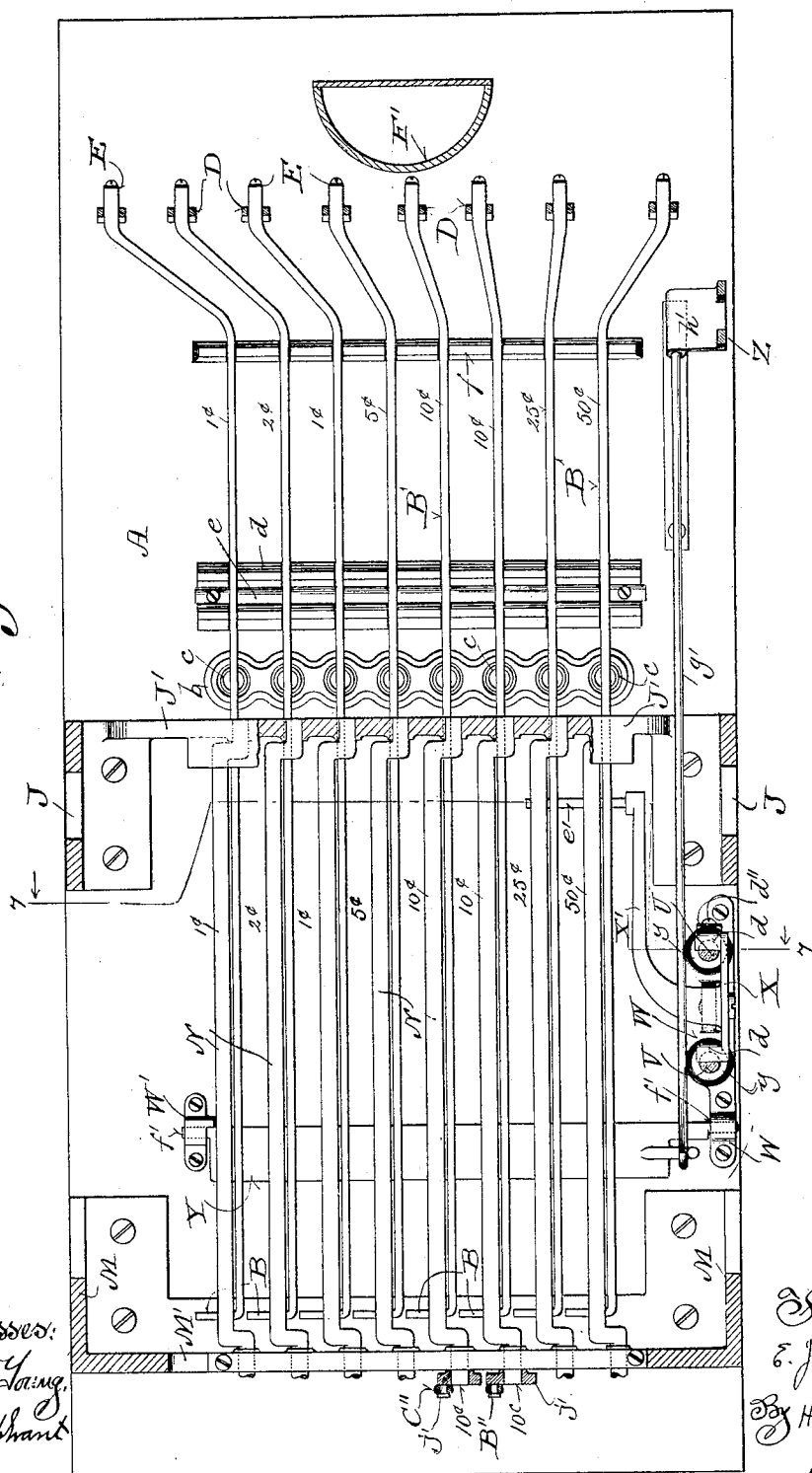
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(Application filed June 16, 1899.)

(No Model.)

6 Sheets—Sheet 4.



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Fig. 5.

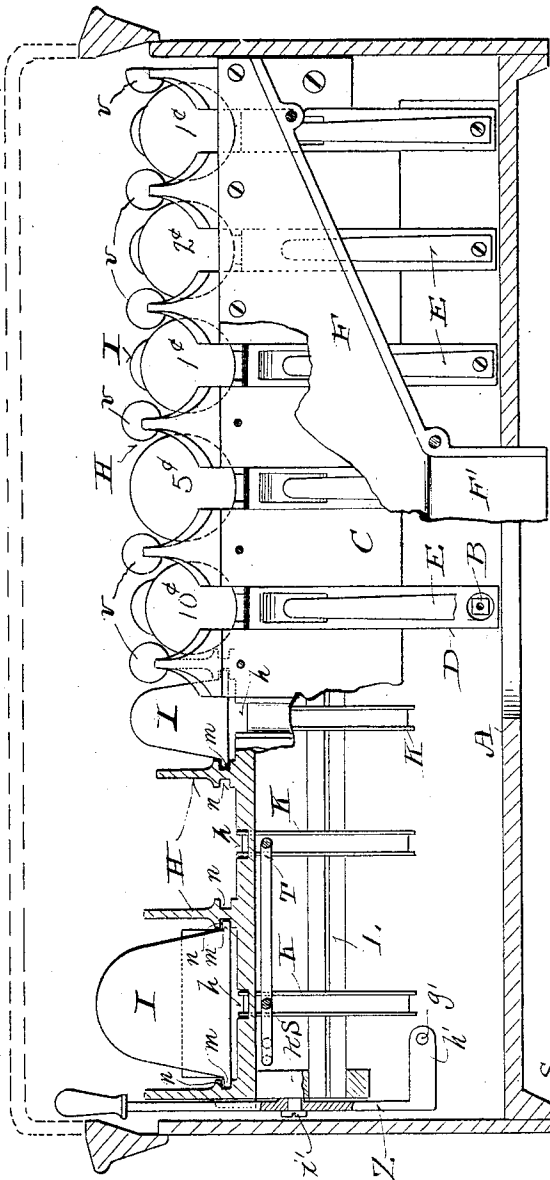
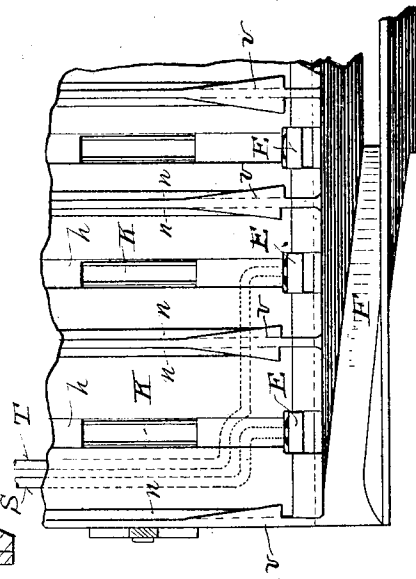


Fig. 6.



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6 Sheets—Sheet 6.

Fig. 7.

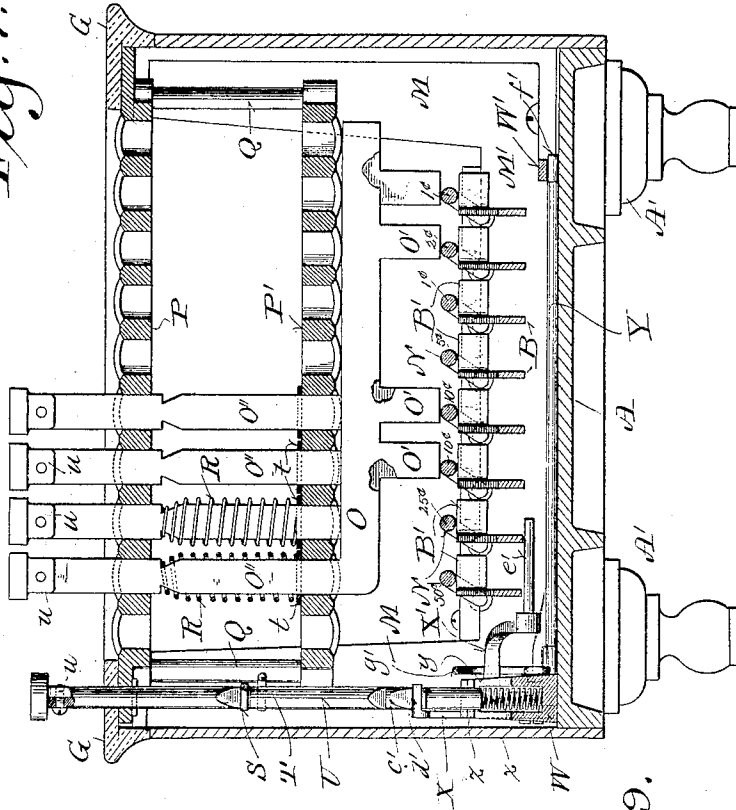


Fig. 8.

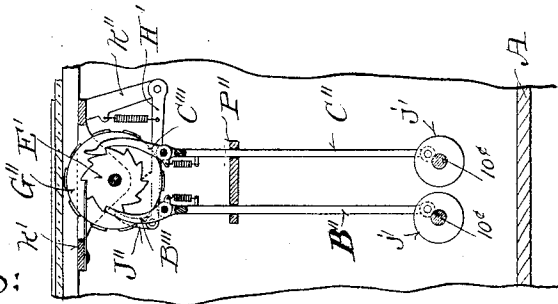
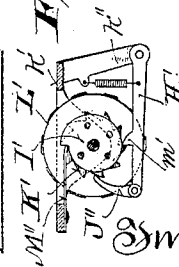


Fig. 9.



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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN.

COIN-DELIVERY MACHINE.

SPECIFICATION forming part of Letters Patent No. 658,828, dated October 2, 1900.

Application filed June 16, 1899. Serial No. 720,754. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BRANDT, a citizen of the United States, and a resident of Watertown, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Coin-Delivery Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to simplify, strengthen, and cheapen machines of a character similar to that set forth in my United States Patents, No. 604,600, dated May 24, 1898, and No. 628,688, dated July 11, 1899, and to provide the same with means for automatic registration of the money value of coin expelled therefrom.

Therefore said invention consists in certain peculiarities of construction and combination of parts hereinafter specified with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a plan view of my improved machine partly broken; Figs. 2 and 3, vertical longitudinal sections of the machine respectively indicated by lines 2 2 and 3 3 in the first figure; Fig. 4, a plan view in horizontal section indicated by line 4 4 in the third figure; Fig. 5, a transverse sectional view indicated by line 5 5 in said third figure, certain parts in this view appearing broken; Fig. 6, a detail plan view illustrating certain chutes and adjacent mechanism embodied in said machine; Fig. 7, a transverse sectional view indicated by line 7 7 in the fourth figure; Figs. 8 and 9, detail partly-sectional views illustrating a register mechanism that may constitute part of the aforesaid machine; and Fig. 10 a detail partly-sectional view illustrating a portion of a detachable glazed and hinged portion of the top of the machine-casing swung up.

Referring by letter to the drawings, A represents a rectangular cast metal base constituting part of the machine-casing, and this base is shown provided with legs A' in order that it may stand at a predetermined elevation above the counter, shelf, or other convenient support. The base is cast with a transverse rib *b*, approximately midway of its length, and this rib is provided at regular intervals with sockets, in which spiral springs

c under tension are located. In front of rib *b*, a short distance therefrom and parallel thereto, is another base-rib *d*, having its upper portion longitudinally channeled to form a seat for a rod *e*, made fast to ends of this latter rib by screws or otherwise, as may be most convenient and economical in practice. Forward of rib *d* the base A is provided with still another rib *f*, and all the base-ribs are cross-kerfed in line at intervals longitudinally thereof to accommodate a series of levers B, the kerfs in rib *b* being central of its sockets. The levers are apertured to be engaged by a rod *e*, that constitutes their fulcrum, and the depression of each lever in rear of said rod is against resistance of a spring *c*, the latter acting by expansion to return said lever to normal position when opportunity is afforded after an operation of the same. The kerfs in rib *f* serve as guides for the levers and prevent sway of same.

Made fast to base A forward of rib *f* are end stilts of a plate C, having front vertical recesses at intervals thereof engaged by pushers D, the lower ends of the pushers being provided with eyes engaged by forward portions of the levers B, these portions of said levers being bent substantially as best shown in Fig. 4.

Held by screws or otherwise to the front terminals of the levers are the lower ends of leaf-springs E, and the upper free ends of these springs bear against the pushers, the latter being preferably recessed to accommodate said springs. The upper edge of plate C is provided with a series of notches intercepted by the guide-recesses for the pushers D, the width of these notches being variable in proportion to their diameters of arbitrarily-selected coin, and the face of each notch is preferably beveled to present a thin rear edge.

Secured to plate C by screws or otherwise is a chute F, made to have its open end extend the full width of said plate. The chute is slanted forward of plate C and has convergence from the extremities of its upper open end toward a spout F', that constitutes its outlet, this spout being preferably semi-circular at the rear and extended through a corresponding opening provided in the base A aforesaid.

A frame G, constituting part of the top of the machine-casing, is provided with a continuous depending flange *g*, that comes adjacent to the upper front edge of chute F and serves to deflect coin dislodged from any one or more of a series of inclined chutes H back of plate C, the bottom of each chute being a predetermined distance below the plate-notch that constitutes its outlet, where-
 10 by said plate serves as a temporary stop for coin arranged in the several chutes forward of spring-actuated followers I hereinafter more particularly set forth. The coin-chutes are preferably divisions of a casting supported on a ledge of plate C and shoulders of a pair of standards J, made fast to the base A immediately in rear of the socket-rib *b* thereon, and practice has determined that the single continuous flange *g* constitutes a
 20 better coin-deflector than the means set forth in the patent aforesaid. Each coin-chute has its bottom provided with a central longitudinal groove *h* for the engagement of a flexible strap *i*, connected at one end to a coin-follower I and having winding connection at its other end with a hollow pulley K, that extends up in a slot intersecting said groove longitudinally thereof near the lower end. Within the pulley the outer end of a convolute spring *j* is made fast, and the inner end of this spring is bent at a right angle and engaged with a kerf longitudinally of a spindle L, upon which said pulley is loose, the spindle being held rigid in boxes *k*, depending from the coin-chute casting. In setting
 35 up the machine all the pulleys are slipped on the spindle L, and the springs *j* have their bent inner ends engaged with the kerf in said shaft. The spindle is then positioned in boxes *k* and turned to tension the springs, after which said boxes are tightened on the spindle to hold the same against reverse movement, and thus maintain the tension of said springs, or other means may be utilized
 45 for holding the aforesaid spindle in adjusted position.

Like in the patent aforesaid the coin-followers are provided with lateral lugs *m*, engaging guide-grooves in side ribs *n* at the bottom of the coin-chutes.

In pintle connection with the frame G aforesaid is a preferably glazed section G' of the casing-top over the coin-chutes, and by means of a lock having its sections *p p'* fast to the glazed cover-section and the front plate of the casing, as shown in Fig. 2, provision is had for fastening said glazed cover-section when swung down. In order that the glazed cover-section may be readily detached from
 60 frame G, one of its pintles *q* is retractable against resistance of a spring *r*, this retractable pintle being provided with a stem *q'*, engaging a guide-slot, as shown in Fig. 10. Stop-ears are provided on the glazed cover-section to limit its upward swing, and extending inward from the rear portion of said cover-section is a loop *s*, by which it may be hung

upon a convenient hook when detached from the aforesaid frame.

The standards J are connected at their lower ends by a transverse bar J', and a pair of rear standards M are connected by a transverse bar M', these bars being provided with bearings for cranked rods N, constituting
 75 rockers that bear upon right-angle rear bends B' of the levers B aforesaid, there being a rocker for each lever. The rockers are actuated by feet O' of a series of plates O, set edgewise in the casing. As a feature of my improvements each plate and its foot or feet are made in one piece with a vertical angular push-shank O'', the latter being loose in guide-slots formed in upper and lower parallel plates P P', joined together by vertical
 85 spacing-stems Q, the upper plate constituting part of the casing-top under frame G and having its support on the standards J M aforesaid.

Each of the plates P P' is a casting, one face of which is corrugated in a direction longitudinally of the machine, its other face being grooved in the same direction immediately
 90 opposite the convexities of the former face. The guide-slots for the push-shanks of plates O are obtained by kerfing the convexities of plates P P' at intervals longitudinally of the same in a transverse direction, it being practical to make all the slots in each series at the same time by utilizing a gang of saws
 95 spaced apart on a single arbor.

As herein shown, the corrugated face of plate P is uppermost, that of plate P' being just the reverse, and the push-shanks of plates O have their edges under notched below the former plate to be engaged by the reduced upper coils of spiral springs R, surrounding
 105 said shanks. Slotted washers *t*, engaged by said push-shanks, rest upon the ribs between grooves of plate P' and serve as bases for the spiral springs R, as best shown in Fig. 7.

Fastened by screws or otherwise to the upper ends of the push-shanks of plates O are depending plugs *u* of buttons having their tops numerically indexed. One hundred buttons are shown in ranks of ten exposed above the machine-casing, and these buttons are
 115 indexed from "1" to "100," inclusive, the "91" to "99" buttons being also indexed from "1" to "9," this indexing being clearly shown in Fig. 1.

The machine herein shown is designed for the delivery of United States coin aggregating sums from one cent to one dollar, and said machine is provided with one chute for half-dollars, another chute for quarters, two for
 120 dimes, one for five-cent pieces, and three for cents, columns of these coins being set in said chutes between the plate E and the followers I, the running back of the latter operating to proportionately increase the tension of the springs in the pulleys above specified. The
 130 walls of the coin-chutes are provided at their lower ends with upper longitudinal stop-ears *v*, tapered toward the rear and cut away enough at the front to permit a predetermined

number of coin in each chute to pass into the path of a pusher D, these ears serving to prevent lift of coin immediately in rear of those to be dislodged by an operation of the pusher.

5 As a matter of convenience the organization of the machine is such that one pusher will operate to dislodge two of a column of cents arranged in one of the chutes, and to facilitate explanation of the working of said machine the rockers and pusher-levers are indexed in Fig. 4 to show the money value of coin an operation of each will dislodge.

In the present showing the machine is organized so that ordinarily the depression of any one of ninety-nine of plates O will dislodge one or more coin of value equal to the difference between an amount indexed on the corresponding push-button and one dollar, pressure on the "1.00" push-button resulting in the delivery of sufficient coin to make full change for one dollar. As hereinafter specified, provision is had for preventing discharge of quarter and half dollar coin in various combinations when change out of twenty-five, fifty, or seventy-five cents is wanted from the machine, and in matters of detail the mechanism for accomplishing this result is part of the improvements to which the present invention relates. All the coins being exhausted from any chute, the corresponding follower will come in the path of the relative pusher to prevent lifting of same, and failure of a lever mechanism to respond to the operator signals that the supply of coin in one or more of the chutes is exhausted. Therefore the machine cannot at any time deliver less than a predetermined value in coin incidental to operation of any one of the aforesaid rocker-actuating plates.

40 Guided in apertures in plate C and a depending rear flange *w* of the coin-chute casting clear of the pulley in flexible connection with the fifty-cent coin-follower are rods S T, that respectively oppose the fifty and twenty-five cent coin-pushers. The rear ends of rods S T are supported in acute angle notches cut in stems U V, surmounted by push-buttons. These stems extend down through corresponding apertures provided in the frame G and plate P, their lower ends being rested on spiral springs *x*, arranged in sockets *y*, rising from a casting W, made fast on the base-plate of the machine. To hold the stems U V against rotation, their lower ends are provided with lateral lugs *z*, engaging vertical slots in the adjacent sockets.

Each of the stems U V is double-notched at its lower end to form an under-beveled lip *c'*, and normally engaging the lowest of these notches are lateral lugs *d'* of a rocker X, connected to casting W, one of these lugs being opposed by a flat spring *d''*, also connected to said casting. The rocker is provided with an offset forwardly-extending arm X', and a lateral finger *e'* of this arm comes under the fifty and twenty-five cent levers, as best shown in Figs. 4 and 6.

In adjustable connection with the rods S T are collars S' T', and these collars are set so that the one on rod T will push upon the other when stem V is depressed, this action being illustrated by dotted lines in Fig. 3.

From the foregoing it will be understood that when either of stems U V is depressed the rocker X is moved forward against resistance of spring *d''* out of the lower notch of said stem and forced back by said spring into the next notch above lip *c'* until such time as an operation of the fifty or twenty-five cent lever or levers against finger *e'* of arm X' causes said rocker to swing clear of said lip and thus permit automatic return of the stem to normal position incidental to expansion of the spring opposing its lower end. It will also be readily understood that depression of stem U will move the fifty-cent pusher clear of the opposing coin, and thus this coin will remain in the machine when the fifty-cent lever is operated. If the stem V be depressed, it is obvious that the fifty and twenty-five cent pushers will be simultaneously moved out of working position. If a sale to the amount of thirteen cents be made and a quarter given by the buyer, depression of stem V will cause retention of seventy-five cents in the machine when the push-button "13" is pressed down, the change delivered from chute F into the hand of the machine-operator being the difference between the remaining quarter of one dollar and the amount of sale. If there be a sale of thirty-seven cents and a half-dollar be given in payment, operation of stem U and pressure upon push-button "37" will result in discharge of correct change from the machine. If a sale amount to sixty-one cents and seventy-five cents be paid by the buyer, operation of stem V and push-button "61" will result in delivery of correct change from the machine. The machine being schemed on a predetermined unit of any currency provision similar to that herein set forth may be had for facilitating computation of change out of payments less than the unit, it being practical to so organize the machine that various combinations of coin-pushers may be moved out of working position by depression of push-stems.

Engaging the casting W and a clip W' on the machine-base are trunnions *f'* of a plate Y, and a link-rod *g'* connects this plate with a lateral inwardly-extending foot *h'* of a hand-piece Z, provided with a slot having depressed extremities and engaged by a screw *i'*, run into one of the spindle-boxes depending from the coin-chute casting. This screw supports the hand-piece, and the slot in the latter permits of its having the necessary amount of play, either slot-depression engaging with said screw to lock said hand-piece against accidental shift. The normal position of the hand-piece Z is best shown in Fig. 3, and being moved out of this position said hand-piece causes an upward swing of plate Y close under the levers B, as shown by dotted lines in

Fig. 2, to thereby lock the coin-delivery mechanism of the machine.

While I have shown and particularly described the machine as organized with particular reference to making change, it may be as readily organized as a paying-machine without change other than that of the arrangement of the rocker-actuating plates.

Shown in connection with the rear crank ends of the ten-cent rockers are disks j' , having eccentric wrists engaging eyes in the lower ends of rods $B'' C''$, that are guided in an extension P'' of plate P' aforesaid. In spring-controlled pivotal connection with the upper ends of rods $B'' C''$ are pawls $B''' C'''$, that engage a ratchet-wheel extension E' of a register-disk G'' , loose on an arbor suspended in a bracket k' , depending from the rear upper portion of frame G aforesaid. Pawl B''' is arranged to push on the ratchet-wheel, and the other pawl C''' is arranged to pull on said wheel. A spring-controlled arm H' , in pivotal connection with a bracket-arm k'' , is provided with a lug m' in opposition to a trip-cam I' , rigid with register-disk G'' , and a dog J'' , in pivotal connection with said arm, engages a ratchet-wheel K' , constituting an extension of another register-disk L' , loose on the aforesaid arbor, the latter ratchet-wheel being also engaged by a spring-detent M'' , arranged as shown in Fig. 9.

The peripheries of the register-disks are spaced in tenths of a circle and marked with the characters of the Arabic notation. When either of the ten-cent rockers is operated, the register-disk G' is moved one-tenth of a full rotation, and as said disk rotates cam I pushes down on arm H' , whereby dog J' is brought into position to move ratchet-wheel K' , with register-disk L' , one notch, when said cam trips on the lug of said arm, and thus the rotations of the first disk are tallied by the other.

In practice a register mechanism may be utilized with each rocker to determine the money value of coin delivered from the machine, provision being had for preventing registration of a delivery of twenty-five, fifty, or seventy-five cents held back in the machine by an operation of either of the push-stems above specified, and the indexed peripheries of said disks may be observed through a glazed portion of the aforesaid frame, the latter being thus shown. The details of the register mechanism may be indefinitely varied from what is herein shown without departure from my invention.

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

60 1. A coin-delivery machine comprising a base provided with transverse socket and channel ribs cross-kerfed at intervals, a fulcrum-rod made fast in the channel-rib, kerf-engaging coin-pusher levers loose on the rod, springs arranged in the socket-rib under the levers, and lever-actuating mechanism.

2. A coin-delivery machine comprising a base provided with transverse socket, channel and guide ribs cross-kerfed at intervals, a fulcrum-rod made fast in the channel-rib, kerf-engaging coin-pusher levers loose on the rod, springs arranged in the socket-rib under the levers, and lever-actuating mechanism.

3. A coin-delivery machine comprising a series of inclined coin-chutes, a notched stop-plate at the lower ends of the chutes provided with vertical guide-recesses intercepting its notches, a coin-follower under tension in each chute, coin-pushers engaging said recesses, lifting-levers having ends thereof extending forward through eyes in the coin-pushers, springs secured to said ends of the levers to bear against said coin-pushers, and lever-actuating mechanism.

4. A coin-delivery machine comprising a series of inclined coin-chutes, a notched stop-plate at the lower ends of the chutes provided with vertical guide-recesses intercepting its notches, a coin-follower under tension in each chute, coin-pushers engaging said recesses, lifting-levers having ends thereof extending forward through eyes in the coin-pushers, leaf-springs secured by screws to said ends of the levers to bear against said coin-pushers, and lever-actuating mechanism.

5. A coin-delivery machine comprising a series of inclined chutes each provided with a central longitudinal bottom groove and a slot intercepting the groove, a temporary coin-stop at the lower ends of the chutes, a coin-ejector mechanism, coin-followers in the chutes, a stationary spindle arranged under the coin-chutes, a series of pulleys arranged loose on the spindle to engage the bottom slots of said chutes, flexible straps connecting the pulleys and coin-followers, and a convolute spring in each pulley fast at its outer end to same and having its inner end in the form of a bend engaging the spindle-groove.

6. A coin-delivery machine comprising a casing provided with side sockets, a top section having a stationary pintle engageable with one of the sockets, another pintle longitudinally loose in the top section for engagement with another of the sockets, a stem on the latter section engaging a play-slot, and a spring arranged to resist retractive movement of the latter pintle.

7. A coin-delivery machine comprising a base provided with transverse socket and channel ribs cross-kerfed at intervals, a fulcrum-rod made fast in the channel-rib, kerf-engaging coin-pusher levers loose on the rod and having angularly-bent rear ends, springs arranged in the socket-rib under the levers, rockers arranged in opposition with bent ends of the levers, and rocker-actuating mechanism.

8. A coin-delivery machine comprising a series of coin-pusher levers, lever-actuating mechanism, a swing-plate arranged to be brought in position to prevent operation of

the levers, a handpiece having play-slot engagement with a support, and a link rod connecting the swing-plate and handpiece.

9. A coin-delivery machine comprising a series of coin-pusher levers, lever-actuating mechanism, a swing-plate arranged to be brought into position to prevent operation of the levers, a handpiece having play-slot engagement with a support and its slot provided with end depressions, a spring exertive against the handpiece, and a link rod connecting the swing-plate and said handpiece.

10. A coin-delivery machine having a coin-ejector mechanism embodying a series of reciprocative edgewise plates made to form integral angular push-shanks and feet, together with shank-guides each consisting of a plate having one face thereof corrugated, its other face grooved opposite the convexities of the former face and said convexities cross-kerfed at intervals to form guide-slots for the shanks of said plates.

11. A coin-delivery machine having a coin-ejector mechanism embodying a series of edgewise plates provided with angular push-shanks, shank-guides consisting of a pair of plates spaced apart, each plate having one face thereof corrugated, its other face grooved opposite the convexities of the former face and said convexities cross-kerfed at intervals to form guide-slots for the shanks of said plates, the latter being inverse to each other, slotted washers engaging the push-shanks on ribs between grooves of one guide-plate, and spiral springs supported on the washers having reduced end coils engaging push-shank notches.

12. A coin-delivery machine comprising a coin-ejector mechanism embodying a series of lever and spring controlled coin-pushers, a slide operative to move a coin-pusher out

of working position, a rod-actuating spring-controlled push-stem, a spring-latch engageable with the push-stem upon inward movement of same, and a latch-retractor opposed to the lever of the coin-pusher in the path of the slide.

13. A coin-delivery machine comprising a coin-ejector mechanism embodying a series of lever and spring controlled coin-pushers, a pair of slides operative to move coin-pushers out of working position rod-actuating spring-controlled push-stems, an oscillative spring-latch engageable with either push-stem upon inward movement of same, a latch-retractor opposed to the levers of those coin-pushers in the paths of the slides, and means for effecting simultaneous action of both slides incidental to operation of a single push-stem.

14. A coin-delivery machine comprising a coin-ejector mechanism embodying a series of lever and spring controlled coin-pushers, a pair of slides operative to move coin-pushers out of working position, sockets containing spiral springs, push-stems held against rotation in the sockets on the springs, an oscillative spring-latch engageable with either push-stem upon inward movement of same, a latch-retractor opposed to the levers of those coin-pushers in the paths of the slides, and means for effecting simultaneous action of both slides incidental to operation of a single push-stem.

In testimony that I claim the foregoing I have hereunto set my hand, at Watertown, in the county of Jefferson and State of Wisconsin, in the presence of two witnesses.

EDWARD J. BRANDT.

Witnesses:

J. S. MACDONALD,
ROBT. DENT.