

(No Model.)

5 Sheets—Sheet 1.

E. J. BRANDT.
COIN DELIVERY APPARATUS.

No. 542,602.

Patented July 9, 1895.

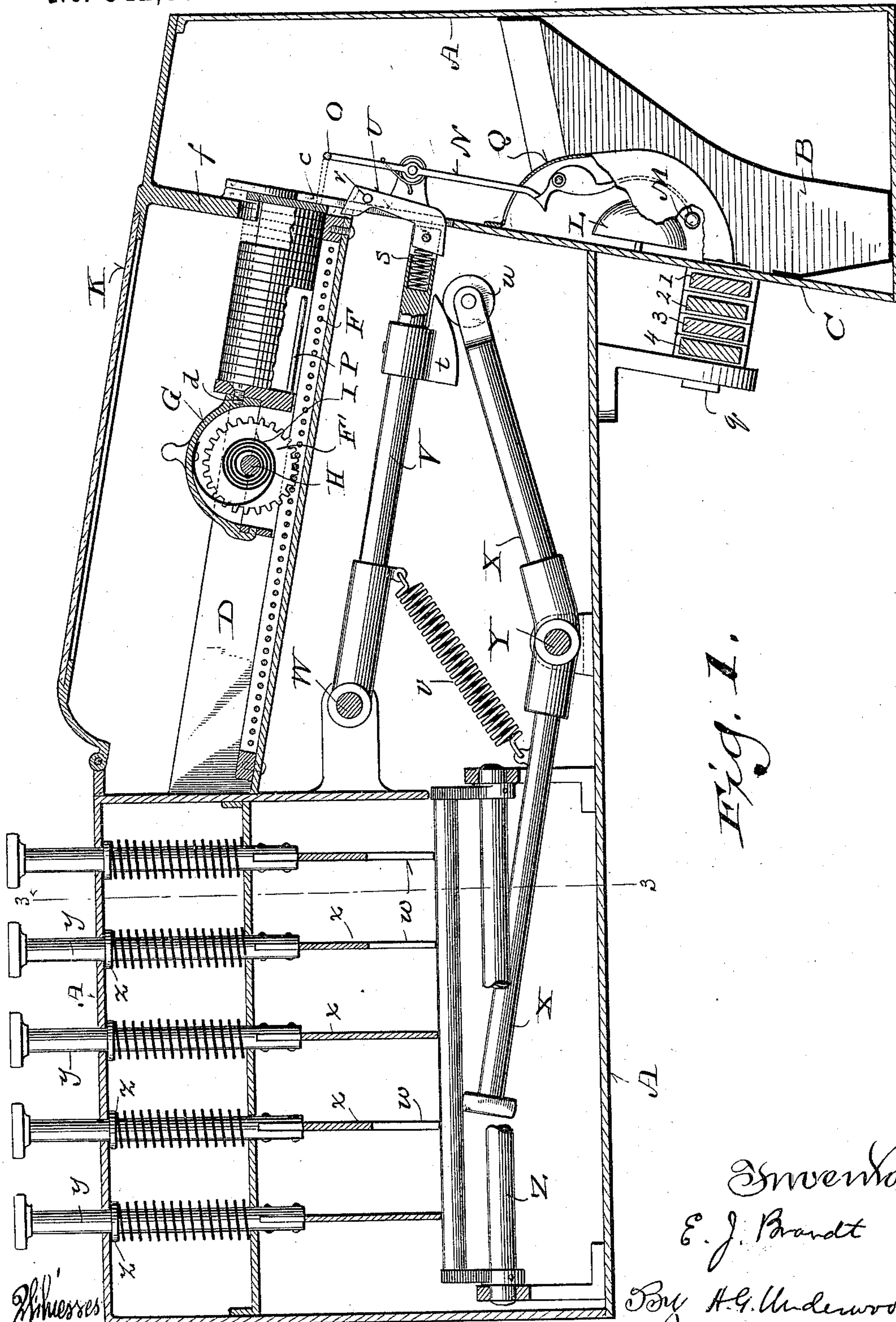


Fig. 1.

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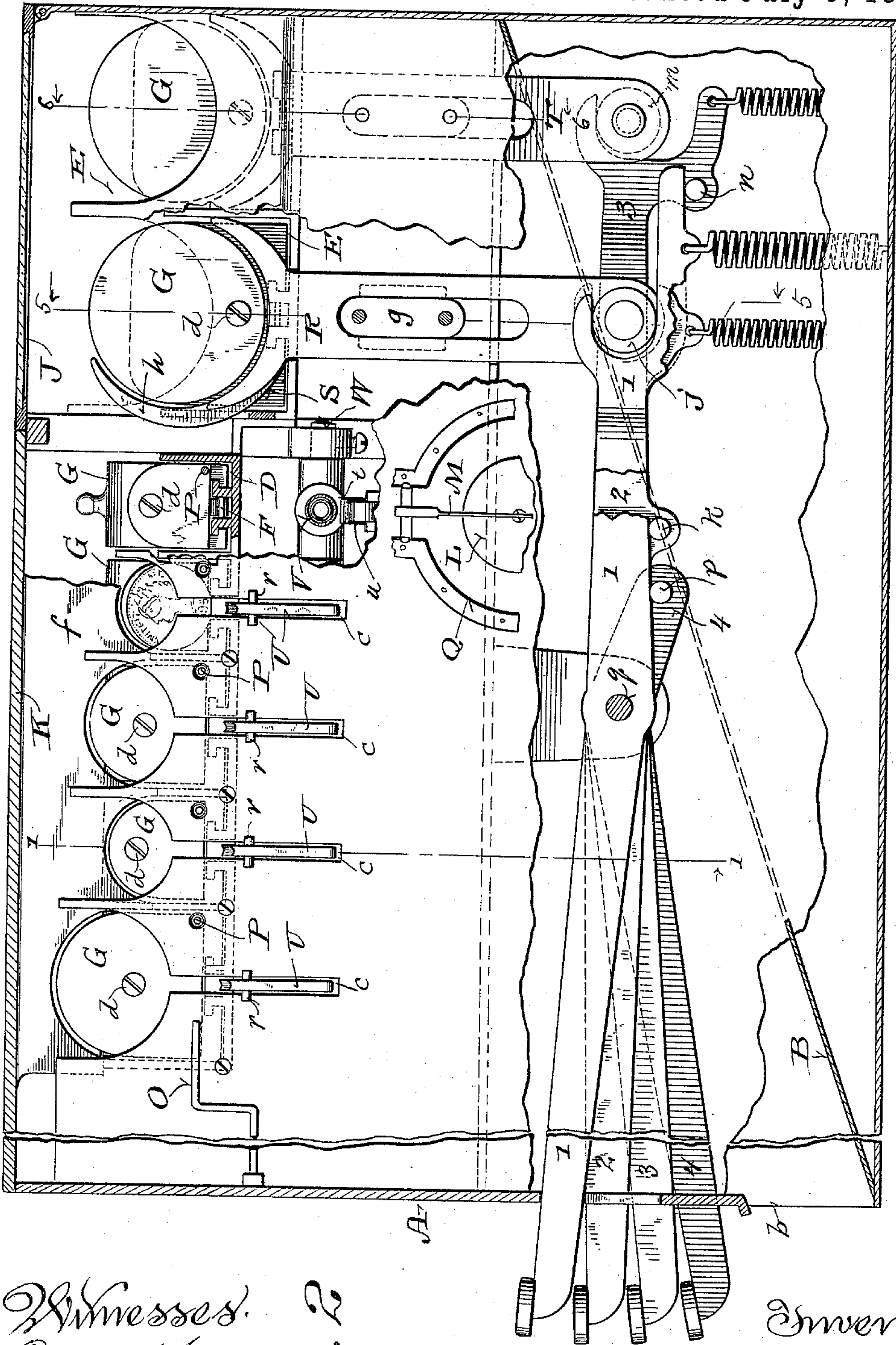
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5 Sheets—Sheet 2.

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Fig. 2

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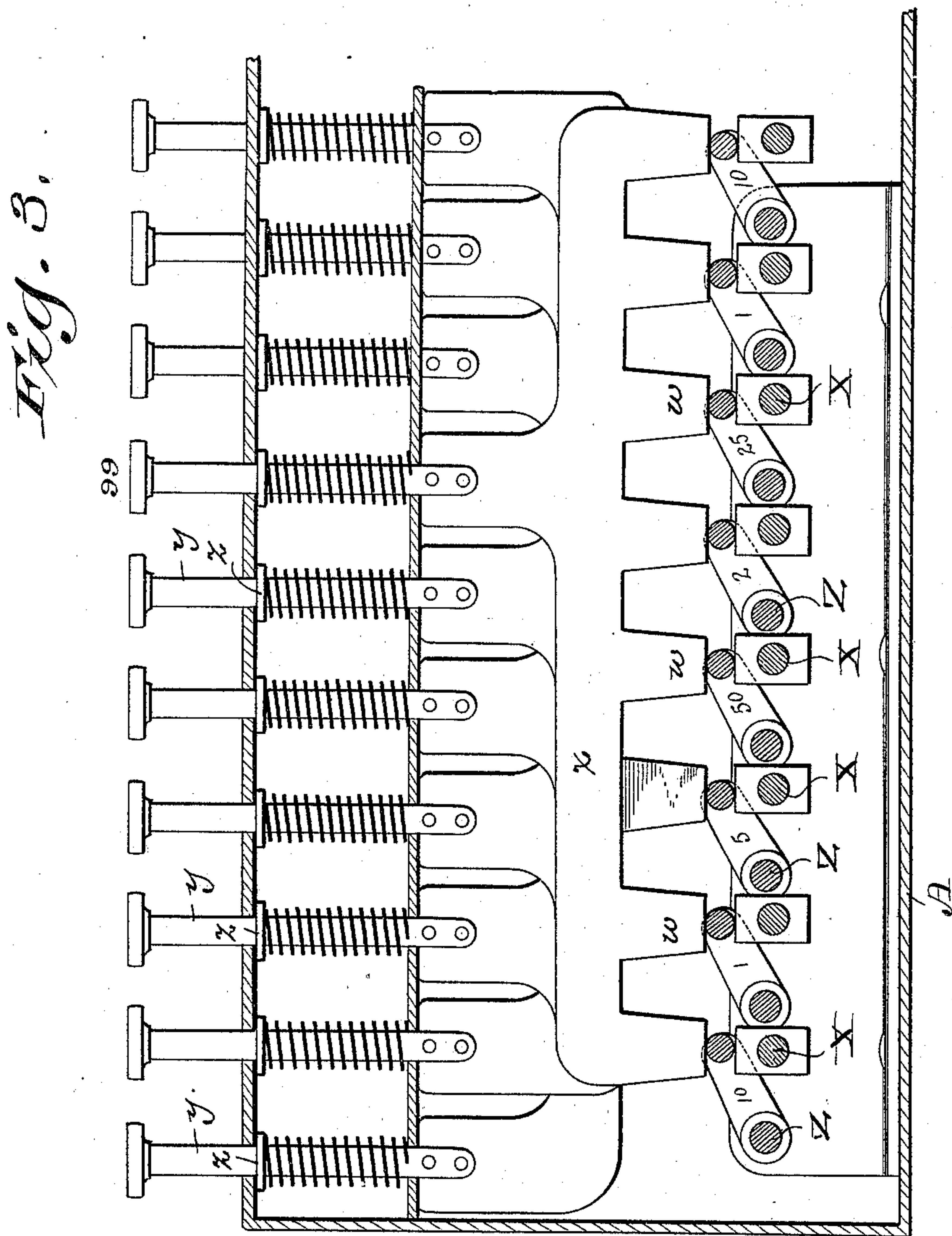
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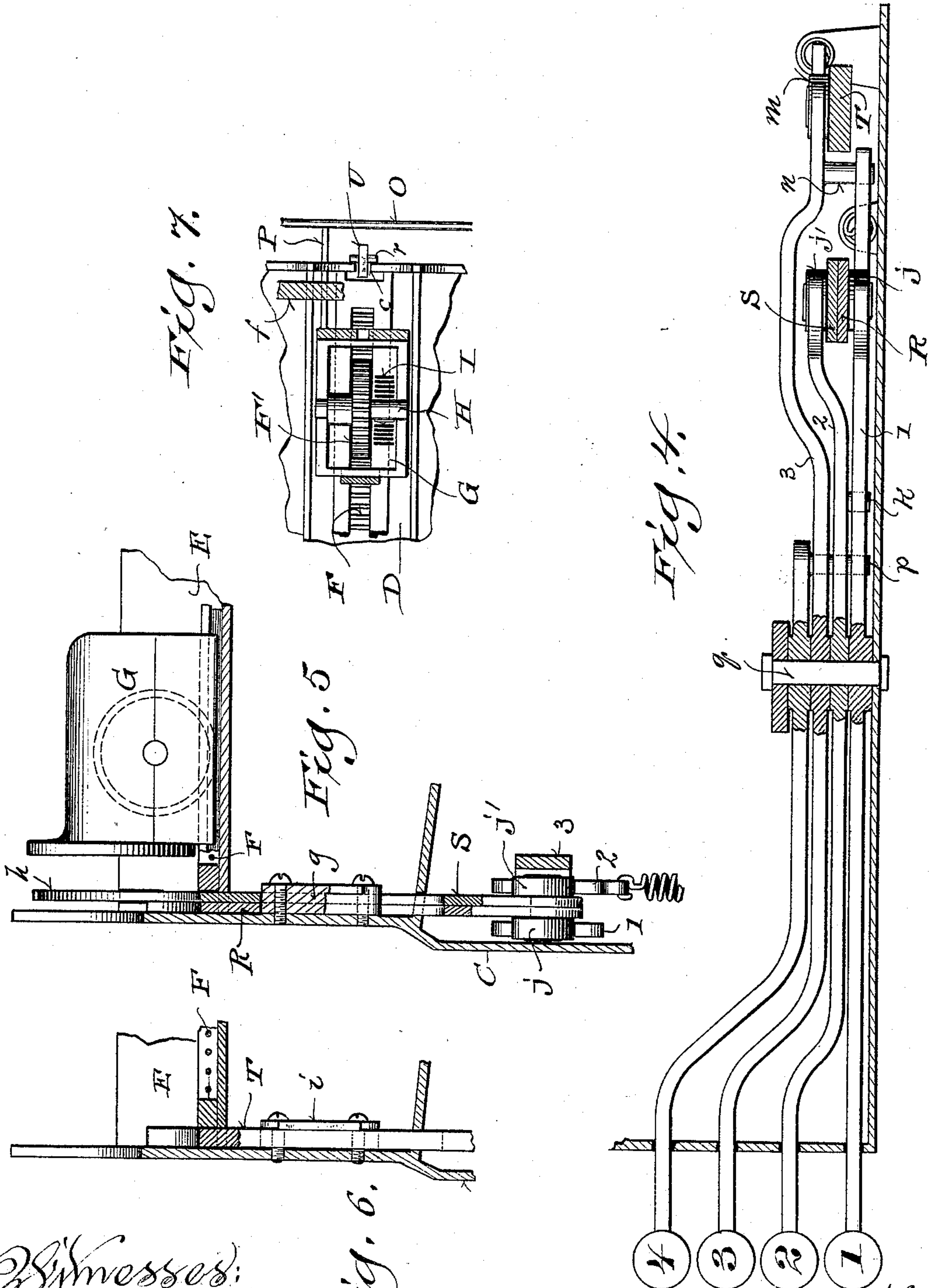
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Fig. 6.

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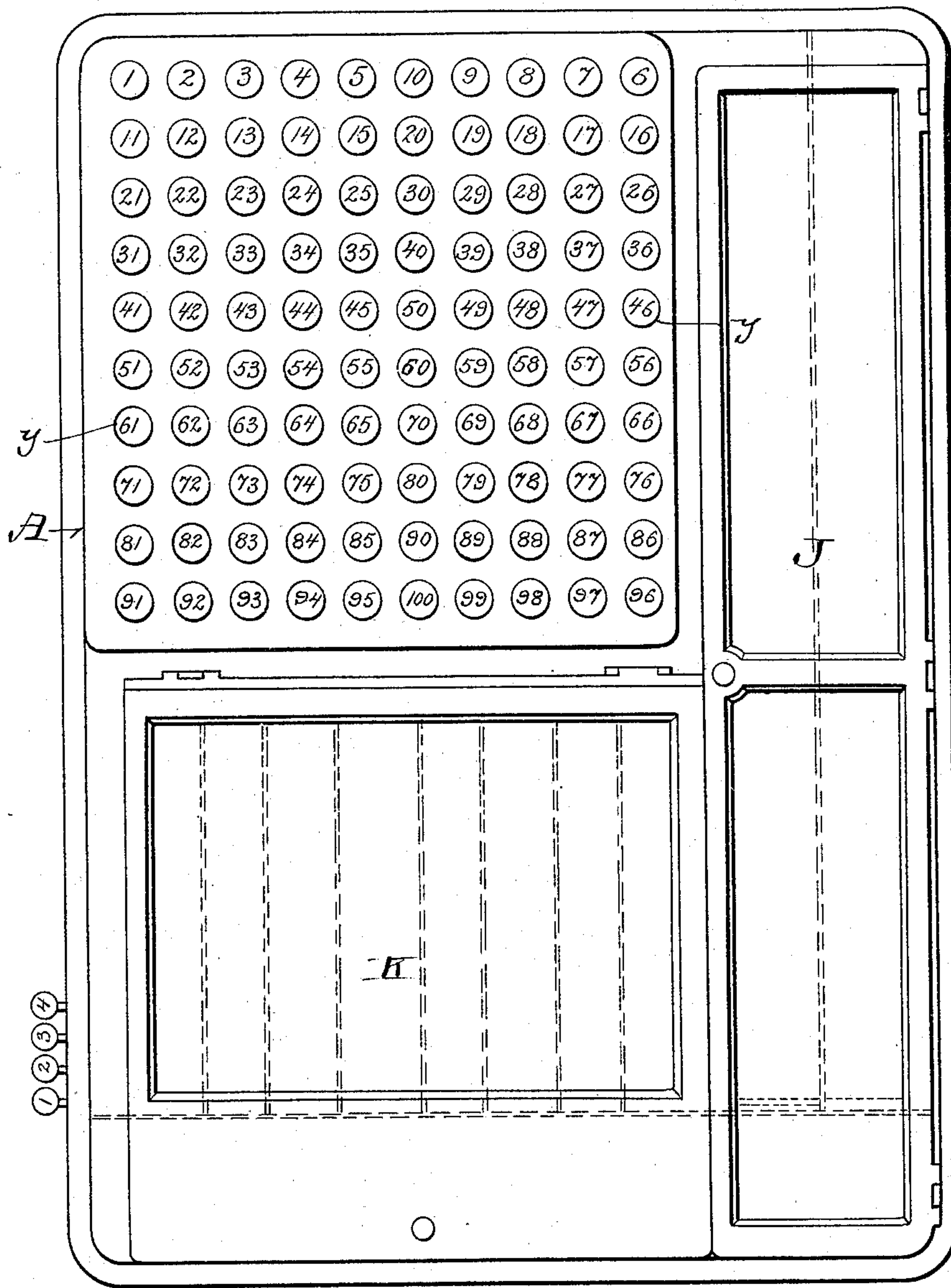
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E. J. BRANDT.
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Fig. 8.



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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN.

COIN-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 542,602, dated July 9, 1895.

Application filed February 25, 1895. Serial No. 539,552. (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 Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical, and efficient coin-delivery apparatus of that class employed in banks, stores, and other places of business to facilitate the paying out of money and making change, the same consisting in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a section of a coin-delivery apparatus constructed according to my invention, the view being taken on the plane indicated by line 1 1 in the succeeding figure, but for convenience in the matter of illustration several duplicate parts, comprising transverse edgewise plates and spring-controlled push-rods attached thereto, are omitted. Fig. 2 represents a partly-sectional view of the apparatus viewed from the front and having certain of the parts broken away. Owing to the scale to which this view is drawn I have found it necessary to contract the apparatus somewhat, as will be apparent when said view is read in connection with the third and eighth figures. Fig. 3 represents a vertical transverse section of the apparatus, taken on a plane indicated by line 3 3 in the first figure. Fig. 4 represents a detail plan view, partly in horizontal section, and illustrates a lever mechanism embodied in my invention. Figs. 5 and 6 show sections respectively taken on lines 5 5 and 6 6 in the second figure. Fig. 7 represents another detail plan view, partly in horizontal section, and illustrates a coin-channel, automatic follower, alarm-actuating mechanism, and a push-finger for coin. Fig. 8 represents a plan view of the entire apparatus as it appears set up for use.

Referring by letters and numerals to the drawings, A represents a casing of metal or other suitable material designed to have the

greater part thereof rest upon a counter, shelf, or other convenient support. The front portion of the casing overhangs the support and contains an inclined chute B, that extends across said casing, one side of the latter being provided with an opening *b*, that constitutes the outlet for the chute.

A transverse plate C, constituting part of the casing in rear of the chute B, has its upper edge provided with a series of notches that have variable dimensions, each notch being of a width and contour corresponding to an arbitrarily-selected coin, and certain of the notches are intercepted by vertical slots *c* in said plate, each slot being central of the corresponding notch.

Extending rearward from the plate C are a series of inclined channels D E, each of which registers with one of the aforesaid notches and is designed as a receptacle for coin. The channels D are shorter than the ones E, and each channel has its bottom a suitable distance below that of the corresponding plate-notch.

Fast on the bottom of each channel is a rack F, and in mesh with the rack is a hollow follower G, having a detachable top section herein shown as being held in place by means of a screw *d* run through the upwardly-projecting front of the bottom section, the latter being in free dovetail connection with the sides of the rack.

A rack-engaging pinion F' is fast on an arbor H, that has its bearings in the follower, and a volute spring I is joined at its ends to this arbor and the top section of said follower. When a follower is run back on a rack the inclosed pinion and arbor are rotated to wind the spring, and expansion of this spring will cause an automatic travel of said follower toward the plate C against interposed coin, as will be apparent by reference to Fig. 1. It is also to be observed that the pressure of each follower is automatically proportioned to the number of coins in the corresponding channel, this being a result of the variable-tension spring contained in said follower and operating by expansion to rotate its arbor and the rack-engaging pinion thereon.

The long channels E are designed for the reception of large coin—such, for instance, as

United States silver dollars—and the mechanism for discharging the coin from these channels into the delivery-chute B differs from that utilized for the same purpose with respect to the other shorter channels. A hinged top section J of the casing covers the long channels, and another hinged top section K of said casing is utilized as a cover for the shorter channels. As shown in Figs. 1 and 2, I provide the hinged top section K of the casing with a depending notched flange *f*, arranged to come in position to prevent lift of more than a predetermined number of coin from any of the channels D; but this coin-guard may be stationary in the body of the casing if the latter construction is found desirable.

As an alarm mechanism may be desirable to signal when coin in any of the channels D is nearly exhausted, I show a bell L, a pivotal gravity-striker M for the same, a spring-controlled trip N for the striker, a crank-bail O, connected to the trip, and loose pins P, arranged in the descending path of the followers G in said channels, to be operated by these followers against the crank-bail. A shield Q is also arranged to protect the bell L from being struck by coin discharged into the delivery-chute.

Any suitable alarm mechanism may be substituted for that above described, and the same may be extended to signal depletion of coin in the long channels if found convenient or desirable.

For the purpose of dislodging coin from the innermost long channel, I employ parallel pushers R S in the form of yokes having longitudinally-slotted shanks engaging a guide-block *g* on the rear side of the plate C, above specified. Each yoke has a contour corresponding to that of the coin on which it operates, and the working-face of this yoke has a width about equal to the standard thickness of said coin. It is also to be noticed that the inner yoke or pusher S has a guard-extension *h*, designed to prevent the lift of the opposing coin when the outer yoke or pusher is independently operated.

Another coin yoke or pusher T operates in the outermost long channel, and the longitudinally-slotted shank of the latter pusher engages a guide-block *i* on the plates C parallel to the other guide-block *g*, above specified. The working-face of the yoke portion of pusher T is about equal to that of both the former pushers in order to dislodge two coins at each lift.

As a matter of detail, to lessen friction I show the shank of coin-pusher R provided with an antifriction-roller *j*, engaging the forked inner end of a spring-controlled lever 1, and another spring-controlled lever 2 has a forked inner end engaging an antifriction-roller *j'* on the shank of coin-pusher S, the latter lever being also provided with a lateral lug *k*, that operates to lift on the former lever. The forked inner end of still another

spring-controlled lever 3 engages an antifriction-roller *m* on the shank of coin-pusher T, and has a lateral lug *n* arranged to lift on lever 1, while a lever 4 has a lateral lug *p* arranged to lift on all the former levers. I also prefer to have all the levers on a common fulcrum-pin *q* supported in the casing.

By operating lever 1 one dollar will be delivered into the chute B by a lift of the pusher R, or by operating lever 2 two dollars will be delivered by lift of pushers R S. Hence it follows that an operation of lever 3 will cause the lift of the pushers R T to deliver three dollars, and an operation of lever 4 will lift all of said pushers to deliver four dollars.

The outer ends of the several levers above specified are arranged adjacent to the mouth of the delivery-chute, and are operated by the thumb of the hand held to receive the coin dislodged from one or both long channels E into said chute.

When coin is exhausted from any of the several channels constituting parts of the herein-described apparatus, the follower G in such channel will come in the path of the pushing device to lock the same against lift, whereby the operator will be informed that a new supply of coin is required.

The pushing devices for coin in the shorter channels D have the form of fingers U, pivoted to the outer ends of rods V, pivoted to a shaft W arranged in the casing. Each push-finger engages a slot *c* in the aforesaid plate C, and is provided with ears *r* that bear against the front of this plate. Springs *s*, seated in the rods V, operate by expansion against the push-fingers to hold the latter up to their work, while at the same time the yielding joints resulting from the construction and arrangement of parts just specified lessen the liability of said push-fingers to become broken by resistance of opposing coin.

A cam *t* is arranged on each rod V to oppose a roller *u*, journaled in an arm of a bell-crank X, and a spiral spring *v* connects said rod with the other arm of the bell-crank. All of the bell-cranks are mounted on a shaft Y arranged in the casing, and all the rods V being likewise mounted on a single shaft the leverage is evenly distributed.

The inner ends of the bell-cranks X are shouldered and opposed to rockers Z, that individually comprise a pair of arm-jointed parallel shafts, one of which has its bearings in suitable standards, these rockers being operated by feet *w* of a series of plates *x*, set edgewise in the casing and provided with upwardly-extended spring-controlled push-rods *y*, that work loosely in the top of said casing and a horizontal partition intermediate of this top and said plates, upward movement of the push-rods being limited by stop-collars *z* or other suitable means.

Each push-rod is preferably surmounted by a button that may be indexed to show the value of a coin or coins delivered to the operator when said-push rod is depressed. A de-

pression of a push-rod causes the foot or feet of a corresponding plate x to operate an equivalent number of the rockers Z, thus tilting a like number of bell-cranks X to elevate one or more of the rods V and fingers U, the latter operating to push coin out of a channel or channels D into the delivery-chute.

As a matter of detail I prefer to join each of the edgewise plates x and its push-rod as near as possible to the center of strain, and for handling United States coin I utilize three channels for cents, one for five-cent nickel coins, two for dimes, one for quarters, and one for half-dollars, in addition to the channels E for silver dollars. It is also intended that two coins shall be delivered from one of the cent-channels each time the push-finger corresponding therewith is elevated, and in Fig. 3 I have marked the rockers Z to correspond with the cents value of coins that can be delivered at a time from the channels D corresponding to said rockers.

I have shown one hundred push-rods indexed for all possible amounts from one cent to one dollar, inclusive, and the feet of the edgewise plates x are arranged to tilt any one or a combination of rockers Z, and thereby operate the mechanism that will cause a lift of one or more push-fingers U against opposing coins. By reference to Fig. 3 it will be seen that a depression of push-rod 99 will operate all but one of the rockers Z and result in a delivery of one half-dollar, one quarter, two dimes, and four cents, two of the latter being discharged from a single channel and one each from two other channels.

It has been shown possible to obtain four silver dollars by the operation of a single lever, and fractional coin in any amount from one cent to one dollar is obtainable by a depression of a single push-rod. Consequently a total amount of five dollars in change may be delivered at one time from the apparatus, the operator using one hand to operate the lever 4 and the other hand to depress the push-rod 100.

From the foregoing it will be seen that any amount of change within certain limits may be obtained by direct push of not more than two devices within easy reach of the operator, and it is also to be observed that the apparatus is organized with a view toward minimizing friction and preventing dead weight of coin against the pushing devices that discharge them from the channels, one of the particular features in this connection being the employment of the rockers Z in opposition to the plate-feet w , whereby the same leverage is obtained irrespective of the particular point on each rocker at which a plate-foot may press.

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

1. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, an apertured plate facing

the lower ends of the channels, racks arranged in said channels, hollow coin-followers in sliding engagement with the racks, rack-engaging pinions fast on arbors mounted in the followers, volute springs connecting the arbors and housings, and reciprocative pushers operative to lift coin from the aforesaid channels into register with the plate-apertures, the latter being of such contour and dimensions as will permit escape of coin brought into register therewith.

2. A coin-delivery apparatus embodying a suitable casing, a pair of inclined coin-channels in the casing, a suitably apertured plate facing the lower ends of the channels, a pair of parallel single coin-pushers operative in one channel adjacent to said plate, levers connected to both pushers, a lug on one of the levers arranged to lift the other, another pusher operative in the remaining channel, and having a working face approximately equal in width to the thickness of two coins, a lever connected to the latter pusher and provided with a lug arranged to lift the outermost of the former levers, and still another lever provided with a lug arranged to lift all the aforesaid levers.

3. A coin delivery apparatus that embodies a suitable casing, a series of inclined coin channels in the casing, an apertured stop-plate at the lower ends of the channels, coin-pushers loose in the plate, and a reciprocative mechanism for the pushers comprising a series of rockers, together with a series of vertically reciprocative edgewise plates having depending feet opposing the rockers.

4. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin-apertures, as well as vertical slots communicating with these apertures, coin-pushers loosely engaging the slots, ears on the pushers abutting said plate, tilt-rods in pivotal connection with the lower ends of said pushers, springs in the rods exertive against the aforesaid pushers, and suitable mechanism for actuating said rods.

5. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin apertures above the bottoms of the same, as well as vertical slots communicating with these apertures; coin-pushers maintained in loose engagement with the slots, tilt-rods in pivotal connection with the pushers, bell-cranks exertive against the rods, rockers operative against the bell-cranks, a series of loose edgewise plates having depending feet opposing the rockers, and push-rods joined to the plates.

6. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin-apertures above the bottoms of the same, as

well as vertical slots communicating with these apertures; coin-pushers maintained in loose engagement with the slots, tilt-rods in pivotal connection with the pushers, bell
5 cranks exertive against the rods, springs connecting the rods and bell-cranks, rockers operative against said bell-cranks, a series of loose edgewise plates having depending feet opposing the rockers, and push-rods joined to
10 the plates.

7. A coin-delivery apparatus embodying a suitable casing a series of inclined coin-channels in the casing, an apertured stop-plate at the lower ends of the channels, coin-pushers

loose in the plate, a reciprocative mechanism 15 for the pushers, coin followers in the afore-said channels, loose pins in the paths of the coin-followers, and an alarm-mechanism arranged to be actuated by movement of the pins under impulse of said followers. 20

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:

ROBT. DENT,

AUG. WIGGENHOUR.