

(No Model.)

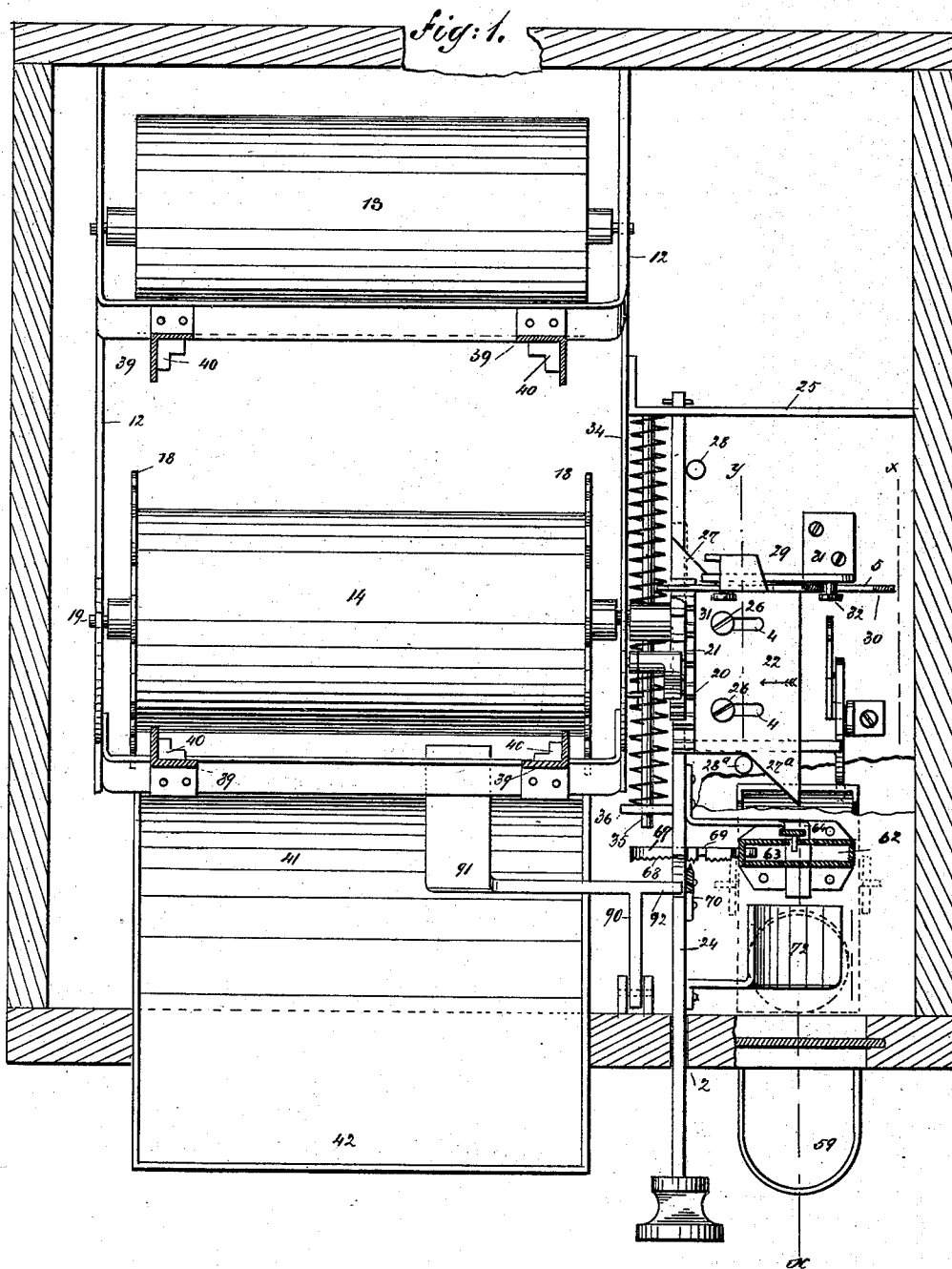
4 Sheets—Sheet 1.

J. CORBETT.

COIN CONTROLLED VENDING MACHINE.

No. 416,827.

Patented Dec. 10, 1889.



WITNESSES:

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(No Model.)

4 Sheets—Sheet 2.

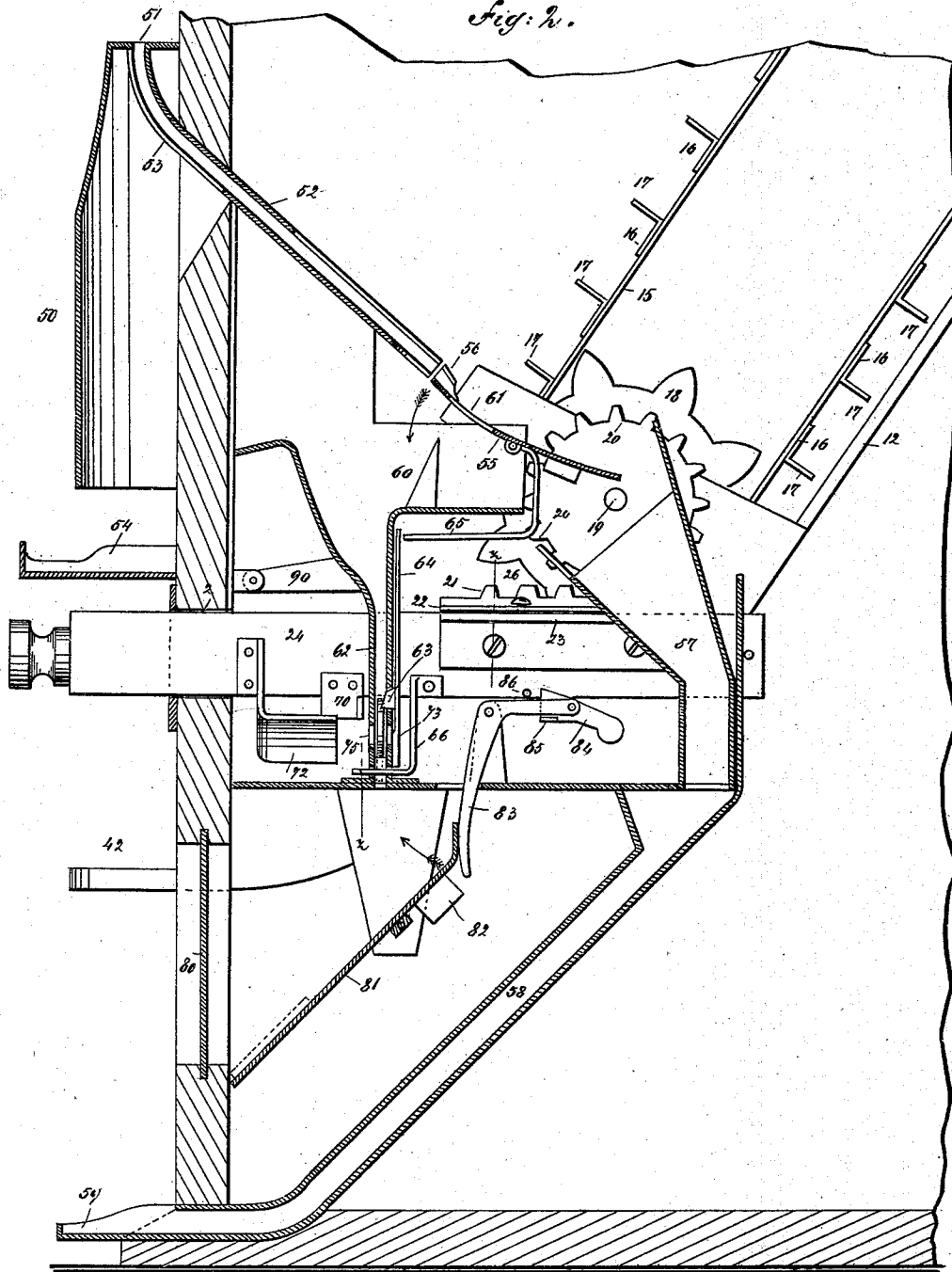
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Fig. 2.



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(No Model.)

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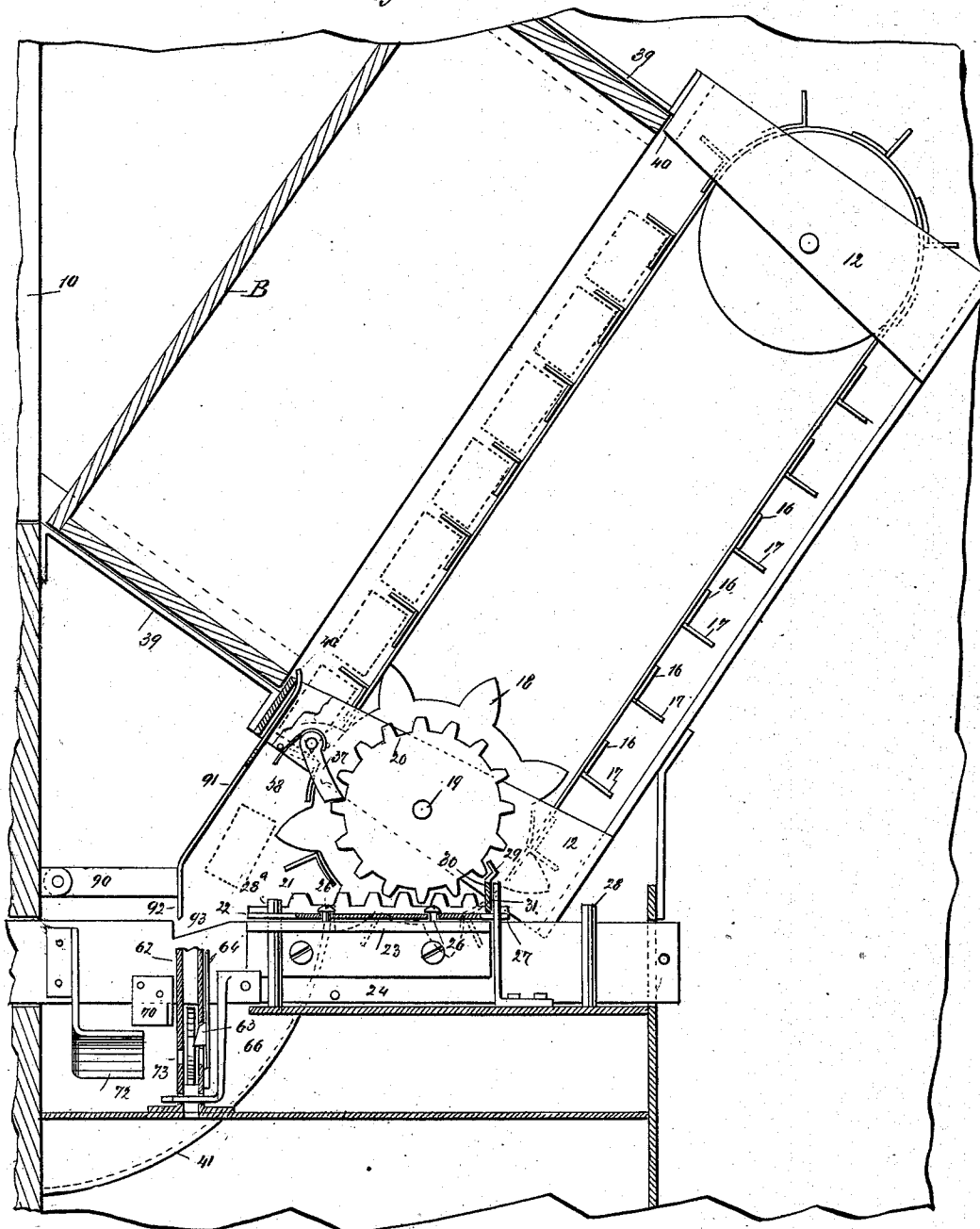
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Fig. 3.



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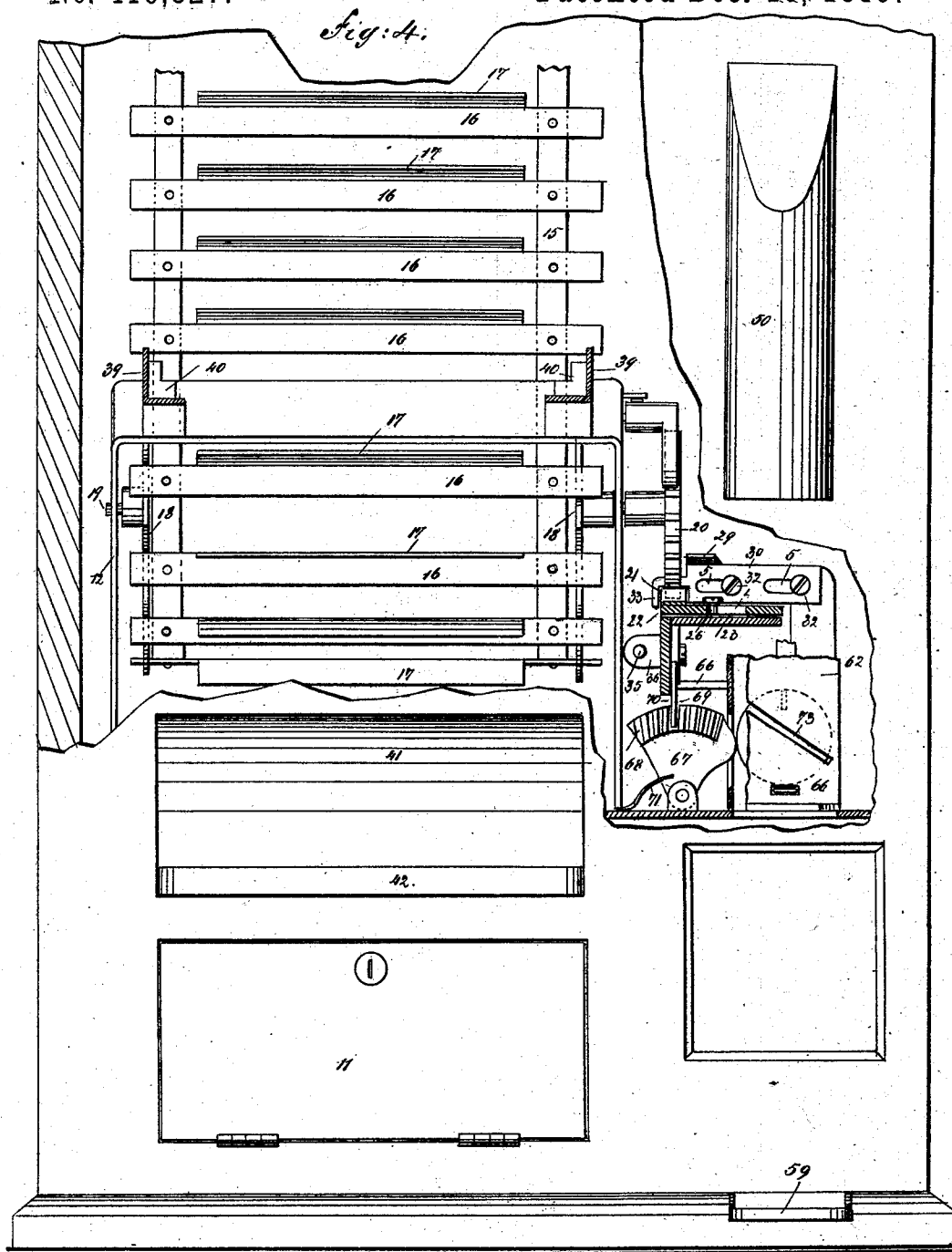
(No Model.)

4 Sheets—Sheet 4.

J. CORBETT.
COIN CONTROLLED VENDING MACHINE.

No. 416,827.

Patented Dec. 10, 1889.



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UNITED STATES PATENT OFFICE.

JOSEPH CORBETT, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC
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COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 416,827, dated December 10, 1889.

Application filed February 7, 1888. Renewed August 27, 1889. Serial No. 322,086. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CORBETT, of the city, county, and State of New York, have invented a new and Improved Coin-Controlled Vending-Machine, of which the following is a full, clear, and exact description.

This invention relates to that class of machines wherein articles or packages of goods are placed in a manner such that on the deposit of a coin of predetermined value a single article or package may be withdrawn, the main object of my present invention being to provide for the introduction of goods in their original gross packages, a further object being to expose the coin deposited after the goods have been withdrawn, and a still further object is to prevent the tripping of the locking mechanism except upon the deposit of a proper coin.

Many other objects, in addition to those above set forth, are aimed at and accomplished by means of the improved machine forming the subject-matter of this specification.

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

Figure 1 is a sectional plan view of the machine, the endless carrier-belt, however, being removed and parts being broken away. Fig. 2 is a sectional side view taken on line *x* of Fig. 1. Fig. 3 is a sectional side view taken on line *x y* of Fig. 1, and Fig. 4 is a sectional front view taken on the broken line *z z* of Fig. 2.

I have not illustrated the full case or cabinet in the drawings, such case being a simple box-like structure of ordinary construction, provided with an upper door 10 and a lower door 11, the goods being introduced through the opening that is normally closed by the upper door, while the lower door affords access to the cash-box A.

In a suitable frame 12, fixed within the cabinet, I journal the shafts of two drums 13 and 14, which carry an endless belt 15, bearing cross-flights 16, which have upturned flanges 17, the flights proper extending beyond the side edges of the belt to engage toothed wheels 18, that are carried by the shaft 19 of the drum

14. In addition to the wheels 18, the shaft 19 carries a gear 20, that is normally engaged by a rack 21 formed at one edge of a plate 22, that is mounted to move laterally on a plate 23, which is rigidly connected to a reciprocating slide or bar 24, said slide or bar being mounted in an aperture 2 formed in the front wall of the cabinet, and an aperture 3 formed in a vertical plate 25, that is connected to the frame 12. The connection between the plates 22 and 23 is established by bolts or rivets 26, which pass through transverse apertures 4 formed in the plate 22, and engage with the plate 23. At the inner end of the plate 22 there is an inclined faced projection 27, which, as the slide or bar 24 is pushed inward, strikes against a pin or stud 28 and acts to carry the plate 22 in the direction of the arrow shown in connection therewith in Fig. 1, which movement of the plate will throw the rack 21 out of engagement with the gear 20, and as the rack is so thrown from engagement with the gear, the gear is engaged by a locking-ear 29, that is formed upon a plate 30, said plate being connected to a fixed plate 31 by headed studs 32, which extend from the plate 31 and pass through slots 5 formed in the plate 30. The side movement of the plate 30 is brought about by means of a hook-like end 33, that is formed upon the plate, this hook-like end overlapping the rack 21, so that as the plate 22 moves in the direction of its arrow the plate 30 will be carried in the same direction and its ear 29 will engage the gear 20. After the slide or bar 24 has been forced inward, as above described, and the pressure brought to bear on the bar is relaxed, a spring 34 will act to return it to the position shown in the drawings, said spring being coiled about a rod 35, that is connected to and extends forward from the plate 25, to pass through a lateral projection 36, that is connected to the slide or bar 24.

Upon the forward end of the plate 22, I form an inclined projection 27^a, which, as the slide or bar 24 approaches its normal position, strikes against a pin or stud 28^a, and upon a continued movement of the bar or slide the rack 21 will be brought into engagement with the gear 20, and the ear 29 carried

from engagement with said gear. The fixed studs 28 28^a, co-operating with the inclined-faced projections 27 27^a on the plate 22, thus constitute a shifting mechanism for moving the rack 21 into and out of engagement with the gear 20.

To prevent any retrograde movement of the gear 20 and the parts controlled thereby, I arrange a pawl 37 upon the frame 12 in such position that it will engage the gear, being held in engagement therewith by a spring 38, arranged as shown in Fig. 3. The frame 12 carries four angular corner-posts 39, that are each provided with a step 40, the posts being so placed as to receive the box B, in which the packages or articles to be delivered by the machine are packed, such box being placed so that its open side will be just above the belt 15, as shown in Fig. 3. The weight of the box B is supported by the steps 40, while the packages or articles within the box are supported by the belt 15, a single package or article resting between each adjacent pair of flanges 17.

From the above description it will be seen that when the slide or bar 24 is pushed inward the belt 15 will be moved in the direction of its arrow, and as the parts are so proportioned that at each inward throw of the slide the belt will be moved a distance equal to the space between its flanges 17, it follows that at each throw of the slide a package or article will be carried downward to a position such that it will drop from the belt. In order that as the package or article so dropping from the belt may be delivered from the machine, I provide a curved chute 41, into which the article or package drops, said chute leading to a tray 42, located outside of the machine, as shown.

Up to this point I have simply described the package-delivery mechanism; but with a machine of the class to which my invention relates it is necessary to provide for the locking of the delivery mechanism except at the time when a coin of specified value has been deposited in the machine, and this locking mechanism will now be described.

To the outer side of the front wall of the cabinet I secure a bottomless tube 50, in the upper closed end of which there is a coin-slot 51, so proportioned as to just receive a coin of the required denomination and character. A curved coin-chute 52 leads upward within the tube 50, the upper end of the chute being connected to the top of the tube in a position such that the chute will register with the coin-slot 51. The under side of the upper portion of the chute 52 is open save for two flanges 53, the inner edges of which flanges are so spaced that the flanges will just support a coin of the required diameter, but any coin of less diameter will fall between the flanges and onto a tray 54 placed beneath the tube 50.

At the lower inner end of the chute 52, I mount a counterbalanced tilting plate 55,

which normally rests in the position in which it is shown in the drawings. This plate 55 is provided with ears 56, which extend over the upper portion of the face of the plate, the lower edges of the ears more closely approaching the plate than do the upper edges, the space between the lower edges of the ears and the plate being insufficient to allow for the passage of a coin of the required value; but any coin of less thickness will easily pass through between the ears and plate and into a hopper 57, to pass thence through a chute 58 to a tray 59. When a coin of the required value finds its way to the plate 55, it will be caught by the ears 56, and the plate will be tilted in the direction of the arrow shown in Fig. 2, the coin being forced from the plate by an inclined-faced spur 60, which enters a slot 61 formed in the plate. As the coin falls from the tilting plate 55 it enters a coin-receptacle 62, and bears against a projection 63, which enters said receptacle, the projection being carried by a spring-finger 64, the upper end of which bears against an arm 65, that is connected to the plate 55, the arrangement being such that after one coin has reached the receptacle 62, it will act to throw the plate 55 to a position such that its ears 56 will be below the lower end of the chute 52, and consequently if a second coin be deposited it will pass over the plate 55 into the hopper 57, to pass thence into the tray 59, from which it may be taken by the depositor.

All parts described since the mention of the tube 50 are fully set forth and claimed in my application, Serial No. 255,503, filed on the 18th day of November, 1887, and I make no claim to such parts herein, save in so far as they enter the combinations hereinafter recited.

As the coin enters the receptacle 62 it strikes upon an arm 66, that is carried by the bar or slide 24 and passes through the receptacle. At one side of the receptacle I pivotally mount a vertically-extending locking-bar swinging in a vertical plane 67, which is formed with a serrated face 68 and a slot 69, the locking-bar being normally held so that a lug 70, carried by the slide or bar 24, will bear against its serrated face, this position of the locking-bar being secured by overweighting it upon the side toward the coin-receptacle, or the locking-bar might be thrown over by a spring, as 71. When a coin reaches the receptacle 62, it will bear against the extending edge of the locking-bar and move the locking-bar to a position such that its slot 69 will register with the lug 70, and then the slide or bar 24 may be pushed in, which movement of the slide or bar will actuate the delivery mechanism, as hereinbefore described, and a package will be delivered to the tray 42.

To prevent the throwing of the locking-bar by means of a wire or the continued tripping of the locking-bar by means of a coin tied to a string, thread, or fine wire, I secure a severing-plate 72 to the slide or bar 24, this severing-plate being arranged to enter slots 73

formed in the side walls of the coin-receptacle 62, the arrangement being such that should a coin connected to a string or wire be inserted in the slot 51 and find its way to the receptacle 62 the severing-plate 72 would bind against and sever the said string or wire, and hence the coin would drop into the coin-chest A after the first throw of the slide 24.

The severing-plate 72 might be vertical; but I prefer to arrange it at an angle, as shown.

To impose a check upon the deposit of spurious coins or blanks of the size of the coin in connection with which the machine is designed to operate, I place a heavy-glass panel 80 in the front wall of the cabinet, and just behind this panel and beneath the coin-receptacle 62 I mount a tilting-plate or tray 81, said tray being normally held with its lower forward edge against the wall of the cabinet by a weight 82, as shown in Fig. 2. The inner upper end of the plate or tray 81 is borne upon by the lower arm of a bent lever 83, the upper arm of which lever carries a pivotally-mounted catch 84, the rearwardly-extending end of which overbalances the forward end so as to hold the upper portion of the said forward end above the upper face of the upper lever-arm, the position of the catch being defined by a stop 85, that is formed thereon and bears against the upper lever-arm. The slide 24 carries a pin 86, which, as the slide is forced inward, strikes the exposed portion of the catch and causes the lever to move as indicated by the arrow. As the lever moves, as above set forth, the tray 81 will be tilted and the coin upon its upper side will drop into the chest or box A, immediately after which the tray will return to its normal position to receive the next coin, which is left in full sight until another coin is deposited in the machine, the position of the lever being unaffected when the slide 24 is forced forward by its spring, as the pin 86 will simply depress the catch 84.

The above-described safety attachment will prevent many persons from dropping spurious coins and blanks into the machine, as they will hesitate about exposing their dishonesty to the succeeding depositor.

In case any of the spaces between the flanges 17 should be empty, it is desirable that the delivery mechanism be locked when such empty space comes to a position such that at the next deposit of a coin it will be moved to a position to deliver a package of goods. To the above end I provide a lever 90, that is pivotally connected to the cabinet, said lever being formed with an upwardly-extending bent arm 91 and with a catch-tooth 92. The arm 91 is normally upheld by the lowest package of goods carried by the belt 15; but if the space in which said package of goods should rest be empty the lever will drop and its catch-tooth 92 will enter a recess 93 formed in the slide or bar 24, and thus lock the bar against any inward movement.

Although I have described my improved selling-machine as being arranged in connection with a single-delivery mechanism, I desire it to be understood that two of such delivery mechanisms could be employed by arranging the slides and coin-receptacles as described in my former application, hereinbefore referred to; and I desire it to be understood that, although I have described a specific means for throwing the gear 20 from engagement with the rack 21, any other proper means could be employed for this purpose.

In the drawings I have represented the belt 15 as being formed of two continuous strips, and I desire it to be understood that the number of these strips might be increased or that a single wide strip might be employed.

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

1. In a coin-controlled vending-machine, an operating-slide having a projecting lug, in combination with a coin-receptacle, and a vertically-swinging locking-bar, which stands normally partly across said receptacle, said locking-bar having a vertically-extending slot, which registers with said projecting lug on the deposit of a coin in said receptacle, substantially as set forth.

2. In a coin-controlled vending-machine, an operating-slide having a projecting severing-plate, in combination with a coin-receptacle having slots in its walls, into which enters said severing-plate on the inward movement of said slide, substantially as set forth.

3. In a vending-machine, an endless-carrier delivery-belt, the rotary drums on which said belt is mounted, and a gear-wheel arranged in connection with one of said drums, in combination with a slide, and a rack connected with said slide and engaging with said gear-wheel, substantially as set forth.

4. In a vending-machine, an endless-carrier delivery-belt, cross-flights on said belt, rotary drums on which said belt is mounted, and a rotary sprocket-wheel engaging said flights, in combination with a gear-wheel in connection with said sprocket-wheel, a slide, and a rack connected with said slide and engaging with said gear-wheel, substantially as set forth.

5. In a vending-machine, the combination, with a belt, of flights which extend beyond the side edges of the belt, flanges extending outward from the flights, drums upon which the belt is mounted, toothed wheels carried by the lower drum and arranged to engage the belt-flight, a gear arranged in connection with said lower drum, a laterally-shifting rack which normally engages the gear, a slide to which the rack is connected, and shifting mechanism for moving said rack into and out of engagement with said gear, substantially as described.

6. In a vending-machine, the combination, with a belt, of flights which extend beyond the side edges of the belt, flanges extending out-

ward from the flights, drums upon which the belt is mounted, toothed wheels carried by the lower drum and arranged to engage the belt-flights, a gear arranged in connection with said lower drum, a rack which normally engages the gear, a slotted plate by which the rack is supported, said slotted plate having inclined faces, pins against which said faces bear, a slide provided with a plate which supports the slotted plate, and studs or pins extending from said slide-plate through the slots of the slotted plate, substantially as described.

7. In a vending-machine, an endless-carrier delivery-belt, drums upon which said belt is mounted, and a gear-wheel on the shaft of one of said drums, in combination with an operating-slide, a laterally-shifting plate carried by said slide, a rack on said plate, which is engaged and disengaged from said gear-wheel upon the shifting of said plate, and a locking-ear actuated by said shifting-plate, which engages said gear to lock the same when said rack is disengaged therefrom, substantially as set forth.

8. In a vending-machine, the combination, with a belt provided with flanged flights, of drums upon which the belt is mounted, toothed wheels carried by the lower drum-shaft and arranged to engage the belt-flights, a gear also carried by the lower drum-shaft, a rack 21, a plate 22, which carries the rack, said

plate being provided with inclined-faced projections 27 and 27^a, pins 28 and 28^a, against which said faces are brought to bear, a slide 24, a plate 23, carried thereby and provided with studs or pins which pass through slots formed in the plate 22, and a plate 30, having an ear 29 and a hook-like end 33, which overlaps the rack 21, substantially as described.

9. The combination, with an endless-carrier belt provided with flanged flights, of drums upon which the belt is mounted, a gear arranged in connection with one of the drum-shafts, a slide, a rack carried thereby and arranged to engage the gear, and a lever 90, provided with an arm 91 and a catch 92, which is arranged to enter a recess formed in the slide, substantially as described.

10. In a vending-machine, the combination, with an operating-slide, of a tilting plate pivotally mounted beneath a coin-delivery receptacle, a lever arranged to bear against said plate, a counterbalanced catch pivotally connected to the lever, and a pin or projection carried by the slide, substantially as described.

JOSEPH CORBETT.

Witnesses:

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