L. FOSSEE.

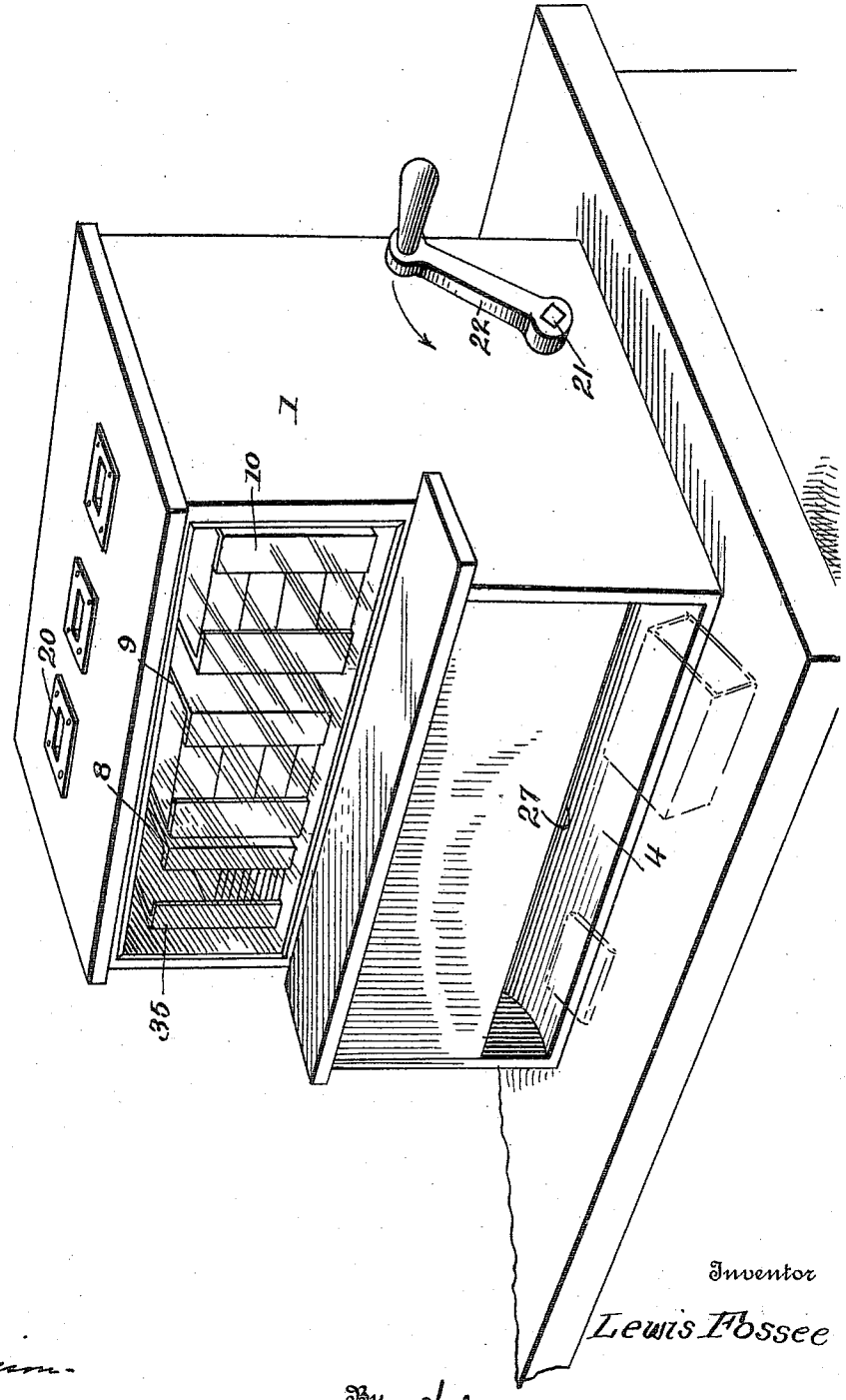
VENDING MACHINE.

APPLICATION FILED AUG. 8, 1910.

985,794. Patented Mar. 7, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

Inventor

Lewis Fossee

By Attorneys.

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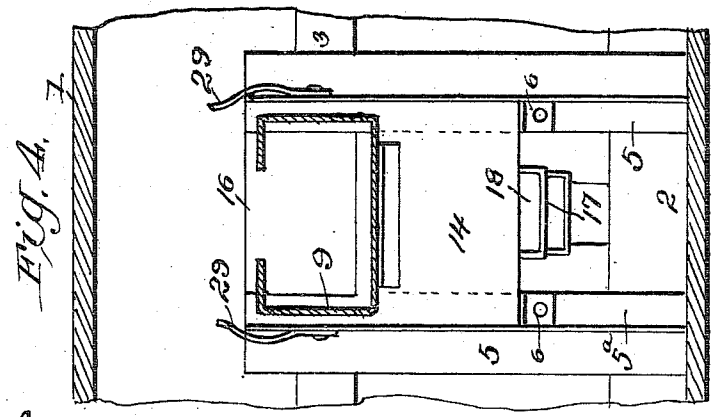
3 SHEETS—SHEET 2.

Fig. 4.



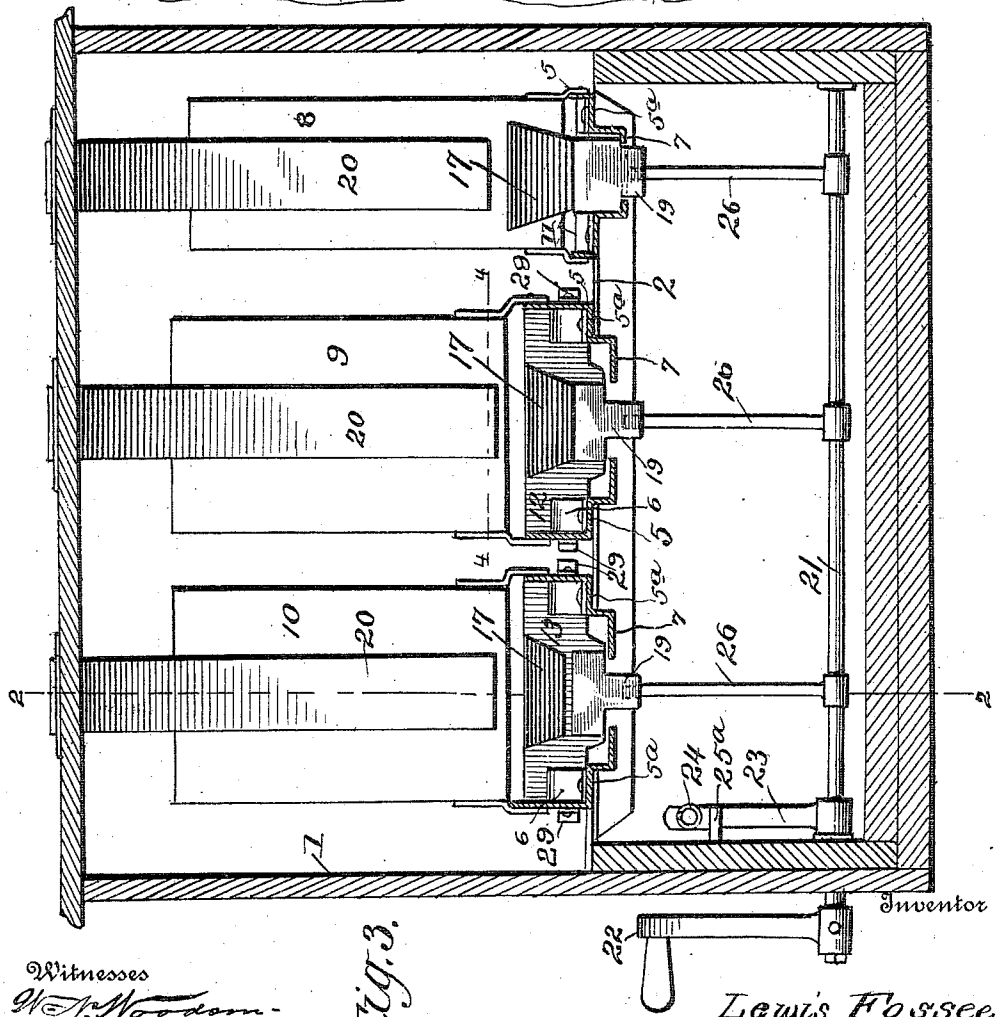


Fig. 3.

Witnesses

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3 SHEETS—SHEET 3.

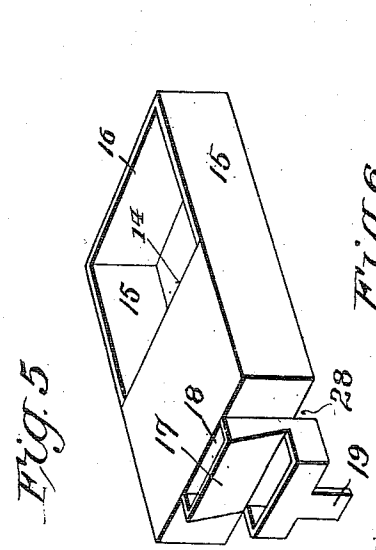

Fig. 5

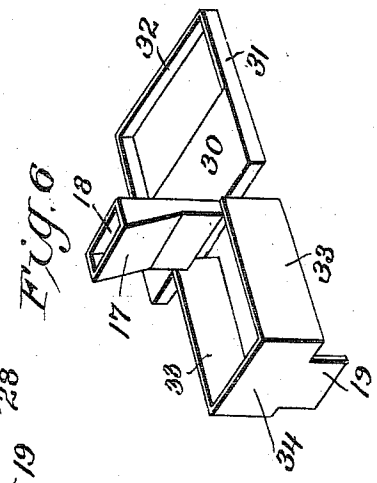

Fig. 6

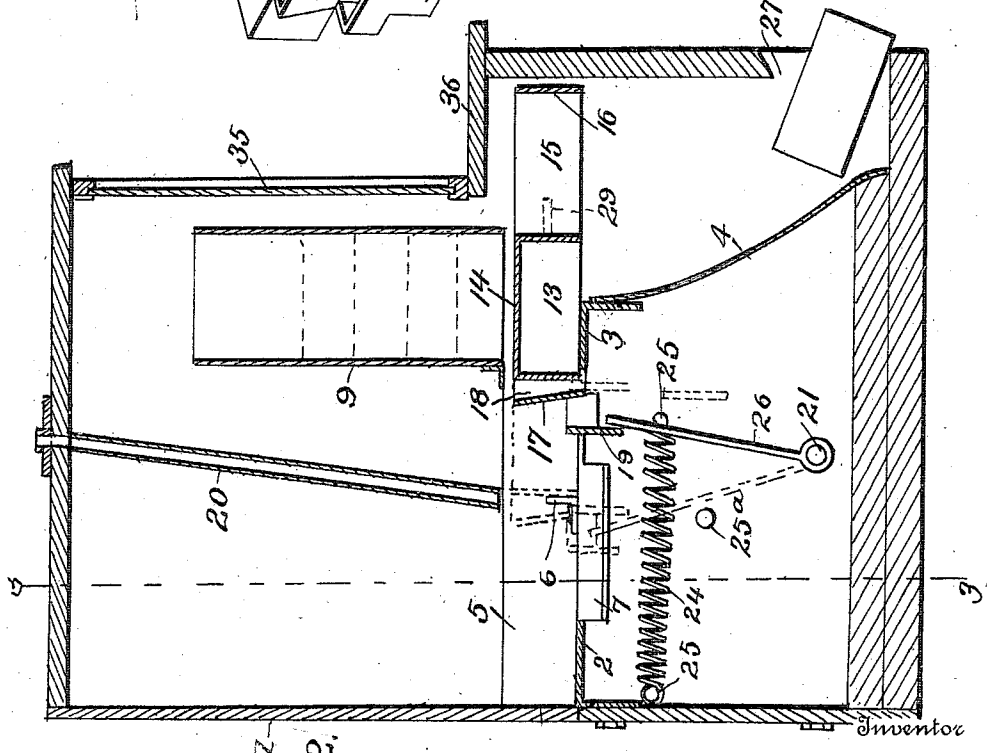

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

LEWIS FOSSEE, OF JEFFERSONVILLE, INDIANA, ASSIGNOR OF ONE-FOURTH TO EDWARD A. RYANS AND ONE-FOURTH TO HIRAM O. LYNN, BOTH OF JEFFERSONVILLE, INDIANA.

VENDING-MACHINE.

985,794. Specification of Letters Patent. Patented Mar. 7, 1911.

Application filed August 8, 1910. Serial No. 576,239.

To all whom it may concern:

Be it known that I, LEWIS FOSSEE, a citizen of the United States, residing at Jeffersonville, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to vending machines of that type in which a coin acts as the means for operatively connecting the actuating lever with the article delivery mechanism, and in which unless the coin is deposited the actuating lever is inoperative as regards the delivery mechanism, and the object of my invention is primarily to provide a very simple and effective mechanism, particularly adapted for vending small flat packages such as packages of matches or chewing gum, but not necessarily limited thereto, in which a plurality of compartments are provided in which different articles are to be vended and one actuating lever, and in which an article in any one or more of the compartments may be delivered by the deposit of a prescribed coin, or coins, and the actuation of the handle.

My invention is shown in the accompanying drawings wherein:

Figure 1 is a perspective view of my vending machine looking toward the front thereof. Fig. 2 is a vertical section from front to rear on the line 2—2 of Fig. 3. Fig. 3 is a vertical transverse section looking toward the front of the machine on the line 3—3 of Fig. 2. Fig. 4 is a fragmentary horizontal section on the line 4—4 of Fig. 2. Fig. 5 is a perspective detail view of one of the article deliveries. Fig. 6 is a like view of another article deliverer having the same general character as illustrated in Fig. 5 but adapted to smaller packages.

Referring to these figures 1 designates an outer casing of any suitable character and 2 designates a transverse angle iron supported in any suitable manner at the rear of the casing.

3 designates a transverse angle iron disposed upon a level with the angle iron 2 and also supported in any suitable manner upon the casing and spaced from the angle iron 2. These transverse angle irons form supporting bars upon which the vending compartments and coin-operated mechanism are supported. Extending downward from the forward edge of the angle iron 3 is the downwardly and forwardly inclined delivery apron 4 which opens adjacent to a longitudinally extending delivery slot 27 formed in the outer casing, as shown in Fig. 2.

Supported upon the angular strips or angle irons 2 and 3 are a plurality of pairs of guides 5 which extend between the angular strips or angle irons 2 and 3 and are supported thereon, the angular guides of each pair being spaced apart from each other, as illustrated in Fig. 3. Each guide is angular in cross section and has projecting upward from its lower or supporting flange 5^a the stops 6 formed in any suitable manner. Attached to the flange 5^a of each of the angular guides 5 are the angular coin-supporting strips or members 7. These extend downward and inward and are spaced apart from each other a distance less than the diameter of the coin, as shown in Fig. 3. These supporting strips 7 do not extend the entire length of the angular strips 5 but extend from the rear ends of these strips about to the middle thereof.

Supported upon the forward ends of the strips 5 in a vertical position are the vertical casings 8, 9 and 10. These casings are each open on the front so that the commodities contained within the casings may be plainly visible through the glass forming the front of the casing 1, and so that the operator may see whether any of the casings or compartments are empty. The lower ends of the casings 8, 9 and 10 are coincident with or slightly above the upper edges of the flanged strips 5, as illustrated in Fig. 2. These compartments or casings 8, 9 and 10, as shown in Fig. 3, are made of different sizes so as to accommodate different sized articles. For instance in Fig. 3 the compartment 8 is shown as of relatively small size in cross section and is intended to carry flat packages of chewing gum. The compartments 9 and 10, however, are of a larger size and are adapted to carry matches or other like packages or boxes. It will be seen also from Fig. 3 that the lower ends of the compartments 9 and 10 are elevated to a greater distance from the plane of the strips 2 and 3 than is the lower end of the compartment 8. It will of course be obvious that the distance between the plane of the supporting strips 2 and 3 and the lower ends of the compartments depends entirely upon the thickness of the article to be vended. While there is

this difference between the elevation of the compartment 8 and the elevation of the compartments 9 and 10, it is to be understood that in all three of these compartments the article is vended in precisely the same manner and that a description of the means for vending articles in one compartment applies equally well to the vending of articles in any of the three compartments.

Supported upon the angular guide strips 5 and movable between the upwardly extending flanges of said strips and guided thereby, are the delivery members or ejectors 11, 12 and 13. Inasmuch as these delivery members are precisely alike in principle, it is only necessary to describe one of them. As shown in Fig. 5 each delivery member or ejector comprises a rectangular plunger 14, the sides of which are extended as at 15 in parallel relation to each other and connected by a cross piece 16. There is no bottom to the space inclosed by the outer wall of the plunger 14, the side pieces 15 and the cross piece 16, as shown in Fig. 2. This space inclosed by these parts is equal in area to the cross sectional area of the compartment beneath which the plunger moves so that when the plunger is in its retracted position the article-holding portion, which includes the walls 15, will be immediately beneath its compartment and aline therewith so that the articles will drop into the space inclosed by said walls and be held thereby.

The rear end of the plunger 14 is provided with a coin holder 17 which is open at its top as at 18 and is open at its bottom. Attached to the lower end of the coin-holder 17 is the downwardly projecting lug 19 which is disposed between the guide flanges 7 so as to be guided between the same. Preferably, this lug 19 is supported in spaced relation to the lower end of the coin holder 17, as shown in Fig. 5. The coin holder 17 is adapted to receive a coin from a chute 20 which opens at one end upon the top of the outer casing 1, as shown in Fig. 2, and which extends downward at its lower end behind a corresponding compartment in such position as to register with the coin guide or holder 17 when the plunger is in its retracted position, as shown in dotted lines in Fig. 2. When a coin is deposited within the chute 20 it drops down into the coin guide or holder 17 and passes into the lower end thereof and rests upon the flanges 7 and is supported thereon, the coin guide or holder holding the coin in a vertical position. It will be seen that a space will thus be left between the coin and the lug 19, as illustrated in Fig. 2, which space is designed to accommodate the upper end of an operating finger now to be described.

In order to actuate the article delivery mechanism I provide a rock shaft 21 which passes transversely through the casing 1 and extends out at one end through said casing where it is provided with a handle 22. Projecting upward from this rock shaft and rigidly fastened thereto is an arm 23 to which a spring 24 is attached, which spring at its other end is attached to any fixed support as the pin 25. The spring is a retractile spring and will resist the turning movement of the shaft 21 in a forward direction. The side of the case 1 is provided with the spaced stops 24 and 25 which limit the movement of the arm 23 and thereby limit the rotation of the rock shaft. The rock shaft is provided with a plurality of operating fingers 26, these fingers extending upward and projecting into the space between each pair of flanges 7 and being disposed normally in front of the lugs 19. It will of course be understood that there are as many fingers 26 as there are vending compartments, and inasmuch as all the fingers 26 are alike and operate in precisely the same manner, it is only necessary to describe the operation of one of these fingers.

The finger projects upward as before stated into position in front of the downwardly extending lug 19. When a coin is deposited in the coin holder 17 it drops down upon the guide flanges 7 and upon a forward movement of the finger caused by an actuation of the handle 22 the finger will engage with the coin, and as a consequence will move the article delivery mechanism forward along the guides 5 until the plunger 14 has moved to a position beneath the superposed compartment and closed the bottom of the same while the article holder has been correspondingly projected out beyond the upper end of the apron 4. As this article holder is so projected the article will drop from the same, strike the apron 4 and be guided out of the delivery slot 27 formed in the front of the case 1, as illustrated in Fig. 2. As soon as the article has been vended by a complete actuation of the handle 22, and the handle released, the spring 24 will act to return the finger to its normal position. As the finger returns it will strike the inner face of the lug 19 and will retract the plunger 14 and the article holder so as to bring the article holder, composed of the walls 15, into register with the lower end of the compartment, whereupon the article contained in the compartment will drop into the article holder.

It will be obvious that unless a coin is deposited in the coin holder 17 that an actuation of the lever will not shift the delivery mechanism. The fingers 26 will simply move forward, but as there is nothing with which they can engage they will not operate the delivery mechanism.

The forward movement of the article delivery mechanism is limited by the fact that the rear wall 28 of the plunger is extended

downward slightly below the lower edge of the walls 15 so as to engage with the rear edge of the angular strip 3. Furthermore, the forward movement of the delivery mechanism is limited by the fact that the fingers 26 are stopped from any further forward movement when the arm 23 engages with the stop 25.

The means for delivering chewing gum which is contained within the compartment 8 is slightly different from the delivery plunger and article holder used for the compartments 9 and 10 by reason of the fact that a package of gum is usually relatively thin, whereas matches and like articles are relatively thick. Furthermore, the package of gum is comparatively narrow in comparison with the matches or like article, hence the delivery mechanism is modified as is to be seen by a comparison of Figs. 5 and 6.

Referring more specifically now to Fig. 6, 30 designates the plunger which is precisely the same in operation as the plunger 14 only thinner and narrower and 31 designates the extended side walls of the plunger, and 32 the cross piece which connects the ends of these side walls, thus forming an inclosing member adapted to engage the package of gum, move it outward but permitting it to fall when the plunger has been moved to its full position. In Fig. 5, because of the width of the plunger 14, the lug 19 is spaced a comparatively short distance from the coin holder 17, whereas in Fig. 6 the lug 19 is spaced a considerably greater distance from the coin holder 17. It will be obvious that it is necessary to have each of the delivery plungers and article holders of the same length, and in order to secure this the relatively long side pieces 33 are attached to the lower end of the coin holder 17 and extend rearward to support the cross piece 34 upon which the lug 19 is mounted. The operation of the delivery device shown in Fig. 6 is precisely the same as that previously described and all the elements found in Fig. 5 are equally found in Fig. 6.

In order to center the article delivery devices between the guides 5 I provide each pair of guides with spring fingers 29 which are attached to the outside faces of the upwardly extending flanges of the guides 5 at their forward ends and project beyond the forward ends of these flanges. These spring fingers 29 are turned inward as shown in Fig. 4. When the plungers are forced outward these spring fingers engage with the side walls 15, and while they do not impede the movement of the article delivery mechanism they guide and center the same between the guide flanges 5 so that they will not become centered and hence jammed between the guides.

In the operation of the invention a coin is dropped in one of the coin chutes 20. It passes down into the corresponding holder 17 and rests upon the supporting strips 7 in a vertical position and extending transversely to the path of travel of the corresponding finger 26. Under these circumstances when the rock shaft is actuated the finger will move forward until it engages the coin. When this occurs it will move the ejector forward, the coin being held in its vertical position until the coin passes the forward ends of the supporting strips, whereupon the coin will drop from the holder into any suitable money compartment. At the moment when the coin passes the supporting strips the ejecting or delivery mechanism has been moved to its full delivering position, as shown in Fig. 2, and the article drops out of the article-holding device. As soon as the article has been delivered and the handle 22 released the spring 24 acts to return the rock shaft to its original position, the finger then engaging with the lug 19 and retracting the ejector.

While I may form the case in any desired manner I have shown it as provided with a glazed observation opening 35 through which the contents of the various compartments may be observed, and with a ledge 36 disposed beneath the observation opening so as to accommodate the projection of the article delivery mechanism.

It will be obvious that coins may be deposited one in each of the coin chutes 20, and that then upon an actuation of the lever 22 articles will be ejected from each one of the compartments 8, 9 and 10, and it will also be obvious that the operator may select the article he desires to have vended and by dropping a coin in the proper chute he will actuate the ejecting devices of that particular compartment but not the ejecting devices of any other compartment.

My invention is simple in operation and construction, cannot readily get out of order and is entirely effective in actual practice.

What I claim is:

1. In a coin-operating mechanism for vending machines, oppositely disposed parallel guides, parallel coin-supporting strips mounted on the guides and extending parallel therewith for a distance less than the length of the guides, said strips being spaced from each other, a movable operating member extending up between said guides and coin-supporting strips and movable in the space between the same, a coin holder carried by the ejector, said holder being open at its bottom and adapted to hold a coin in its vertical position supported on the supporting strips, said holder having a downwardly projecting lug spaced rearwardly from the forward wall of the holder and engaging behind the movable operating member.

2. In a coin-operating mechanism for vending machines, oppositely disposed parallel guides, parallel angular coin-supporting strips mounted on the guides and extending parallel therewith for a distance less than the length of the guides, said strips being spaced from each other a distance less than the diameter of the coin, a movable operating member extending up between said guides and coin-supporting strips, an ejector, a coin holder carried by the ejector, said holder being open at its upper and lower ends and being adapted to hold a coin in a vertical position supported on the said coin-supporting strips, a downwardly projecting lug mounted upon the coin holder and spaced rearwardly from the forward wall of the mouth of the coin holder, said lug engaging behind the operating member, and a coin chute supported above the guides in such position as to register with the coin holder when the ejector is in its retracted position.

3. In a coin-operating mechanism for vending machines, oppositely disposed parallel guides, parallel coin-supporting strips depending from the guides and extending parallel therewith for a distance less than the length of the guides, said supporting strips extending toward each other and being spaced from each other a distance less than the diameter of an operating coin, a rock shaft mounted between the guides, a finger on the rock shaft projecting upward into the space between the guides and the coin-supporting strips, an ejector supported on the guides, a coin holder carried by the ejector and adapted to hold a coin in a vertical position supported on the coin-supporting strips and in the path of movement of the upper end of the finger, a lug spaced rearward from the forward wall of the coin holder and engaging behind the upper end of the finger, means for operating the rock shaft in one direction, and a spring for rotating the rock shaft in the opposite direction to return the operating finger and the ejector to their normal position.

4. In a coin-operating mechanism for vending machines, a plurality of pairs of oppositely disposed parallel guides, parallel coin-supporting strips carried by each of the guides and extending parallel therewith for a distance less than the length of the guides, the strips of each pair of guides extending toward each other but being spaced from each other a distance less than the diameter of an operating coin, a rock shaft mounted beneath said pairs of guides extending transversely thereof, a plurality of fingers projecting from the rock shaft, one for each pair of guides, the ends of said fingers projecting into the space between the guides and between the supporting strips, a plurality of ejectors, one for each pair of guides, said ejectors being slidable on the guides, a coin holder carried by each ejector adapted to hold a coin in a vertical position upon the supporting strips, each holder having a downwardly projecting lug spaced rearward from the mouth of the holder and engaging behind the corresponding finger, stops for limiting the rotation of the rock shaft, an actuating handle for moving the rock shaft in one direction, a spring for returning the rod to its normal position and thereby returning the ejectors and coin holders to their original positions, and a plurality of coin chutes, the delivering ends of said chutes registering with the coin holders.

In testimony whereof, I affix my signature in presence of two witnesses.

LEWIS FOSSEE. [L. S.]

Witnesses:
EDW. A. RYANS,
H. O. LYNN.