

March 19, 1935.

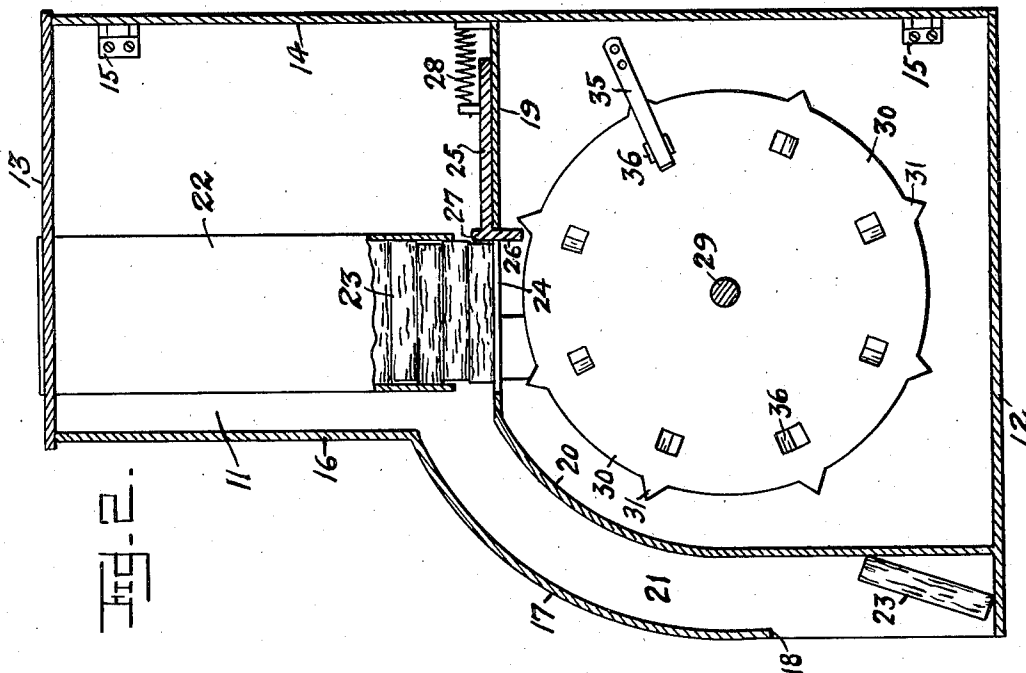
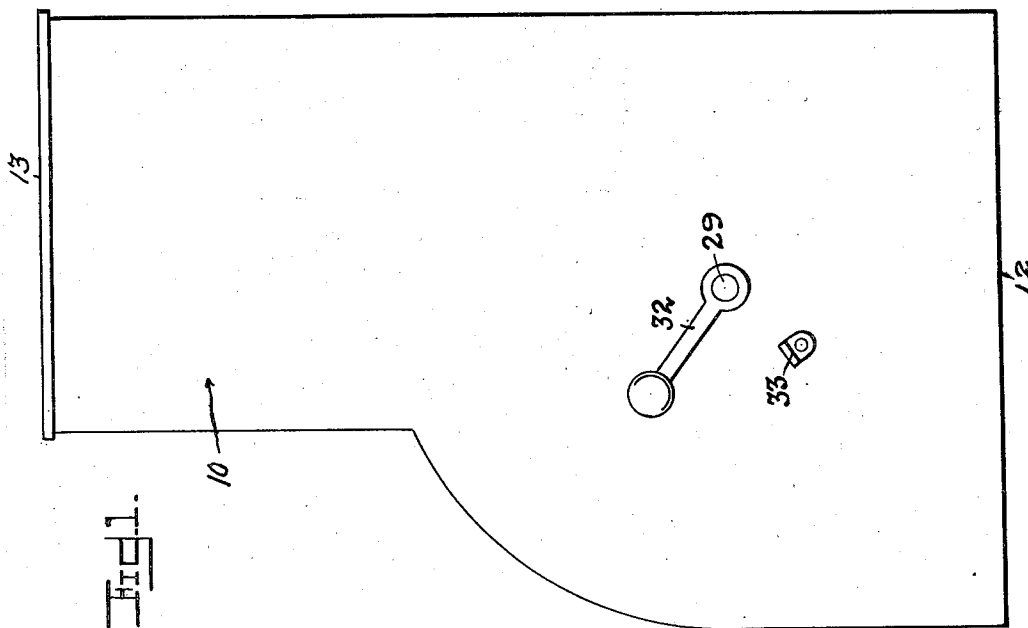
V. L. BAKER

1,994,745

VENDING MACHINE

Filed Feb. 4, 1932

4 Sheets-Sheet 1



INVENTOR.
Vernon L. Baker

March 19, 1935.

V. L. BAKER

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4 Sheets-Sheet 2

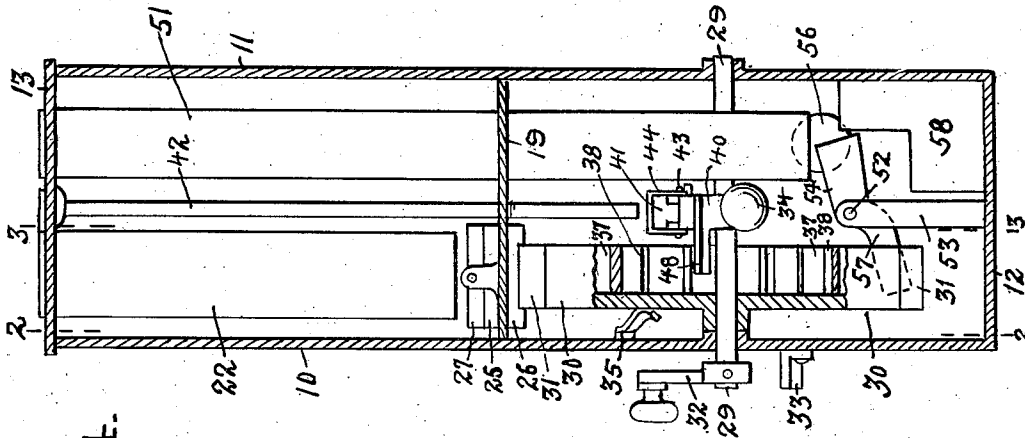


Fig. 4.

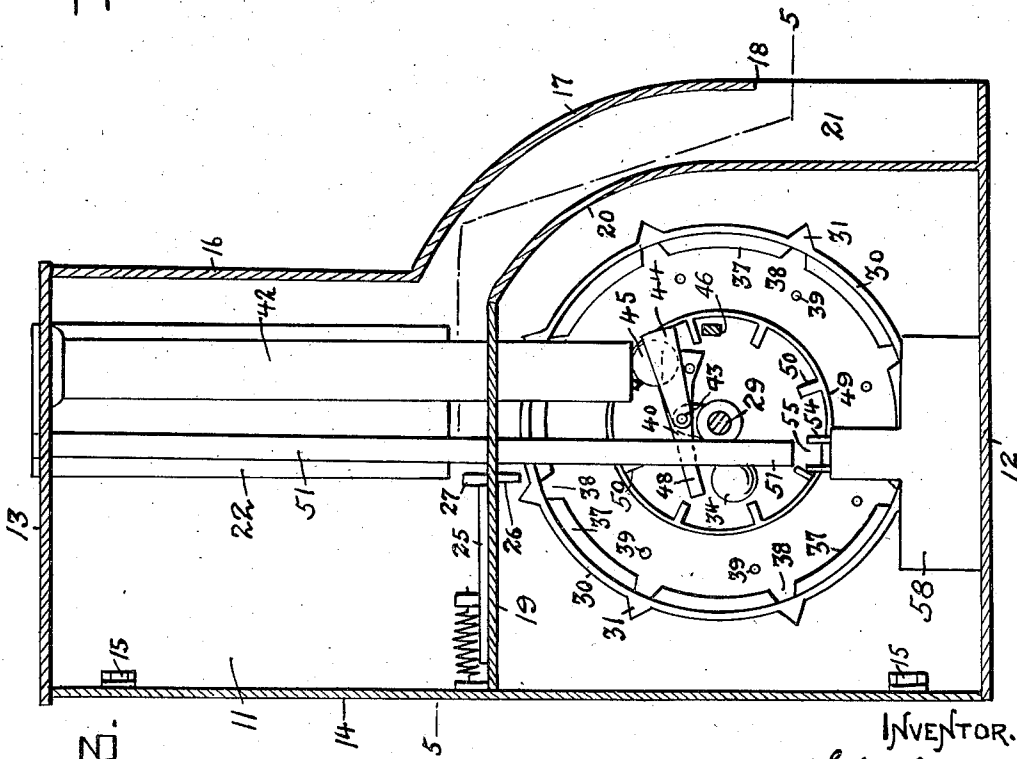


Fig. 3.

INVENTOR.
Vernon L. Baker.

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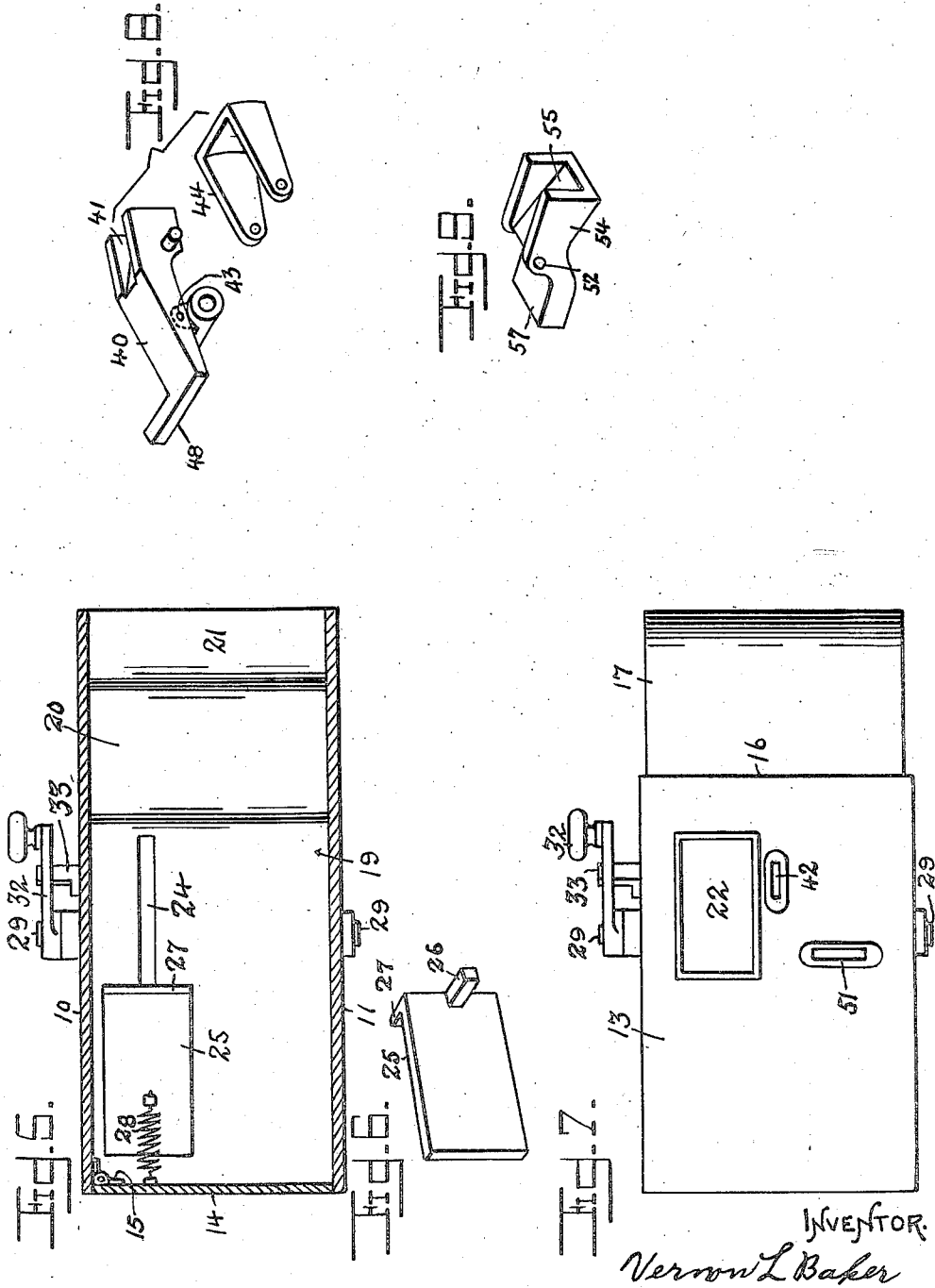
V. L. BAKER

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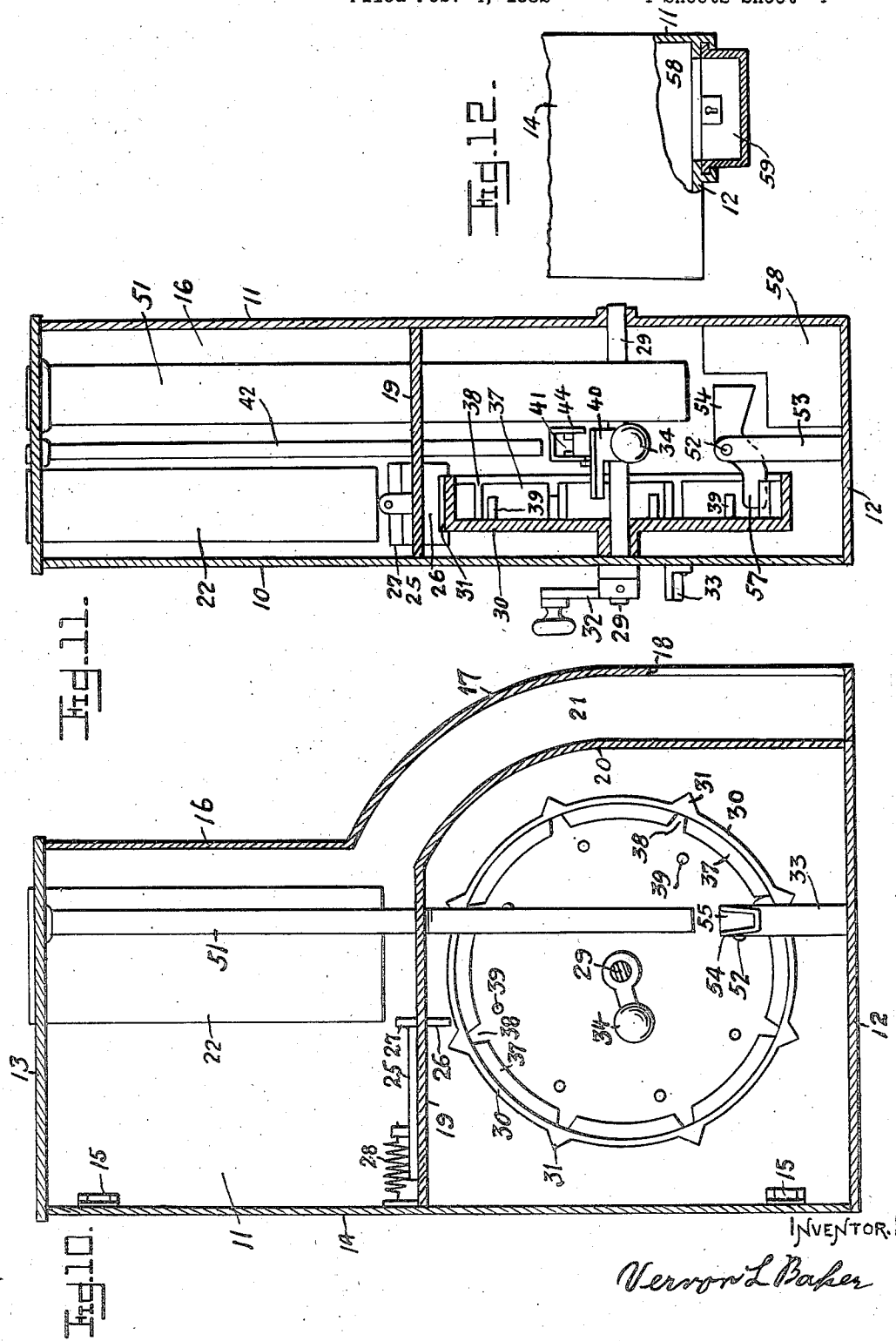
V. L. BAKER

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UNITED STATES PATENT OFFICE

1,994,745

VENDING MACHINE

Vernon L. Baker, Waitsburg, Wash.

Application February 4, 1932, Serial No. 590,826

7 Claims. (Cl. 194—73)

This invention relates to coin controlled vending apparatus, and has for one of its objects to provide a device of this character whereby a plurality of coins of varying size or value may be utilized in the same apparatus to actuate the delivery mechanism.

Another object of the invention is to provide an apparatus of this class in which two coins of different sizes are required to actuate the delivery mechanism, and in which means are provided for quickly transforming the apparatus into a one-coin apparatus.

With these and other objects in view, the invention consists substantially in the structure herein described and claimed, and as illustrated in the accompanying drawings in which:

Figure 1 is a side elevation of the improved apparatus.

Figure 2 is a vertical section on the line 2—2 of Fig. 4.

Figure 3 is a vertical section on the line 3—3 of Fig. 4.

Figure 4 is a vertical section on the line 4—4 of Fig. 3.

Figure 5 is a transverse section on the line 5—5 of Fig. 3.

Figure 6 is a perspective view of the ejector plate.

Figure 7 is a plan view of the complete apparatus.

Figures 8 and 9 are perspective views of the two trip devices.

Figure 10 is a similar view to Figure 3 with parts of the trip mechanism removed.

Figure 11 is a similar view to Figure 4 showing both trip devices disengaged.

Figure 12 is a front elevation of the cash drawer.

Having reference to the drawings like numerals refer to like parts throughout the several views.

The improved device is enclosed in a casing or shell including spaced sides 10 and 11, bottom 12, and top 13. The sides 10 and 11 are connected at one side by an end member 14 hingedly connected thereto as shown at 15 to provide for access to the interior of the casing. At the opposite sides the members 10 and 11 extend for a distance in parallel relation and this portion is connected by an end member 16, while the remaining portions of the sides are connected by an outwardly curving portion 17, the terminal 18 of the latter being spaced from the bottom 12. Extending between the sides 10 and 11 is a transverse horizontal partition or diaphragm 19 and a curved portion 20, the portion 20 being spaced

from the curved end member 17 and extending to the bottom 12, thus forming a curved chamber 21 opening at the upper end into the interior of the casing and ending at the lower end opposite the opening beneath the terminal 18 of the member 17 and forming a receptacle for the ejected articles.

Located in the space above the partition 19 is a holder 22 for the articles to be ejected, and formed to correspond to the shape of the article, for illustration a supply of cigarettes or the like, and indicated at 23. The holder 22 opens at the upper open end through the top 13 of the casing, and terminates at its lower open end a distance above the partition 19 slightly greater than the diameter of the cigarette or other article 23, as shown in Fig. 2. The partition 19 is formed with a slot 24, and slidable on the partition is an ejector plate 25, of suitable form for its purpose, having a stud 26 extending below the lower face of the plate. A spring 28 is coupled to hold the plate yieldably in withdrawn position, with the face 27 in vertical alignment with the adjacent wall of the holder 22, as shown in Figs. 2 and 3. The face 27 is less in height than the diameter of the articles to be ejected, so that when the plate 25 is actuated against the resistance of the spring 28, the face 27 will eject the lowermost of the articles 23 (for instance a cigarette) and pass beneath the next one above but without affecting it, and force the ejected cigarette into the chamber 21 wherein it falls to the floor 12 and can be removed through the opening below the terminal 18 as illustrated in Fig. 2. When the plate 25 is released, the spring 28 will return it to its former position guided by the stud 26, while the mass of cigarettes in the holder will force the lower one to settle on the partition 19 in position to be ejected at the next operation of the plate 25. Thus the articles will be ejected one at a time by each action of the plate 25.

Mounted for rotation through the casing is a shaft 29, and supported on the shaft within the casing is a drum 30 having a plurality of spaced lugs 31 projecting from its periphery into the path of the stud 26. By this arrangement, when the drum 30 is rotated, the lugs 31 will consecutively engage the stud 26 and actuate the plate 25 a sufficient distance to eject a single cigarette, and then pass from the influence of the lug when the reaction of the spring 28 will return the ejector plate to its former position as before described.

Means are provided for rotating the drum a predetermined distance only, consisting of an operating handle 32 secured to the shaft 29 ex-

ternally of the side 10 of the casing, a stop 33 on the side 10 to limit the throw of the handle, a counterweight 34 on the shaft 29 operative to return the shaft to its former position, and a spring 35 attached to the inner face of the side 10 and curved to engage intermittently in sockets 36, one socket for each of the lugs 31 to stop the drum at a position of engagement with the stud of the ejector. Each forward movement of the handle 32 will cause the ejection of one of the articles, and when the operator releases the handle the spring 28 will return the ejector plate and the counterweight 34 will return the handle to operative position as before stated.

Coin controlled means are provided for locking the drum 30 stationary and to be released only by the insertion of a coin. The interior of the drum 30 is provided with a plurality of segments 37 corresponding in number with spaces between the lugs 31, and with spaces 38 between the segments. Extending inwardly from the side of the drum are pins 39, one adjacent to each of the segments 37 and these pins 39 are offset from the recesses 38 and act to stop the drum on its return movement with the arm 57 directly in register with the respective recess 38. Mounted pivotally to swing on the member D and in the mounting E is a trip member 40 having a coin receiving recess 41, the counterweight 34 operating to hold the trip 40 normally in elevated position with the recess 41 in a position to receive the coin from a coin duct 42, to be explained. A coin duct 42 is supported within the casing opening at its upper end through the top 13 and opens at its lower end above the recess 41 of the trip 40. A coin inserted in the duct 42 will pass into the recess 41 and by its weight will trip the member 40 on its pivot 43. Pivoted also at 43 upon the trip member 40 is a yoke device 44 operative to hold the coin, indicated at 45, within the recess 41 until the shaft 29 is rotated by the handle 32. The weight of the coin is sufficient to overbalance the member 40 and when the handle 22 is actuated to move the ejector plate, the trip 40 carrying the coin 45 will be advanced and carry the yoke 44 with it. Attached at a suitable point on the casing 10 is a stop 46 which the yoke 44 engages when the trip member is advanced and thus secures the free end of the yoke against further movement, permitting the trip to continue and release the coin which falls into a suitable receptacle (not shown). When the handle 22 is released, the counterweight 34 returns the handle and the trip device 40 and its attached yoke 44 to former position to receive the next coin.

Extending from the body of the trip member 40 is an arm 48 terminating near the wall of the drum 30, and extending inwardly toward the inner face of the drum wall there to engage an annular member 49 secured to the drum. Associated with the annular member for engagement purposes are pins 50, one for each of the studs 31, and when the trip 40 is depressed by the coin, the arm 48 will be moved to successively engage the pins 50 and lock the trip member in engagement with the drum 30, to actuate that member upon the movement of the handle.

The duct 42 is just large enough to receive a predetermined size of coin, for example, a dime. Disposed within the casing 10 is another duct 51, preferably at right angles to the duct 42, and opening at the upper end through the top 13 of the casing and at the lower end nearer the bottom 12 of the casing. The duct 51 is larger than the duct 42, and is designed to receive a five cent or

nickel piece. Pivoted at 52 in a standard 53 is another trip device 54 having an outwardly opening recess 55 in one end and normally disposed in a poised position beneath the outlet end of the duct 51, or in position to receive a coin therefrom, the latter indicated at 56 in Fig. 4. Extending from the body of the trip member 54 is an arm 57, projecting when in one position consecutively into the recesses 38 between the segments 37, and held thereby in locked position when the recessed end of the trip member 54 elevated, as shown in Fig. 4. By this means, so long as there is no coin 56 in the slot 51, the trip member 54 will be held in poised position and the drum held from rotation. When however a coin is deposited in the duct 51, its weight will overcome the trip member, elevate the arm 57 from the recess 38, to the position shown in Fig. 11, and permit the drum to be rotated and the cigarette ejected as before described.

A coin receptacle 58 is located within the casing in position to restrain the coin from leaving the recess 55 until the trip has been depressed thereby and, to then receive the coin from the trip 54, and a receiving drawer 59 is preferably located beneath the receptacle 58, as represented in Fig. 12.

By this arrangement the nickel trip locks the device from action until a dime is deposited, and the dime trip is held in inoperative position until a nickel coin is deposited. Hence the two-coin apparatus requires that both coins be deposited to enable the delivery mechanism to be actuated.

To transform the apparatus into a dime actuated device, it is only necessary to remove the fulcrum pin 52 and the trip lever 54—57.

Having now described my invention, that which I claim to be new and desire to secure by Letters Patent is:

1. In a device of the class described, the combination with a case containing an article receptacle and an ejector therefor, of a drum provided with pins and mounted for rotation in said case and having a plurality of spaced lugs disposed to engage said ejector, a coin duct, a trip device in position to receive a coin from said duct and having a coin actuated arm offset for engagement with the pins of said drum, a yoke swinging upon said trip device and holding the coin therein, means for rotating said trip device, and means in the path of said yoke for tripping the same to release the coin.

2. In a device of the class described, the combination with a case containing a holder for the articles to be dispensed, and an ejector element operative beneath said holder, of a drum mounted for rotation in said case and having a plurality of internal spaced pins and a plurality of spaced external lugs, said lugs adapted to intermittently engage said ejector element, a coin duct, a trip device in position to receive a coin from said duct and having a coin actuated arm extending into said drum and disposed to engage said pins to rotate said drum, and means for rotating said drum through the medium of said trip device.

3. In a device of the class described, an inclosing casing, a transverse diaphragm within the casing and having a longitudinally directed slot, a holder for the articles to be dispensed and spaced at its discharge end from the diaphragm, an ejector plate slidably mounted upon said diaphragm for movement through the space beneath the holder and provided with a yielding returnable means, a drum rotative within the casing and having a plurality of spaced external lugs adapted to intermittently engage the ejector ele-

ment, and provided with spaced pins, a coin duct, a trip device in position to receive a coin from said duct, and having an arm extending into and disposed and adapted to engage consecutively the pins of said drum, and means for rotating said drum through the medium of said trip device.

4. In a vending machine, a casing, an article receptacle mounted in said casing, and an ejector associated therewith, a drum containing spaced pins mounted for rotation in said casing and provided with lugs disposed to intermittently actuate said ejector, means to stop said lugs at a position to register with said ejector, a coin actuated trip disposed to internally engage the pins of said drum, and means to manually operate said trip to actuate said drum.

5. In a vending machine, a casing, a shaft journaled in said casing, an article receptacle mounted in said casing, a yieldingly returnable ejector registering with said receptacle, a drum containing spaced pins and mounted on said shaft and disposed for intermittent engagement with said ejector, a coin actuated trip mounted on said shaft and disposed to engage the pins of said drum, and means to intermittently rotate said shaft to operate said ejector through said drum and said trip.

6. In a vending machine, a casing, a shaft journaled in said casing, an article receptacle mounted in said casing, an ejector registering with said receptacle, a drum idly mounted on said shaft and disposed to engage said ejector, and provided with spaced pins, a coin actuated trip mounted on said shaft and disposed to consecutively engage the pins of said drum, and means to rotate said shaft to operate said ejector through said drum and said trip.

7. In a vending machine, an enclosing casing,

a transverse diaphragm within the casing provided with a longitudinally directed slot, a holder for the articles to be dispensed contained in said casing and spaced at its discharge end from said diaphragm, a yieldingly returnable ejector plate slidably mounted on said diaphragm for movement through said space, a stud carried by said ejector and disposed in said slot, a shaft mounted in said casing, a drum rotatively mounted on said shaft and having a plurality of spaced external lugs adapted to intermittently engage said stud for advancement of said ejector plate, and provided with internal spaced pins, means to stop said drum at a position of registry with the ejector, a plurality of coin ducts, a trip device secured to said shaft and provided with a counterweight adapted to return the shaft to a normal position, an arm pivotally attached to said counterweight and provided at one end with a coin receiving recess normally positioned to receive a coin from one of said ducts, and provided with a hook at its other end adapted to be elevated upon receipt of said coin, and to engage said spaced pins to rotate said drum, a coin securing yoke pivoted to said arm and disposed about said coin recess, a stop disposed in the path of said yoke to trip said yoke and release the coin, internal segments contained in said drum and disposed to provide spaces therebetween, a removable pivotally mounted trip member consisting of an arm having a coin receiving recess at one end positioned in register with the other of said ducts and having its opposite end registerable with said spaces for locking engagement with said drum in the absence of a coin, and to release said drum by the presence of said coin, and means to rotate said shaft.

VERNON L. BAKER.