

Aug. 2, 1932.

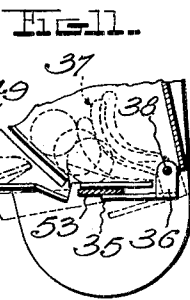
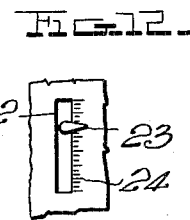
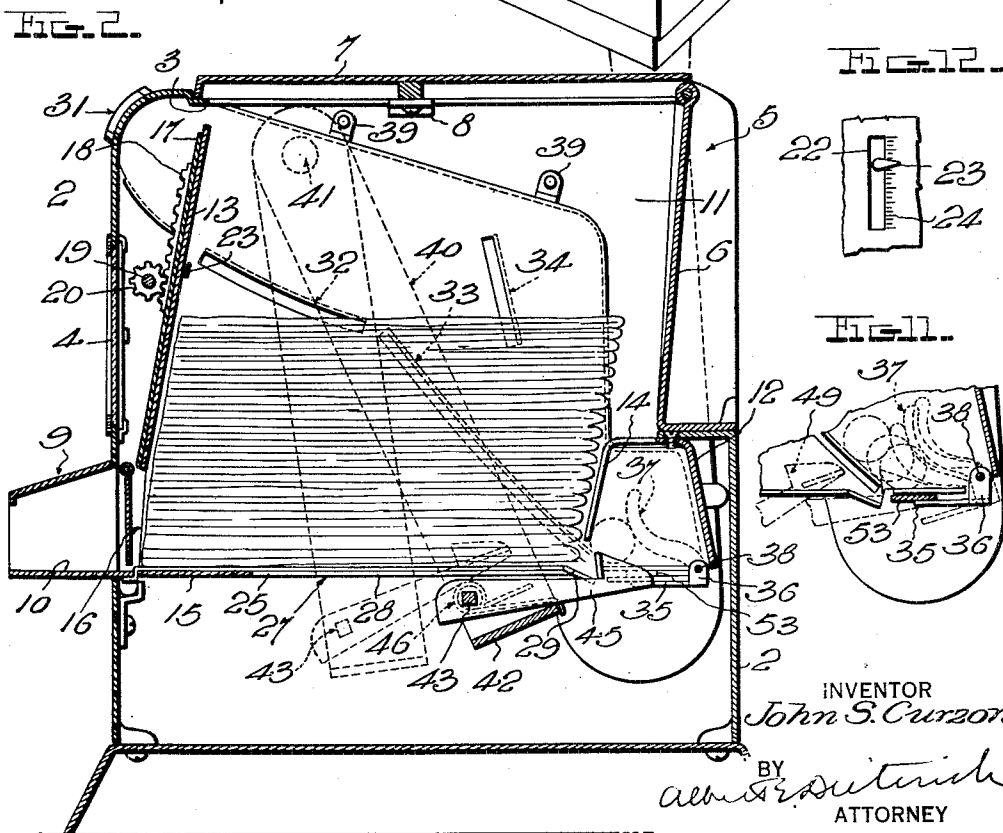
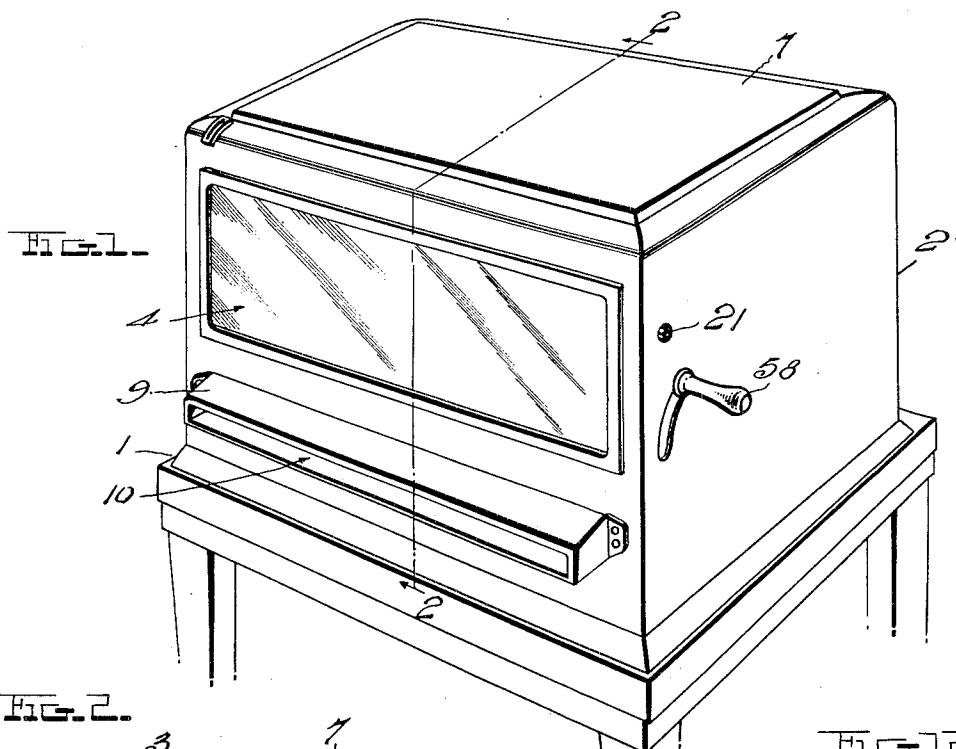
J. S. CURZON

1,870,100

VENDING MACHINE

Filed Feb. 8, 1930

3 Sheets-Sheet 1



INVENTOR
John S. Curzon
BY
attorney
ATTORNEY

Aug. 2, 1932.

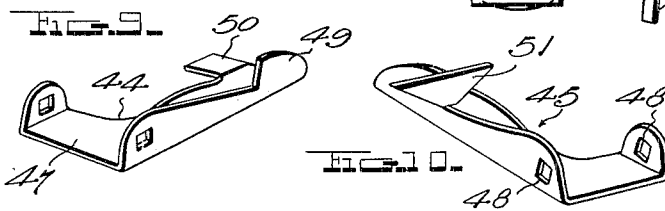
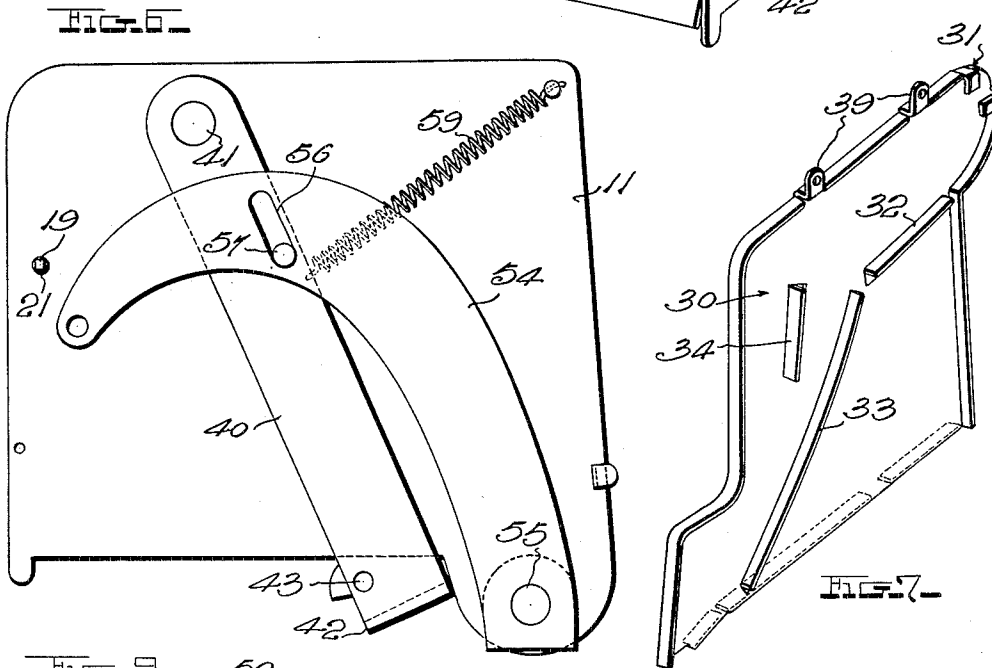
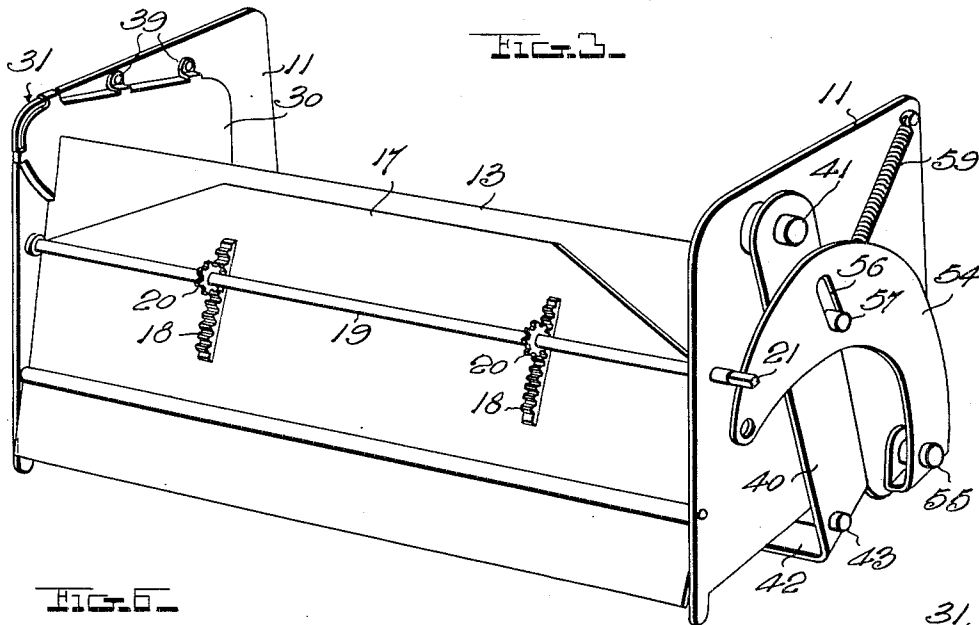
J. S. CURZON

1,870,100

VENDING MACHINE

Filed Feb. 8, 1930

3 Sheets-Sheet 2



INVENTOR
John S. Curzon

BY
Albert J. Dinterich
ATTORNEY

Aug. 2, 1932.

J. S. CURZON

1,870,100

VENDING MACHINE

Filed Feb. 8, 1930

3 Sheets-Sheet 3

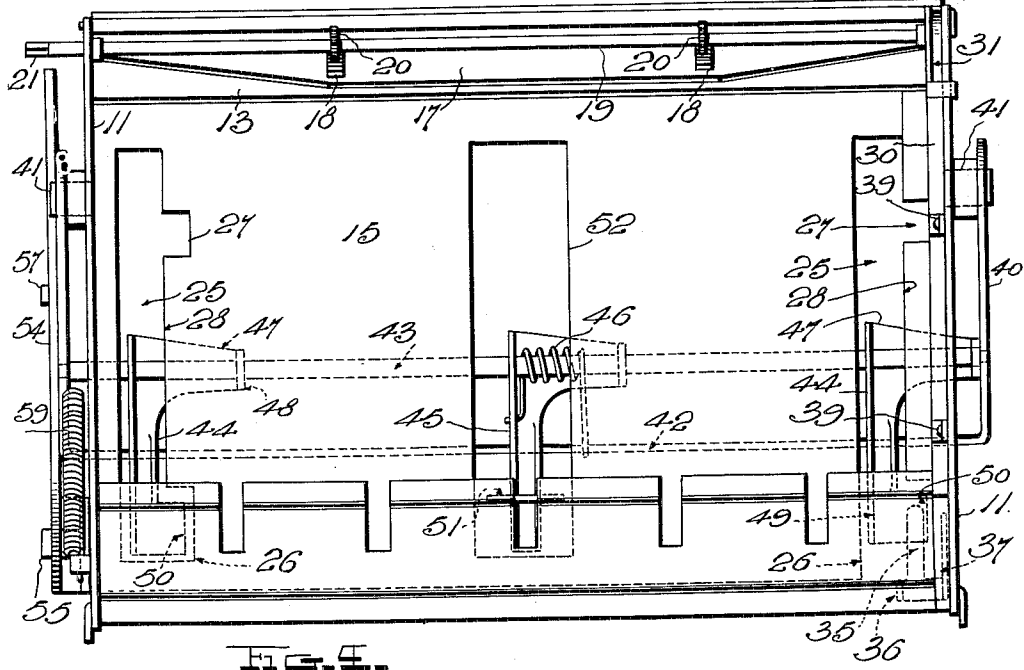


Fig. 4.

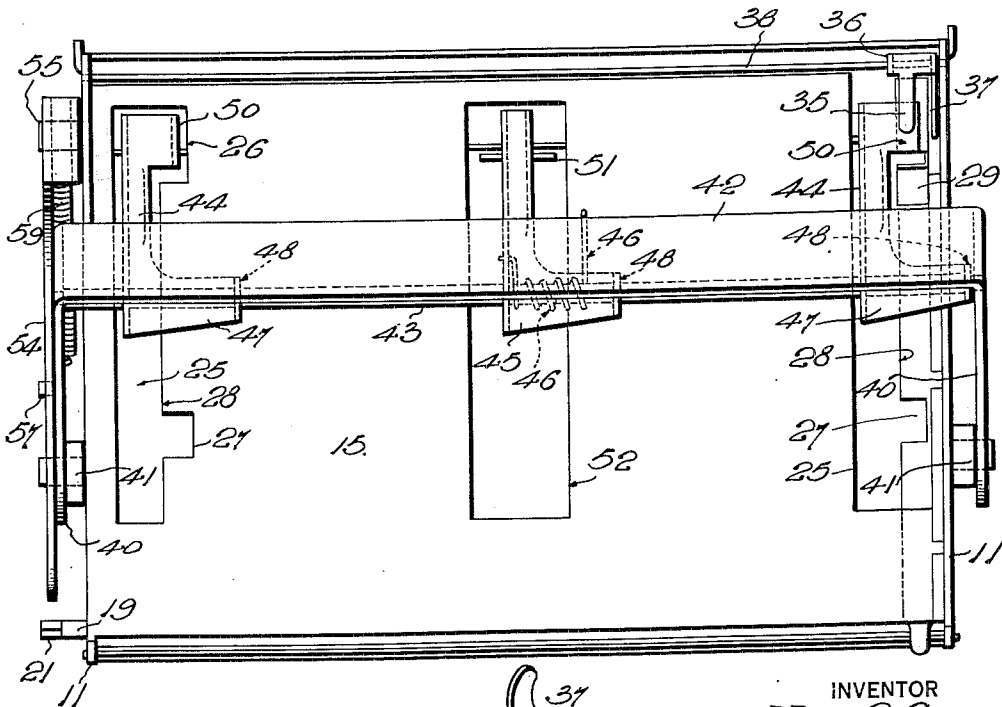
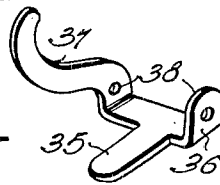


Fig. 5.

Fig. 6.



INVENTOR

John S. Curzon

BY

Robert R. Dutcher

ATTORNEY

UNITED STATES PATENT OFFICE

JOHN SIMMINS CURZON, OF PEERLESS, UTAH, ASSIGNOR OF ONE-HALF TO ACE MINER,
OF HELPER, UTAH

VENDING MACHINE

Application filed February 8, 1930. Serial No. 426,929.

My invention relates to coin controlled machines for vending flat articles such as newspapers, magazines, etc. and it particularly has for its object to provide a newspaper and
5 magazine vending machine of a simple construction, rugged in character, positive in operation and one in which provision is made whereby the attendant may readily and conveniently adjust the area of the discharge
10 opening to conform to the particular thickness of the newspaper or magazine to be vended.

Further, the invention has for an object to provide an improved means whose operation is dependent on coin control for pushing
15 the articles from the machine partly through the discharge throat where they may be grasped by the purchasers and removed.

Further, it is an object to provide a machine whose works are self-contained as a
20 distinct unit from the casing or housing so that this unit may be removed and replaced in toto for repairs or replacements.

Other objects will in part be obvious and in
25 part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel features of construction and in the combination, connection and arrangement of parts,
30 hereinafter more fully described, and then pointed out in the appended claim.

In the drawings:

Figure 1 is a perspective view of the machine embodying the invention.

35 Figure 2 is a cross section on the line 2—2 of Figure 1.

Figure 3 is a perspective view of the works unit per se.

Figure 4 is a plan view of the same.

40 Figure 5 is an inverted plan view of the same.

Figure 6 is an end view of the same.

Figure 7 is a detail perspective view of the coin chute per se.

45 Figure 8 is a detail perspective view of the coin actuated feed-pawl setting finger.

Figure 9 is a detail perspective view of one of the end feed pawls.

50 Figure 10 is a detail perspective view of one of the intermediate feed pawls.

Figure 11 is a diagrammatic view showing how the coin causes the pawl-setting finger to be operated, and in dotted lines showing how the fingers are released in passing into the enlargement 27 of the slot in the bottom
55 of the works unit.

Figure 12 is a detail view illustrating the scale measuring device.

In the drawings, in which like numerals of reference indicate like parts in all of the
60 figures, 1 represents a base on which is suitably mounted a housing 2 that encloses the works unit of the apparatus. The housing is provided with an opening 3 in its top that is adapted to be closed by a removable
65 cover 7, the latter being held in place by suitable clamps 8 as indicated.

The front of the housing 2 is provided with a glass case 4 in which advertising matter or
70 directions for operating the machine may be placed, or it may simply be a window through which the contents of the machine may be observed.

The rear of the housing is provided with an opening 5 covered by a hinged door 6
75 through which the articles to be vended may be placed in the machine. The housing is provided with a discharge throat 9 having a shelf 10 over which the articles are projected in delivering the same from the
80 machine.

The works unit comprises a frame including end plates 11, a back bar 12, a front wall
13. The front wall 13 inclines upwardly and backwardly and the front face 14 of the
85 back bar 12 is also inclined upwardly and rearwardly.

Beneath the wall 13 and spaced therefrom is a bottom plate 15, the space 16 serving as a discharge opening for the articles to be
90 vended.

17 is a slide held against the front wall 13 by retaining friction and adapted to be raised and lowered to vary the area of the discharge opening, the slide 17 being provided with racks 18 to engage with pinions
95 20 on an adjusting shaft 19 that is journaled in suitable bearings in the side or end plates 11 of the works frame, and has a squared end 21 to receive a key by means of which the

shaft can be turned to adjust the height of the slide 17.

The front wall 13 may be provided with a sight opening 22 viewable from the rear and a pointer 23 cooperating therewith and with a scale 24 on the adjustment plate or slide 17 so that the attendant when filling the machine can adjust the slide to reduce or increase the area of the discharge opening in accordance with the thickness of the article at that time to be dispensed.

The bottom plate 15 is provided with end slots 25 having rear enlargements 26 and forward enlargements 27, the latter serving as releasing enlargements as will hereinafter be more clearly understood.

28 designates feed-pawl rest flanges, the inclined ends of which are provided with guide lips 29.

A coin slot plate 30 is secured to one end wall and has an entrance 31 and is provided with coin guide ribs 32—33—34 to direct the coin inwardly and downwardly into co-operative relation with the pawl-setting finger 35. This finger 35 is pivotally mounted and has an ear 36 and a coin engaging finger 37, the pawl-setting finger 35 being pivoted through ear and coin engaging finger as at 38 and is so designed that gravity holds the finger 35 downwardly and the finger 37 forwardly when no coin is in the chute.

The coin slot plate 30 is secured to the bottom plate 15 and is provided with ears 39 by which it may be fastened to the end plate 11 which serves as the other side of the coin chute.

A swinging yoke 40 is pivoted at 41 to the end plate and includes a bottom cross bar 42 that lies beneath the bottom plate 15. The bottom cross bar 42 carries a pivoted shaft 43 on which is securely mounted the end feed pawls 44 that operate in the slots 25 and the intermediate feed-pawls 45 that operate in intermediate slots 52 (only one intermediate slot and pawl being shown in the drawings though as many may be used as desired).

The feed pawls are held in a retracted or non-operative position by a spring 46 so that under ordinary conditions the yoke 40 may be swung back and forth without causing the pawls to operate on the articles to be dispensed.

The end feed pawls 44 are preferably stamped of sheet metal and consist of a transverse portion 47 having ears 48 with squared apertures to fit the squared portion of the shaft 43. These pawls are provided with pushing elements 49 that are adapted, when the pawls are in the operative position, to engage the lowermost article in the receptacle and push it into and through the discharge opening. Each of the end pawls 44 carries a pawl hold-up lip 50 which cooperates with the rest flange 28 and guide lip 29 at its respective slot.

The intermediate pawl or pawls 45 have pusher plates 51 and the intermediate slot 52 in the bottom plate 15 need not be provided with any rest flanges 28 or guide lips 29.

A pawl stop lip portion 53 of the bottom plate 15 lies above the finger 35 and limits its movement upwardly as well as limiting the downward lifting movement of the feed pawl, the feed pawl having its lip 50 held against the lip portion 53 by the finger 35 when a coin is in place until the lip 50 can ride over the guide lip 29 and bring the pusher parts of the pawls through the slots 25 and 52 into working relation with the articles to be vended.

54 is a yoke swinging lever that is pivoted at 55 to one of the end plates 11 and carries a crank 58 on the outside of the housing, the housing being slotted to permit passage of the crank. 59 is the yoke returning spring and 56 is a slot in the lever 54 in which the pin 57 on the swinging yoke operates.

From the foregoing description taken in connection with the accompanying drawings, it will be seen that with the articles in place in the machine and it is desired to vend one of them, by placing a coin in the chute opening 31 it will be deflected down until it comes in contact with the finger 37 and rocks the same to bring the finger 37 up beneath the lip 50 of the adjacent feed pawl. This causes the feed pawls and their shaft to be rocked until all feed pawls are brought into position adjacent the bottom 15 and above the lever of the end of the guide lip 29 so that when the lever 54 is pushed down and the yoke 40 swung forwardly, the pawls will ride up through the slots in the bottom and their pusher elements 49 and 51 will engage the lowermost article and push it out through the outlet opening of the machine. As soon as the pusher pawl has left the finger 35 the coin will continue movement of the finger sufficiently to release itself and drop down into the bottom of the machine, after which gravity will move the finger 35 downwardly again ready for the next operation.

As the yoke is swung forward, the pawl will push the articles forwardly and as soon as the lips 50 of the end pawls arrive at the enlargements 27 of the slots 25 they will disengage the rest flanges 28 and the spring 46 and again drop the pawls down to their inactive position.

Of course, any suitable lock may be provided for locking the hinged door 6 but as that is a matter of common practice, no illustration thereof is thought to be necessary.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the construction, operation and advantages of my invention will be clear to those skilled in the art to which it relates.

What I claim is:

In a vending machine, a casing having a front wall, side walls, a bottom, a top and a back wall with a door through which the machine may be loaded, the front wall having a discharge throat; a works unit insertible into the casing as a unit and itself comprising a pair of end walls and a bottom wall joining the end walls, a rod carrying a flap valve mounted between said end walls, a plate extending upwardly from adjacent said rod and inclined rearwardly and joining said end walls together, a slide on the front face of said plate, said plate and said slide being disposed to the rear of said rod whereby said slide may be raised and lowered in back of the rod to alter the area of the opening covered by said flap valve, said slide having a pair of racks on its front face, a rotatable rod journaled in said end walls and having pinions meshing with said racks, article discharging mechanism mounted on said side walls and cooperating with said unit's bottom for feeding the articles one at a time into said throat, said discharging means including a swinging lever, said casing having a slot in one side wall, a handle having a projection passing through said slot and secured to said swinging lever, said casing having an opening in one side wall aligning with the end of said rotatable rod into which an operating key may be passed to rotate said rod.

JOHN SIMMINS CURZON.

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