Sept. 12, 1950 L. STEINER 2,522,316

DISPENSING MACHINE

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Fig. 1

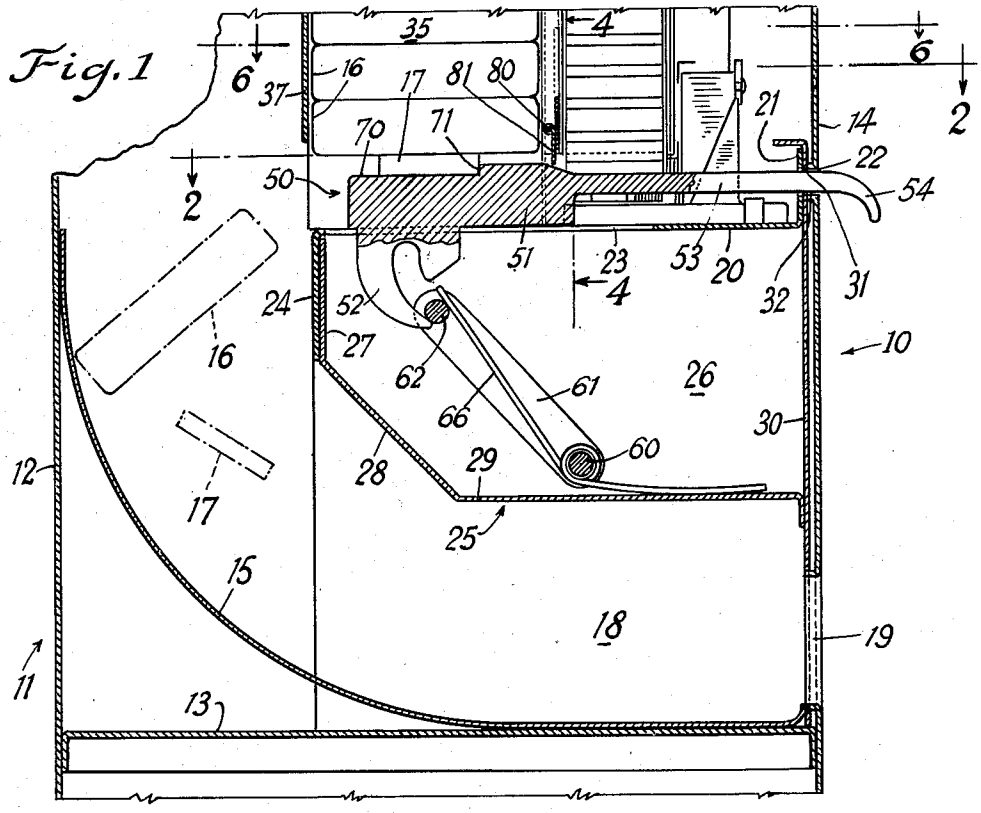


Fig. 2

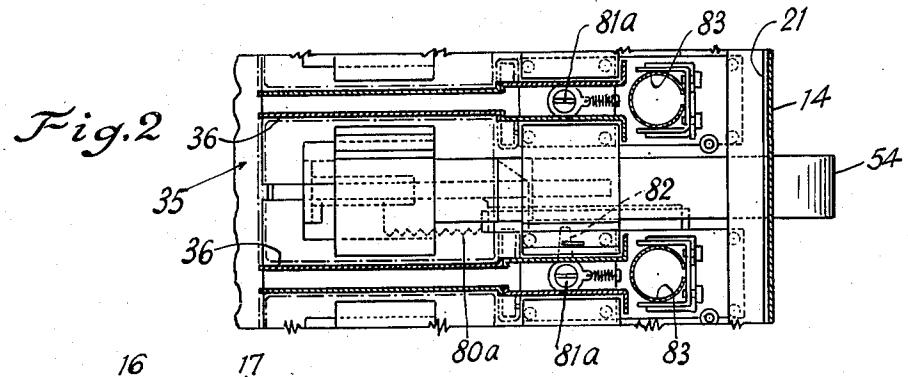
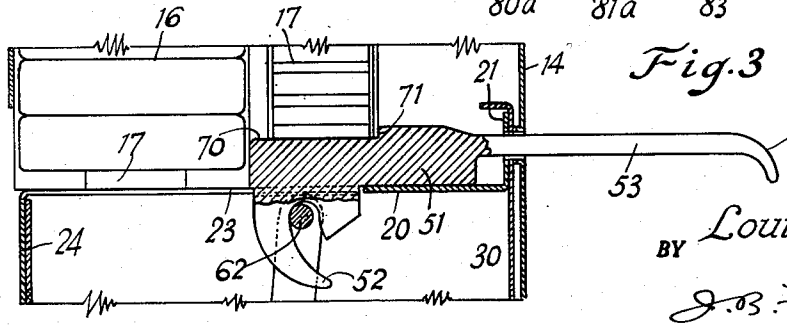


Fig. 3



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Fig. 4

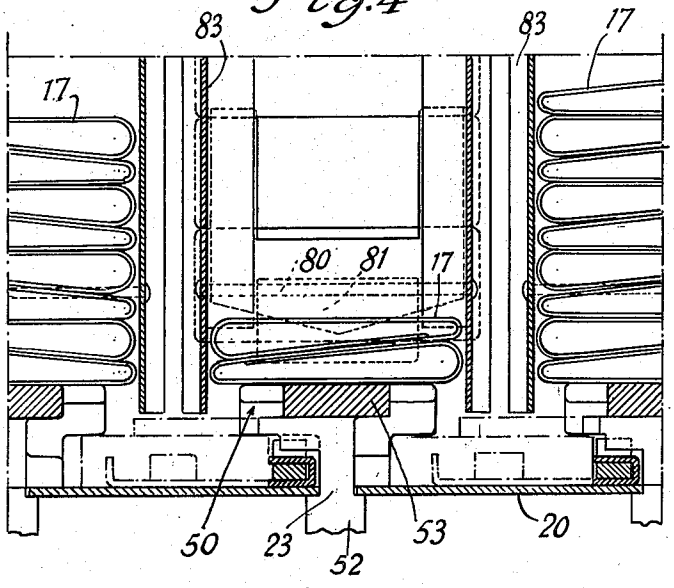
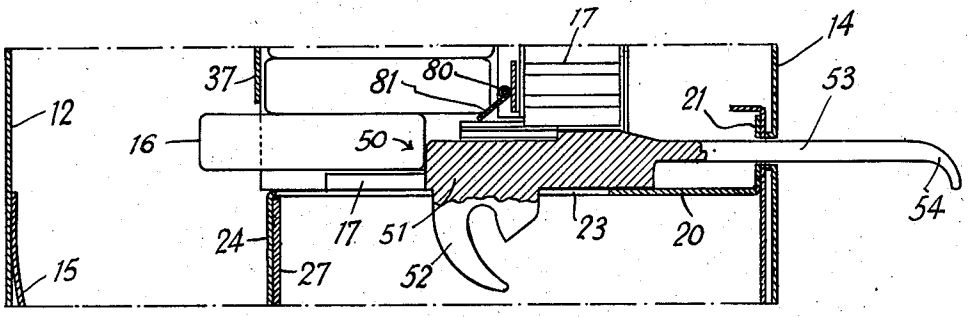


Fig. 5



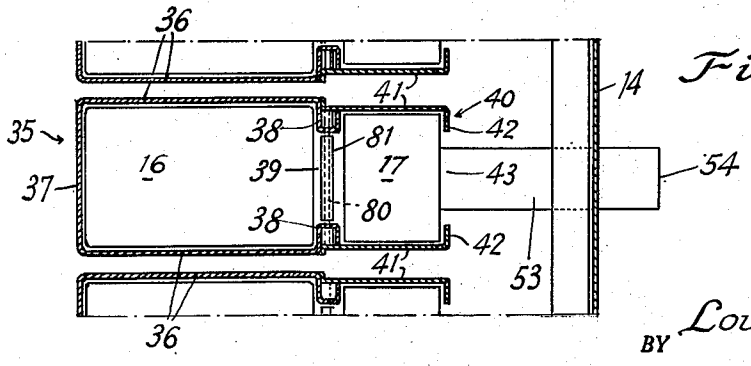


Fig. 6

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Patented Sept. 12, 1950 2,522,316

UNITED STATES PATENT OFFICE

2,522,316

DISPENSING MACHINE

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Application May 16, 1946, Serial No. 670,136

5 Claims. (Cl. 312—67)

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This invention relates to dispensing machines. It is particularly directed to a device for dispensing a main article and also an auxiliary article each time a main article is dispensed.

In machines for vending packages of cigarettes there is usually provided means for dispensing a packet of matches with each cigarette package dispensed. In prior machines, the chutes or chambers containing the packets of matches were usually placed either behind or at one side of the cigarette chambers. Difficulty has been experienced in refilling or restocking such machines with packets of matches. It is therefore an object of the present invention to provide a dispensing machine of the character described including chambers for packets of matches located in front of the chambers for the columns of cigarette packages.

It is a further object of this invention to provide in a machine of the character described, a dispensing pull bar beneath the column of cigarettes which when pulled back and released, will push the bottommost package of cigarettes rearwardly to permit it to drop down to a dispensing chamber, means being further provided to eject a packet of matches from a match chamber disposed in front of the chamber for the cigarette packages, each time the dispensing bar is pulled and released.

Still a further object of this invention is to provide in a dispensing machine of the character described, a vertical chamber to receive a column of cigarette packages, a vertical chamber in front of the first chamber and containing a column of packets of matches, a bar slidably mounted beneath said chamber, the construction being such that when the bar is pulled, the bottommost packet of matches is engaged by a shoulder on said bar, and the bottommost package of cigarettes drops behind the bar, and when the bar is released it is moved rearwardly by a spring to push out the dropped package of cigarettes and to move the packet of matches engaged by the shoulder on the bar beneath the cigarette package column, so that the next time the bar is pulled both the package of cigarettes and the packet of matches beneath the column of cigarette packages will drop behind the bar, to be ejected when the bar is released.

Still a further object of this invention is to provide a strong, rugged and durable dispensing machine construction of the character described which shall be relatively inexpensive to manufacture, easy to operate, and yet practical and efficient to a high degree in use.

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Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown various possible illustrative embodiments of this invention,

Fig. 1 is an elevational cross-sectional view of a portion of a dispensing machine embodying the invention;

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1, but showing the dispensing bar pulled back;

Fig. 4 is an enlarged cross-sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a view similar to Fig. 3, but showing the position of the dispensing bar as it moves rearwardly after being pulled forwardly and released; and

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 1.

Referring now in detail to the drawing, 10 designates a dispensing machine embodying the invention. The same comprises a casing 11 having a rear wall 12, a bottom wall 13, and a front wall 14. The casing may have side walls at the sides thereof, only a portion of the casing being shown. On the bottom wall 13 is a curved guide wall 15 to guide dispensed or ejected packages of cigarettes 16 and packets of matches 17 down to a dispensing chamber 18 from which they may be removed by a purchaser. The front wall 14 is formed with an opening 19 adjacent its lower end through which the purchaser may insert his hand to remove articles from the dispensing chamber 18.

Within the casing is a horizontal wall 20. Extending upwardly from the wall 20, adjacent wall 14, is a flange 21 formed with a plurality of openings 22. Horizontal wall 20 is formed with a plurality of parallel slots 23 extending from front to rear. Extending downwardly from the rear end of horizontal wall 20 is a flange 24. Attached to wall 20 is a sheet metal member 25 forming an operating chamber 26. Member 25 has a vertical wall 27 contacting flange 24, a downwardly and forwardly inclined wall 28, and a horizontal wall 29 parallel to wall 20 and disposed therebelow.

Closing chamber 26 is a vertical wall 30 dis-

posed parallel and adjacent to the front wall 14 of the casing. Wall 30 extends up above flange 21 and is formed with openings 31 registering with the openings 22. The front wall 14 is formed with openings 32 registering with openings 31.

Mounted on the horizontal wall 20 are a plurality of vertical chutes or chambers 35 containing columns of cigarette packages 16 or other main articles to be dispensed. The chutes 35 are parallel to one another and parallel to the front wall of the casing 11. Each one is centered with respect to one of the slots 23. Each chute 35 comprises parallel side walls 36 and a rear wall 37. Extending inwardly from the forward ends of side walls 36 are flanges 38 extending toward each other. The flanges 38 are spaced from one another leaving a longitudinal slot 39 at the front of the chute 35 to facilitate restocking of said chute.

Attached to each rear chute 35 is a front chute 40 for the packets of matches 17. Each chute 40 is disposed in front of and in alignment with a rear chute and comprises side walls 41 which extend from the shoulders 38. The side walls 41 are formed with inwardly extending front flanges 42 forming a longitudinal slot therebetween to facilitate restocking the chute 40 with packets of matches.

It will be noted that the lower end of rear wall 37 terminates above bottom wall 20 by a distance somewhat greater than the thickness of the packet 16 so that a package at the bottom of the chute 35 may be pushed rearwardly out of said chute. Also the shoulders or flanges 38 terminate at their lower ends above wall 20.

Slidably mounted beneath each pair of chutes 35, 40 is a dispensing bar 50. Each dispensing bar 50 is slidably mounted on the bottom wall 20 and is centered with respect to a pair of complementary chutes 35, 40. Each bar 50 comprises a block 51 and a hook 52 extending downwardly therefrom and projecting through one of the slots 23. Extending forwardly from block 51 is a bar 53 which passes through the registering openings 22, 31, 32. The forward end of each bar 53 has a downwardly extending hook or handle 54 which may be grasped by a purchaser for pulling the bar forwardly.

Any suitable means, not shown, may be provided to prevent pulling of a bar unless proper coins are inserted into the machine.

Means is provided furthermore to return the bar or retract the same rearwardly, after the bar has been pulled forwardly and released. To this end, there is rotatably mounted within the operating chamber 26, a horizontal bar 60. Attached to the ends of the bar 60 are arms 61 interconnected by a horizontal rod 62. The hooks 52 engage bar 62. When any bar 50 is pulled forwardly, its hook 52 will swing bar 62. A torsion spring 66 disposed about rod 60 is provided with an arm engaging bar 62 to swing said bar back and retract the pusher bar 50.

The block 51 is provided with a shallow recess 70 forming a shoulder 71 transverse of the block. When the bar 50 is pulled forwardly, the lowermost packet 17 of matches drops onto the recess 70 and is engaged by shoulder 71. Such position is shown in Fig. 3 of the drawing. At the same time, the column of cigarettes drops so that the lowermost package drops behind the bar. When the pusher bar 50 is released, it is retracted and pushes out a package of cigarettes at the same time bringing a packet of matches beneath the remaining column of cigarettes. Such

position is shown in Fig. 1. The next time the bar 50 is pulled forwardly, the packet of matches resting thereon drops onto wall 20 and the lowermost package of cigarettes drops on top of said packet of matches. When the pull bar 50 is thereafter released, it pushes out both the package of cigarettes and packet of matches and brings another packet of matches beneath the column of cigarettes. Thus a packet of matches is dispensed with each package of cigarettes. Obviously, the packet of matches and the package of cigarettes are used for illustrative purposes, since any main article and auxiliary article may be substituted.

Hinged between the flanges 38 and above the lower end of said flanges, as on a horizontal pivot pin 80 carried by said flanges, is a gate 81. The gate 81 is swung in a clockwise direction when the bar 50 is retracted as shown in Fig. 5 of the drawing. When the bar is pulled, the gate 81 prevents the packet of matches from being pulled back into the match chute.

Each bar 50 may be provided at one side thereof with a straight ratchet 80*a*. Pivoted alongside each chute 40, as at 81*a*, is a spring pressed pawl 82 adapted to engage said ratchet. The pawl and ratchet insure against pushing the bar rearwardly unless it is fully retracted to a point where the pawl 82 is by-passed by the ratchet.

Any number of pairs of chutes 35, 40 may be provided in the machine.

In front of and between each pair of chutes 40 is a vertical cylindrical container 83 adapted to contain pennies.

Means, not shown in this application, but described fully in my co-pending application filed on the 16th day of May, 1946, which matured as Patent No. 2,457,187, December 28, 1948, is provided to dispense one or more pennies in change each time articles are dispensed from the chute 35.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

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

1. A dispensing machine for simultaneously dispensing a main article and an auxiliary article, comprising a casing, a storage chute therein for the main articles, a second storage chute therein for the auxiliary articles, means providing a discharge passageway beneath said chutes, and an ejector reciprocably mounted in said passageway and having a pushing surface arranged to engage the lowermost of the main articles in said first-mentioned chute and to discharge the same through said passageway upon a dispensing stroke of the ejector, said ejector having a shoulder thereon arranged to engage the lowermost of the auxiliary articles in said second-mentioned chute and to carry the same into the first-mentioned chute beneath and in contact with the main article next above the one being dispensed from such chute upon such dispensing stroke of the ejector, said shoulder being movable away from said auxiliary article upon the return

stroke of said ejector, thus leaving such auxiliary article in said first-mentioned chute beneath the then lowermost main article therein, whereby upon the next dispensing stroke of the ejector both said auxiliary article and said lowermost main article will be discharged from the machine by contact of said pushing surface on such ejector.

2. A dispensing machine for simultaneously dispensing a main article and an auxiliary article, comprising a casing, a storage chute therein for the main articles, a second storage chute therein for the auxiliary articles, means providing a discharge passageway beneath said chutes, an ejector reciprocably mounted in said passageway and having a pushing surface arranged to engage the lowermost of the main articles in said first-mentioned chute and to discharge the same through said passageway upon a dispensing stroke of the ejector, said ejector having a shoulder thereon arranged to engage the lowermost of the auxiliary articles in said second-mentioned chute and to carry the same into the first-mentioned chute beneath and in contact with the main article next above the one being dispensed from such chute upon such dispensing stroke of the ejector, said shoulder being movable away from said auxiliary article upon the return stroke of said ejector, thus leaving such auxiliary article in said first-mentioned chute beneath the then lowermost main article therein, whereby upon the next dispensing stroke of the ejector both said auxiliary article and said lowermost main article will be discharged from the machine by contact of said pushing surface on such ejector, and a device positioned and arranged to obstruct possible return movement of such auxiliary article to said second chute upon the return stroke of said ejector.

3. A dispensing machine for simultaneously dispensing a main article and an auxiliary article, comprising a casing, a storage chute therein for the main articles, a second storage chute therein for the auxiliary articles, means providing a discharge passageway beneath said chutes, an ejector reciprocably mounted in said passageway and having a pushing surface arranged to engage the lowermost of the main articles in said first-mentioned chute and to discharge the same through said passageway upon a dispensing stroke of the ejector, said ejector having a shoulder thereon arranged to engage the lowermost of the auxiliary articles in said second-mentioned chute and to carry the same into the first-mentioned chute beneath the main article next above the one being dispensed from such chute upon such dispensing stroke of the ejector, said shoulder being movable away from said auxiliary article upon the return stroke of said ejector, thus leaving such auxiliary article in said first-mentioned chute beneath the then lowermost main article therein, whereby upon the next dispensing stroke of the ejector both said auxiliary article and said lowermost main article will be discharged from the machine by contact of said pushing surface on such ejector, and a pivoted member movable into position upon the return stroke of said ejector to obstruct possible return movement of said auxiliary article to said second chute.

4. A dispensing machine for simultaneously dispensing a main article and an auxiliary article,

comprising a casing, a storage chute therein for the main articles, a second storage chute therein for the auxiliary articles positioned in front of said first chute with relation to the front side of the machine, means providing a discharge passageway beneath said chutes, and an ejector reciprocably mounted in said passageway and having a pushing surface arranged to engage the lowermost of the main articles in said first-mentioned chute and to discharge the same through said passageway upon a dispensing stroke of the ejector, said ejector having a shoulder thereon arranged to engage the lowermost of the auxiliary articles in said second-mentioned chute and to carry the same into the first-mentioned chute beneath and in contact with the main article next above the one being dispensed from such chute upon such dispensing stroke of the ejector, said shoulder being movable away from said auxiliary article upon the return stroke of said ejector, thus leaving such auxiliary article in said first-mentioned chute beneath the then lowermost main article therein, whereby upon the next dispensing stroke of the ejector both said auxiliary article and said lowermost main article will be discharged from the machine by contact of said pushing surface on such ejector.

5. A dispensing machine for simultaneously dispensing a main article and an auxiliary article, comprising a casing, a storage chute therein for the main articles, a second storage chute therein for the auxiliary articles, means providing a discharge passageway beneath said chutes, an ejector reciprocably mounted in said passageway and having a pushing surface arranged to engage the lowermost of the main articles in said first-mentioned chute and to discharge the same through said passageway upon a dispensing stroke of the ejector, said ejector having a shoulder thereon arranged to engage the lowermost of the auxiliary articles in said second-mentioned chute and to carry the same into the first-mentioned chute beneath the main article next above the one being dispensed from such chute, upon said dispensing stroke of the ejector, said shoulder being movable away from said auxiliary article upon the return stroke of said ejector, thus leaving such auxiliary article in said first-mentioned chute beneath the then lowermost main article therein, whereby upon the next dispensing stroke of the ejector both said auxiliary article and said lowermost main article will be discharged from the machine by contact of said pushing surface on such ejector, said ejector being manually operable on the return stroke, and a spring-actuated lever for operating said ejector on the dispensing stroke thereof.

LOUIS STEINER.

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