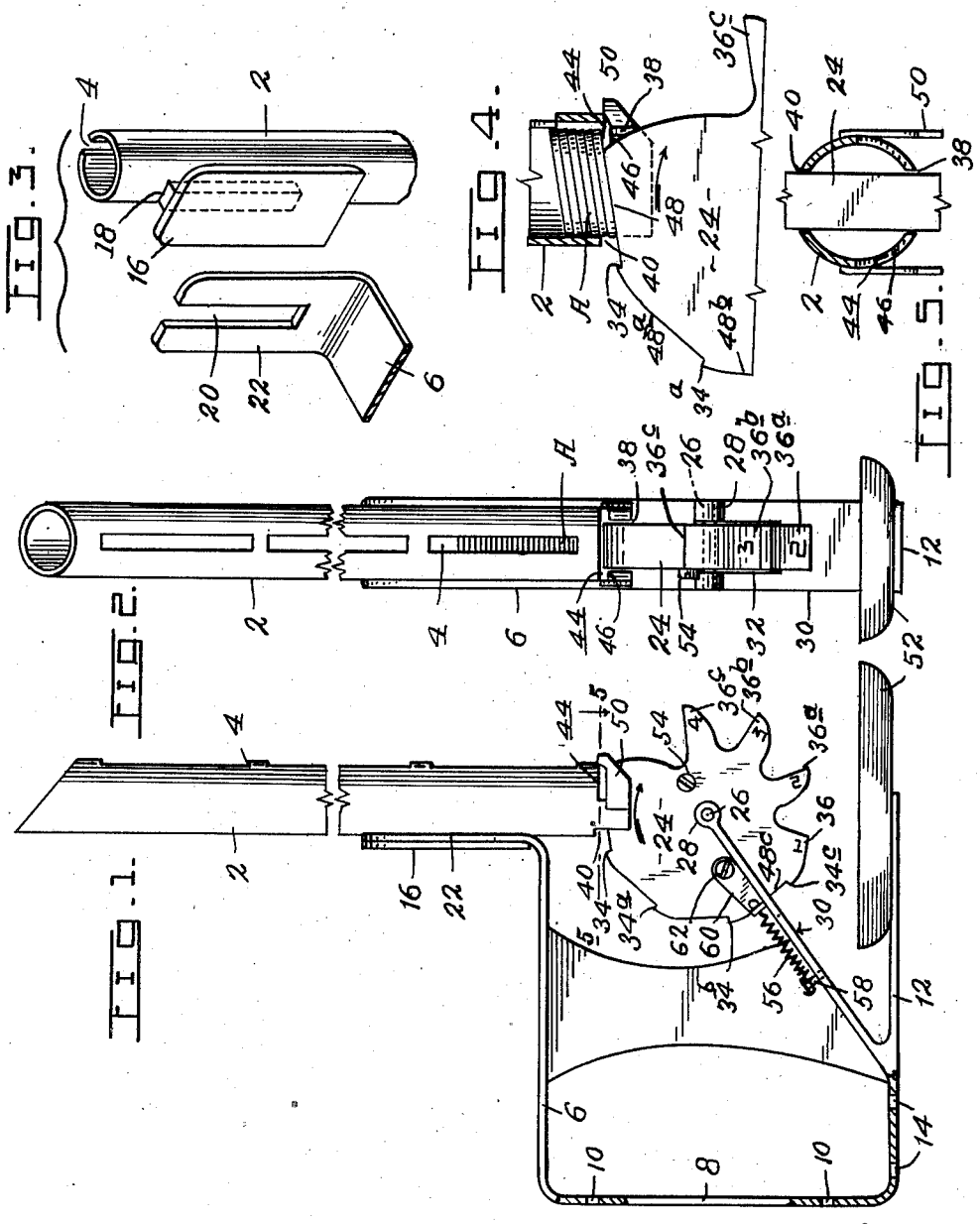
July 1, 1947. E. ARENSON 2,423,166

DISPENSING DEVICE

Filed Nov. 3, 1943



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Patented July 1, 1947 2,423,166

UNITED STATES PATENT OFFICE

2,423,166

DISPENSING DEVICE

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Application November 3, 1943, Serial No. 509,000

10 Claims. (Cl. 133—5)

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My invention relates to a coin or token dispensing device of a type that may be manually operated by conductors, cashiers and others when making change, and the general object of my invention is to provide a device of this character including a magazine for holding a supply of coins, tokens or the like and novel means for discharging them from the magazine.

An important object of the invention is the provision of a single rotatable ejector that is associated with a discharge opening in the magazine, whereby one or any predetermined number of coins, tokens or the like may be discharged at the will of the operator and at one operation of the ejector.

A further object of the invention is the provision of a magazine support and a plurality of interchangeable magazines, so that when one magazine becomes empty it may be quickly removed from the support and a filled one substituted therefor without material loss of time.

Another object is the provision of a dispensing device of simple and practical construction which may be manufactured at low cost and kept in working condition over a long period of time without requiring the attention of a mechanic.

Other objects will hereinafter appear and in order that the invention may be fully understood reference will now be had to the accompanying drawing, in which:

Fig. 1 is a side elevation of the dispensing device, with an intermediate portion of the magazine broken away.

Fig. 2 is a front elevation of the device.

Fig. 3 is a fragmentary perspective view showing means whereby the magazine is detachably connected to the supporting means.

Fig. 4 is an enlarged fragmentary side elevation of the ejector and the lower portion of the magazine, which latter is in vertical section.

Fig. 5 is an enlarged fragmentary horizontal section on line 5—5 of Fig. 1.

Referring in detail to the different parts, 2 designates the magazine, which is preferably of cylindrical form, open at each end and having a sight opening 4 whereby the approximate number of coins or tokens A in the magazine can be ascertained at a glance. The magazine may be removably mounted upon any appropriate support, shown in the present instance in the form of a bracket 6 having an upright rear portion 8 with holes 10 so that it may be readily secured to a wall or other vertical surface by suitable fastening means such, for instance, as nails or screws. The bracket 6 also has a horizontal base 12 with holes 14 so that it may be secured upon a table or other horizontal support by nails or screws, not shown.

The magazine 2 may be removably connected

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to the bracket 6 by any appropriate means. In the present instance I have shown such means comprising a plate 16 permanently fixed to the rear portion of the magazine 2 by a vertical rib 18 adapted to be slid in or out of a vertical slot 20 in the upper front portion 22 of the bracket. When the rib 18 is slid downward into the slot 20 the plate 16 overlaps the slotted portion 22 of the bracket 6 and thus reliably secures the magazine in an upright position. A number of interchangeable magazines may be provided so that when one becomes emptied it may be quickly removed from the bracket and a filled one substituted therefor without material loss of time.

Referring now more particularly to what I consider an important feature of the invention, 24 designates a rotatable ejector arranged in a vertical position at the lower end of the magazine 2, into which it projects. The ejector 24 may be supported in any appropriate manner in relation to the magazine. In the present instance I have shown the ejector mounted upon a transverse shaft 26, mounted in bearings 28 on the upper end of a member 30 extending upwardly at an angle from the horizontal base 12 of the bracket 2, the upper portion of said member having a longitudinal slot 32 through which the ejector freely projects.

The ejector 24 is of disk-like form with a body provided at its rear portion with a series of equally spaced peripheral shoulders 34, 34*a*, 34*b* and 34*c* for ejecting the coins or tokens, hereinafter referred to as articles, from the magazine 2. The shoulders may each be proportioned to discharge a plurality of articles from the magazine at each operation of the ejector 24, but in the present instance each shoulder is only of sufficient depth to discharge one article at each operation. The ejector 24 is adapted to be actuated manually through the medium of selective means which may be of any appropriate size and shape. In the present instance I have shown such means in the form of a series of radial-like arms 36, 36*a*, 36*b* and 36*c*, extending outwardly from the front portion of the body to the periphery of the ejector 24 and equal in number to the shoulders 34, 34*a*, 34*b* and 34*c*, respectively. The arms 36, 36*a*, 36*b* and 36*c* are spaced apart to leave intervening recesses as shown by Fig. 1, to receive the end of a finger of the operator's hand, to prevent it from slipping off the ejector when operating the latter. Beginning with the initial arm 36 the arms are numbered 1 to 4, inclusive, for indicating to beginners the number of articles delivered at the operation of the respective arms. The upper portion of the ejector 24 projects through apertures 38 and 40 in the lower front and rear portions, respectively, of the magazine 2 and supports the stack of articles A, as shown by Fig. 4. The articles are

ejected one by one from the magazine through a circumferential horizontal slot 44 which communicates with the front aperture 38 and extends rearwardly to about half way through the cylindrical wall of the magazine, as shown by Figs. 1 and 5.

As shown by Figs. 1 and 4, the face of the ejector has seats 48, 48a, 48b and 48c associated with the respective shoulders 34, 34a, 34b and 34c. Each seat extends at an angle from the apex of one shoulder to the base of the following shoulder and when the ejector is in normal position as shown by Fig. 4, the initial seat 48 inclines upward and forward and tilts the articles so that the front portion of the edge of the lowermost one will be too high to enter the slot 44 until the ejector has advanced clockwise far enough to carry the initial shoulder 34 into engagement with the rear of the article. By that time the seat 48 has moved to a horizontal position and carried the lowermost article into registry with the slot 44 through which the article is then ejected by the initial shoulder 34. As the lowermost article is advanced by the shoulder 34, it is supported and slides upon the lower opposed horizontal edges 46 of the slot 44, until it becomes unbalanced and either falls into the hand of the operator or into a tray 52 located beneath the ejector 24 and fixed to the forward portion 12 of the bracket 6. By supporting the lowermost article on the lower edges 46 of the slot, the article is prevented from moving downward out of line with the slot to a point from which it could not be ejected. The seats 48a, 48b and 48c, when passing through the apertures 38 and 40, act upon each successive lowermost article in the same manner as the initial seat 48. As the lowermost article is being ejected through the slot 44 it is prevented from moving laterally and falling from either side of the face of the ejector 24, through the medium of a pair of guides 50 fixed to diametrically opposed sides of the magazine adjacent to the slot 44, Figs. 1 and 5.

The ejector 24 is arranged to turn clockwise when manually operated and is provided with a stop 54 adapted to contact the bracket arm 30, when turned to the limit of its clockwise movement. On being released by the operator, the ejector is automatically turned backward to normal position by means, such, for example, as a retractile spring 56 attached at one end to a pin 58, fixed to the inclined member 30, and at its other end to a link 60 loosely connected to the ejector by a pivot 62. The link 60 also acts as a stop by contacting the member 30 when the ejector 24 is restored to normal position.

On referring to Fig. 1, it will be noted that the inclined member 30 extends downwardly and rearwardly of the ejector 24, and thus permits the cupped hand of the operator, when operating the ejector to pass beneath the latter and catch the ejected articles so that they may be handed directly to the customers without loss of time. The inclined member 30 also acts as a common stop for the hand when turning the ejector through different degrees to effect the discharge of one or more articles.

Briefly the operation is as follows: If but one article is desired the operator cups one hand, places the end of the middle finger against the initial arm 36 and pushes forward until checked by the forward end of the finger coming into contact with the member 30. The foregoing movement turns the ejector one step and causes the initial shoulder 34 to eject the lowermost

article from the magazine 2. If, two, three or four articles are to be successively dispensed in a single operation of the ejector 24, the finger tip is pressed against the arm 36a, 36b or 36c, respectively. In each instance the forward movement of the finger is checked by contacting the member 30, except when the arm 36c is operated, whereupon the ejector, after successively delivering four articles, is checked by the stop 54 contacting the member 30. When one or more articles are thus ejected from the magazine 2, they fall into the cupped hand of the operator so that they may be handed to the customer without the delay of picking them from the tray or counter. If preferred the articles may be delivered to the tray 52, instead of the hand of the operator, in which event the ejector 24 is actuated by the operator approaching the desired arm of the ejector with the index finger, from one side instead of the front of the ejector.

From the foregoing description, taken in connection with the drawing it is apparent that I have provided a device that is well adapted for the purpose intended and while I have disclosed a preferred form of the device, I reserve all rights to such changes and modifications as properly fall within the scope of the invention as claimed.

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

1. In a dispensing device, a magazine adapted to hold a plurality of articles to be dispensed and provided at its lower end with an outlet, a vertically disposed rotatable ejector having its upper portion associated with the outlet to dispense articles therefrom, said ejector having arms extending inwardly from the periphery of the ejector and spaced apart at their outer portions to leave intervening recesses any of which is adapted to receive the finger of a cupped hand of the operator to actuate the ejector, a support for the ejector including an inclined member extending downwardly and rearwardly from the ejector to permit the cupped hand to pass beneath said ejector and inclined member and thus receive the ejected articles, said inclined member also constituting a stop for the finger, spring means for restoring the ejector to normal position, means for connecting one end of the spring means to the ejector, and means for connecting the other end of the spring means to the ejector support.

2. In a dispensing device, a rotatable ejector comprising a body portion, a series of peripheral shoulders projecting from said body portion, and a series of manually selective arms extending inwardly from the periphery of the ejector and connected to the body portion; in combination with means adapted to deposit articles upon the periphery of the ejector in advance of the respective shoulders, and supporting means for the ejector and the article depositing means.

3. In a dispensing device, a rotatable ejector comprising a body portion, a series of peripheral shoulders projecting from said body portion, and a series of arms extending inwardly from the periphery of the ejector and connected to the body portion, said arms being spaced apart to leave intervening recesses into any of which a finger of the operator may be inserted; in combination with means adapted to deposit articles upon the periphery of the ejector in advance of the respective shoulders, and supporting means for the ejector and the article depositing means.

4. In a dispensing device, a vertical magazine for articles to be dispensed, said magazine having

vertical front and rear apertures extending upwardly from its lower end and a horizontal circumferential discharge slot for said articles extending rearwardly from the front aperture with its lower edge aligned with the top of the latter, supporting means, a vertically disposed rotatable ejector mounted on the supporting means and projecting into the lower portion of the magazine and the apertures, said ejector having an upper peripheral seat extending into the magazine and forming the major portion of a chord of the ejector, said seat being inclined to support the articles in the magazine in a tilted position with the front margin of the lowermost article extending above the front part of the slot when the ejector is in its initial position, a peripheral shoulder on the ejector perpendicular to the rear end of the seat for ejecting the lowermost article as the latter moves downward to the plane of the slot when the ejector is rotated to effect delivery of the lowermost article, and means on the ejector whereby the latter can be manually operated.

5. In a dispensing device, a magazine having a discharge opening in its lower portion through which articles may be dispensed, a rotatable ejector projecting into said discharge opening and provided with a plurality of peripheral shoulders, each adapted to eject an article from the magazine, said ejector also embodying a plurality of selective means spaced apart to provide intervening recesses for reception of a finger of the operator whereby the ejector may be rotated one or more steps to effect the discharge of one or more articles by the shoulders at each operation.

6. In a dispensing device, a magazine having a discharge opening in its lower portion through which articles may be dispensed, a rotatable ejector projecting into said discharge opening and provided with a plurality of peripheral shoulders, each adapted to eject an article from the magazine, said ejector also embodying selective means comprising a plurality of radial arms spaced apart to provide intervening recesses to receive a finger of the operator whereby the ejector may be rotated through one or more degrees to effect the discharge of one or more articles by the shoulders at each operation.

7. In a dispensing device, a magazine having a discharge opening in its lower portion through which articles may be dispensed, a vertically-disposed ejector associated with said magazine and provided with a plurality of peripheral shoulders adapted to eject articles from the magazine through said discharge opening, said ejector having a series of peripheral recesses therein equal in number to the peripheral shoulders and spaced apart to admit one or more fingers of the operator whereby the ejector may be manually operated to eject one or more articles at one operation, and supporting means for the ejector.

8. In a dispensing device, a magazine having a discharge opening in its lower portion through which articles may be dispensed, a vertically-disposed ejector associated with said magazine and provided with a plurality of peripheral shoulders adapted to eject articles from the magazine through said discharge opening, said ejector having a series of peripheral recesses therein equal in number to the peripheral shoulders and spaced apart to admit one or more fingers of the operator whereby the ejector may be manually operated to eject one or more articles at one operation, supporting means for the ejector, means on the ejector adapted to contact the supporting means and thereby check movements of the ejector, and means for restoring the ejector to normal position.

9. In a dispensing device, a magazine for containing articles to be dispensed and provided with a lower open end, front and rear apertures extending upwardly from said open end and a horizontal circumferential discharge slot extending rearwardly from the upper end of the front aperture to approximately midway of the magazine, a vertically disposed rotatable ejector provided at its upper portion with a peripheral shoulder and seat which latter inclines upwardly from the base of the shoulder into the lower portion of the magazine through the rear aperture when the ejector is in normal position, said inclined seat being adapted to support the articles in a tilted position with the front porton of the lowermost article disposed above the front portion of the discharge slot and its rear portion spaced in advance of the shoulder, said seat being adapted to pass downward through a horizontal plane as the ejector is rotated and deposit the lowermost article upon the lower edge of the discharge slot as the peripheral shoulder engages and advances said lowermost article until the latter is ejected from the magazine.

10. In a dispensing device, a magazine for containing articles to be dispensed and provided with a lower open end, front and rear apertures extending upwardly from said open end and a horizontal circumferential discharge slot extending rearwardly from the upper end of the front aperture to approximately midway of the magazine, a vertically disposed rotatable ejector provided with a series of spaced peripheral shoulders and seats, each of which latter extends at an angle from the base of one shoulder to the apex of the preceeding shoulder, the initial seat, when the ejector is at rest, inclining upwardly into the magazine to support the articles in a tilted position with the front portion of the lowermost article disposed above the front portion of the discharge slot and its rear portion spaced in advance of the following shoulder, each seat being adapted to tilt the articles as stated and pass downward as the ejector is operated and deposit an article upon the lower edge of the discharge slot as the following shoulder engages and advances the article to eject it from said discharge slot, and means for restoring the ejector to normal position.

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