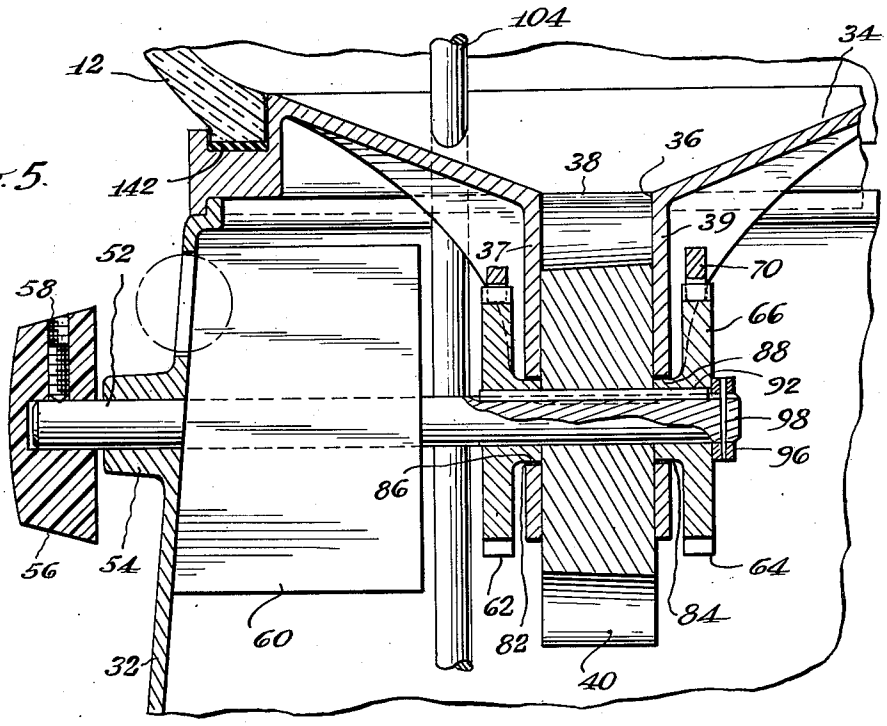
Oct. 21, 1952 A. OBODZINSKI 2,614,673

MERCHANDISE VENDING MACHINE

Filed June 9, 1949 4 Sheets-Sheet 1

Fig. 5.



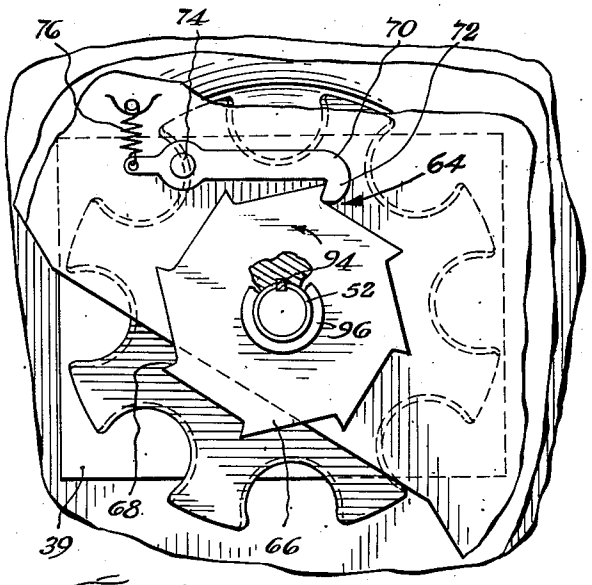
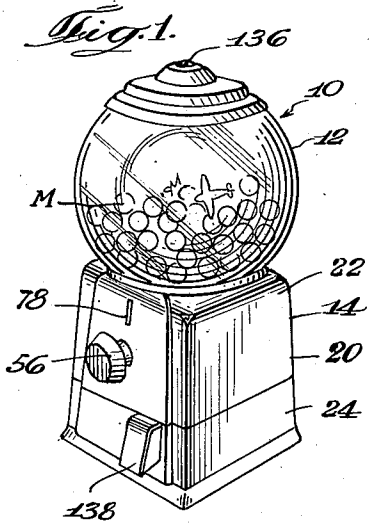


Fig. 6.

Fig. 1.



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MERCHANDISE VENDING MACHINE

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Fig. 2.

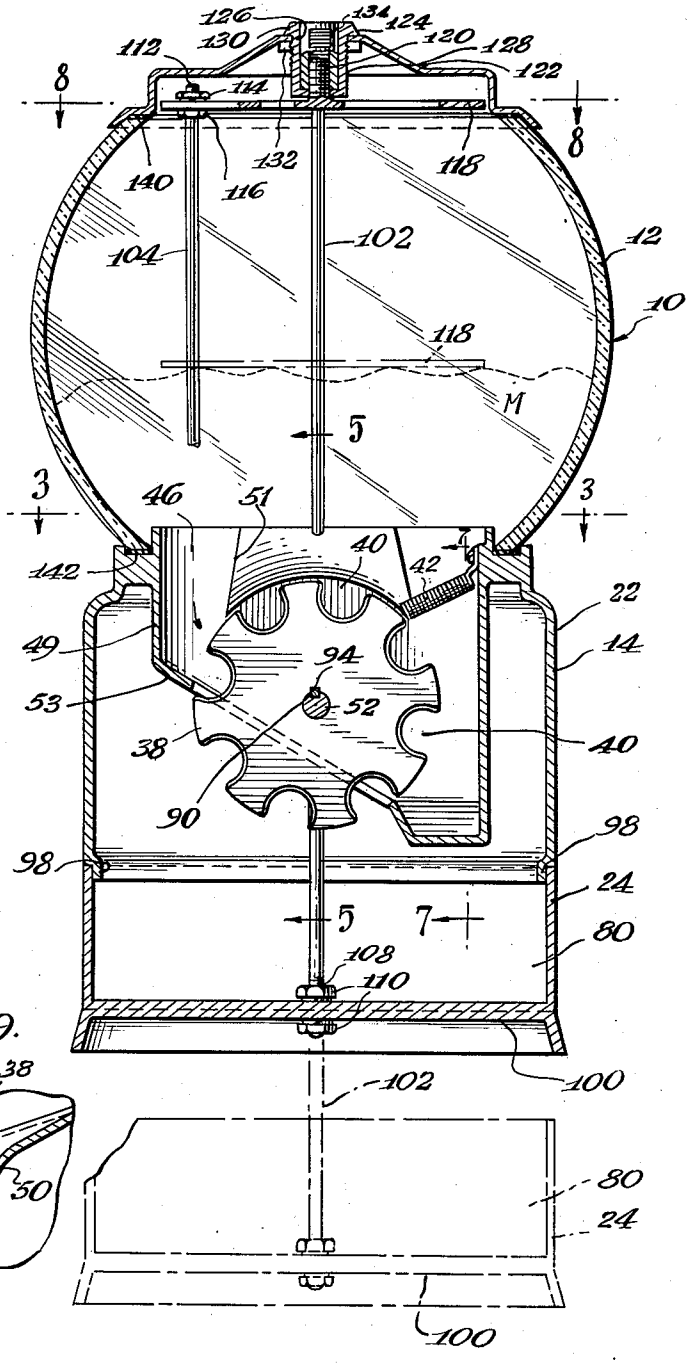
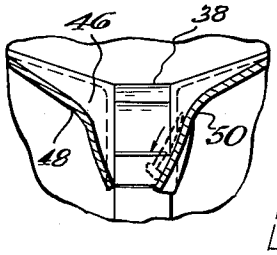


Fig. 9.



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MERCHANDISE VENDING MACHINE

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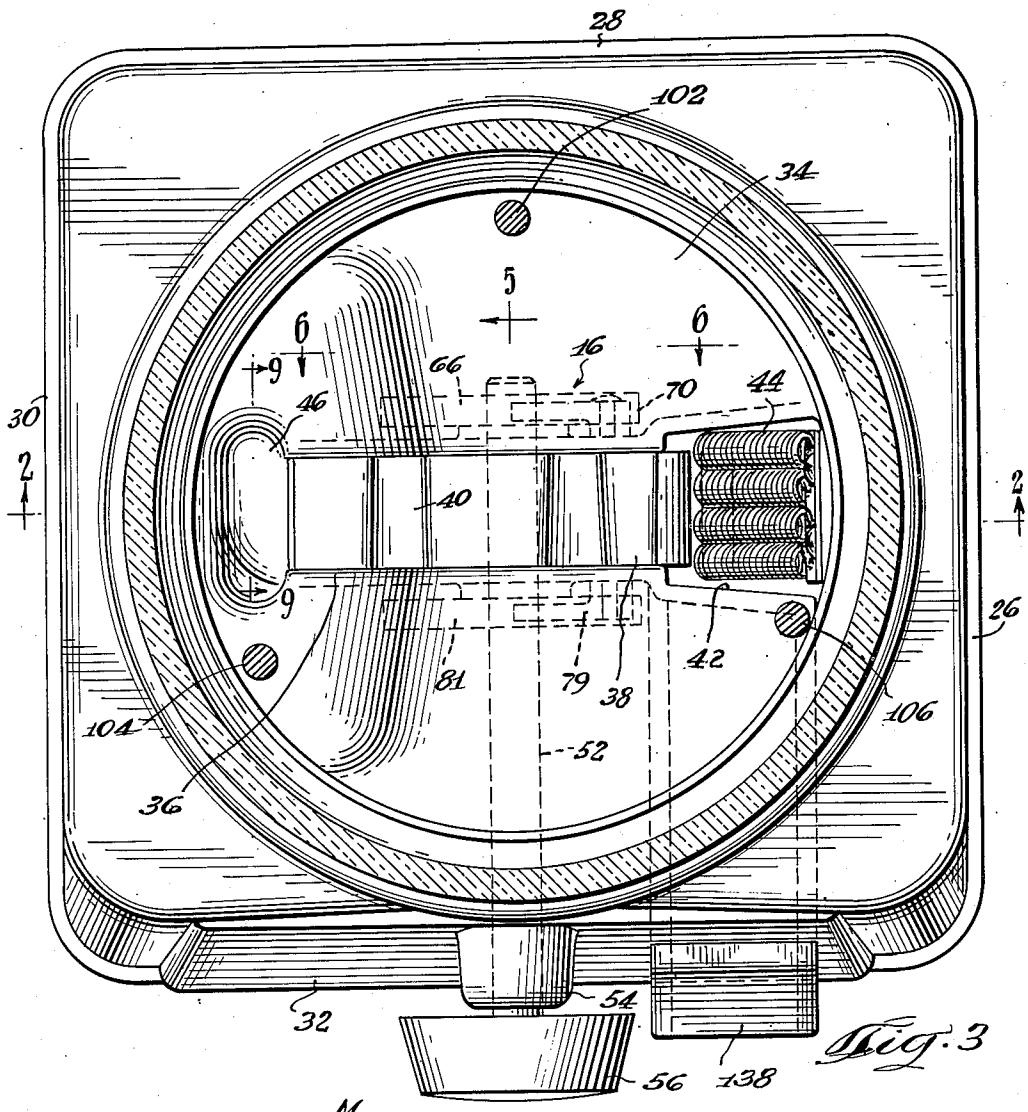

Fig. 3

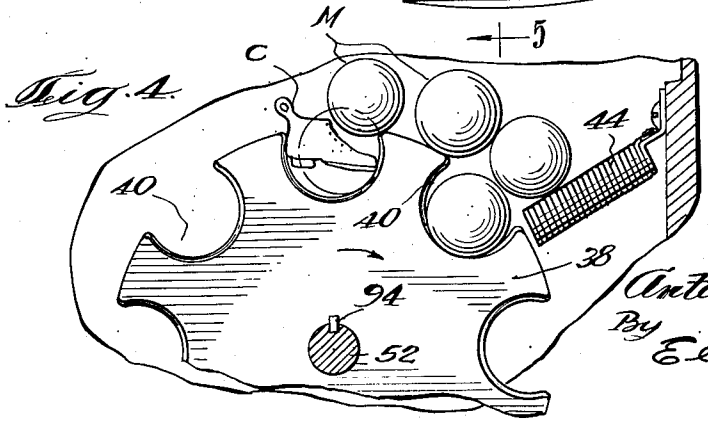

Fig. 4

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MERCHANDISE VENDING MACHINE

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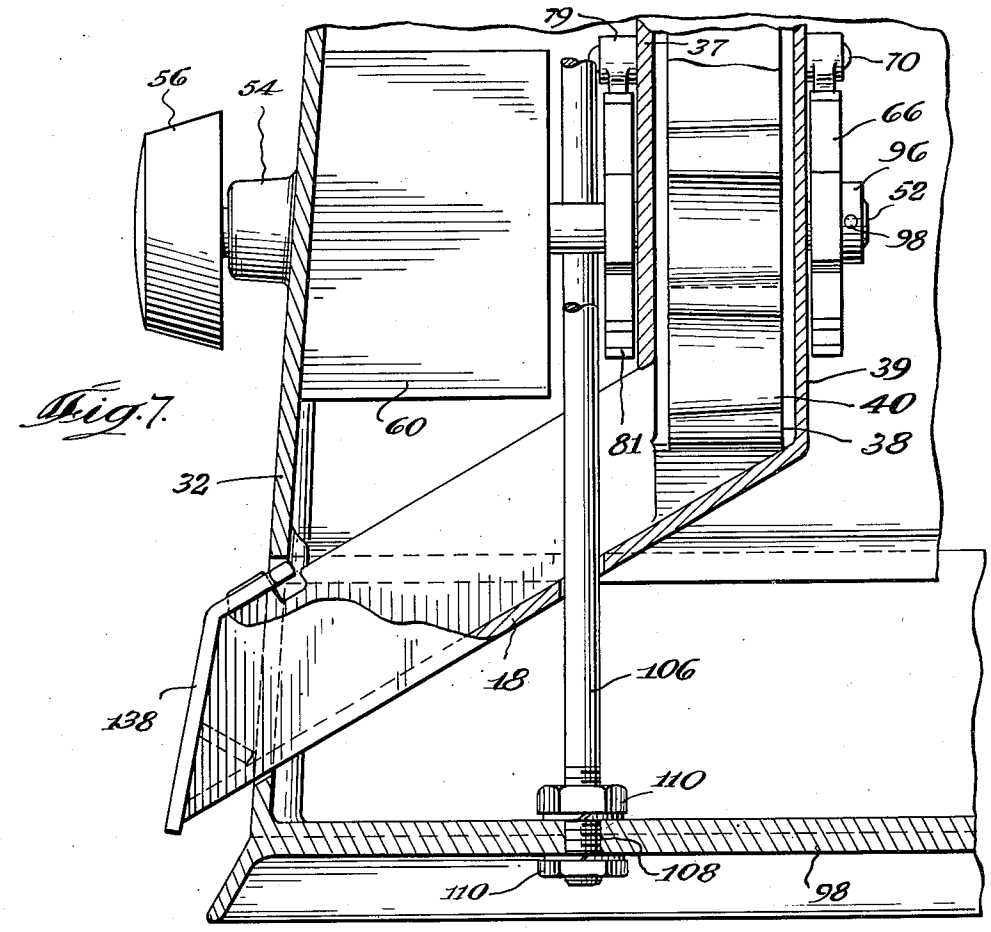

Fig. 7.

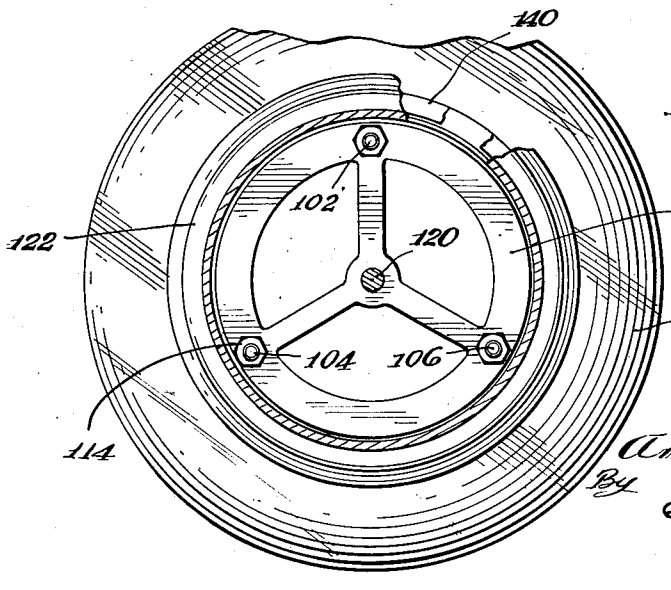

Fig. 8.

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UNITED STATES PATENT OFFICE

2,614,673

MERCHANDISE VENDING MACHINE

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Application June 9, 1949, Serial No. 98,109

2 Claims. (Cl. 194—2)

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This invention relates to merchandise vending machines, and more particularly to improvements in coin controlled merchandise vending machines of the type adapted to dispense a plurality of varied types of merchandise simultaneously. Specifically, this invention is directed to improvements in the measuring and dispensing mechanism of the machine.

Heretofore vending machines of the type adapted to dispense ball-shaped confections and the like have been generally constructed with a measuring and dispensing mechanism comprising a pair of plates horizontally positioned below the merchandise, and adapted by the movement of one plate over the other to dispense a measured amount of merchandise through a chute.

Since the dispensing of the merchandise depended upon the admission of the same within an opening in the top plate and the alignment of this opening with a similar opening in the bottom plate, merchandise was often crushed or otherwise injured by the plates during the dispensing thereof. Moreover, all of these dispensers were characterized by a common fault in that they frequently failed to dispense merchandise despite the fact that the designated coin was properly inserted and the actuating mechanism correctly manipulated. They were further characterized by a rather complicated mechanism comprising numerous parts.

It is, therefore, a primary object of this invention to provide a merchandise vending machine which will overcome all of the disadvantages set forth above.

Another object is to afford a dispensing mechanism in a merchandise vending machine which will minimize the frequency of failure to dispense merchandise. An object relating thereto is to so design the dispensing mechanism that the mathematical probability of failure to dispense is reduced by at least one-third.

A further object is to provide a dispensing machine with a simplified dispensing mechanism comprising a reduced number of component parts.

Still another object is to afford a dispensing mechanism for use in a merchandising machine which will eliminate the possibility of injury to the merchandise during the dispensing thereof.

In recent years the merchandising of ball gum confections and the like through coin controlled dispensing machines has been complicated by the addition of premiums, such as small charms, which are dispensed along with the merchandise. These charms are often so shaped that they are likely to be drawn into the narrow space between

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the dispensing plates of the old machines. Thus, they prevent the actuation of the machine with the subsequent failure of dispensing. Furthermore, if force is exerted it can, and often does, result in injury to the machine mechanism.

It is, therefore, another important object of this invention to provide a merchandise vending machine which will overcome this aforementioned objection. An object relating thereto is to provide a dispensing mechanism which entirely eliminates the use of a plurality of cooperating rotating dispensing plates.

Still a further object is to provide a merchandising dispensing machine, the actuation of which requires considerably less work than in the machines heretofore used. An object relating thereto is to so construct the machine that instead of requiring a full 360° rotation of the actuating knob, a slightly more than 180° rotation will actuate the dispenser. This machine thus extends the use thereof to children of younger age groups.

Yet another object is to provide a merchandise dispensing machine which will eliminate expensive and complicated transmission mechanism by affording a direct drive.

Yet a further object is to provide a universal coin controlled bulk merchandise vending machine which will dispense a variety of ball sizes including all standard sizes of gum balls in addition to other forms of merchandise such as nuts and confections, and will simultaneously dispense premium items such as charms.

And yet a further object is to provide a merchandise vending machine so constructed that the replacement of parts therein may be readily accomplished with a minimum amount of work and skill.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and a combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which, when considered in connection with the following descrip-

tion, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

Fig. 1 is a perspective view of a coin controlled merchandise vending machine embodying the principles of the present invention;

Fig. 2 is a sectional view taken generally on line 2—2 in Fig. 3 showing in some detail the novel dispensing mechanism in its normal position before actuation thereof, and showing in dotted outline the open position of the cash box;

Fig. 3 is an enlarged sectional view taken on the plane of line 3—3 in Fig. 2, and viewed in the direction indicated;

Fig. 4 is an enlarged fragmentary detailed view in which the dispensing mechanism is being actuated;

Fig. 5 is an enlarged fragmentary sectional view taken on the plane of line 5—5 in Fig. 2 of the drawings, viewed in the direction indicated, and with a portion broken away to show a certain detail of construction;

Fig. 6 is a fragmenary detail view taken on the plane of line 6—6 in Fig. 3, and viewed in the direction indicated;

Fig. 7 is another fragmentary sectional view taken on the plane of line 7—7 in Fig. 2, viewed in the direction indicated, and with certain portions broken away to show details of construction;

Fig. 8 is a fragmentary partially sectional view taken on the plane of line 8—8 in Fig. 2, viewed in the direction indicated, and with a portion broken away to show a certain detail of construction; and

Fig. 9 is a fragmentary sectional view taken on the plane of line 9—9 in Fig. 3, and viewed in the direction indicated.

Referring now to the drawings, reference numeral 10 indicates generally a coin controlled merchandise vending machine comprising a merchandise storage member 12, here shown in the form of a transparent glass globe, mounted on a pedestal 14 in which is mounted a dispensing mechanism generally indicated by the reference numeral 16 which is positioned and adapted to receive and dispense the merchandise M contained in the storage globe 12 through a chute 18.

The pedestal 14 comprises a main casting or housing 20 which may be of generally recangular shape, and constructed in two cooperating sections 22 and 24. The upper section 22 comprises generally vertical walls 26, 28 and 30 with a slightly inclined front wall 32 and with a top closure member 34. This closure member 34 forms an important part of the dispensing mechanism, and further comprises the bottom closure for the merchandise storage globe 12, the merchandise resting directly thereon. This closure member 34 is generally inclined at an angle of approximately 20° from its periphery towards a central opening 36 defined by a pair of depending, parallel, vertical walls 37 and 39 integrally formed with the top closure member, and terminating in chute 18.

In this central opening 36 is mounted a measuring and dispensing wheel 38 having a plurality of measuring and dispensing cylindrically shaped slots 40 formed transversely in the peripheral portion of the wheel 38. It is these slots 40 that receive and measure the merchandise M as the wheel 38 is rotated therebeneath. A resilient measuring device 42 having a plurality of coiled brushes such as 44 is positioned to prevent the dispensing of any merchandise in excess of that contained with in the slot 40 into the chute 18. This is best illustrated in Fig. 4 of the drawings.

Although the top closure member 34 is generally inclined towards the center, at least a portion thereof is depressed at one end towards a filling cavity 46 integrally formed therein. The function of this cavity is to permit the merchandise to drop therein so that when the first loading slot 40 of the wheel 38 comes in contact with the merchandise it should ordinarily drop within the slot. However, if for some reason (such as arching of two or more articles over the opening) merchandise is prevented from entering therein, additional opportunities for filling the cavity is afforded as the wheel is rotated. It will be noted in Fig. 2 of the drawings that at least three slots are presented for filling beneath the merchandise M at one and the same time. Hence, each slot is rotated through three different positions beneath the merchandise so that at least three opportunities for filling the same are afforded before the contents of the slot reaches the dispensing position.

This depression 46 is formed with walls such as 48, 49, 50 and 51, and is closed at the bottom by an integrally formed inclined floor 53. The slope of at least a portion of the wall 50 is nonsymmetrical with that of wall 48 to provide a depression of a shape which will prevent long, thin and substantially flat charms from being lodged therein, and thus barring the entrance to the slots 40. Such a charm is illustrated in Fig. 9 of the drawings.

The novel merchandise wheel 38 and its assembling structure forms an important part of this invention. Thus, the wheel 38 is mounted near the inner end of a shaft 52 which extends through a boss 54 integrally formed with the outer wall 32 of the pedestal. To the outer protruding end of this shaft 52 an actuating knob such as 56 may be mounted and retained by a set screw 58. The actuation of the wheel 38 by means of shaft 52 may be controlled by any conventional coin mechanism such as 60, the details of construction of which need not here be illustrated.

The rotation of the wheel 38 is in turn limited by a novel mechanism also mounted on shaft 52 and controlled by the actuating knob 56 and coin mechanism 60. This mechanism comprises a pair of ratchet and pawl assemblies 62 and 64 mounted one on each side of the wheel 38. In Fig. 6 the rear ratchet and pawl assembly 64 is illustrated, and comprises a ratchet 66 having eight teeth such as 68 (one for each of the merchandise slots 40) which cooperate with a pawl 70 having a hook 72 at one end. The pawl is pivotally mounted as at 74 and is spring urged downwardly by coil springs 76 affixed at the other end. This pawl 70 is normally urged downwardly so that the hook 72 engages a tooth 68 of the ratchet 66 to prevent the rotation thereof. Since the ratchet is keyed in with the wheel 38, in a manner which will be later described in detail, rotation of the ratchet 66 also controls the rotation of the wheel 38. To permit rotation of the ratchet 66 and wheel 38 for dispensing merchandise, the coin mechanism 60 is associated with the pawl 70 in such a way that the coin, during its passage from the slot 78 to a coin box 80, dis-

engages the pawl 70 from the ratchet 66, and permits its rotation from one tooth 68 to the next such tooth. (This is fully disclosed in my copending application, Serial No. 135,354, filed December 28, 1949.)

The other ratchet and pawl 62 duplicates the mechanism above described, and comprises a pawl 79 and a ratchet wheel 81. The teeth of this ratchet are reversed in direction to that of ratchet 66 to prevent rotation in the opposite direction. The pawl 79 of this ratchet 81 is not affected by the coin so that it can rotate only in one direction.

The entire rotating mechanisms 38, 81 and 66 are removably mounted on the shaft 52 in a novel manner to insure cooperation therebetween and to permit ready removal and replacement of any component part. Thus, it will be noted upon examination of Fig. 5 of the drawings that the shaft 52 is journaled through the wall 32, the coin mechanism 60 and through the rotary mechanisms 81, 38 and 66. The depending walls 37 and 39 are formed with aligned openings 82 and 84. The ratchet wheels 62 and 66 are formed with bosses 86 and 88 which may be rotatably mounted within the openings 82 and 84. The shaft 52 is formed with a key-way which cooperates with a similar key-way 92 formed in each of the rotatable members 81, 38 and 66 for the purpose of inserting therein a key 94. This then keys all three rotatable members to the shaft 52, but yet permits the actuation of the wheel 38 by the knob 56. The entire above described mechanism is retained on the shaft by means of a collar 96 which may be mounted on the shaft 52 and retained thereon by a pin 98 which is passed through the collar and the shaft 52.

To assemble the globe 12 with the pedestal 14 in such a manner that the globe may readily be removed from the pedestal to permit replenishing of the stock of merchandise therein and also to lock the globe to the pedestal, a novel but effective structure is provided. This same structure also locks the cash box 80, and the removal of the globe from the pedestal simultaneously opens the cash box. As was previously described, the pedestal 14 comprises two cooperating members 22 and 24, which may be assembled as by an offset flange 98 formed at the bottom of walls 26, 28, 30 and 32. The lower member 24 serves as the cash box 80 and for this purpose it is provided with a bottom closure member 100. Heretofore, in the old machines, the cash box, pedestal and merchandise globe were assembled and secured together by means of a central vertical rod. However, in the present invention a central assembling rod cannot be utilized because of the radical change in the design of the dispensing mechanism 16. Moreover, the assembling mechanisms heretofore used were objectionable in that they permitted complete separation of the coin box from the pedestal of the machine. This often resulted in the coin box dropping with resultant scattering and loss of the coins.

To overcome the above mentioned objections, a novel securing mechanism has been designed which comprises a set of three vertical rods 102, 104 and 106 equally spaced one from the other about, but not through, the central dispensing mechanism 16. The lower portions of each of these rods are screw threaded as at 108, threaded through bottom member 100 and secured as by nuts 110. The upper ends of these rods 102, 104 and 106 may also be screw threaded as at 112 and secured as by pairs of cooperating nuts 114 and 116 to a spider 118. This spider is formed with an upstanding, screw threaded central bolt 120 which is adapted to secure the spider to a merchandise globe cover 122.

This securing means comprises a lock assembly 124 adapted for threading through a central opening 126 in the cover 122. This lock comprises an outer cylinder 128 flanged as at 130 and provided with a cooperating nut 132 for the purpose of securing the lock 124 to the cover 122. Within the cylinder 128 an internally threaded hollow barrel 134 is provided. This barrel 134 is designed to receive therein the screw threaded spider bolt 120 for the purpose of thus securing the entire assembly. The barrel 134 may further be provided with a key hole 136 into which may be inserted a key (not shown) to permit the unscrewing of the barrel 134 from the spider bolt 120. When this is unscrewed the spider 118 may be lowered until it rests upon the merchandise M (as shown in Fig. 2 of the drawings). This then also lowers the rods 102, 104 and 106 with the simultaneous lowering of the cash box 80 to the position, also shown in dotted outline in Fig. 2 of the drawings. However, it is important to note that the cash box 80 cannot be entirely removed from the machine without laboriously disengaging the rods 102, 104 and 106 from the bottom member 100, and hence cannot drop out during servicing of the machine.

The machine is provided with a hinged chute cover 138 which protrudes from the pedestal front 32. Gaskets 140 and 142 may be provided at the top and bottom of globe 12 for providing water-tight seals between the globe and the cover 122 and pedestal 14 respectively. To further insure proper dispensing, the wheel slots 40 may be formed with a slight taper inclined towards the chute 18. It is also important to note that the entire upper pedestal 22 may be cast or formed in one piece, including chute 18, top closure member 34, cavity 46 and depending walls 37 and 39. In operation, a coin is inserted within slot 78 and knob 56 is rotated (clockwise as viewed in Fig. 1). The coin enters the coin mechanism 60 which momentarily lifts pawl 70 from ratchet 66 thereby releasing it. This permits the shaft 52 to rotate the wheel 38 beneath the merchandise M. The slot 40 which is nearest brush 42 moves thereunder until it dumps its contents into chute 18. The brush removes any excess balls, but permits the charms C to pass through between its coils 44. As the wheel rotates another slot 40 is moved into contact with the merchandise M at the lowest part of the cavity 46 and subsequent actuations will move this slot to the dispensing position. From the coin mechanism the coin drops into the box 80; the pawl 70 snaps back to its normal position; the pawl hook 72 engages the next pawl tooth 68, and once more locks the shaft 52.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. In a coin controlled vending machine, a

pedestal having a lower portion constituting a coin box, an upper portion resting upon the lower portion and separable therefrom for removal of coins, a storage member supported over said upper section and having top and bottom openings, dispensing mechanism in the top section communicating with the storage member through the bottom opening thereof, a cover for the top opening of said storage member, rods disposed vertically through the pedestal and the storage member and slidably passing through portions of the dispensing mechanism and having lower ends rigidly secured to the lower pedestal section, a plate in said storage member and with which upper ends of said rods are connected serving to limit downward movement of the rods by engagement with material in the storage member when the upper pedestal section is shifted upwardly for removal of coins from the coin box formed by the lower pedestal section, a post extending upwardly from said plate, and a fastener for said cover detachably engaged with said post.

2. The structure of claim 1, wherein the dispensing mechanism has a flared upper portion upon which the storage member rests with a portion of the said flared upper portion extending through the bottom opening into the storage member, the rods slidably passing through openings in the flared upper portion of the dispensing mechanism, and the plate with which upper ends of the rods are connected being a spider and thereby allow the storage member to be readily filled when the cover is removed.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
898,995	Simpson	Sept. 15, 1908
910,246	Travis	Jan. 19, 1909
993,860	McGill	May 30, 1911
1,101,653	Millard	June 30, 1914
1,134,305	Wiesner	Apr. 6, 1915
1,192,019	Taylor	July 25, 1916
1,239,753	Antoine et al.	Sept. 11, 1917
1,250,774	Behrens	Dec. 18, 1917
1,398,351	Williams	Nov. 29, 1921
1,441,438	Leonhardt	Jan. 9, 1923
2,076,513	Hoban	Apr. 6, 1937
2,365,165	Bauman et al.	Dec. 19, 1944

FOREIGN PATENTS

Number	Country	Date
8,371	Great Britain	of 1899