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METHOD AND MEANS FOR HANDLING ARTICLES
TO BE DISPENSED FROM A BULK SUPPLY
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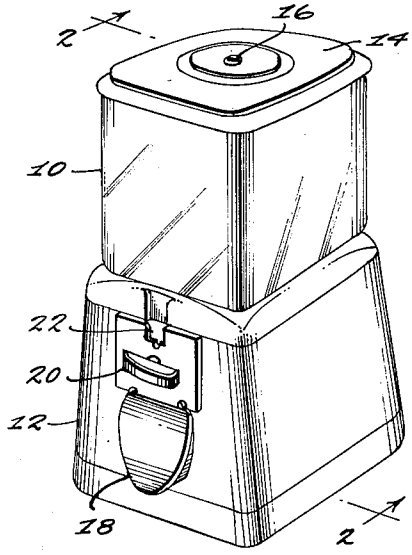



Fig. 1

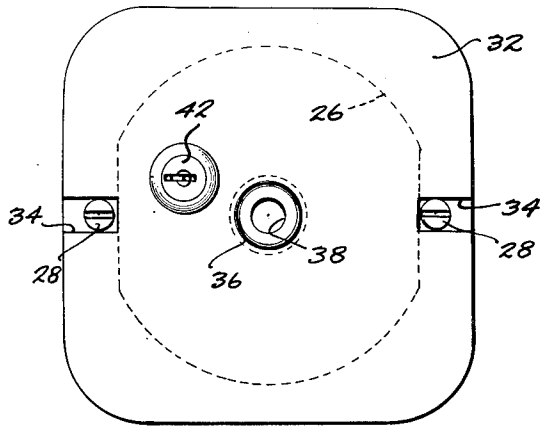



Fig. 3

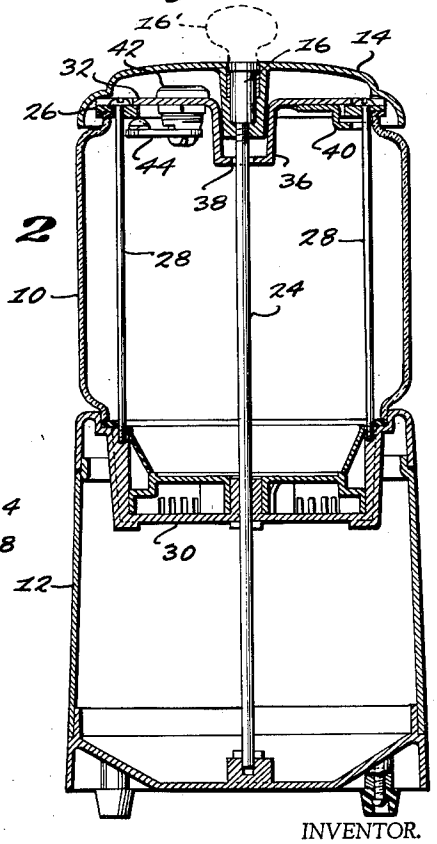



Fig. 2

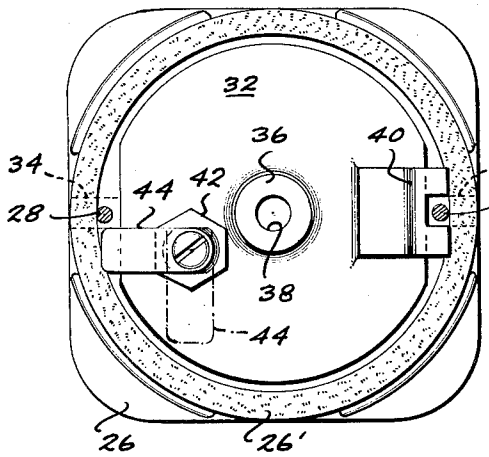



Fig. 4

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# METHOD AND MEANS FOR HANDLING ARTICLES TO BE DISPENSED FROM A BULK SUPPLY

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This invention relates to the dispensing of articles such as chewing gum and candy and the like, from a bulk supply in coin controlled vending machines, and more particularly to an improved method and means for handling articles of this sort for such dispensing so that a centralized accounting control of the coin receipts that should be realized from the vending machines can be accurately maintained.

Bulk supply dispensing of articles is commonly done with vending machines of the type disclosed in U.S. Patent No. 2,537,317, in which a separable receptacle is provided to contain the bulk supply of articles for dispensing from the bottom thereof, and a top clamping plate is arranged for locking engagement with a tie rod extending upwardly from the base of the machine and through the receptacle so that it may be locked in place as a component of the machine with the contents thereof protected against unauthorized tampering while it is in place for dispensing.

Vending machines of this sort are characteristically installed at a variety of suitable locations distributed throughout a given area, and a substantial group of such machines is normally serviced from a central point by employing an excess of the separable receptacles that may be filled at the central servicing point with a bulk supply of the articles to be dispensed and then delivered periodically to the various machine locations to replace receptacles there that have been or are about to be exhausted; the replaced receptacles being in turn taken back to the central servicing point for refilling and similar delivery as required.

As the vending machines in a common service group are thus maintained with an adequate article supply for dispensing, the coin receipts are concurrently collected from each machine, and it should be possible to balance these coin receipts against the number of articles that have been dispensed from the bulk supply previously delivered to the machine. However, because replacement of the receptacles will usually be made before the article supply therein has been completely exhausted, with the purpose in mind of keeping each machine of the group being serviced always well supplied for vending, and because delivery of newly filled receptacles for replacement will ordinarily be delegated to one or more subordinate employees for handling from the central servicing point, great difficulty has heretofore been encountered in maintaining a reliable check on the coin receipt collections.

This difficulty has resulted from the fact that access to the contents of the separable receptacles has heretofore been prevented only while the receptacles were actually locked in place as a component of a machine installed for vending, so that accidental loss or pilferage of article contents from the receptacles could occur either as the newly filled receptacles were being delivered for replacement or as the replaced receptacles were being returned; which has meant that a count of the article quantities delivered from and returned to the central servicing point in the receptacles could not be depended on to indicate actual coin receipts at the machines, and that this circumstance could be taken advantage of by a subordinate servicing employee to withhold coin receipt collections improperly while seeming to account fully for such collections in terms of the article contents in receptacles delivered and returned.

The foregoing difficulty is eliminated entirely according



to the present invention by arranging for separately locking each of the receptacles upon filling at the central servicing point, so that access to or loss of the contents therefrom is not possible during delivery or return of the receptacles in the course of servicing vending machines in use, while at the same time allowing for additional locking of the receptacles in place as a component of the vending machines in the usual manner; all as described in further detail below in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of an exemplary vending machine with which the method and means of the present invention may be employed;

FIG. 2 is an enlarged vertical section detail of the vending machine illustrated in FIG. 1, with the article supply receptacle shown separately locked in accordance with the present invention;

FIG. 3 is a top plan view of a representative form of cover cap, shown in relation to a rim plate for the article supply receptacle, as provided according to the present invention for separately locking the receptacle; and

FIG. 4 is a bottom plan view corresponding to FIG. 3.

Referring now in detail to the drawings, FIG. 1 illustrates the general arrangement of a common type of vending machine, in which the article supply receptacle is indicated by the reference numeral 10, installed on a base structure 12 by a top clamping plate 14 that is locked in place at 16, so that the contents of the receptacle 10 can be obtained only through a delivery chute at 18 by manipulation of a knob or handle 20 arranged to be released for operation upon insertion of a proper coin at a slot 22.

FIG. 2 shows more in detail the manner in which the receptacle 10 is held in place by the top clamping plate 14, through engagement of the locking means 16 therein with a tie rod 24 extending upwardly from the base structure 12 and centrally within the receptacle 10. The receptacle 10, which is normally formed of glass so that its contents may be seen, is fitted with a substantially annular rim plate 26 carrying a cushioning gasket, as indicated at 26' in FIG. 4, to protect its top edge against damage by the clamping grip of the top plate 14, and the rim plate 26 is held in place by additional tie rods 28 extending within the receptacle 10, adjacent the sides thereof, from a dispensing unit 30 that is similarly held in place at the bottom receptacle edge for operation by the knob or handle 20 when the machine is completely assembled.

The dispensing unit 30 is constructed with a central clearance aperture to allow upward extension of the tie rod 24 therethrough, and the locked assembly of the machine is effected by employing a key, as indicated in broken lines at 16' in FIG. 2, to manipulate the clamping plate locking means 16 so that the clamping plate 14 is drawn tight on the receptacle 10. The key 16' is then removed for safekeeping apart from the machine until it is needed for comparable use in releasing the clamping plate 14 whenever a receptacle 10 previously in use needs replacing by a newly filled one.

As thus arranged, the receptacle 10, together with the top rim plate 26 and bottom dispensing unit 30 that are assembled therewith by the tie rods 28, is made readily separable from the machine in effecting the above described replacement, but the receptacle contents have heretofore become openly accessible through the annular rim plate 26 upon such separation, so as to be subject to the wasteful loss or pilferage that has been noted above. The present invention provides for guarding against this circumstance, while at the same time allowing the receptacles to be installed and removed from the machines just as readily as has previously been possible.

For this purpose, each receptacle 10 is additionally equipped, according to the present invention, with a cover

cap 32 (as seen in FIGS. 2, 3 and 4) arranged for separate locking so that the article contents are always maintained secure whether the receptacle assembly is installed for vending operation or is being delivered or returned incident to servicing of the vending operation. In the illustrated embodiment, the cover cap 32 takes form of a plate having an outline corresponding to that of the rim plate 26, with edge notches 34 slotted therein to clear the heads of tie rods 28, so that it may be superimposed on the rim plate 26 without interfering with subsequent disposition of the clamping plate 14 thereover in the usual manner; the central portion of the cover plate 32 being formed inwardly, as indicated at 36, to provide whatever clearance recess is required for the clamping plate locking means 16, and having an aperture 38 at the bottom of this recess 36 to accommodate extension of the central tie rod 24 therethrough for engagement by the locking means 16.

Provision for separate locking of the cover cap 32 in place may then be made in any convenient manner, as by arranging a retainer bracket 40 at the bottom face thereof to reach beneath the rim plate 26 adjacent one of the tie rods 28, and installing a locking device 42 at the opposite side thereof to control a locking lever 44 between an engaged position beneath the rim plate 26 adjacent the other tie rod 28 and a free position as indicated by dotted lines in FIG. 4.

The separate receptacle locking arrangement thus provided makes it possible to maintain complete and accurate accounting control at the central servicing point of all bulk article supplies distributed therefrom for vending, and of the coin receipts that should be collected therefor; as the initial filling of the receptacles 10 can be closely supervised and recorded at the servicing point, and the filled receptacles can then be immediately locked against any disturbance of their contents until they have been delivered and returned again, after substantial exhaustion, for unlocking and checking of the remaining contents under similarly close supervision. At the same time, the delivery and replacement of the receptacles 10 may be carried out just as readily as has always been the case, because the separately locked cover caps 32 still allow installation and removal of the article receptacles in the same way, while leaving only the tie rod aperture 38 as a possible avenue of access to the contents thereof, which aperture may be made amply large for easy clearance purposes and still remain small enough to prevent passage therethrough of articles suitable for bulk supply vending.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

I claim:

1. The method of handling articles dispensable from a bulk supply in coin controlled vending machines of the type that incorporate a separable receptacle having a top filling opening through which the bulk supply of said articles is loaded for subsequent dispensing, and that provide for the locking of said receptacle in place as a component of the machine, and by which method a centralized accounting for undispensed articles may be made so that the coin receipts that should be realized from said machines may be accurately determined: said method comprising filling such receptacles while separate from said machines with articles in bulk through said filling opening, covering each such filling opening upon such filling, separately locking the covering at the filling opening of each filled receptacle, and subsequently attaching and additionally locking the filled receptacles in place as a component of said machines without disturbing the separately locked condition of said receptacles.

2. Means for handling articles dispensable from a bulk supply in coin controlled vending machines of the type incorporating a separable receptacle having a top filling opening through which the bulk supply of said articles may be loaded for subsequent dispensing, and in which machines provision is made for locking said receptacle in place as a component thereof, said means comprising a cover cap for each such separable receptacle to close the filling opening thereof against removal of articles when the receptacle is separate from the machine, a locking device carried by said cover cap to engage said receptacle for selectively locking said cover cap at said filling opening against removal when the receptacle is separate from the machine, and means formed in said cover cap for additionally accommodating the locking of said receptacle in place as a component of said machine.

3. Means for handling articles dispensable from a bulk supply in coin controlled vending machines of the type incorporating a separable receptacle in which the bulk supply of said articles is loaded from the top for dispensing from the bottom thereof, and having a top clamping plate arranged for locking engagement with a tie rod extending upwardly from the base of the machine through said receptacle so as to lock the receptacle in place as a component of the machine, said means comprising a cover cap for each such separable receptacle, a locking device carried by said cover cap to engage said receptacle for selectively locking said cover cap thereon against removal when the receptacle is separate from the machine, and means formed in said cover cap for allowing extension of said tie rod therethrough for additional locking engagement of said top clamping plate with said tie rod to lock said receptacle in place as a component of said machine.

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