An improved merchandise supporting hook and release mechanism actuator for a vending machine for supporting merchandise in the vending machine and releasing it such that only a single article will be dispensed by the release mechanism during each duration.

6 Claims, 5 Drawing Figures
HOOK AND ACTUATOR FOR VENDING MACHINE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application comprises an improvement on the release mechanism disclosed in U.S. Pat. No. 3,219,234 entitled AUTOMATIC VENDING MACHINE FOR GREETING CARDS AND THE LIKE, which issued on Nov. 23, 1965, and is related to the application for patent by CHARLES H. FLU-BACKER entitled VENDING MACHINE, filed May 17, 1971 Ser. No. 143,924.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates in general to vending machines and in particular to improved supporting hook and dispenser.

2. Description of the Prior Art

U.S. Patent No. 3,219,234 entitled AUTOMATIC VENDING MACHINE FOR GREETING CARDS AND THE LIKE, which issued on Nov. 23, 1965 to R. H. Wichman, discloses a vending machine for storing and dispensing articles. In that patent, operating elements are disclosed which are pivotally mounted on a rod connected to the top of a rack and which include an upwardly extending operating arm and a downwardly extending dispensing arm which is bifurcated to provide a pair of blades which are offset from each other such that when the operating element is pivoted by moving its operating arm, an article of merchandise will be dispensed from one of the blades of the downwardly extending portion while the second offset blade prevents additional merchandise stored on the rack from being dispensed. This patent also discloses merchandise supporting hooks which are supported from the dispensing tray and which contain spacer elements that extend transversely from the side of the hook to separate adjacent hooks.

SUMMARY OF THE INVENTION

The present invention comprises an improved merchandise supporting hook and arrangement wherein the hook is provided with improved spacing means and wherein the merchandise supporting portion of the hook extends substantially over the merchandise to be supported and holds it in alignment. A container made of pressed board, for example, is received over the merchandise and hook such that the merchandise is attached to the hook and supported so that the hook and merchandise will not be accidentally separated before being dispensed from the machine.

The invention also provides an improved dispensing operating element wherein one of the downwardly extending blades which engages the merchandise not in position for discharge is tilted so as to provide improved operation and assure that more than one article is not dispensed when the operating elements are energized.

Other objects, features and advantages of the invention will be readily apparent from the description of the preferred embodiment thereof taken in conjunction with the accompanying drawings, although variations and modifications may be effected without departing from the spirit and scope of the novel concept of the disclosure and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top view of the improved hook and merchandise supporting means of the invention;

FIG. 2 is a plan view illustrating the improved merchandise supporting hook in use;

FIG. 3 is a side view of the improved dispensing mechanism of the invention;

FIG. 4 is a plan view of the improved dispensing mechanism of the invention; and

FIG. 5 illustrates the improved hook and dispenser of the invention mounted on a suitable dispensing tray of a vending machine.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1 and 2 represent respectively top and side plan views of the article supporting hook of the invention. The hook 29 has an upper hook portion which is receivable over a supporting member of the dispensing tray and an arcuately shaped spacer 32 is attached to one face of the hook so as to aid in stabilizing it on its support when in use. The hook has a pair of extending end portions 37 and 38 which are formed with downwardly extending ends 41 and 39 which engage the opposite edges of the merchandise 27. A pressed board holder which has sides 42, a bottom 43 and a top 44, is received over the merchandise 27 and the portions 37 and 38 of the hook 29 and is formed with an opening 36 in the top portion 44 through which the hook portion 31 extends. A reinforcing portion 33 is attached to the hook portion 31 under the opening 36 so as to hold the hook in alignment with the merchandise.

The hook 29 may be made of polyethylene or other suitable plastic and may be deformed to allow the ends 37, 38 to move upwardly so that the downwardly extending portions 39 and 41 clear the merchandise as the pressed board holder is placed over the merchandise. The portions 37, 38 may then be released to move to the positions illustrated in FIG. 2, thus holding the merchandise firmly to the hook 29.

The merchandise may have many shapes and sizes and a particular hook will be utilized which has the size appropriate for the particular merchandise. Examples of merchandise dispensed by vending machines are stockings, magnetic tape cartridges and cassettes, pantyhose and greeting cards. It is to be realized, of course, that the invention is not limited to any particular type of merchandise.

FIG. 10 illustrates a dispensing tray 10 from which the merchandise 27 and hooks 29 of the invention may be supported. The dispensing tray 10 includes a plurality of offset tilted supporting rods 12 upon which the hooks 29 are supported. Dispensing levers 13 are pivotally supported on the tray 10 by a shaft 25 which is supported in suitable bearings 30 mounted on the tray 10. The dispensing members 13 are spring-biased by springs 39 so that in the unactuated position the members 13 are in the position shown in FIG. 4, with the stop 40 of the actuator engaged by the tray 10. The actuator 13 has an upwardly extending lever 16 which is attached to the hub 14 and when the dispensing mechanism 13 is pivoted by rotating the lever 16 clockwise relative to FIG. 4, one of the hooks 29 will slide from the supporting shaft 12 and be dispensed by the vending machine.
The dispensing mechanism 13 has a first downwardly extending portion 18 that is formed with spacing ridges 21 and 22 for engaging the sides of the hook 29 as shown in FIG. 5. A second downwardly extending portion 19 of the dispenser 13 is laterally offset from the portion 18 and is formed with an opening 23. The portion 19 is tapered relative to the vertical as shown in FIGS. 3 and 5 and serves the purpose of engaging the next article of merchandise on the shaft 12 behind the article of merchandise which will be dispensed when the actuator 13 is energized. In other words, the hook 29 of the merchandise to be dispensed will normally lie between the portions 18 and 19 and when the lever 16 is depressed to dispense an article of merchandise, the portion 18 which prevents the merchandise normally from being dispensed will move out of engagement with the hook 29 so that the merchandise may move down the shaft 12 and be dispensed by gravity from the machine. Simultaneously the portion 19 will engage the hook of a second article on the shaft 12 and prevent it from being discharged from the machine. When the actuating lever 16 is released, the portion 19 will move out of engagement with the hook 29, and it will move to a position illustrated in FIG. 5 for the first hook 29 on the left relative to the figure against the portion 18 and be ready for discharge on the next cycle. Thus, the tilted portion 19 engages the second article on the shaft 12 and holds it, thus preventing it from being dispensed during discharge of the first article. After the arm 16 is released and the actuator 13 returns to its normal position, the hook 29 of the merchandise disengages the portion 19 and moves between the portions 19 and 18 and is held by the portion 18 as shown in FIG. 5.

By tilting the portion 19, the second article will not be accidentally discharged or fall from the shaft 12. Thus, the improved dispensing mechanism 13 in combination with the improved hook of this invention provides improved operation and security.

Although minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such modifications as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

1. A supporting hook assembly for supporting articles comprising:
   a transverse member lying in a first plane and having portions at either end which extend at right angles to said first plane;
   a hook attached to the center of said transverse member and extending in the opposite direction to said portions and lying in a plane which is at right angles to said first plane and said portions; and
   a rectangular hollow holder which has a pair of sides, a bottom and a top, said top lying in said first plane and formed with an opening through which said hook extends and said article received in said hollow holder with its sides, bottom and top extending therearound and said portions of said transverse member engaging opposite edges of said article to form said article, hollow holder and transverse member into a rigid assembly.

2. A supporting hook according to claim 1 comprising spacer means attached to one side of said hook.

3. A supporting hook according to claim 2 wherein said spacer means is arcuately shaped.

4. A supporting hook according to claim 1 including a reinforcing portion formed in the transverse body member adjacent said hook and said opening in said hollow holder through which said hook extends being smaller than said reinforcing portion.

5. A supporting hook according to claim 4 wherein said transverse body portion is formed of polyethylene.

6. A supporting hook assembly according to claim 1 wherein said hollow holder is formed of cardboard.

* * * * *