United States Patent [19]

Flubacker

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[45] **Apr. 17, 1973**

[54] **HOOK AND ACTUATOR FOR VENDING MACHINE**

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[52] **U.S. Cl.**.....**248/339,** 248/359
[51] **Int. Cl.**.....**B65d 63/18**
[58] **Field of Search**.....248/359, 360, 304, 248/309, 318, 339, 340, 341, 215

[56] **References Cited**

UNITED STATES PATENTS

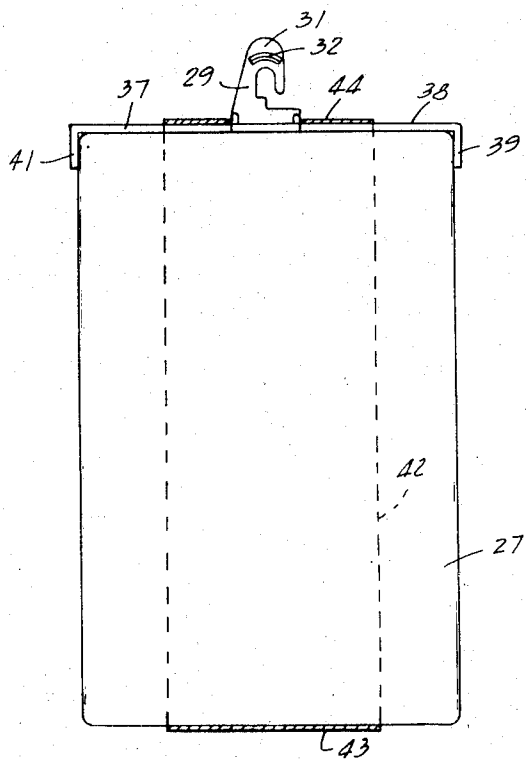
1,133,471	3/1915	Harper	248/359
2,304,547	12/1942	Cutter	248/359
2,350,901	6/1944	Johnston	248/318
2,479,700	8/1949	Pritchard	248/339
2,906,488	9/1959	Wolar	248/339
2,911,179	11/1959	Hammercy	248/339
3,366,360	1/1968	Burke	248/318
3,486,683	12/1969	Kamins	248/340

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[57] **ABSTRACT**

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



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Fig. 1

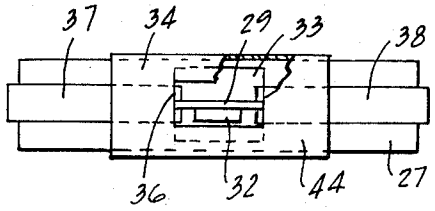


Fig. 2

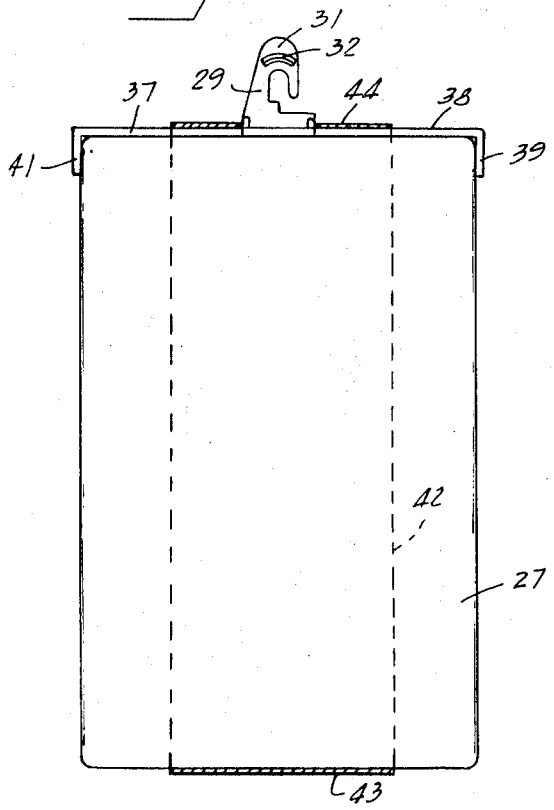


Fig. 3

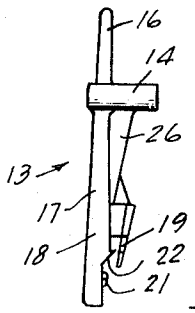


Fig. 4

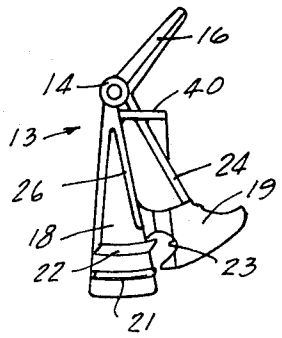
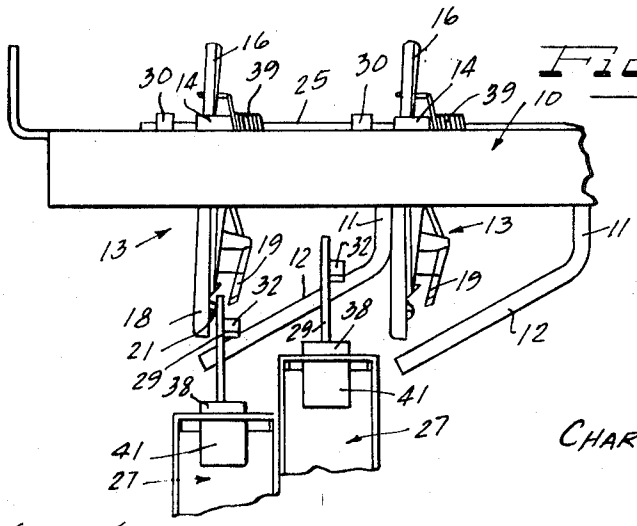


Fig. 5



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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. FLUBACKER 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 embodiments 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.

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