Nov. 11, 1969 D. G. HOFF 3,477,612

DISPENSER FOR HOLLOW TRUNCATED ARTICLES

Filed May 20, 1968 2 Sheets-Sheet 1

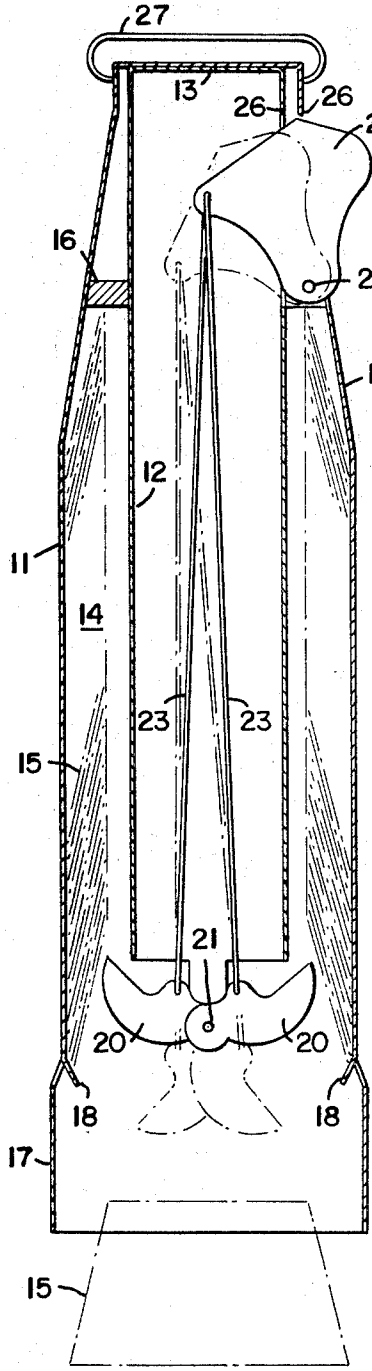


FIG_1

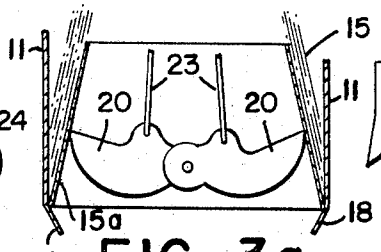


FIG_3a

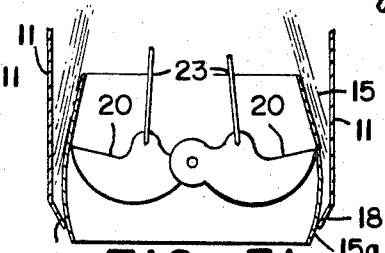


FIG_3b

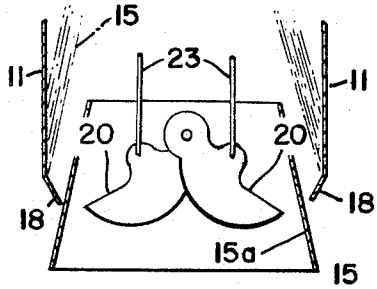


FIG_3c

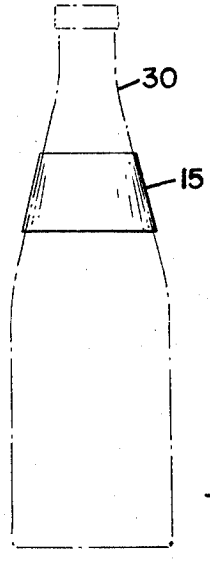


FIG_4

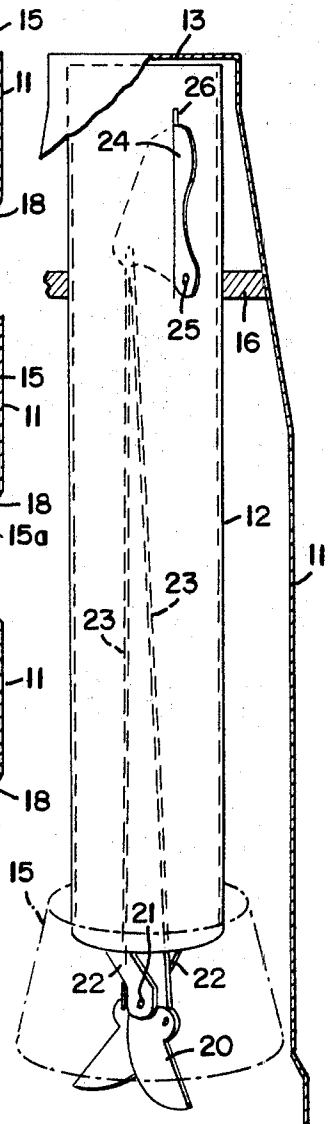


FIG_2

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DISPENSER FOR HOLLOW TRUNCATED ARTICLES

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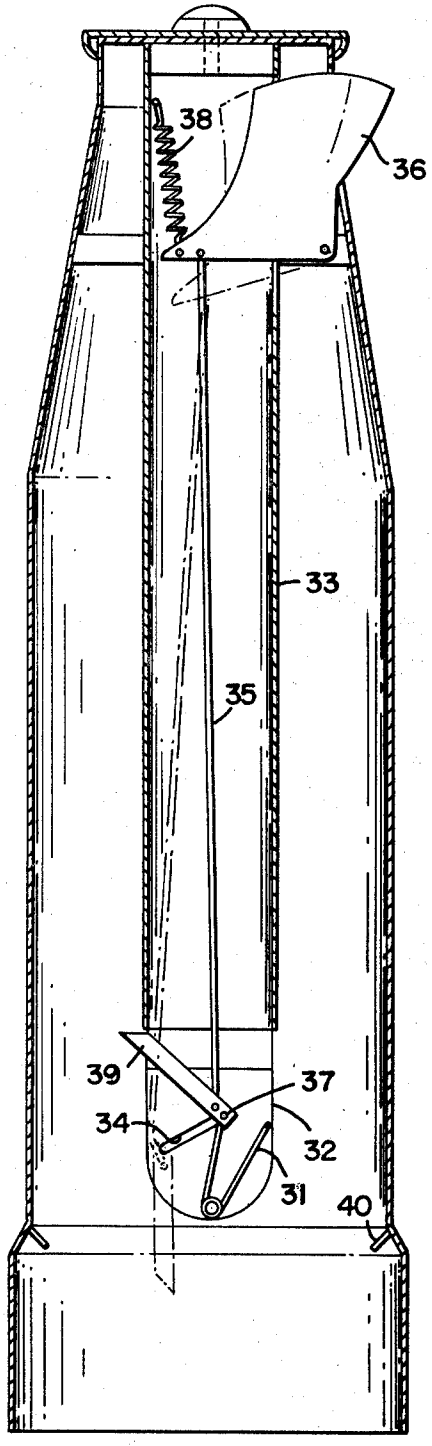


FIG_5

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3,477,612

DISPENSER FOR HOLLOW TRUNCATED ARTICLES

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Int. Cl. B65h 3/24
U.S. Cl. 221—40 2 Claims

ABSTRACT OF THE DISCLOSURE

A dispenser for dispensing hollow truncated articles is disclosed comprising an elongated housing and a stacking column axially enclosed therein defining an elongated peripheral space between the housing and the stacking column for receiving and stacking hollow truncated articles. The housing includes at least one inwardly extending projection at its open end to retain a stack of hollow truncated articles in the elongated peripheral space between the stacking column and housing. Means are provided for deformably pushing the outermost truncated cone from a stack over the inwardly extending projection of the housing to thereby dispense the outermost hollow truncated article from the stack.

This invention relates to a new and improved dispenser useful for dispensing hollow truncated articles such as truncated cones made from paper or other flexible material, over bottles or other articles of merchandise for advertising and display purposes.

It is an object of the present invention to provide a simple device for quickly and efficiently dispensing hollow truncated cones of paper or other flexible material over bottles and other articles of merchandise for advertising and display purposes. Another object of the invention is to provide a hand-held and hand-operated hollow truncated cone dispenser.

In order to accomplish these results the present invention contemplates the provision of an elongated housing and a stacking column axially enclosed in the housing, rigidly joined together at one end. The housing and stacking column together define an elongated annular space for receiving through the open end and stacking therein hollow truncated cones axially about the stacking column and retaining the stack therein by means of at least one inwardly extending projection from the housing.

The invention further contemplates frictionally engaging from the inside the outermost truncated cone of a stack held in the dispenser and deformably pushing the outermost truncated cone over the inwardly extending projection of the housing to thereby dispense the cone. The dispensed cone may then drop vertically over the bottle or other article on which it is to be displayed.

Other objects, features and advantages of the present invention will become apparent in the following specification and accompanying drawings.

In the drawings:

FIGURE 1 is a side cross-sectional view of a hollow truncated cone dispenser embodying the present invention.

FIGURE 2 is a fragmentary perspective view of the hollow truncated cone dispenser illustrated in FIGURE 1.

FIGURES 3*a*, 3*b* and 3*c* are fragmentary side views of the dispensing mechanism at various stages of operation.

FIGURE 4 is a plan view of a bottle and a hollow truncated cone dispensed thereon for display purposes.

FIGURE 5 is a side cross-sectional view of another hollow truncated article dispenser embodying the present invention.

In the embodiment of the present invention illustrated in FIG. 1 there is provided an outer elongated housing **11** and a stacking column **12** rigidly fixed with respect to each other at one end **13**. The housing **11** and stacking column **12** define an elongated annular space **14** adapted to receive a stack of hollow truncated cones **15**. Spacing between the housing **11** and stacking column **12** may be reinforced by braces **16**.

The inner diameter of the housing **11** is approximately equal to the diameter of the lower base of the truncated cones **15** to be dispensed and terminates in a flared open end **17** through which the dispensed cones fall. The outer diameter of the stacking column is approximately equal to or slightly less than the diameter of the upper base of the hollow truncated cone. At the top of the flared open end **17** of housing **11** there is provided at least one inwardly extending projection **18**, extending inwardly of the diameter of housing **11** to retain in the elongated annular space **14** a stack of hollow truncated cones **15**. The inwardly extending projection **18** may be a lug cut from the flared base **17** or housing **11** and bent inwardly. In the embodiment illustrated in FIG. 1, a pair of lugs **18** are provided extending inwardly from opposite sides of the housing **11**.

Referring to FIGS. 1 and 2, the dispensing mechanism for dispensing hollow truncated cones stacked in the dispenser comprises a pair of extending cams **20** pivotally mounted for rotation about an axis **21** formed between extensions **22** from the open end of the stacking column **12**. The radius of rotation of the pair of cams **20** is sufficiently long to frictionally engage the inner walls of the outermost truncated cone of a stack held in the cone dispenser by lugs **18**. Pivotally connected to each cam **20** at a point outside the axis of rotation **21** is an elongated rod **23** extending from the cam **20** axially within and along the length of the stacking column **12**. Each of the elongated rods **23** is pivotally connected at its other end to a hand-operated trigger means **24** comprised of a flat piece of material having irregularly extending lugs and pivotally mounted on an axis **25** on one of the braces **16**. A slit **26** is provided in the stacking column **12** and housing **11** so that the trigger **24** may be extended and retracted about the axis of rotation **25** to thereby extend and retract the elongated rods **23** which in turn rotate the wings **20**. The trigger **24** may be spring-biased in an outwardly extending position by spring-biasing means at the axis **21**, axis **25** or at any other suitable position. The cone dispenser may be provided with a cap **27** to facilitate hand-holding of the cone dispenser and the trigger **24** may thus be depressed with a finger to rotate the cams **20**. With the trigger biased in an outwardly extending position, the cams **20** will normally be retained in an upwardly extending position as illustrated in FIG. 1. As the trigger is depressed, the cams **20** will engage the outermost hollow truncated cone **15***a* of a stack of hollow truncated cones **15** held within the cone dispenser as illustrated in FIG. 3*a*. As the trigger is further depressed and the cams **20** rotated still further downward, the outermost truncated cone **15***a* is deformed and pushed over the lugs **18** and as the cams **20** are rotated to a still further downward position, the truncated cone is free to drop out of the cone dispenser onto a bottle **30** or other article of merchandise in which the cone is to be displayed as illustrated in FIG. 4. In the downward position, the width across the cams is less than the diameter of the upper base of the hollow truncated cone. The cams **20** are shown rotated to the lowest position in FIG. 2.

During the recovery of the cams **20** to an upward position, the ends of the cams again engage the stack of hollow truncated cones **15**, compressing or lifting the stack. To prevent this from happening, an embodiment

of the invention, as illustrated in FIG. 5, is provided with a single camming arm **39** pivotally mounted on the end **37** of a bent wire spring **31** connected to the extension **32** at the end of the stacking column **33**. The camming arm **39** is also mounted for translation along a slot **34** in the extension **32**.

Elongated rod **35** connected to trigger **36** at one end is connected at its other end to the camming arm off center from the pivot point **37** for rotating the camming arm upon extension and retraction of the rod **35** by the trigger **36**. Bent wire spring **31** biases the camming arm **39** in the direction of the outer end of the slot **34** while spring **38** normally maintains the camming arm **39** at the inner end of slot **34** centrally of the stacking column. When the trigger is depressed and the pressure from spring **38** on the arm released, the camming arm not only rotates about the pivot **37** but also translates outwardly along slot **34** under pressure from bent wire **31** to engage the outermost hollow truncated cone from the stack and urge the cone over the projections **40** for dispensing the cone.

Camming arm **30** then recovers by first translating to the inner end of slot **34** centrally of the stacking column under the recovery pressure of spring **38** and then rotating to an upward position without displacing other stacked articles.

It is thus apparent that the present invention facilitates quick and efficient dispensing of hollow truncated cones onto bottles or other articles of merchandise for advertising and display purposes. The dispenser may be readily adapted for dispensing other hollow truncated articles such as hollow truncated pyramids, hollow truncated elliptical cones and other similar articles having an open lower base of greater width than an open upper base. The housing would be formed with a cross-sectional shape conforming to the shape of the perimeter of the lower base of the article while the stacking column would be formed with a cross-sectional shape conforming to the shape of the perimeter of the upper base of the article. The articles would thus be stacked in the elongated peripheral space defined by the housing and stacking column.

What is claimed is:

1. A dispenser for dispensing hollow truncated articles having an open lower base of greater width than an open upper base thereof comprising: an elongated tubular housing of cross-sectional shape conforming to the shape of the lower base of hollow truncated articles to be dispensed and having an inner width approximately equal to the width of the lower base of hollow truncated articles to be dispensed; a stacking column of cross-sectional shape conforming to the shape of the upper base of hollow truncated articles to be dispensed, coaxially mounted within said housing and rigidly fixed thereto at one common end, said stacking column having an outer width approximately equal to the width of the upper base of hollow truncated articles to be dispensed, said housing and stacking column defining an elongated peripheral space open at one end for receiving and stacking hollow truncated articles therein axially about said stacking column; said housing having at least one projection extending inwardly therefrom at the open end of the elongated peripheral spaces a distance sufficient to retain a stack of truncated cones received in the elongated peripheral space between the stacking column and housing; camming means rotatably mounted on said stacking column at the open end of the elongated peripheral space, said camming means rotatable to an outwardly extending position to frictionally engage the inner surface of a hollow truncated article adjacent the inwardly extending projection from said housing and deformably push said hollow truncated article over the projection, and a downwardly extending position in which the width of the camming means is less than the width of the upper base of said hollow truncated article, thereby permitting said hollow truncated article to be dispensed over said camming means, said camming means comprising at least one extending cam adapted to translate toward the housing and rotate about a pivot axis to dispense articles and wherein said extending cam is adapted to translate away from the housing and rotate about a pivot axis after dispensing an article, and means for translating and rotating said extending cam.

2. An article dispenser for dispensing hollow truncated articles comprising: an elongated tubular housing, a stacking column coaxially mounted within said housing; said housing and stacking column rigidly fixed with respect to each other at one common end and open at the other common end, said housing and stacking column defining an elongated annular space for receiving and stacking truncated articles therein through the open end axially about said stacking column, said housing having at least one inwardly extending projection at its open end adapted to retain a stack of hollow truncated articles in the elongated annular space between the stacking column and housing; means within said housing for deformably pushing a truncated articles adjacent the open end of said housing from a stack of truncated articles held in the elongated annular space over the inwardly extending projection of the housing to thereby dispense the outermost truncated article, said means for deformably pushing a truncated article comprising at least one extending cam adapted to translate towrd the housing and rotate about a pivot axis to dispense articles and wherein said extending cam is adapted to translate away from the housing and rotate about a pivot axis after dispensing an article; and means for translating and rotating said extending cam.

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STANLEY H. TOLLBERG, Primary Examiner