United States Patent [19]

Hafner

[11] **3,796,347**

[45] **Mar. 12, 1974**

[54] **PELLET DISPENSING APPARATUS**

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[22] Filed: **Nov. 27, 1972**

[21] Appl. No.: **309,693**

Related U.S. Application Data

[63] Continuation of Ser. No. 132,642, April 9, 1971, abandoned.

[52] **U.S. Cl.** **221/276**

[51] **Int. Cl.** **B65g 59/06**

[58] **Field of Search** ..... 221/251, 306, 276, 307, 221/267, 155, 269, 271, 285, 287, 264, 282; 206/42, 56 AC

[56] **References Cited**

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[57] **ABSTRACT**

A pellet or shot dispensing invention comprising a dispensing apparatus having a tube with a cap fixed thereto and inclined at an upward angle. The cap and tube have a bore providing communication between the bottle and tube. A plurality of pellets or shot are in the bottle and flow under gravity from the bottle into the bore and into the tube one at a time. A spring rod is mounted into the passageway below the bore from the bottle to retain a pellet in the tube. A plunger is slidably mounted in the tube above the bore and slidable downward against the pellet in the tube to push the pellet downward against the spring rod forcing the spring rod outward so that the pellet may slip past the rod and out the tube. Spring means are provided to return the plunger to its upward position so that the operation may be replated to dispense pellets or shot one at a time out of the tube from the bottle.

2 Claims, 4 Drawing Figures

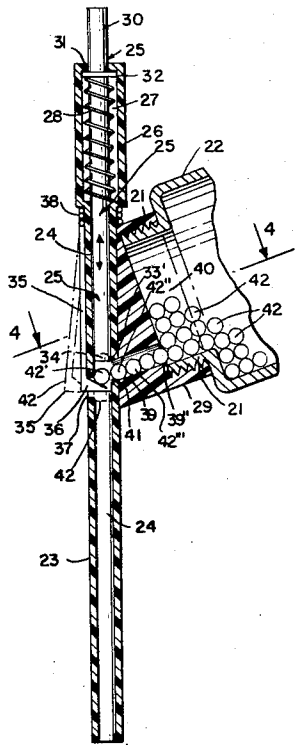


FIG. 1.

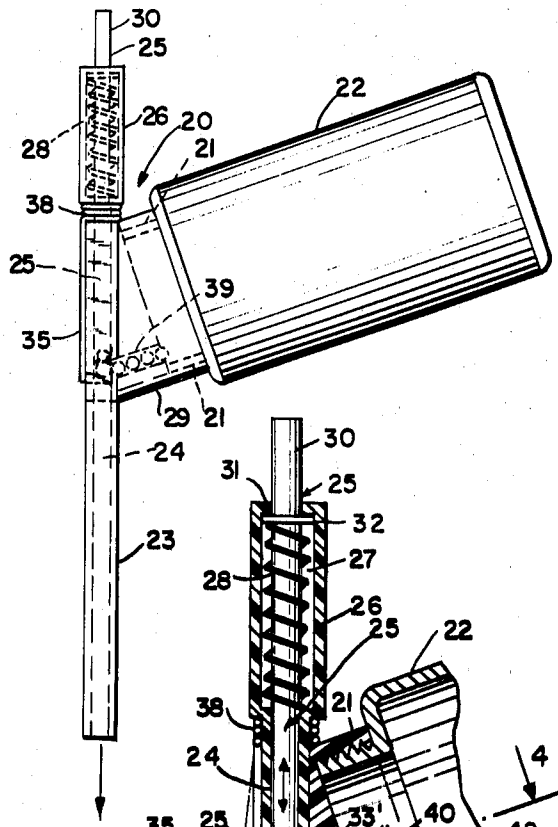
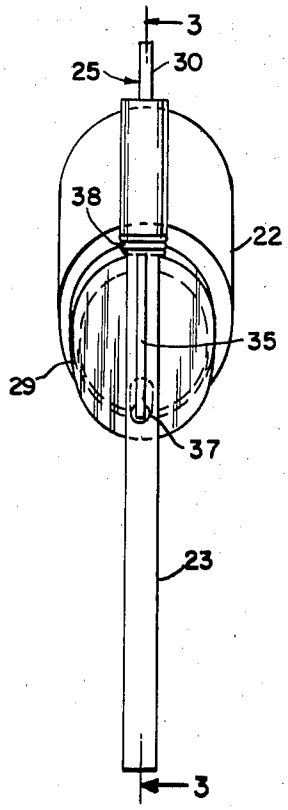


FIG. 2.



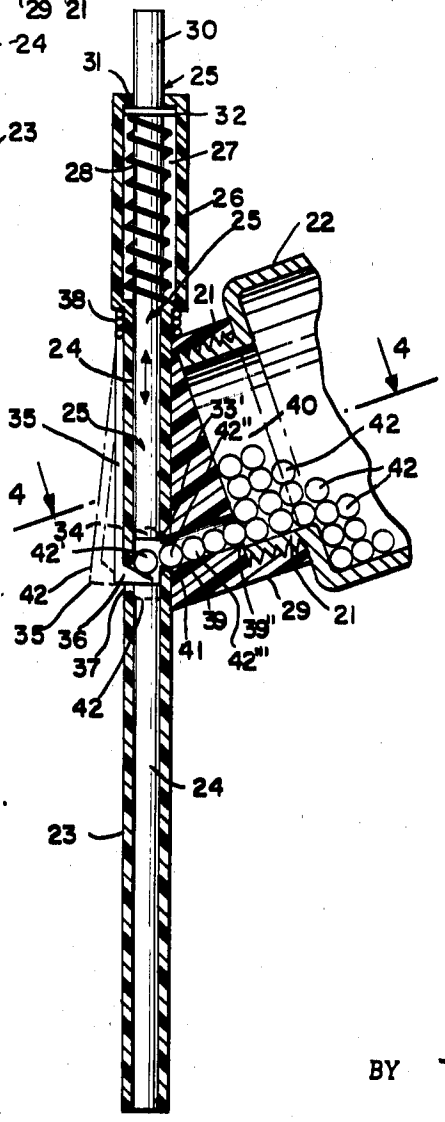


FIG. 3.

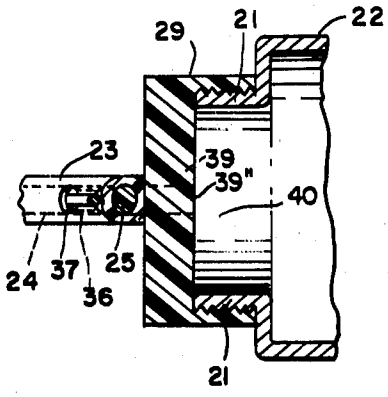


FIG. 4.

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PELLET DISPENSING APPARATUS

This is a continuation of application Ser. No. 132,642, filed Apr. 9, 1971, now abandoned.

This invention relates to dispensing apparatus, more particularly the invention relates to dispensing shot-like or pellet dispensing apparatus.

It is an object of the invention to provide a novel pellet dispensing apparatus for easily and rapidly dispensing apparatus for easily and rapidly dispensing single shot-like pellets from a bottle one at a time under a gravity flow.

It is a further object of the invention to provide a novel dispensing apparatus which will accurately and easily dispense a quantity of pellets one at a time.

It is a further object of the invention to provide a novel dispensing apparatus which will dispense pellets from a bottle one at a time.

Further objects and advantages of the invention will become apparent as the description proceeds and when taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a side elevational view of the sugar pellet dispensing invention.

FIG. 2 is a front elevational view of the sugar pellet dispensing invention.

FIG. 3 is an enlarged fragmentary cross-sectional view taken along line 3—3 of FIG. 2 illustrating the interior construction of the pellet or shot-like dispensing invention.

FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 3.

Briefly stated, the invention comprises a pellet or shot-like dispensing apparatus for dispensing pellets one at a time out of a tube from a bottle, having an elongated tube with a cap portion fixed thereto at an upward angle, said cap being threaded onto the mouth of a bottle, said tube has a hollow interior with said cap and tube having a bore providing communication between the bottle and the tube and plunger mounted in the tube, a spring rod mounted to the tube having a laterally bent and projecting into an opening in the tube below the opening in the cap to the bottle, whereby the bent end of the rod will hold only one pellet in the tube at a time; pellets in the bottle which will roll from the bottle down the bore in the cap and tube into the tube one at a time, a plunger slidably mounted in the tube acting more downward and push the pellet in the tube downward with the pellet forcing the bent end of the spring rod out to enable the pellet to slide or slip past and drop out the bottom of the tube, spring means returning the plunger to its upward position after pushing the pellet past the bent end of the spring rod so that another pellet may roll into the tube where it may be forced downward past the bent end of the spring rod and out the tube by the plunger.

Referring more particularly to the drawing in FIGS. 1 and 3 the sugar pellet dispensing invention **20** is shown threaded onto the threaded mouth reduced collor parts **21** of a conventional bottle **22.**

The dispensing invention **20** has an annular cap **29** to thread over the mouth **21** of the bottle. The dispensing invention has a tubular member **23** fixed to the cap **29** and the tubular member **23** has a cylindrical inner bore **24.** A plunger **25** has a cylindrical outer surface **725'** and the plunger **25** is slidably mounted in the cylindrical bore **24.** The upper end of the tube **24** has an enlarged tubular portion **26** with an enlarged cylindrical inner bore **27.** A coil spring **28** is slidably mounted coaxially over the plunger **25** within the enlarged bore **27.**

The upper end **30** of the cylindrical plunger projects upward through a bore **31** the upper end of the tube **23.** An annular ring **32** is fixed to the pluger **25** and projects outward therefrom within the enlarged bore **27** of the enlarged tubular portion **26,** above the coil spring **28.** The lower end **33** of the plunger has a spherical recess **34,** so that the outer lower edges **33'** project and taper downward to form a knife like edge.

A spring rod **35** has a laterally bent lower end **36** which projects freely through a hole or bore **37** in the tube **23** and extends centrally across the inner bore **24** of the tube. The upper end **38** of the spring rod **35** is wrapped around the tubular member **24** so as to lock the upper end of the spring rod to the tubular member.

The cap **29** has a cylindrical bore **39** which communicates at its upper end **39'** with the opening **40** in the mouth **21** of the bottle and it communicates at its lower end **39'** with a bore **41** in the tube **24.**

The plurality of spherical sugar pellets **42** are located inside the bottle. The pellets **42** are of the type used for decorating cookies and pastry and are made of sugar with a silver coating and are edible.

The pellets **42** have an outside diameter which is smaller than the bore **39** on the cap **29** and smaller than bore **41** into the tube and also smaller than the cylindrical inner bore **24** extending along the tube, so as to move or roll freely through the bores **39, 41,** and **24,** under the force of gravity, so that pellets located in the bottle will roll one after another down the bore **39** through the bore **41** into the bore **24** where they will come to rest upon the laterally bent leg **36** of the spring rod. The bores **39, 41,** and **24** are only large enough so that the pellets **42** may move freely only one after another through the bores **39, 41,** and **24,** as shown in FIGS. **1** and **3,** and so that only one of the sugar pellet **42** will rest in the bore **24** tube **23,** at a time as shown in FIGS. **1** and **3.**

OPERATION

The shot or pellet dispensing invention **20** operates as follows: The dispensing invention **20** will be mounted onto a bottle **22** having a plurality of shot-like sugar coated pellets **42** by placing the bottle **22** upright with the mouth **40** extending upward and then rotating the dispensing invention to thread the threaded cap **29** onto the threaded mouth or collar portion **21** of the bottle **22.** Whereupon the dispensing invention **20** with the bottle **22** attached thereto will be tipped to its position shown in FIGS. **1** and **3** and held over the cookie to be decorated and the operator will press the top of the plunger downward moving the plunger **24** downward from its position shown in solid lines to its position shown in dashed lines in FIG. **3** and designated by numeral **42.** The recess portion **34** of the lower end **33** of the plunger as it moves downward will socket over the pellet **42'** located in the tube **24** and the tapered annular knife like outer edge **33'** will project between the pellet **42'** and the next upward adjacent pellet **42''** to separate them and prevent the pellet **42''** from rolling into the tube **24.**

The plunger will continue moving downward pushing the pellet **42'** downward from its position shown in

FIG. 3, and with the bottom of the pellet 42' engaging the lateral bent end of the spring rod and push the rod and bent end clockwise outward from its position shown in solid lines to its position shown in dashed lines and designated by numeral 42, which enables the pellet to slip past the bent end 36 of the rod and drop out the bottom 44 of the tube.

The operator will then release the plunger and the coil spring 28 will push the plunger back upward to its position shown in solid lines in FIGS. 1 and 3 as the lower end of the plunger moves upward past the lateral bent end 36 of the spring rod, the spring rod will be released and spring back to its position shown in solid lines in FIG. 1 and 3, and after the plunger has slid upward past the bore 41 to its position shown in solid lines in FIG. 3, the next pellet 42'' may roll into the tube 24 to the position formerly where pellet 42 was located and the next pellet 42''' will take the same position of pellet 42'', before the plunger action. This only one pellet is located in the tube at a time for each plunger action. This process will repeat itself with pellets moving from the bottle down the bore 39 into the tube one at a time under gravity flow.

Thus it will be seen that a novel shot or pellet dispensing device has been provided which will dispense cylindrical pellets easily and rapidly from a bottle, under a gravity flow, accurately and one at a time by simply pressing the plunger at the top of the dispenser.

It will be obvious that various changes and departures may be made without departing from the spirit and thereof and accordingly it is not intended that the invention be limited to that specifically described in the specification or as illustrated in the drawings but only as set forth in the appended claims wherein:

What is claimed is:

1. A pellet dispensing apparatus comprising an elongated tube adapted to extend downward, a cap mounted to said tube above the lower end of the tube, said cap and tube having an opening providing communication between the interior of the tube and the interior of the cap, a bottle having a mouth, said cap and said bottle having cooperating attachment means to attach the cap to the mouth of the bottle with the mouth of the bottle extending downward and with the bottle extending at an upward angle in relation to the tube, a plurality of pellets in said bottle flowable under the force of gravity and of a size to travel out of the mouth of the bottle through the opening in the cap and tube into the tube, a spring biased rod mounted to said tube with a flange on the rod projecting through a slot into said tube and spaced beneath said opening so that only one pellet is received into the tube at a time and acting to hold said received pellet in said tube from gravitating out of the lower end of said tube, a spring biased plunger slidably mounted in said tube above said opening and acting when slid downward to provide an engagement against said rod to push said flange out of said tube so that said received pellet may travel downward past said flange and gravitate out the bottom of the tube, said plunger when sliding downward acts to close said opening between said tube and cap to prevent another pellet from gravitating into the tube until after the received pellet has been pushed past the flange and the flange is free to move back into the tube under the spring biasing of the rod to hold the next received pellet.

2. A pellet dispensing apparatus according to claim 1 wherein said plunger provides said engagement against said rod when said sliding downward, by said plunger engaging said received pellet and said received pellet in turn engaging said flange of said rod to push said flange out of said tube.

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