United States Patent [19]

Basa

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[54] **DISPENSER DEVICE**

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Related U.S. Application Data

[62] Division of Ser. No. 37,685, May 15, 1970, Pat. No. 3,649,471.

[52] **U.S. Cl.** **222/49,** 222/326, 222/340

[51] **Int. Cl.** **B67d 5/42**

[58] **Field of Search** 222/326, 327, 340, 222/49; 239/321

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[57] **ABSTRACT**

A dispenser device includes a hollow container portion for flowable material and has an outlet means. Plunger means is slidably mounted within the container portion and spring means normally urges the plunger means toward the outlet means. A cock arm is connected to the plunger means and extends through slot means formed in a housing means. The slot means has a part extending longitudinally of the housing and a part extending laterally of the housing. A manually operated control means is provided for controlling movement of the plunger.

10 Claims, 6 Drawing Figures

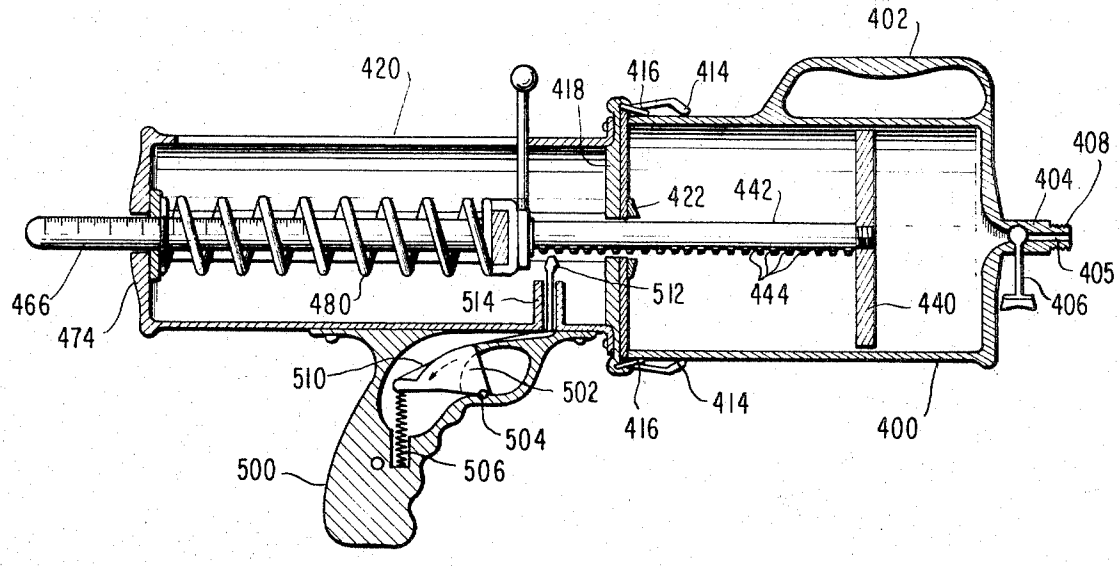


FIG. 1

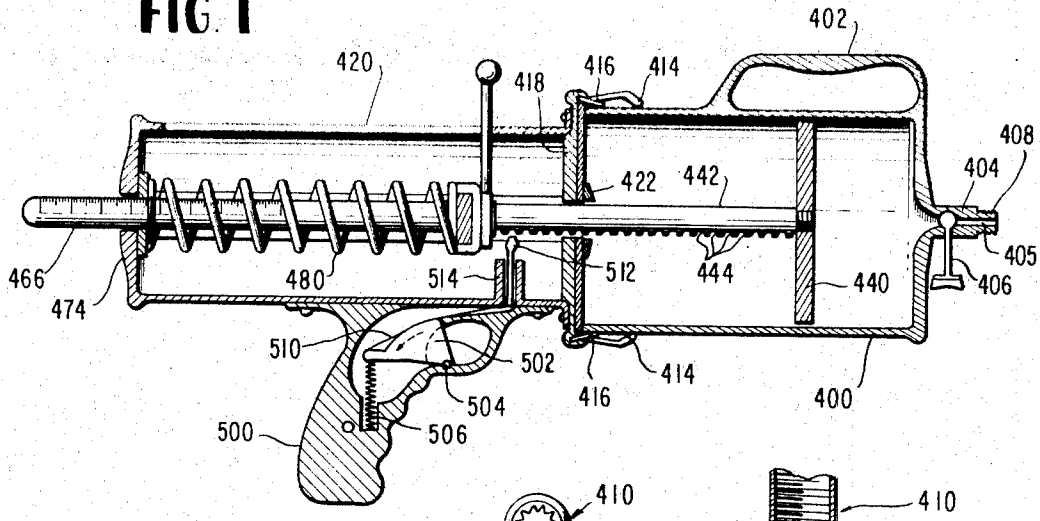


FIG. 2

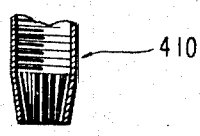


FIG. 3

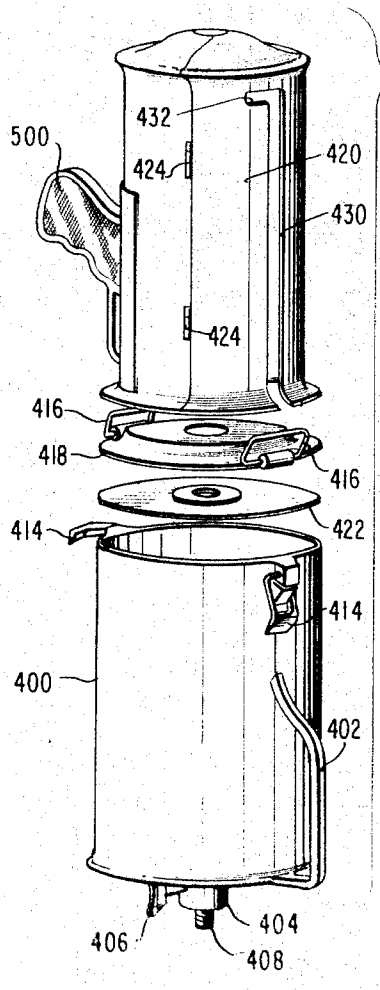


FIG. 4

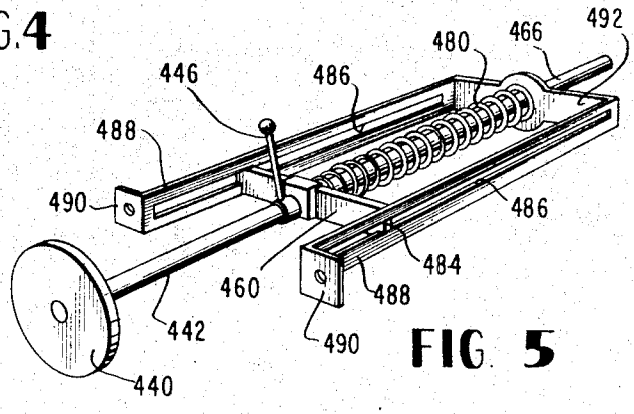
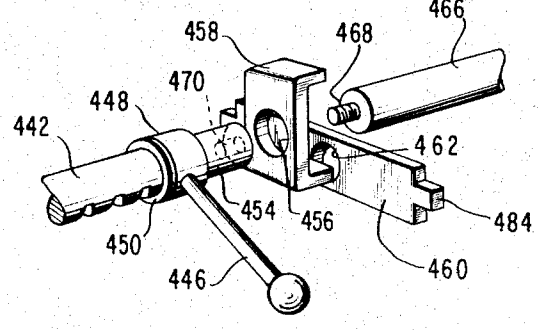


FIG. 5

FIG. 6



DISPENSER DEVICE

This is a division, of application Ser. No. 37,685, filed May 15, 1970 U. S. Pat. No. 3,649,471.

BACKGROUND OF THE INVENTION

The dispenser device of the present invention relates to a device for dispensing various flowable materials which may have many applications, such as in the agricultural field for dispensing liquid fertilizers and the like. Insecticides may also be dispensed with this type of apparatus during pest control operations. The dispenser device may also be utilized as a fire extinguisher. The dispenser device is further particularly adaptable as to dispensing relatively viscous materials such as the icing placed on cakes and the like whereby the dispenser device may be employed as an icing decorator device.

In the prior art, flowable materials are ordinarily dispensed from a storage tank or the like by means of compressed gas which is compressed either by manual pumping or by utilizing so-called aerosol arrangements. This type of compressed gas construction requires a number of steps in order to prepare the device for operation and the mechanisms for creating the desired air pressure are relatively complex.

The aforementioned type of known dispenser devices are also limited to use with liquids of relatively low viscosity since as the gas pressure is dissipated, the devices are not capable of adequately dispensing viscous solutions.

SUMMARY OF THE INVENTION

The dispenser device of the present invention includes a hollow container portion for flowable materials which has an outlet means. A plunger means is slidably supported within the container portion and spring means normally urges the plunger means toward the outlet means. A cock arm is interconnected with the plunger means and extends through slot means formed in a surrounding housing. This slot means includes a part extending longitudinally of the housing and a part extending laterally of the housing whereby the cock arm may be moved into the laterally extending part of the slot means so as to hold the plunger means against movement toward said outlet means.

A manually operated trigger means is provided to control the movement of the plunger means, and a gauge portion is interconnected with the plunger means and extends outwardly of the housing for indicating the amount of flowable material remaining within the container portion at all times.

The dispenser device of the present invention may be readily prepared for use simply by cocking the spring means there of which can be carried out manually in a simple and efficient manner. Operation of the dispenser device is substantially fool-proof and the spring means provides sufficient energy to expell the flowable material from the device at a greater velocity than is obtainable with gas pressure discharge arrangements. The components of the dispenser device may be readily replaced when so desired and the device can be easily assembled and disassembled. The dispenser device is especially suited for dispensing a viscous material such as icing decoration for cakes and molds of any particular design may be connected with the outlet means of the dispenser device so as to provide the desired decoration.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a longitudinal section through a dispenser device according to the present invention;

FIG. **2** is an end view of a nozzle for use with the dispenser device shown in FIG. **1**;

FIG. **3** is a longitudinal section through a nozzle shown in FIG. **2**;

FIG. **4** is a top perspective exploded view of the dispenser device shown in FIG. **1**;

FIG. **5** is a top perspective view of a portion of the structure shown in FIG. **1**, and

FIG. **6** is a top perspective exploded view of a portion of the components shown in FIG. **5**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing, a dispenser device according to the present invention is illustrated. The dispenser device includes a hollow container portion **400** for receiving flowable material, a handle **402** being formed integral with the container portion facilitating handling thereof. The container portion includes an outlet means **404** having a bore **405** formed therethrough, a manually operable flow control valve **406** being provided for controlling the discharge of flowable material from the container portion. The outer end of discharge means **404** is threaded for receiving a suitable nozzle such as nozzle **410** illustrated in FIGS. **2** and **3** which is of conventional construction.

Attaching clips **414** are secured to the outer surface of container portion **400** and cooperate with attaching clips **416** secured to a base plate **418** which is in turn attached to a housing means **420** whereby the housing means and container portion may be detachably connected to one another by the attaching clips. A rubber gasket **422** is provided between the container portion and the base plate when the apparatus is in operative position as shown in FIG. **1** to provide a liquid type seal.

As seen most clearly in FIG. **4**, housing means **420** is split longitudinally thereof and is provided with hinges **424** whereby the two halves of the housing means may be swung open when desired. Suitable attaching clips are provided at points diametrically opposed from the hinges for securing the two halves of the housing means together.

Slot means is formed through the housing means and includes a longitudinally extending part **430** and a laterally extending part **432** for a purpose hereinafter described.

A disc-like plunger means **440** is slidably disposed within the interior of container portion **400** and has a relatively snug fit therewith. This plunger means is connected with a push rod **442** having a plurality of spaced recesses **444** provided along one side thereof. The push rod extends through holes provided in base plate **418** and gasket **422**. As seen in FIG. **6**, a cock arm **446** is connected with a hub portion **448** which is rotatable on push rod **442** and is retained against axial movement with respect thereto by a collar **450** formed on the push rod.

The outer end **454** of the push rod extends through a central hole **456** formed in a generally U-shaped bracket **458**. A spring engaging plate **460** is received by bracket **458** and has a hole **462** formed therethrough for receiving the end of the push rod.

A gauge portion **466** includes a reduced threaded end **468** which is threaded within a correspondingly threaded bore **470** provided in the end of the push rod whereby the gauge portion is moveable with the push rod as well as bracket **458** and spring engaging plate **460.** The gauge portion extends through a central hole provided in the end wall **474** of the housing means the gauge portion having suitable indicia provided thereon for indicating the position of the plunger means within the container portion whereby the amount of flowable material remaining in the container portion may be readily determined at all times.

A compression spring **480** is disposed in surrounding relationship to the gauge portion **466** and normally biases the plunger means toward the outlet means of the container portion. The cock arm is received in the slot means formed in the housing means whereby the cock arm can be moved longitudinally of the housing means in part **430** of the slot means and then can be swung laterally into part **432** of the slot means to hold the spring under compression until it is desired to pressurize the device. The cock arm is the swung into alignment with part **430** of the slot means whereupon the spring biases the plunger means toward the outlet means of the apparatus.

As seen most clearly in FIGS. **5** and **6,** the opposite ends of the spring engaging plate **460** are provided with lugs **484** which are slidably received within slots **486** formed in opposite legs **488** of a guide rail, laterally extending portions **490** of legs **488** permitting attatchment of the guide rail to the base plate previously described. The guide rail includes a connecting portion **492** between the opposite legs **488** thereof, a central hole being provided through portion **492** for receiving the aforementioned gauge portion. It is apparent that the guide rail serves to guide movement of the spring engaging plate **460** and stabilizes operation of the apparatus.

A pistol grip type handle **500** is provided having a trigger means **502** pivotally supported at point **504,** a compression spring **506** normally biasing the trigger means in one direction.

The trigger means is connected by flexible connector **510** with a detent member **512** which is normally biased by a spring **514** upwardly as seen in FIG. **16** so as to be engaged within one of the recesses **444** provided in the push rod.

It is apparent that when detent member **512** engages one of the recesses **444,** the plunger means will be held against movement. When it is desired to discharge flowable material from the container portion, trigger **502** is operated against a force of spring **506** so as to pull the detent member downwardly against the force of spring **514** thereby freeing the push rod and the associated plunger means for movement under the influence of compression spring **480.** Upon release of the trigger means, the detent member will again be biased upwardly to engage one of the recesses in the push rod so as to hold the plunger means against further movement.

As this invention may be embodied in several forms without departing from the spirit or essential characterisitcs thereof, the present embodiment is therefore illustrative and not restrictive, and since the scope of the invention is defined by the appended claims, all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly cooperative equivalents are therefore intended to be embraced by those claims.

What is claimed is:

1. A dispenser device comprising a hollow container portion for receiving flowable material and including an outlet means, plunger means moveably mounted within said container portion, spring means normally urging said plunger means toward said outlet means, a cock arm interconnected with said plunger means and rotatable in a lateral direction with respect thereto, a housing means, said housing means having slot means formed therethrough receiving said cock arm, said slot means including a part extending longitudinally of the housing means and a part extending laterally of the housing means, and control means for controlling the movement of said plunger.

2. A device as defined in claim **1,** including a push rod interconnected with said plunger, said push rod having a plurality of recesses formed therein.

3. A device as defined in claim **2,** including a moveable detent member adapted to be received in said recesses in the push rod.

4. A device as defined in claim **3,** including manually operable trigger means interconnected with said detent member for controlling movement of said detent member.

5. A device as defined in claim **1,** wherein said container portion is detachable from said housing means, attaching means being provided on said container portion and said housing means for detachably connecting said container portion and said housing means.

6. A device as defined in claim **5,** including seal means between said container portion and said housing means for providing a liquid-type seal therebetween.

7. A device as defined in claim **1,** wherein said plunger means is of disc-like configuration and is slidably disposed within said container portion with a relatively snug fit.

8. A device as defined in claim **1,** including spring engaging means engaging said spring means, said spring engaging means having lug means extending therefrom, and guide rail means supported within said housing means and receiving said lug means for guiding movement of said spring engaging means.

9. A device as defined in claim **1,** wherein said cock arm is rotatable in a lateral direction with respect to the plunger means with which it is operably connected.

10. A device as defined in claim **1,** including a gauge portion interconnected with said plunger means and moveable therewith, one end of said housing means having a hole receiving said gauge portion whereby a part of said gauge portion extends outwardly of said housing means through said opening, said gauge portion having indicia thereon.

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