Oct. 6, 1936. F. CROSSLEY 2,056,422

DISPENSER FOR PLASTIC OR COMMINUTED MATERIAL

Filed Nov. 26, 1935

Fig. 1.

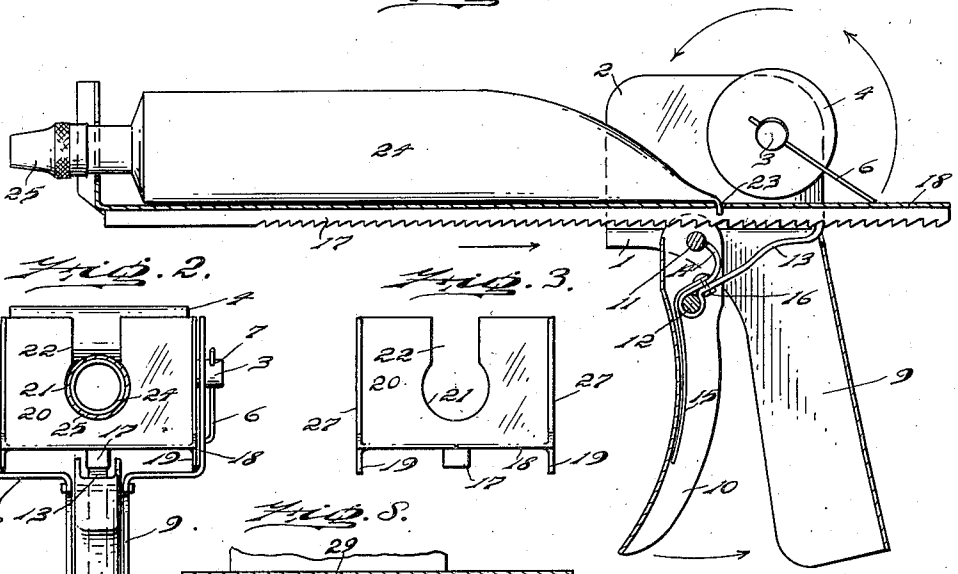


Fig. 2.

Fig. 3.

Fig. 8.

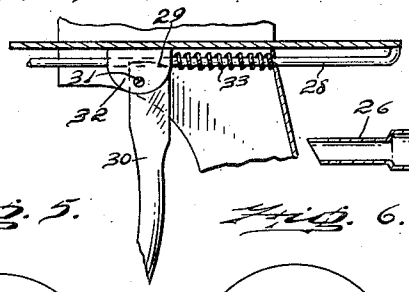


Fig. 4.

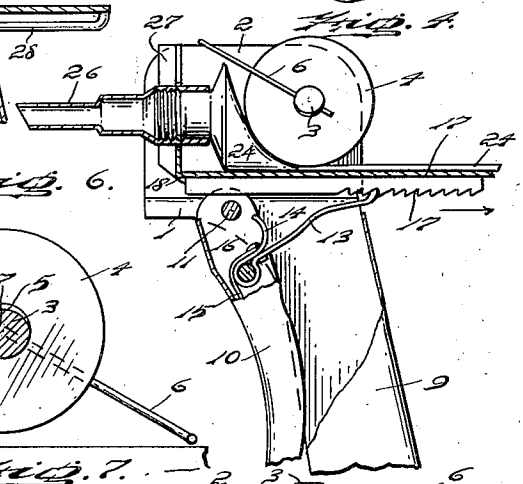


Fig. 5.

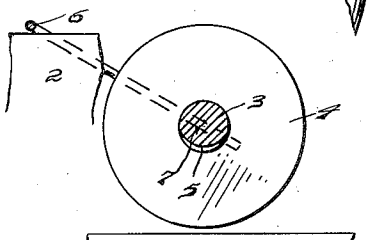


Fig. 6.

Fig. 7.

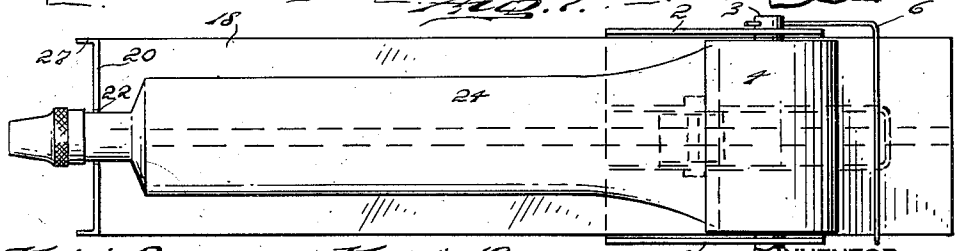


Fig. 9.

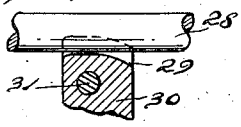
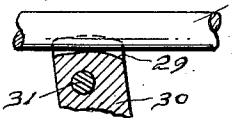


Fig. 10.



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DISPENSER FOR PLASTIC OR COMMINUTED MATERIAL

Frank Crossley, Philadelphia, Pa.

Application November 26, 1935, Serial No. 51,579

7 Claims. (Cl. 221—60)

The object of my invention is to devise a novel device for dispensing plastic or comminuted material.

As illustrated, it is in the form of a caulking gun for dispensing plastic caulking compound.

A further object of the invention is to devise a novel device of this character, wherein the container for the material is moved relatively to a roller to expel the material from the container.

Other objects include novel means for retaining the container in place, novel mounting means for the roller and novel means for effecting relative movement between the container and the roller.

With the above and other objects in view as will hereinafter clearly appear, my invention comprehends a novel device for dispensing plastic or comminuted material.

Ot further comprehends, a novel body portion, novel means for releasably mounting a roller on the body portion, a novel carrier for the container for the material, and novel means to effect relative movement of the carrier and body portion.

Other novel features of construction and advantage will hereinafter more clearly appear in the detailed description and the appended claims.

For the purpose of illustrating the invention, I have shown in the accompanying drawing, typical embodiments of it, which, in practice, will give satisfactory and reliable results. It is, however, to be understood that these embodiments are typical only and that the various instrumentalities of which my invention consists can be variously arranged and organized, and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 is a sectional elevation of a dispensing device, embodying my invention.

Figure 2 is a front elevation, with the discharge end of the container in section.

Figure 3 is a front elevation of the carrier for the container.

Figure 4 is a side elevation partly in section of a portion of the dispensing device.

Figure 5 is a side elevation of the roller with its shaft in section.

Figure 6 is a side elevation similar to Figure 5 but showing the parts in a different relation from that seen in Figure 5.

Figure 7 is a top plan view of the dispensing device.

Figure 8 is a sectional elevation of another embodiment of my invention.

Figure 9 is a sectional view on an enlarged scale of the cam means seen in Figure 8 for effecting relative movement of the roller and container carrier.

Figure 10 is a view similar to Figure 9 but showing the parts in a different relation from that seen in Figure 9.

Similar numerals indicate corresponding parts.

Referring to the drawing:

1 designates the body portion of a device embodying my invention for dispensing plastic or comminuted material.

The body portion 1 has side plates 2 which are apertured to receive a shaft 3 on which a pressure applying roll 4 is free to revolve. The bearing ends of the shaft are eccentric as at 5, and the shaft is retained in assembled condition by a combined fastening device and releasing member 6 which is substantially U-shaped and has its free ends received in apertures 7 at the free ends of the shaft, see Figures 5 and 6.

The body portion has a base plate 8, and a channelled grasping portion 9 extending downwardly from the base plate.

10 designates a trigger pivoted at 11 to the body portion. The trigger has a pin 12 on which is mounted a rack actuator 13 which at one end is bent around the pin and terminates in a forwardly extending stop member 14. A flat spring 15 has one end fixed to the rack actuator 13 by a fastening device 16. The opposite end of the actuator is deflected upwardly to engage a rack 17 secured to a carrier 18 having at opposite sides the depending flanges 19 which form rails slidable on the bottom plate of the body portion 1. The carrier at its forward end is deflected upwardly to form a front wall 20 having a circular aperture 21 which opens through the top of the front wall by a slot 22. The carrier is provided with a slot 23 adapted to receive an end of a container 24 which is in the form of a collapsible tube having a threaded closure 25 at its discharge end, see Figure 1. The rear end of the tube is inserted in the slot 23 and the forward or discharge end is passed through the slot 22 into the aperture 21. The cap 25 is now removed and a nozzle 26 having any desired contour at its discharge end is screwed on to the discharge end of the tube. As the nozzle at its rear end is of greater diameter than the slot 22, the container is retained in fixed position on the carrier 18.

The front wall 20 may be provided with forwardly extending side flanges 27.

In the operation, when the tube 24 is in posi-

tion ready for use, the member 6 is moved into the position seen in Figure 4 with its cross member resting on the side plates 2 as in Figures 1 and 5. The trigger 10 is moved in the direction of the arrow in Figure 1, thereby moving the carrier and container towards the roller 4. This exerts a pressure against the container to cause the material to be expelled from the nozzle 26.

In the embodiment seen in Figures 8, 9 and 10 the operation is the same but I have shown a different mechanism for effecting relative movement between the carrier and the body portion. In this form instead of using a rack, I employ a rod 28 which is moved rearwardly by a cam 29 on an actuating arm 30 pivoted at 31 to an inverted U-shaped slide 32 slidable on the rod 28. A spring 33 between a fixed portion of the body portion and the slide 32 tends to move the slide forwardly on its rod.

It will be apparent that when the actuator arm 30 is moved rearwardly it will turn on its pivot 31 causing the cam face 29 at the bottom of the groove of the actuator arm to frictionally engage or grip the rod so that the rod and its carrier will be moved towards the roller.

When the member 6 is in the position seen in Figures 1 and 6, the pressure of the roller 4 is released and the carrier can be removed from the body portion so that a used tube can be removed and a new tube secured in position.

The stop 14 in Figure 1 contacting with the pivot pin 11 limits the upward movement of the pawl formed by the arm 13.

My present invention has been found in practice to be very satisfactory in dispensing plastic or other material from collapsible tubes under a desired pressure.

While the device is especially adapted for use as a caulking gun, it will be apparent that it is not limited to such use but may be employed to dispense any plastic, semi-plastic or comminuted material.

It will now be apparent that I have devised a new and useful dispenser for plastic or comminuted material which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described preferred embodiments thereof which will give in practice satisfactory and reliable results, it is to be understood that these embodiments are susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a dispensing device, a body portion, a carrier slidable thereon, having a slot to receive the rear end of a collapsible tube, and having a front wall provided with an aperture and a slot opening from the aperture through its wall adapted to receive the discharge end of the tube, the aperture being of greater diameter than the slot, a discharge tube connected with the discharge end of the collapsible tube, extending into said aperture and of greater diameter than said slot, a roll mounted in the body portion, and means to move the carrier beneath the roll to cause the latter to compress the collapsible tube.

2. In a dispensing device, a body portion, a carrier slidable in a rectilinear path on the body portion, and having means to receive one end of a collapsible tube for the material to be dispensed, said carrier being upwardly deflected at its forward end and slotted to receive the discharge end of the tube, a roll mounted in the body portion to compress said tube as the carrier is moved beneath the roll, means to move the roll into and out of its compressing position, and means to effect relative movement of the carrier and roll.

3. In a dispensing device, a body portion, a shaft having eccentric portions mounted in the body portion, a roll on said shaft, a carrier for a collapsible tube slidable on said body portion beneath said roll, means to revolve said shaft to vary the position of the roll with respect to the tube, and means to move said carrier beneath said roll.

4. In a dispensing device, a body portion having a grasping handle, a carrier for the material to be dispensed slidable on said body portion, a roll mounted on the body portion, and relatively to which the carrier is moved, a rod on the carrier, a spring pressed slide on the rod, and a manually actuated cam member movably mounted on the slide and having a cam face to grip the rod to cause the carrier to move relatively to the roll.

5. The combination with roll free to revolve, of a carrier movable in a rectilinear path with respect to the roll, a rod secured to the carrier, a slide on the rod, and a manually actuated cam movably mounted on the slide and having a cam shaped groove to partially surround the rod.

6. The combination with a rod, of a gripping member to move the rod having a cam shaped groove partially surrounding the rod, and means to turn said member to cause it to cam against said rod or to release it therefrom.

7. The combination with a rod, of a gripping member having a cam face to engage said rod, and means to turn said gripping member in one direction to cause it to clamp against and advance the rod or in the opposite direction to release said rod.

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