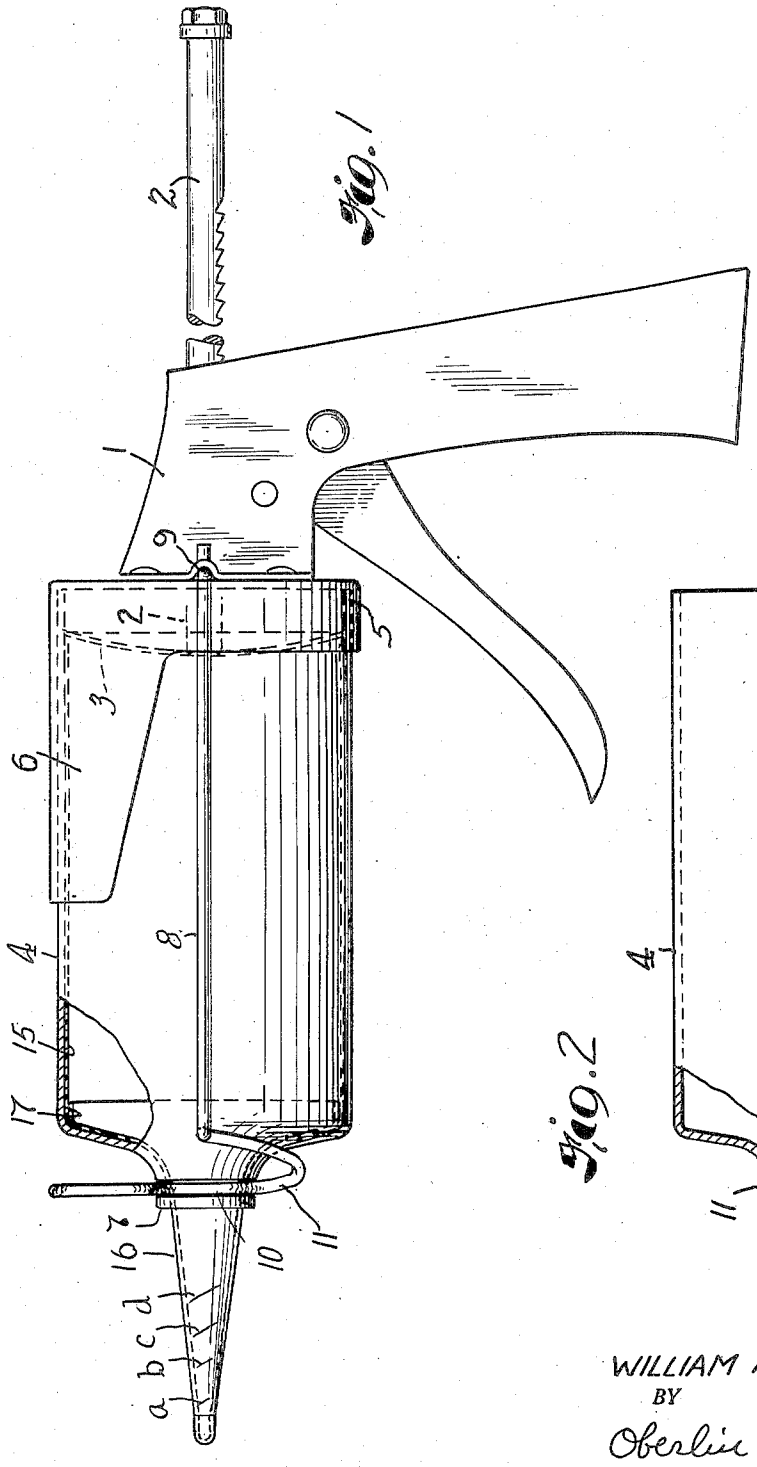
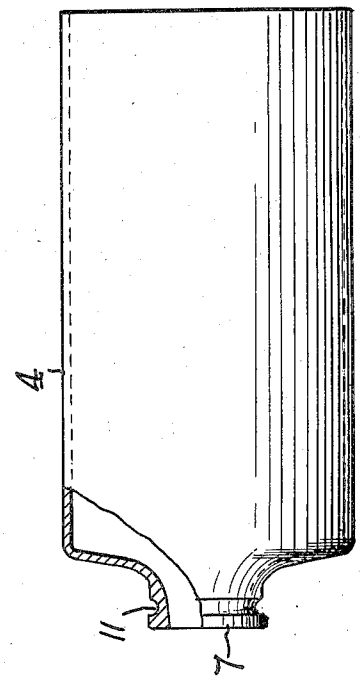
May 6, 1958 W. A. SHERBONDY 2,833,444

DISPENSING DEVICE FOR CALKING AND LIKE MATERIAL

Filed Jan. 25, 1954 2 Sheets-Sheet 1





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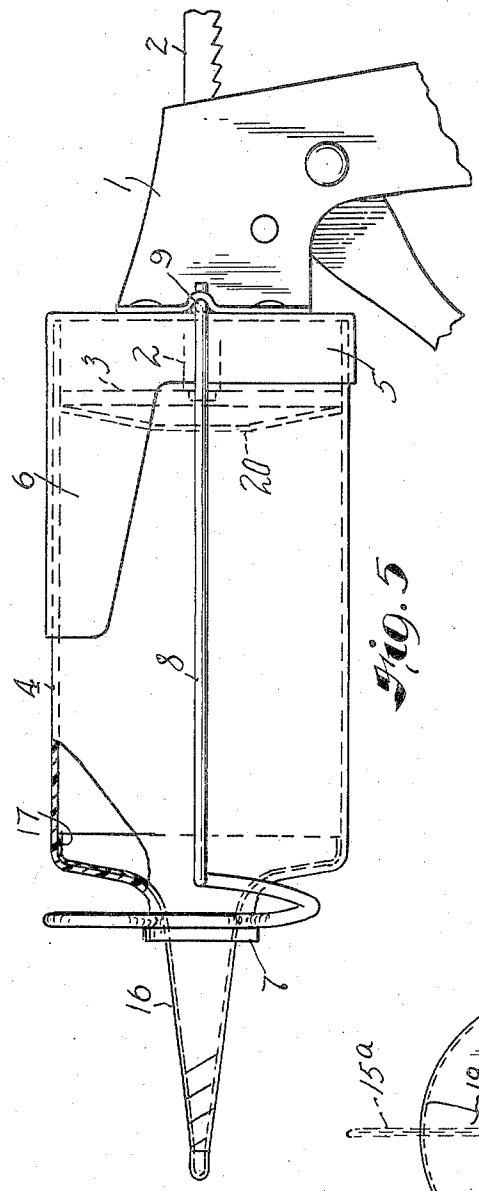


Fig. 3

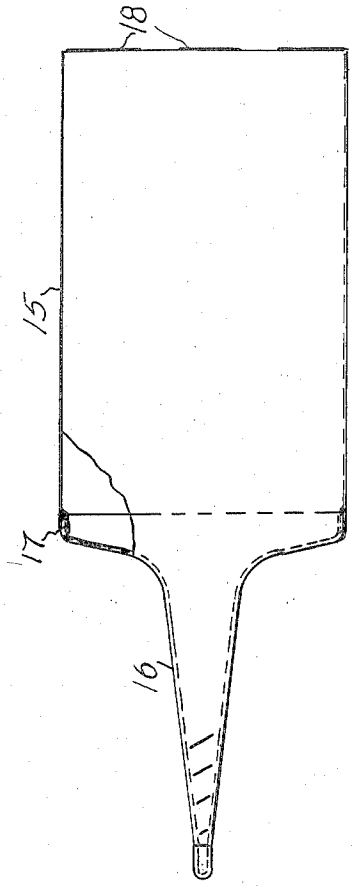


Fig. 3

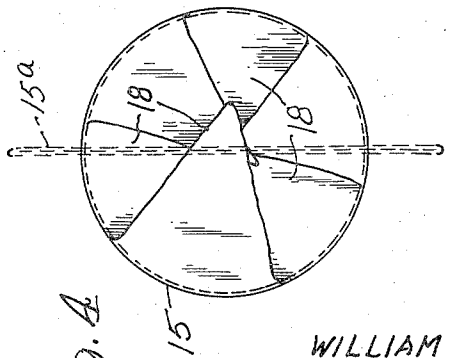


Fig. 4

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DISPENSING DEVICE FOR CALKING AND LIKE MATERIAL

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Application January 25, 1954, Serial No. 405,951

2 Claims. (Cl. 222—95)

A large field of use has been developed for dispensing devices or apparatus of the type known commercially as "calking guns," whereby a suitable plastic material is injected into voids and cracks in the walls of buildings and like structures in order to seal the same. While guns have been designed in which the material in question can be directly charged, in order to preserve such material in proper state for use it has become customary to place the same in a sealed cartridge that in effect becomes a part of the gun when employed therewith. Such cartridge usually takes the form of a cardboard tube, the walls of which are suitably treated or provided with an impervious layer to prevent the plastic contents of the tube from penetrating such walls. In addition to such treatment or provision, if, as is ordinarily the case, the tube when assembled with the gun requires to be self-sustaining, the walls thereof have to be of substantial thickness in order to have the required degree of rigidity. In addition there remains the problem of sealing the respective ends of the tube.

One principal object of the present invention is to provide a dispensing device or apparatus of the character described, in which the container for the material to be dispensed is in the form of a thin walled collapsible bag. The wall of such bag will be made of a tough impervious material such as "Pliofilm," so that when filled with calking or like compound the resulting soft package may be handled without danger of rupture.

A further object is to provide such soft package cartridge with a suitable spout through which the contents may be discharged when the cartridge is placed in the gun, such spout normally forming a seal for the corresponding end of the cartridge or package and at the same time being adapted to provide a discharge opening of varying shape and size to suit the need of the user.

To facilitate the use of such novel cartridge or package further improvements have also been made in the gun wherewith it is designed to be used.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:

Fig. 1 is a side elevation of a calking gun embodying the aforesaid improved construction, such gun being shown in conjunction with a cartridge which likewise embodies the above-mentioned improvements;

Fig. 2 is similarly a side elevation of one principal part of the gun which cooperates with the present improved cartridge;

Fig. 3 is a side elevation of such cartridge by itself;

Fig. 4 is an end view of the same, as viewed from the right in Fig. 3; and

Fig. 5 is a view similar to Fig. 1, but partly in section and showing certain modification in construction.

So far as concerns the main operative elements of the calking gun 1, these may be of any suitable construction; for example that shown in Patent No. 2,602,571 issued to me under date of July 8, 1952. For the present purpose the only parts of such gun that need be noted are the plunger 2 and the piston 3, that is carried by the inner end of such plunger. Detachably secured to, so as to project from, the gun in alignment with the plunger 2, and thus with the direction of movement of the piston 3, is a shell 4 of general cylindrical form. Such shell may be made of light gauge sheet metal, or molded of plastic or other material so long as it is sufficiently strong and rigid to serve the indicated purpose. The inner end of said shell, i. e., the right hand end as viewed in Fig. 1, is designed to be received in a cup-shaped seat 5, that is firmly attached to the gun proper. The opposite end of the shell is necked inwardly to provide a tubular extension 7, the function of which will be presently described. One portion 6 of the side wall of such seat preferably projects a substantial distance beyond this seat proper, so as to provide a lateral support for the shell 4 when in place.

In order to retain the shell securely seated, a bail 8 is provided, the respective arms of such bail being pivotally attached to seat 5 about a transverse axis 9. The outer portion of bail 8 is formed to provide a transversely disposed loop 10 the sides of which are adapted to engage with slot-like depressions 11 on opposite sides of tubular extension 7 of the shell 4. When, as shown in Fig. 1, the loop by thus engagaing the extension will lock the parts securely together; however, by swinging the bail outwardly, the parts are left free to be disassembled. It will also be understood that other forms of bail than the one herein illustrated and described may be employed; for example the forms shown in the previously mentioned Patent No. 2,602,571 or companion Patent No. 2,602,570.

The piston 3 is designed to fit closely but slidably within shell 4 when the parts are assembled. As in the case of the bail, so too the particular means provided in the gun 1 for reciprocating the plunger or piston rod 2 is a matter of indifference, one suitable construction being found in my previously cited Patent No. 2,602,571. It will also be noted that the piston 3 is dished slightly inwardly so as to conform generally with the outer end of shell 4, or rather with the corresponding end of the cartridge or container for the material to be dispensed, as will now be described.

As previously explained, for use in conjunction with and as an essential part of the apparatus thus far described, a special cartridge is provided. This comprises essentially a bag-like container 15 which is pre-filled with the plastic material to be dispensed. The body 15 of such container is formed of a thin sheet of material impervious to the calking compound or other product that is to be dispensed. Such sheet is also sufficiently flexible so as to permit the body to be collapsed, incidentally to the operation of the gun. While a material such as "Pliofilm," previously mentioned, is a suitable material for use in dispensing calking compounds, no limitation is implied to such particular material, so long as it has the stated characteristics.

In its fully expanded condition, i. e. when filled with the material which is to be dispensed, the body 15 of said container will, as illustrated in Figs. 3 and 4, assume the form of a cylinder having an external diameter approximately the same as the internal diameter of shell 4. The length of such body will likewise correspond closely with the length of said shell, or rather that of the cylindrical portion thereof. Fitted to one end of such body is a tapered spout or nozzle 16, preferably molded of plastic material, although it may be made of light gauge

metal if desired. The end of the body **15** is designed to fit snugly within a collar **17** on the large end of such nozzle and is firmly attached thereto by a suitable adhesive or by fusion where the character of the materials is such as to permit this mode of attachment.

In its initial form, as thus attached to the cartridge formed by the wall **15** and its contents, the outer end of spout **16** is closed; in other words, the nozzle normally forms a seal for the corresponding end of the container. Accordingly, before the material within the latter can be dispensed such nozzle requires to be transversely severed, and by selecting the point therealong at which it is thus severed and by varying the angle of the cut, the shape and size of the discharge opening may be varied to suit the particular use to which the device or apparatus is to be put. The lines *a, b, c* and *d* on Fig. 1 constitute markings that indicate the manner in which the nozzle may be thus severed in order to adapt the nozzle for different uses.

After the body of the container has been filled in the manner above described, the end thereof opposite the spout or nozzle **16** will desirably also be sealed as by folding inwardly an extension of the side wall in the form of angular flaps **18**, in the same manner as the bottom of a paper bag is ordinarily closed, and then adhering such flaps together. Any other method of tightly closing the end of a bag may of course be employed. The container as thus filled and sealed may be readily packaged for storage and transport, with assurance that the contents will be preserved indefinitely in condition for intended use. After the contents have been dispensed, the container, including the attached spout, may be discharged. Since such spout may be attached incidentally to the filling of the container, the latter may, until this stage of assembly is reached, be handled in flat form, as indicated by the dotted lines **15***a* on Fig. 4, and be of indefinite length, successive sections of the length required for the container being then cut therefrom.

The operation of the device or apparatus as a whole will now be described. Assuming that the shell **4** has been detached from the gun **1** by releasing the bail **8** from engagement with such shell, a charged or loaded cartridge **15**, sealed at its outer end by the attached spout or nozzle **16**, is slipped into the shell until the collar **17** abuts the shouldered end **11** of the shell. In this position of parts the spout will extend beyond such end a sufficient distance to permit it to be severed at selected points in the manner previously set forth. The bail **8** is now brought in position to lock the shell in place. Thereupon by actuating the gun in familiar fashion, the piston **13**, which of course is in fully withdrawn position, may be advanced at such rate and to such extent as may be desired for the particular operation in hand. As the piston is thus advanced, the flexible side wall which constitutes the body **15** of the container will be collapsed under the pressure thus imposed, and its contents forced out through the spout.

The described apparatus is also adapted for use without necessarily employing the collapsible container **15**. This is the mode of operation illustrated in Fig. 5 in which all the same parts are utilized and assembled in the same manner as in the construction illustrated in Fig. 1, except that said container **15** is omitted; that is, except for the normally sealed spout or nozzle **16** which is attached to and forms a seal for the outer end of said container. In other words, said spout or nozzle is fitted independently in the outer end of the shell **7** so as to seal such end and the material to be dispensed is then filled directly into such shell which now becomes the container. For the purpose of sealing the inner end of the latter, a circular disk **20** is inserted within such end in tight fitting but slidable relation. Such disk in cross-section will, as shown, desirably conform with the dished shape of the piston **3**. Accordingly when the shell, now constituting the container for the material to be dispensed, is secured in place on the gun by means of the bail **8**, the piston being fully withdrawn, will upon actuation of the gun advance the disk **20** and discharge the material in the container through the spout or nozzle which of course will have been severed, as above described, to provide an outlet opening of selected size.

While in the case of such modified construction by removing the spout or nozzle and the disk **20** after the container has been emptied such container may be reused, it is contemplated it will ordinarily be made of plastic or other inexpensive material and so may be discarded just as in the case of the previously described collapsible container.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a dispensing apparatus of the character described, the combination of a piston-actuating gun, a rigid, substantially cylindrical shell open at one end and constricted at the other end to provide a shoulder terminating in a neck, said shell being attached at such one end to said gun to receive such piston for reciprocatory movement therein, and a collapsible container of which the side wall is of flexible film material adapted to fit within said shell with one end adjacent to such piston and with the other end positioned against such shoulder, such other end of said container being of relatively rigid material and provided with a dispensing spout which projects through and substantially beyond such neck and through which spout material in said container may be discharged by longitudinally collapsing the side wall of the latter between such shoulder and piston.

2. As an article of manufacture, a container for material to be dispensed from an apparatus of the character described, said container being of general cylindrical form having a side wall of flexible film material and having closed ends, one of which is of relatively rigid material and terminates in a spout of smaller diameter than said container, said flexible side wall being longitudinally collapsible by relative movement of said ends toward each other, the closed tip of said spout being adapted to be severed for discharge of the material from within said container.

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