July 24, 1951 W. A. SHERBONDY 2,561,825

DISPENSING DEVICE FOR CALKING MATERIAL AND THE LIKE

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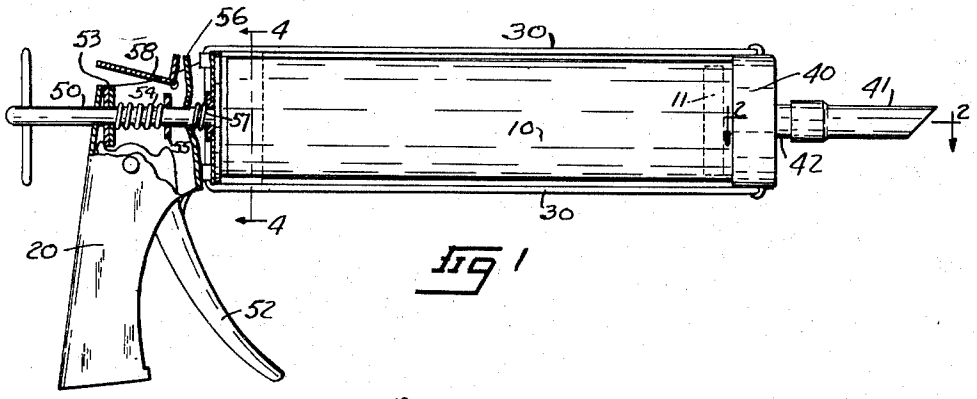


Fig. 1

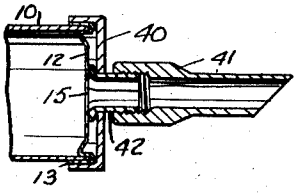


Fig. 2

Fig. 3

Fig. 7

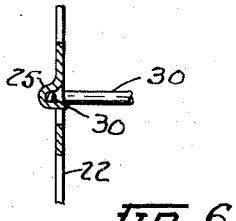


Fig. 6

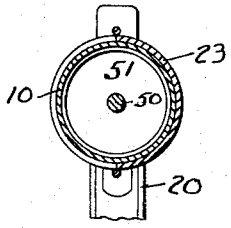


Fig. 4

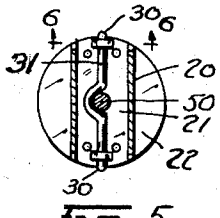


Fig. 5

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DISPENSING DEVICE FOR CALKING MATERIAL AND THE LIKE

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5 Claims. (Cl. 222—327)

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This invention relates to a dispensing device for calking material and the like, comprising a handle in which one end of a cartridge adapted to contain such material may be mounted, the handle carrying means to engage the far end of the cartridge and hold it in place and being equipped with manually operable feeding mechanism to expel the contents from the cartridge. The object of the invention is to provide an extremely simple device for securing the cartridge in place, enabling the expulsion of the contents as desired by manipulation of a suitable hand lever on the handle.

In its preferred form my invention employs a cartridge in the form of a paper tube having at one end an internal cap which may act as a plunger in extruding material, and at the other end a cap having a central opening through which the extrusion takes place. A spout is carried by the dispensing apparatus and in use registers with the discharge opening. When the discharge opening is closed by a suitable frangible strip, the cartridge with its two caps forms a ready shipping container for the calking material.

When it is desired to use the cartridge, it is only necessary to mount it in the apparatus, which is equipped with means to engage and position the rear end of the cartridge while the forward end engages the device carrying the spout. The discharge apparatus may comprise a pusher rod, hand lever and suitable pawls adapted to advance the rod and retain the gain made. Such pusher acts to advance the internal cap as a plunger to force the material forward, breaking the frangible seal and discharging through the spout.

A preferred form of the invention is illustrated in the drawings hereof and is hereinafter more fully described and the essential novel features are set out in the claims.

In the drawings, Fig. 1 is a longitudinal section of the complete dispensing device showing the cartridge mounted in position in the apparatus; Fig. 2 is a fragmentary longitudinal section through the positioned cartridge at the discharge end; Fig. 3 is a plan of the apparatus showing the parts in the act of positioning the cartridge; Fig. 4 is a cross section through the mounted cartridge indicated by the line 4—4 on Fig. 1; Fig. 5 is a cross section through the hand grip, as indicated by the line 5—5 on Fig. 3; Fig. 6 is a detail in cross section, as indicated by the line 6—6 on Fig. 5; Fig. 7 is a modified cross section in a plane indicated by the line 5—5.

As shown in Figs. 1, 2 and 3, 10 indicates the body of a cartridge which is preferably a paper tube similar to a mailing tube. 11 indicates an internal cap which, when the loaded cartridge is delivered, is adjacent one end thereof and forms a closure, but which acts as a plunger operated

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by the pusher of the apparatus to discharge the contents. Such cap, which may if desired be a sheet metal disc having a flange, is indicated near the discharge position at 11 in Fig. 1. 12 indicates the external cap at the discharge end as shown in Fig. 2. This external cap has a double flanged edge 13 which embraces the wall of the cartridge and at the center has a discharge opening 14. When the cartridge is shipped this opening is closed by a thin frangible seal 15 secured to the inner face of the cap.

When the cartridge is mounted and the plunger at the other end actuated the pressure breaks the seal 15, so that the contents may be discharged through the opening 14, and thence through a suitable spout carried by the apparatus. The cartridge with its two caps accordingly constitutes the shipping container and immediately upon receipt by the user, it may be placed in the dispensing apparatus of this invention for discharge.

The dispensing apparatus comprises a body or handle 20 preferably made of sheet material doubled forwardly on itself and formed into a hand grip which at the forward end has a transverse channel member 21 abutting and secured to a disc 22. This disc is provided at its edge with a flange 23 which extends cylindrically for half a circumference, the terminal diameter being preferably in a vertical plane. Such half-sleeve 23 and the disc 22 accordingly form a seat for the rear end of the cartridge.

A pair of rods 30 lying in a vertical plane are connected at their rear ends to the handle and at their forward end to a cap 40 of sufficient size to receive that end of the cartridge and having a central opening adapted to register with the discharge opening of the cartridge. The connection at either the inner or outer end of the rods is pivotal so that the cap may take a position at an angle to the head of the handle. It is preferable to pivot the cap to the ends of the rods and this cap preferably carries a spout 41. If desired, the spout may be removable and internally threaded on an external thread of a short tube 41 secured to the cap.

In mounting the cartridge the far end is merely placed in the cap 40 which is swung somewhat to one side as indicated in Fig. 3, and then the cartridge is swung in the opposite direction across the front plate 22 into engagement with the semi-cylindrical sleeve 23. In this position the cartridge may be readily retained by the first finger of the operator extending alongside of the open side of the retainer 23 and the adjacent portion of the cartridge, until the pusher mechanism, about to be described, enters the cartridge, after which the pusher plate on such mechanism retains that end of the cartridge in position.

The discharging apparatus includes a pusher rod 50 having a disc 51 on its forward end, which,

when the rod is fully withdrawn, preferably seats within a recess in the plate 22. This disc is of such size that it may readily engage the closure cap 11 and force it along the interior of the cartridge as the rod is advanced to expel the material.

A hand lever 52, pivoted to the grip 20, operates suitable mechanism to advance the rod 50. As shown, the mechanism comprises a pair of washers 53 normally loose about the rod and pressed in idle position by a spring 54 operating against an abutment 55 in the hand grip. When the hand lever is drawn by the operator's fingers into the grip the upper end of the lever forces forwardly the lower portions of the washers skewing them and causing them to bind against the rod 50 and feed the same forwardly. The gain is retained by a detent pawl 56 normally pressed by a spring 57 into position to bind against the rod. As the rod is fed forwardly, however, it carries the detent pawl into a more nearly vertical position and passes freely through it. At the end of the stroke, the spring 57 returns the detent pawl to the inclined position where it bites into the rod and prevents retraction thereof and accordingly maintains the gain made by the actuation of the lever 52.

At the end of the operation of discharging the contents of the cartridge, the disc 51 on the end of the rod 50 has shoved the cap 11 practically to the opposite end of the cartridge and against the interior of the cap 12. When it is desired to withdraw the rod the operator actuates an L-shaped lever 58 shown in idle position in Fig. 1 and turns it upwardly into the position shown in Fig. 3. In this position the short arm of the lever engages the detent pawl 55 and cams it to idle position, thus allowing the rod to be freely withdrawn. When completely withdrawn, the cartridge is free to be swung laterally as indicated, for instance, in Fig. 3 and then withdrawn from the cap 40 and discarded.

The two rods 30 may be in the form of a bail having an intermediate portion 31 extending through the handle and suitably secured thereto. In Figs. 5 and 6, I have indicated a pivotal connection between the bail and handle effected by loops 25 on the channel member 20 overhanging the bail. In Fig. 7 the bail is fixed to the handle, which may be readily effected by an ear 26 on the handle overlapping a laterally looped portion 32 of the bail. At the far end, the two arms 30 of the bail are preferably pivoted to the cap 40 by ears 45 on the latter embracing loops 33 on the ends of the rods 30.

It will be seen that my manually operated apparatus is extremely simple and relatively inexpensive in construction. The cartridge may be readily mounted therein and when so mounted a complete calking gun is provided. Such gun has readily operable manual mechanism for extruding the material through the discharge spout, enabling the use of the apparatus in the usual manner of a calking gun. The cartridge may remain in the apparatus as part of the complete gun until the material has been entirely used; thereafter merely withdrawing the pusher rod and swinging the cartridge to one side frees it from the apparatus, enabling the installation of a fresh cartridge.

I claim:

1. In a dispensing apparatus for viscous material, the combination of a handle having an outwardly extending laterally open portion adapted to engage the exterior of one end of a cartridge and position the cartridge at that end, a flanged cap adapted to embrace the far end of the cartridge, and a pair of rods adapted to lie on opposite sides of the cartridge and pivoted to the handle and the cap on axes extending transversely of said rods.

2. In a dispensing apparatus for viscous material, the combination of a handle having an outwardly extending portion adapted to engage the exterior of a cartridge and position the cartridge at that end, a cap adapted to embrace the far end of the cartridge, a pair of rods adapted to lie on opposite sides of the cartridge pivoted respectively to the handle and the cap, said rods being connected by an intermediate portion extending across a portion of the handle and means engaging said intermediate portion to pivot the rods to said handle.

3. In a dispensing apparatus for viscous material, the combination of a handle having an outwardly extending partial sleeve adapted to engage one side of a cartridge while leaving the other side free, a bail having its intermediate portion extending across the handle and pivoted thereto on an axis located substantially in the plane of separation between said partial sleeve and the open entrance thereto and having its free arms adapted to extend on opposite sides of a cartridge, a cap to which the forward ends of the said arms are pivoted, said cap having a peripheral flange and a central opening for the discharge of material from the cartridge positioned by the flange on the cap.

4. In a dispensing apparatus for viscous material, the combination of a handle having an outwardly extending portion adapted to engage the exterior of one end of a cartridge for not more than half of the circumference thereof to provide a side entrance to said portion and position the cartridge at that end, a cap adapted to embrace the far end of the cartridge, and a pair of rods adapted to lie on opposite sides of the cartridge and pivotally connected at their rear ends to the handle on an axis lying in the plane of the edges of the side entrance to said outwardly extending portion and connected at the forward ends to the cap.

5. In a dispensing apparatus for viscous material, the combination of a handle having an outwardly extending portion adapted to engage one end of a cartridge and position the cartridge at that end, a cap adapted to embrace the far end of the cartridge, a pusher rod slidably mounted in the handle, and a pair of rods connected respectively to the handle and cap and adapted to lie on opposite sides of the cartridge, the rods being in the form of a bail having an intermediate portion passing through the handle and offset laterally about the pusher rod, said handle having means embracing the non-offset part of said intermediate portion of the bail to pivot the bail to the handle.

WILLIAM A. SHERBONDY.

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