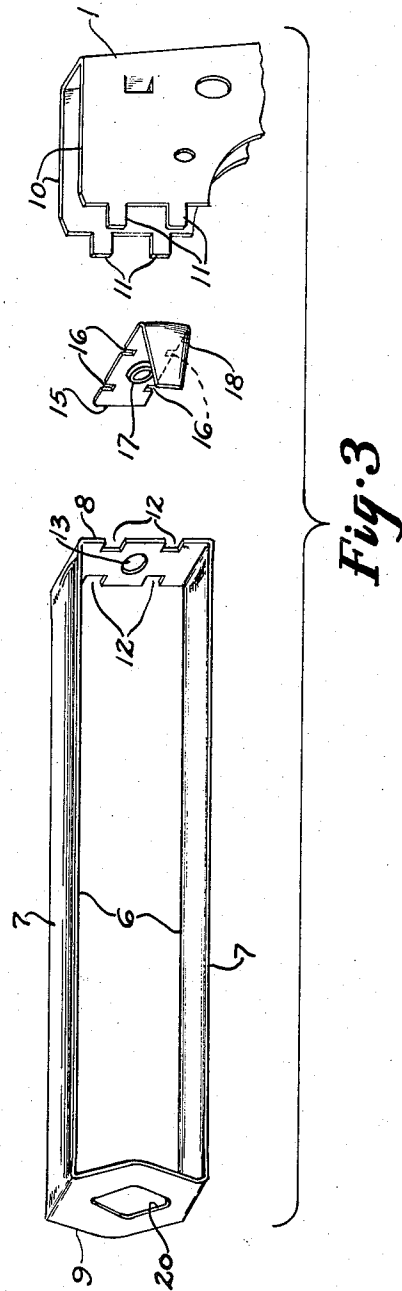
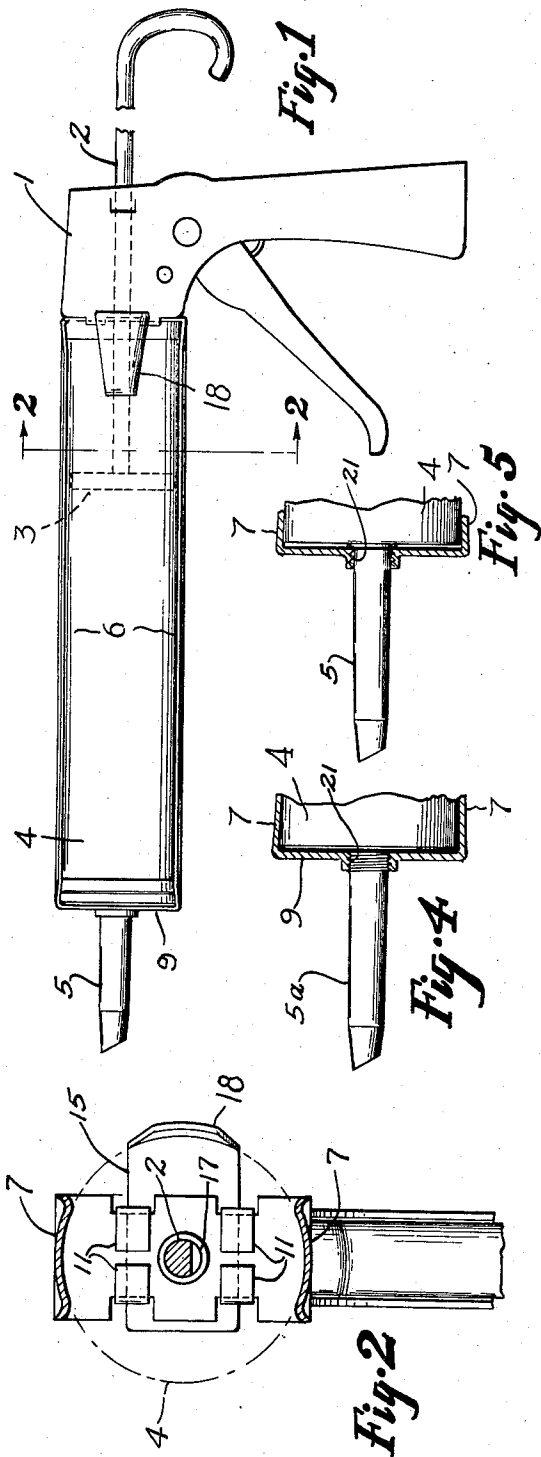


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CALKING GUN AND THE LIKE

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CALKING GUN AND THE LIKE

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While, as indicated, the present invention relates primarily to dispensing devices known as calking guns, no limitation is implied as to the material which may be dispensed. The invention relates more particularly to the type of such dispenser wherein a hand grip assembly is provided with a plunger adapted to enter one end of a tubular cartridge of calking or like material.

One principal object is to provide in connection with such plunger operating means a support for such cartridge, which will permit the ready insertion and removal of the latter as desired, it being understood that after the contents of a cartridge have been discharged therefrom such cartridge is ordinarily discarded and a freshly filled one substituted. A further object is to provide such a support which, while simple and inexpensive in construction, will be light in weight and yet sufficiently rigid to withstand the strains to which it is subjected during operation of the device.

Still another object is to provide means that will adapt the device for use with a cartridge that is fitted with a dispensing nozzle, or that is not so fitted, as occasion may arise.

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 with conventional cartridge in place, such gun being provided with one form of the present improved support or carrier for the cartridge;

Fig. 2 is a transverse section of the device, the plane of the section being indicated by the line 2—2, Fig. 1;

Fig. 3 is an expanded perspective view illustrating three of the component parts of the device shown in Figs. 1 and 2; and

Figs. 4 and 5 are axial sectional views of the discharge end of the device, respectively showing two modifications in construction.

The calking gun 1 may be of any suitable construction; for example that shown in my Patent No. 2,602,571, dated 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, such piston being adapted to fit within a disposable cartridge 4 when suitably supported by or attached to the calking gun by the means which will now be described. As previously explained, such cartridge will be initially filled with calking compound or other material to be dispensed, and when its contents have been discharged it will be removed and replaced with another filled cartridge.

Furthermore, the cartridge may or may not be fitted at its outer end with a discharge nozzle 5.

For the purpose of thus removably receiving the cartridge and for supporting the same during operation of the gun, an open rectangular frame 6, best shown in the expanded perspective view of Fig. 3, is attached to the forward face of the gun body. As there shown, this frame, which will be preferably formed of light gauge metal strip, comprises two longitudinally extending side members 7, 7, connected at their respective ends by transverse members 8 and 9. Side members 7, 7, at least in their intermediate portions, will be spaced apart a distance slightly less than the diameter of the cartridge 4, each of said members being transversely curved, as best shown in Fig. 2, to conform approximately to the transverse curvature of the cartridge. As a result, when the latter is inserted sidewise between the members, it will not only be accurately centered therebetween, but also held with a sufficient degree of security against displacement. At the same time such transverse curvature of the side members 7, 7 in effect provides the latter with stiffening ribs which render the frame as a whole sufficiently rigid not only to support the loaded cartridge but to withstand the lateral pressure imposed on the discharge nozzle of the cartridge, and thus on the outer end of the frame, during operative manipulation of the gun as a whole.

While the frame may be attached to the body of gun 1 by riveting, welding, or similar means, the preferred construction illustrated in Figs. 1 to 3 inc. is designed to permit such assembly by means of a simple press operation, without the use of any additional parts. To this end, the spaced side walls 10, 10 of the gun body (see Fig. 3) have their forwardly directed edges each formed with a pair of ears 11 and the corresponding end member 8 of frame 6 is formed with complementary paired notches 12, 12. In addition, said end member is formed with a central circular opening 13 through which plunger 2 may pass in the assembled condition of the gun.

Also, in order to insure proper placement of the cartridge when it is inserted in the gun, a locating plate 15 will desirably be employed, such plate being inserted between the side walls 10, 10 of the gun body and end wall 8 of frame 6. In order to permit such assembly, said plate, like end member 8 of the frame, is formed with paired notches 16, 16, complementary to the lugs 11, 11. Said plate is likewise formed with a central opening 17 disposed in alignment with opening 13 in end wall 8 of the frame and serving the same purpose, i. e. to permit free movement therethrough of plunger 2. Finally, the plate is formed with an abutment 18 so disposed as to engage the corresponding side of the cartridge 4 when in place in the gun, and preferably curved to conform with the curvature of such cartridge.

The manner in which the parts just described are assembled will be apparent. All that is required to effect such assembly is to successively fit the plate 15 so that the notches therein engage the lugs or ears 11 on the gun body, then similarly engage the notches 12, 12 in the end member 8 of the frame 6 with such lugs or ears and thereupon forcibly bend the latter inwardly so as to tightly clamp the three parts in question together, as shown in Fig. 2.

Where, as assumed in the case of the construction illustrated in Figs. 1 to 3 inc., the cartridge 4 is provided with a discharge nozzle 5, the end wall 9 of the frame 6 is formed with an aperture 20, adapted to receive such nozzle and permit the same to project therethrough. As shown in Fig. 3, this aperture is conveniently provided by forming a slit in the end member in question and then expanding such slit into a diamond shaped opening, dimensioned thus to receive the nozzle. By providing the open-

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ing in question in this manner, there is no weakening of the end member as would be the case if a circular opening were punched therethrough. However, in case the cartridge to be employed with the gun is not already fitted with a discharge nozzle, instead of forming an opening in end member 9 in the manner just described, a circular opening 21 may be provided, as illustrated in Fig. 4, by a punching operation which serves at the same time to upset the metal immediately surrounding the hole. The latter will then be interiorly threaded to receive the externally threaded end of a discharge nozzle 5a. Preferably the diameter of the opening 21 will be made large enough so that in case it is desired to use a cartridge which, as previously described, is already fitted with a discharge nozzle 5, such nozzle may simply be inserted through the same opening, as illustrated in Fig. 5, although of course without having any threaded engagement therewith.

From the foregoing description it will be seen that I have provided a dispensing device of the type described which may not only be readily fabricated and assembled, but which when assembled will be unusually sturdy and capable of indefinite service. It will of course be understood that the several features of improvement disclosed need not be all utilized in any given construction. For example, the frame with its transversely curved side members will function independently of the particular manner in which it is attached to the gun body. Also, as indicated, provision may be made in several different ways for the nozzle end of the gun depending on whether the nozzle is carried by the cartridge or is an adjunct of the frame.

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:

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1. In a dispensing apparatus of the character described, the combination of a gun body including a piston and means for moving said piston, a generally rectangular frame of strip stock having relatively yieldable top and bottom sides and being attached at one end to said gun body for movement of said piston in said frame from such one end toward the other, and a material-containing cartridge of generally cylindrical form adapted to be positioned between the ends and sides of said frame for movement of said piston into one end of said cartridge to thereby displace material through a dispensing opening at its other end, the sides of said frame in the vertical median longitudinal plane thereof being spaced apart a distance corresponding to the diameter of said cartridge and the opposite edges of such sides, only at zones spaced inward from the respective ends, being spaced apart a distance less than the diameter of said cartridge whereby the latter, when positioned as aforesaid, is yieldably retained in alignment with said piston.

2. The dispensing apparatus of claim 1 wherein said frame is formed with a central opening through each of its ends, and wherein a piston rod attached to said piston and a dispensing spout on said cartridge extend through the respective openings.

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