



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



Publication number: **0 534 031 A1**

**EUROPEAN PATENT APPLICATION**

Application number: **91500108.5**

Int. Cl.<sup>5</sup>: **B05C 17/01**

Date of filing: **27.09.91**

Date of publication of application:  
**31.03.93 Bulletin 93/13**

Applicant: **Fletes Martin, Leoncio**  
**Impresores 38**  
**E-28096 Getafe(ES)**

Designated Contracting States:  
**AT BE CH DE DK FR GB GR IT LI LU NL SE**

Inventor: **Fletes Martin, Leoncio**  
**Impresores 38**  
**E-28096 Getafe(ES)**

Representative: **De Arpe Fernandez, Manuel**  
**ARPE Patentes y Marcas Guzmán El Bueno,**  
**133**  
**E-28003 Madrid (ES)**

**Extrusion gun for cartridges.**

To simplify the structure and assembly of a stuffing device for putties contained in plunger cartridges, of the type adopting the shape of a pistol having a breech end (1), a semi-tubular receptacle (2) for the putty cartridge having a stop (3) for the said cartridge and a lever (4) including a piston (4a) for driving the plunger of the cartridge, which is axially displaceable by means of a trigger (6) bearing an actuating bolt (9) and a lock (11), which can operatively be coupled to a denting (5) provided on the side surface of the said actuator lever (4), there have been provided by-pass notches (12 and 13) provided at the side walls of the breech end (1) for

the resting and positioning of a lock (11) in the form of a metal strip, which notches adopt the configuration of a circular sector having small radial prolongations (12b, 13a) in the form of recesses, at least one of which by-pass notches (12 and 13) is provided with a portion (12a) in the form of a vertical radial recess. The trigger (6) has a stop (6a) for the lower portion (9b) of the bolt (9) so that the upper portion (9a) thereof in the shape of a pawl will necessarily occupy a position with respect to the trigger (6) which ensures the correct operative positioning resting on the actuator lever (4).

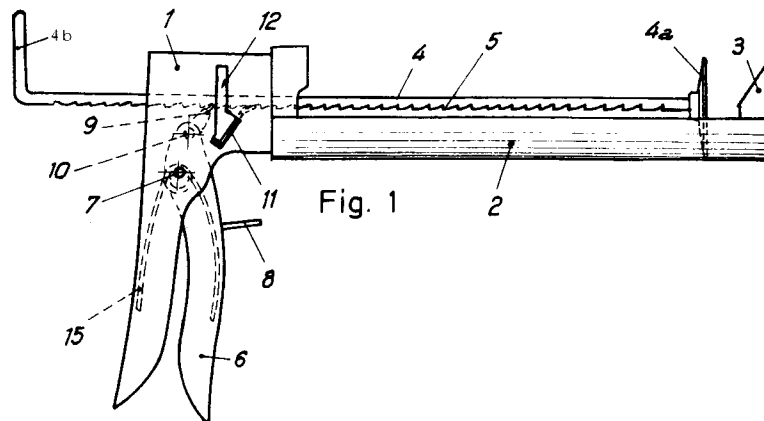


Fig. 1

EP 0 534 031 A1

The present invention relates to an improved apparatus for injecting putty and the like, more particularly for injecting this type of pastes contained in plunger-injector cartridges of the type comprising a receptacle for the putty cartridge and an actuator piston for driving the plunger of the said cartridge, which actuator piston is operated by its rod through a ratchet device operatively coupled to an actuating trigger.

This type of apparatus, adopting the shape of a pistol and essentially comprised of a receptacle portion for the putty cartridge having a tubular arrangement and a front stop for the distal end of the cartridge, a handle portion in the shape of a breech, and a piston movable in an axial direction to the said receptacle portion for driving the plunger of the cartridge by means of a piston rod or piston lever partly dented on its lateral surface, which is operatively coupled to a trigger-actuated ratchet mechanism and a locking mechanism which prevents the rod or lever of the said actuator piston from returning, has been known since at least 1967.

In fact, Spanish patent of invention No. 348,553 and its patents of addition Nos. 399,028 and 399,029, in the name of José Martín Rodríguez, describe this type of apparatus in which the driving ratchet, joined to the trigger, and the locking mechanism of the driving rod or lever are comprised of pawls rotatably mounted on pins and including repositioning springs which are fixed to the breech end portion of the apparatus by means of rivets, to operatively rest in front of the driving lever. This on its own represents an inconvenience insofar as the assembly operations of the apparatus are concerned. In fact, on the one hand, the driving pawl is mounted on the trigger so as to turn freely about a pin, so that during assembly thereof it can rock on the said pin preventing it from remaining in a position opposable to the lever of the apparatus, wherefore the operativeness thereof would be prevented. On the other hand, the assembly by means of the riveting of the locking mechanism of the lever is not desirable due to the high cost of the said riveting operation as well as to the impossibility of replacing the rivet in case of malfunctioning thereof without the appropriate riveting tools.

Therefore, the object of the invention is to proportion an apparatus of the type initially described whereby the aforesaid assembly disadvantages are overcome.

In accordance with the invention, this task is achieved inasmuch as the locking device of the driving lever of the apparatus is comprised of a simple metal strip resting on by-pass notches correspondingly made in the lateral walls of the breech end portion of the apparatus. The notches are

provided with a resting and positioning zone for the strip in the form of a circular sector and at least one of the notches is provided with a straight vertical recess, the length of which is at least equal to the length of the said strip. In this manner the said strip can be mounted in an operative position by inserting it through the said straight recess. This simple measure remarkably simplifies the locking mechanism of the driving lever of the apparatus as also the corresponding assembly operation, since the riveted-in pin is eliminated, on the one hand, and the corresponding repositioning spring, on the other.

In a preferred embodiment of the invention the actuating trigger is provided with a stop to prevent the driving ratchet pawl or latch from rocking, so that its operative positioning with respect to the driving lever of the apparatus may be ensured during the assembly operation.

Other characteristics and advantages of the invention will become more apparent from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 schematically illustrates a side elevational view, partly cut, of a putty injecting apparatus in accordance with the invention, in which the broken lines represent the position of various elements thereof during operation.

Figure 2 illustrates a detail of the lateral by-pass notch on the side of the apparatus represented in figure 1.

Figure 3 is a view similar to that of figure 1 but from the other side of the apparatus, in which the broken lines also represent an operative position.

Figure 4 illustrates a detail of the by-pass notch made in the side of the apparatus shown in figure 3.

Figures 5 and 6 illustrate side and front elevational views, respectively, of the locking strip of the apparatus of the invention.

Figure 7 illustrates a rear elevational view of the actuating trigger of the apparatus of the invention.

Figure 8 illustrates front and side elevational views of the actuating trigger of the apparatus of the invention.

With reference to figures 1 and 3, it can be seen that the putty injecting apparatus or machine adopts the general configuration of a pistol having a handle or breech end portion 1 and a semi-tubular receptacle 2 for the coupling of the injector cartridge with an anterior stop 3 for the distal end of the cartridge, forming a solid whole. Additionally, slidably mounted on the apparatus there is an actuator lever 4 which has a piston 4a for activating the plunger of the injector cartridge, not represented, so that the said actuator lever 4 can move

in an axial direction to the receptacle 2 for driving the said plunger of the putty cartridge. The actuator lever 4 is cylindrical in shape, half its side surface, at the most, includes a denting 5 and it is mounted on the handle or breech end portion 1 so as to turn freely around the studs on which it is mounted, so that it can face actuating elements or it can be uncoupled therefrom by turning its back end 4b, as will be explained in detail later on.

With further reference to figures 1 and 3 and with additional reference to figures 7 and 8, it can be seen that breech end 1 is provided, for activating the dented lever 4, with a trigger 6 pivoting around a pin 7 which has a stop 8 opposable to the lower portion of said breech end 1 and a driving bolt 9 rocking on a pivot 10, with a pawl 9a for coupling to the denting 5 of the lever 4. So that when trigger 6 is activated, the said pawl 9a will drive lever 4 forwards, provided that the denting 5 thereof faces same; additionally positioned ahead of the bolt 9 is a lock 11 in the shape of a strip which, coupled between the side walls of breech end 1, prevents the lever 4 from returning, provided that its upper portion faces the denting 5 of the said lever 4, and permits movement thereof when the said lever 4 is driven forwards by the actuation of the trigger 6 and also the return of the said lever 4 when same is in a turned position, its denting 5 not being coupled to the lock 11 by turning its rear end 4b.

Referring now to figures 2, 4, 7 and 8, it can be seen that the side walls of the handle or breech end portion 1 of the apparatus are respectively provided with by-pass notches 12 and 13 on which the lock 11 rests, so that it can be mounted in the operative position, that is to say resting on the side surface of the lever 4 and being maintained at rest on the said notches. As can be seen in more detail in figures 2 and 4, the notch 12 is arranged in the form of a circular sector of approximately 30-45°, including a first straight portion 12a in the shape of a recess extending vertically upwards in a radial direction in a length at least equal to the length of the strip of the lock 11, and a second straight portion 12b, also in the shape of a recess, extending a short distance backwards in a radial direction. The by-pass notch 13, in turn, made in the other side wall of the breech end 1 adopts the shape of a circular sector having the same extension as notch 12 but merely having a small portion 13a in the shape of a recess which extends radially backwards.

As can be seen in more detail in figures 7 and 8, the lock 11 is comprised of a metal strip having two end bends 16 and 18 which rest, respectively, on the actuator lever 4 and the side notches 12 and 13, and it is further provided with lateral lugs 17 for resting on the said notches 12 and 13.

In view of the foregoing, the said locking strip 11 can be assembled in an operative position, than is, its end 16 resting on the actuator lever 4, being maintained at rest by its lugs 17 on the side walls of the breech end 1 in the notches 12 and 13 and with its end bend 18 fitting into the recesses 12b and 13b thereof. As will easily be understood by the experts, positioning of the said locking strip 11 is extremely simple, since it merely has to be inserted laterally through the recess portion 12a of the notch 12.

With reference to figures 5 and 6, it can be seen that there is mounted on the trigger 6 a bolt 9 rocking on a pivot 10 having a repositioning spring 14 which tends to maintain the said bolt in a raised position, so that it is coupled to and it rests on the actuator lever 4 of the apparatus in order to drive it forwards by actuation of the said trigger 6.

With further reference to figures 5 and 6, it can be seen that the oscillating bolt 9 has an upper portion 9a in the shape of a pawl and a lower portion 9b having a U-section. The trigger 6, in turn, has a notch with a stop 6a for the lower portion 9b of the bolt 9, so that the said bolt 9, once it incorporates its repositioning spring 19, occupies a fixed position with respect to trigger 6, provided that the repositioning force of the said spring 14 is not overcome. With this simple measure, the correct positioning of the pawl 9a of the bolt 9 is ensured when the trigger 6 is mounted between the side walls of the apparatus on its hinge pin 7.

Additionally, figures 5 and 6 illustrate that the front part of the trigger 6 is provided with a recess 6b including a brace 6c for the coupling of a spring 15 for repositioning the trigger 6.

The improvements disclosed in the foregoing, ensure a greater ease in assembling this type of apparatus, as well as the possibility of replacing the locking strip in case of deterioration thereof, without having to use special tools.

Having described the object of the invention in sufficient detail, there only remains to be said that the embodiments resulting from variations in materials, configuration and the like, as well as those resulting from a routine application of the preceding teachings, should be considered as being included within the scope thereof, in accordance with the following claims.

### Claims

1. Improved stuffing apparatus for putties and the like contained in plunger-injector cartridges, of the type adopting the shape of a pistol having a handle or breech end portion (1), a semi-tubular receptacle (2) including a front stop (3) for the distal end of the cartridge and an ac-

tuating lever (4) longitudinally and rotatably displaceable with respect to the said semi-tubular receptacle (2) including a piston (4a) for driving the plunger of the cartridge and a denting (5) on half of its side surface, at the most, which can operatively face a ratchet bolt (9) with a repositioning spring (14) actuated by a trigger (6) and a locking strip (11) for moving the said actuator lever (4) forwards, characterised in that the said locking mechanism is provided as a substantially straight metal strip (11) with an end bend (16) for resting on the actuator lever (4), lateral lugs (17) and another end bend (18) which rest on notches (12 and 13) correspondingly and respectively provided in the lateral walls of the breech end portion (1), which notches (12 and 13) have a resting and positioning zone for the strip (11) in the shape of a circular sector and a small radial recess (12b, 13a), at least one of which notches (12) being provided, additionally, with a portion (12a) in the shape of a vertical, radial recess, the length of which is at least equal to the length of the said locking strip (11), so that the said locking strip (11) can be mounted in an operative position, that is to say, resting on the side surface of the actuator lever (4) by introducing it into the said straight recess (12a).

5

10

15

20

25

30

2. Apparatus according to claim 1, characterised in that the trigger (6) bearing the rocking bolt (9) is provided with a stop (6a) for the lower portion (9b) of the said bolt, enabling a fixed positioning of its pawl portion (9a) with respect to the trigger (6), so that during assembly of trigger (6) on its pin (7) between the side walls of the breech end (1) of the apparatus, the resting position of the said pawl (9a) on the lateral surface of the actuator lever (4) is ensured.

35

40

45

50

55

4

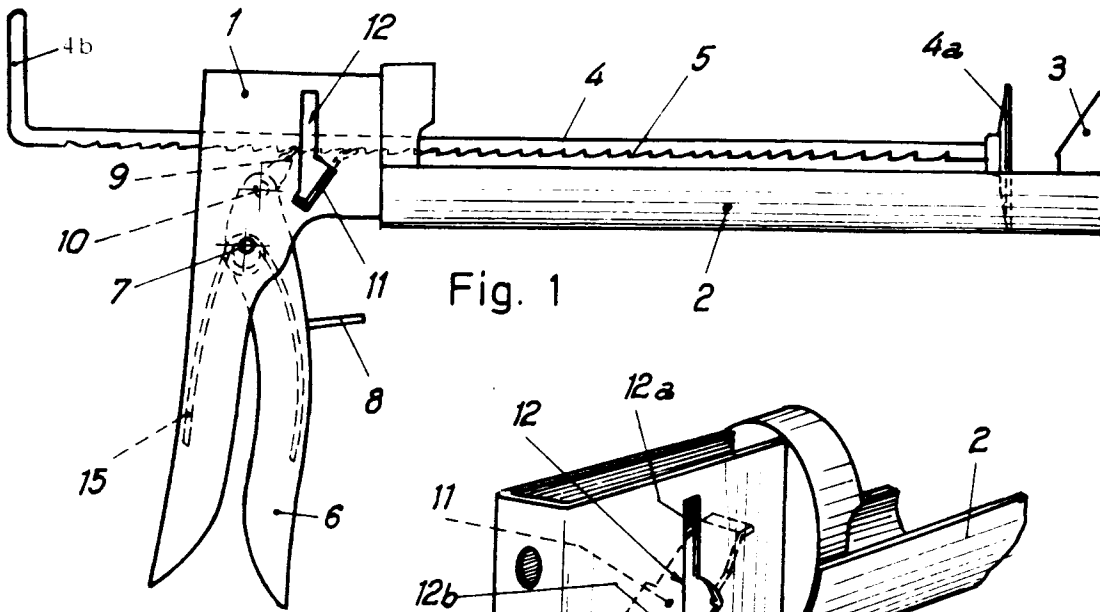


Fig. 1

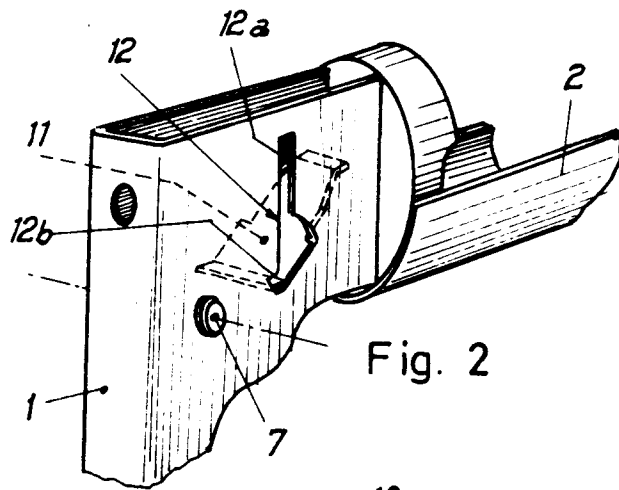


Fig. 2

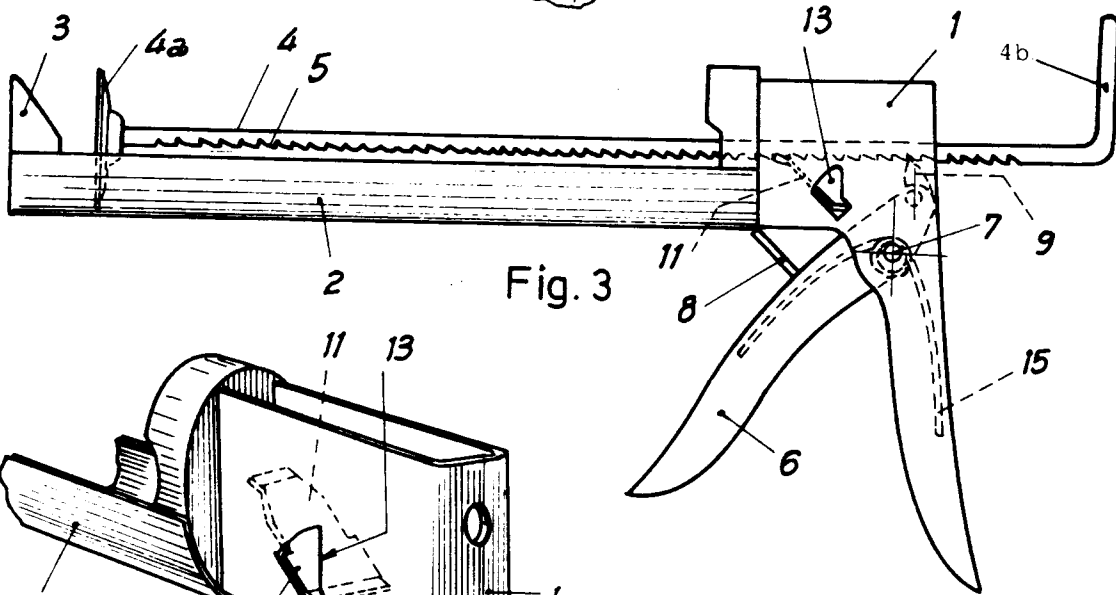


Fig. 3

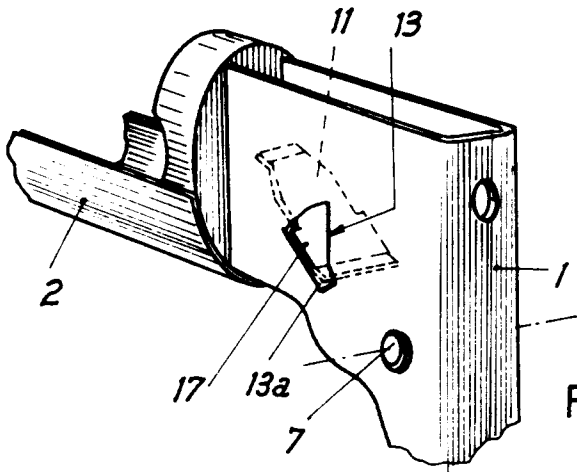


Fig. 4

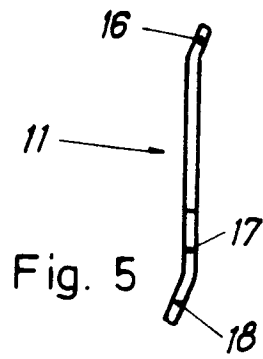


Fig. 5

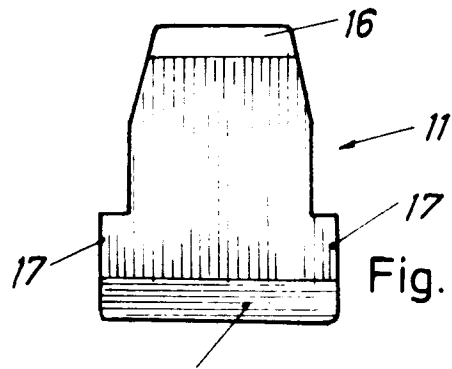


Fig. 6

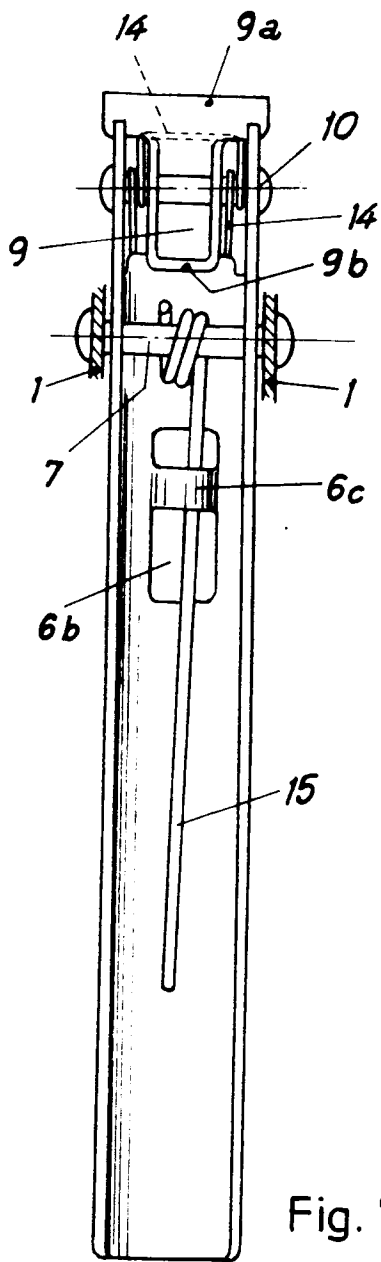


Fig. 7

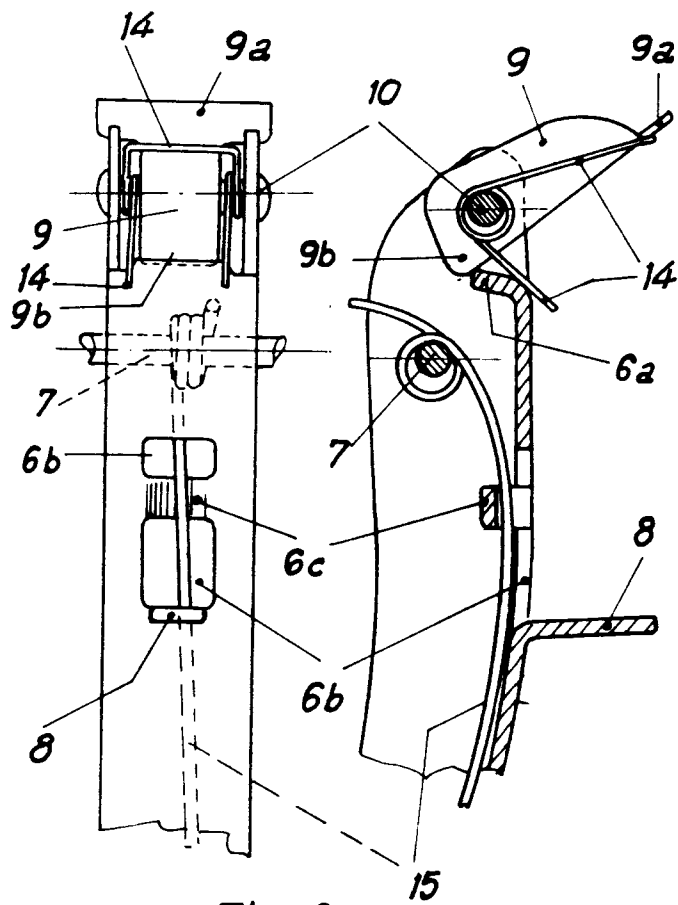


Fig. 8

