

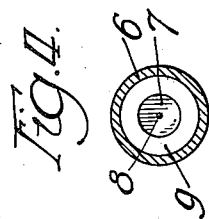
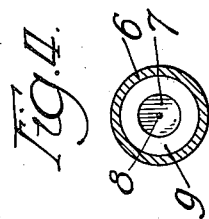
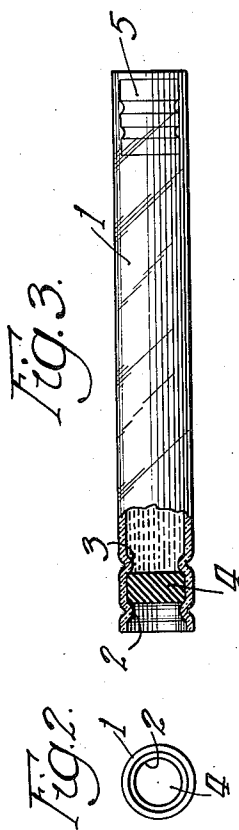
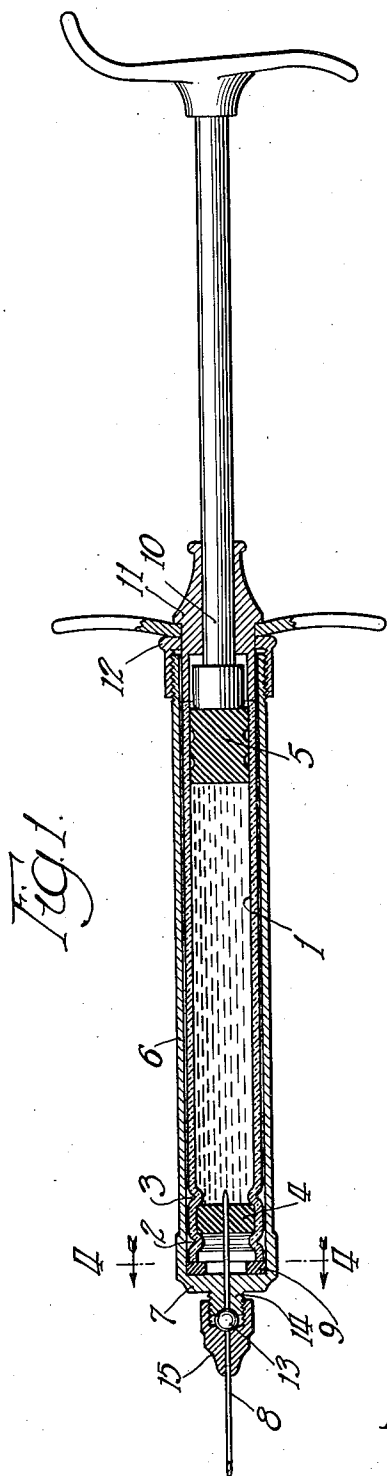
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H. K. BROWN

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HYPODERMIC SYRINGE

Filed Dec. 16, 1927



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HYPODERMIC SYRINGE

Application filed December 16, 1927. Serial No. 240,387.

This invention relates to hypodermic syringes of the kind embodying a cartridge and cartridge-piercing needle in an assembled injection-administering organization.

5 The invention will be explained by reference to an illustrative embodiment thereof shown in the appended drawings.

In said drawings:

10 Fig. 1 is a longitudinal sectional view of a syringe or injection-administering organization comprising or containing the illustrative embodiment of the invention;

Fig. 2 is a front end view of the cartridge embodied in said syringe;

15 Fig. 3 is a side elevation of said cartridge, with the front portion thereof shown in section;

Fig. 4 is a cross section on the line 4—4 of Fig. 1 looking in the direction of the arrow.

20 Referring to the cartridge, 1 denotes a glass cartridge tube, preferably a section of commercial glass tubing. This tube near its fore end is beaded at 2 and 3 to provide internal annular ribs or shoulders. Confined between said shoulders is a stopper 4 of suitable material such for instance as soft rubber adapted to be pierced by a needle and to seal around the same. In effect the internal shoulders provided by the beaded glass tube 30 form a socket between them to receive the stopper which is held in said socket so as to resist inward or outward displacement. The stopper may be a simple plug or disc of resilient material compressed in the tube and snapped into its seat and effectually sealing the tube. In the opposite end of the tube is a stopper 5 which may be of similar material. Said stopper 5 in this instance functions as a sealing closure and also as a piston plug to be 40 forced inwardly to expel the fluid contents of the cartridge through the needle piercing the stopper 4.

50 In the syringe or injection-administering organization exemplified in Fig. 1, the cartridge is held in a holder represented in this instance by a tubular-like instrument body 6. Removably affixed to the head 7 of said body or cartridge holder is a double-pointed hypodermic needle 8, which is mounted in an axial bore of said head, the inner end of said needle

protruding into the holder and piercing the stopper 4. The front end of the glass cartridge tube abuts against an annular gasket 9 of rubber or the like fitted in the holder against the inner side of the head 7. In 55 operation the plunger 10 is forced into the cartridge tube, driving in the plug 5 and forcibly expelling the medicament fluid through the needle. In this action the end of the glass tube is cushioned against thrust and protected by the sufficiently thick rubber gasket 9, and the stopper 4 by virtue of its tight hold in the socket provided between the annular beads 2 and 3 is mechanically interlocked with the glass tube so as to resist 60 displacement in the fluid-ejecting action.

The particular instrument selected for illustration has a detachable breech head 11 in which the plunger rod 10 is slidably fitted, said head in this instance having a screw-cap 12 secured thereto by welding or otherwise 70 and screwed upon the rear end of the instrument body. The cartridge may be inserted endwise into the instrument when the breech head with the parts carried thereby is removed. The inner end of the breech head 10, which is recessed to enclose the enlarged inner end or head of the plunger rod, is adapted to bear on the rear end of the cartridge tube and thus push the cartridge into place with 80 its fore end against the gasket 9. The piercing of the stopper 4 may be accomplished by pushing the cartridge into place after the needle is affixed, or by pushing in and affixing the needle after the cartridge is inserted and held by the breech head. As shown, the needle has an intermediate enlargement 13 seated on the end of the screw-threaded nipple extension 14 and secured by the screw-cap 15. 85 90

I claim as my invention:

1. A hypodermic syringe comprising a cartridge having a sealing closure to be pierced by and seal around a needle and constructed to be reduced in interior volume for ejecting 95 the fluid contents through the needle, said cartridge embodying a glass tube beaded near its fore end to provide internal annular shoulders and said closure consisting of a resilient stopper tightly fitted in the tube be- 100

tween and in engagement with said shoulders and thereby mechanically interlocked with the tube; in combination with means including said needle to provide an injection-administering organization.

2. A syringe cartridge embodying a glass tube beaded near its fore end to provide internal annular shoulders, and having a pierceable sealing stopper of resilient material tightly fitted in the tube and retained between said shoulders, the cartridge being constructed to have its interior volume reduced for expelling the fluid contents through a needle thrust through said stopper.

In testimony whereof, I have signed my name to this specification.

HENRY K. BROWN.

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