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E. BRAUER

HYPODERMIC DEVICE

Filed June 19, 1925

Fig. 1.

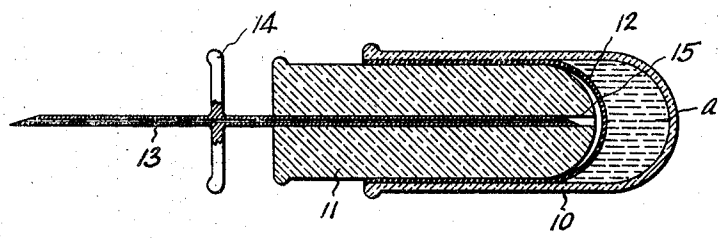
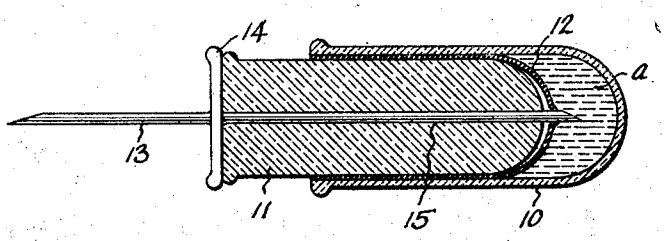


Fig. 2.



WITNESSES

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HYPODERMIC DEVICE.

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My invention relates to hypodermic devices involving a needle and container for the substance to be injected.

The general object of my invention is to provide a sanitary hypodermic device particularly for obtaining sanitary conditions to the maximum extent by reason of the fact that a single use of the device makes for the destruction of the device and the impossibility of using it a second time.

Reference is to be had to the accompanying drawings forming a part of this specification, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a longitudinal section of a hypodermic device embodying my invention showing the same with the needle in the initial position and before movement of the needle to the position for functioning in giving a hypodermic injection;

Figure 2 is a view similar to Figure 1 but showing the needle in position to receive the substance to be injected.

In carrying out my invention in accordance with the illustrated example, a shell or container 10 is provided, closed at the rear end and open at the front end. A plunger 11 is adapted for slidable movement in the container 10. In the container 10 is a flexible sack 12 usually of rubber. Said sack has the general shape of the container 10, being closed at the inner end and open at the outer end. The sack extends across the inner end of the plunger 11 and also along said plunger between the same and the inner surface of the container 10 to form a fluid-tight joint between the plunger and the container. A hypodermic needle 13 is provided sharpened at both ends and formed with a finger-hold 14 in the form of a cross bar. The plunger 11 is formed with a through-bore 15 and owing to the position of the sack 12 between the plunger and the container 10, said sack constitutes a diaphragm at the inner end of the plunger and forms a closure for the bore 15 and at the same time serves to retain in the container the substance *a* to be injected. With the above described construction the substance *a* is placed in the container 10 and the plunger 11 with the sack 12 thereon is then entered in said container, thus sealing the container fluid-tight against the escape of the substance *a*. The needle 13 is now moved inwardly by pressure on the finger-hold 14. The first action of the needle will be to puncture the diaphragm formed over the inner end of the plunger by the sack 12.

With the passage of the needle through the sack 12 the bar 14 will have arrived at the outer end of the plunger and consequently the continued pressure on the bar 14 will carry the plunger 11 inwardly, thereby reducing the volumetric space for the substance *a* and forcing said substance outwardly through the needle in the act of injection.

I would state furthermore that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the exact details herein illustrated, since, manifestly, the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. A hypodermic device including a container adapted to hold the substance to be injected, a plunger receivable in said container, a sack between the plunger and container and forming a diaphragm over the inner end of the plunger, said plunger having a through-bore, and a hypodermic needle fitting said bore and movable therein to puncture said diaphragm to permit the substance in the container to pass through the needle.

2. A hypodermic device including a container, a plunger movable longitudinally in the container, a sack extending over the inner end of the plunger and extending between the sides of the plunger and the inner surface of the container to form a liquid seal, said plunger having a through-bore, and a hypodermic needle sharpened at both ends and movable into and through said bore to puncture the sack.

ELIJAH BRAUER.