J. McMORRIES.

HYPODERMIC SYRINGE.

No. 187,031. Patented Feb. 6, 1877.

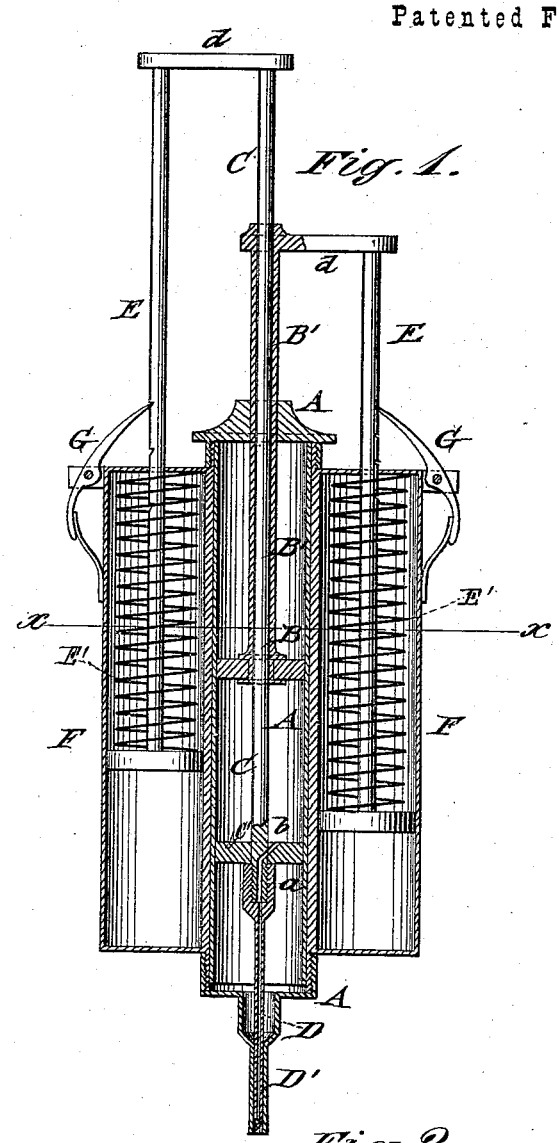

Fig. 1.

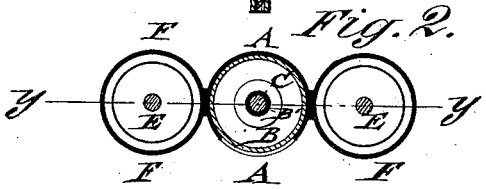

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH McMORRIES, OF NEWBERRY, SOUTH CAROLINA.

IMPROVEMENT IN HYPODERMIC SYRINGES.

Specification forming part of Letters Patent No. **187,031**, dated February 6, 1877; application filed December 30, 1876.

To all whom it may concern:

Be it known that I, JOSEPH McMORRIES, of Newberry, in the county of Newberry and State of South Carolina, have invented a new and Improved Hypodermic Syringe, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical transverse section of my improved hypodermic syringe, taken on line *y y*, Fig. 2, and Fig. 2 is a horizontal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved construction of hypodermic syringes, by which subcutaneous injections may be made in very convenient and painless manner, as the injection is made simultanously with the entrance of the needle; and the invention consists of a syringe with hollow plunger-rod for guiding the needle-rod, both rods being connected to spring-acted plunger-rods of tubular side casings, and retained by spring-acted triggers, to be simultaneously released for jointly entering the skin and injecting the liquid.

In the drawing, A represents a syringe of the usual construction, which draws in the liquid to be injected in the customary manner by a tightly-fitting plunger, B. The plunger-rod B′ is made hollow, to be used as a guide for the needle-rod C, sliding therein. A second plunger, C′, at the end of the needle-rod C, keeps the syringe closed, while the liquid is drawn by the plunger B, the same entering through a spout, *a*, and perforation or channel *b*.

The needle D′ is screwed by a threaded socket or cap onto the spout *a*, and made in the customary manner with a longitudinal perforation and discharge orifice back of the needle-point.

The outer ends of the plunger and needle-rods B′ and C are connected by lateral bars or handle pieces *d*, with the notched plunger-rods E, that are guided in symmetrical tubes or casings F, secured in any suitable manner to the syringe A, and acted upon by spiral springs E′, which are preferably placed between the end disks or plungers of the rods E, and the upper ends of the casings.

Fulcrumed and spring-acted triggers G are arranged at the upper ends of the casings F, for the purpose of engaging the rods E, and thereby, respectively, the plunger and needle-rods of the syringe, when the same are drawn back, ready for operation.

By releasing the triggers by pressing on the same with the fingers, the needle and plunger-rods are simultaneously released, and thereby the needle and injection jointly forced in a sudden and painless manner, by the action of the springs, into the tissues.

The extent to which the needle is inserted may be regulated by guide-sleeve D, of varying length that is screwed into the lower part of the syringe, as shown in Fig. 1.

The instrument is operated in the following manner: The plunger-rod is first drawn back, and thereby the liquid drawn in through the needle and spout. By means of connecting-handle *d* and plunger-rod E, the spiral spring in the corresponding casing F is compressed at the same time, and the trigger G thrown into one of the notches of the rod E, so as to retain plunger B in position. The needle-rod C, and its spring-acted plunger-rod, are next drawn back and retained in similar manner by the opposite trigger. The guide-sleeve is then screwed to the lower part of the syringe after the screw-cap of the same is detached. The instrument is now ready for use, and operated to force in the needle, and inject the liquid by releasing triggers G, which produces the joint working of the needle and plunger, and accomplishes the subcutaneous injection in quick and nearly painless manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A hypodermic syringe for subcutaneous injections, constructed of a syringe having a plunger with hollow rod and a needle-rod sliding therein, in combination with guided, notched, and spring-acted rods, connected, respectively, to plunger and needle-rods, and with spring-acted triggers for locking the same, so as to throw simultaneously the needle, and inject the liquid on releasing the triggers, substantially as and for the purpose set forth.

JOSEPH McMORRIES, M. D.

Witnesses:
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