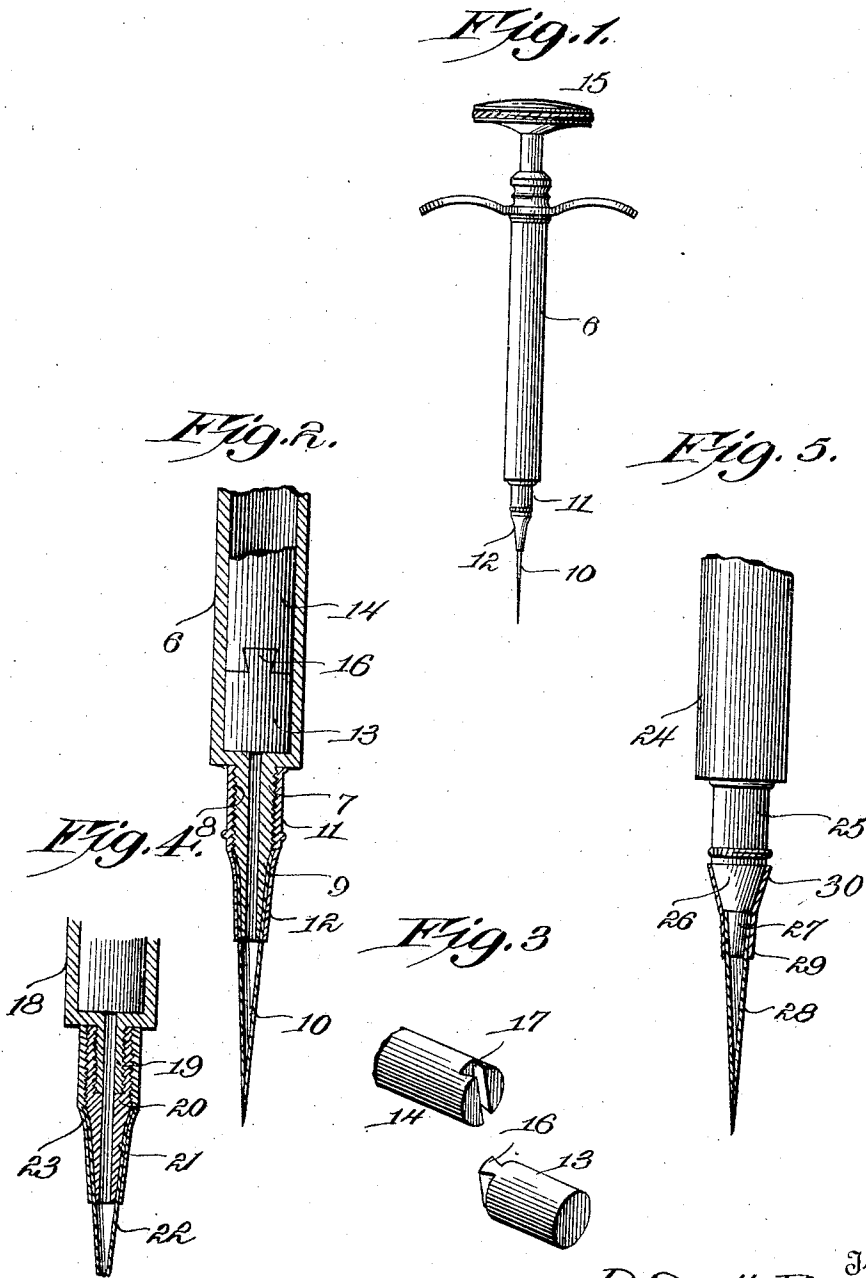


No. 858,025.

PATENTED JUNE 25, 1907.

D. S. REESE,
HYPODERMIC INJECTOR.
APPLICATION FILED JULY 21, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL SCOTT REESE, OF MAHANOEY CITY, PENNSYLVANIA.

HYPODERMIC INJECTOR.

No. 858,025.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed July 21, 1906. Serial No. 327,155.

To all whom it may concern:

Be it known that I, DANIEL SCOTT REESE, a citizen of the United States, residing at Mahanoy City, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Hypodermic Injector, of which the following is a specification.

This invention relates to hypodermic syringes, and one of the principal objects is to provide a novel needle, and means for securing the same to the reservoir or cylinder, so that it may be easily removed and replaced, is not liable to become clogged, eliminates the necessity of soldering and washers, is not liable to leak, can be readily sterilized, permits the easy introduction of the usual wire, and can be manufactured at small cost.

Another and important object is to provide a simple structure that will permit the ready detachment of the plunger from the actuating stem, so that in case of wear or injury, a new plunger can be employed without difficulty.

Several embodiments of the invention are illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of one form of construction. Fig. 2 is a vertical sectional view on an enlarged scale through a portion of the same. Fig. 3 is a detail view of the plunger, and a portion of the actuating stem, showing the same separated. Fig. 4 is a detail view through a modified form of construction. Fig. 5 is a detail view partly in section and partly in elevation of another embodiment of the invention.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

Referring to the embodiment illustrated in Figs. 1, 2 and 3, a reservoir or plunger cylinder 6 is employed, from one end of which projects an integral nipple 7. This nipple has an inner exteriorly threaded portion 8, and an outer tapered portion 9. A needle 10 has its inner portion tapered to correspond to the taper of the outer end 9 of the nipple 7, and is arranged to detachably fit thereon. The needle is held in place by a cap 11, having its inner portion interiorly threaded, and arranged to screw upon the threaded portion 8 of the nipple 7, the outer portion of this cap being tapered, as shown at 12, and fitting over the inner portion of the needle 10.

Operating in the cylinder or reservoir 6 is a solid plunger 13, actuated by a stem 14 that

projects from the rear end of the reservoir or cylinder, and has a suitable head 15. The plunger 13 and stem 14 are detachably connected, and for this purpose, the former is provided on its rear end with a rearwardly projecting centrally disposed dovetail 16, while the adjacent end of the stem has a correspondingly shaped recess 17, that detachably receives the projection 16. It will thus be evident that as long as the parts are interlocked, and remain in the cylinder 6, they will be maintained in their interlocking engagement, but if removed, the plunger can be readily disengaged from the stem by a relative lateral movement between the same. Therefore in case of wear of the plunger, a new one may be substituted for the worn one, and the change can be made without difficulty.

The construction and connection of the needle to the cylinder is an important feature of the invention. I will be evident that the needle can be easily removed and replaced, and moreover, because of its tapering construction, is not liable to become clogged. The necessity of soldering the needle and the use of washers are eliminated. Moreover there is little liability of leakage at the joints. Furthermore the needle, because of its enlarged rear end, can be readily sterilized, as can also the associated parts, and the wire ordinarily placed in the bore of the needle when not in use, can be easily introduced through the enlarged inner end thereof. The structure can also be manufactured at small cost, and the various parts may be made interchangeable.

Fig. 4 shows a slightly modified form of construction. The cylinder or reservoir is illustrated at 18, and has an integral exteriorly threaded stem 19 projecting therefrom. The nipple in this case is designated 20, and is detachable, its inner end being interiorly threaded and screwed upon the stem 19. The outer end is tapered, as shown at 21. The needle 22 is fitted upon the tapered portion, and is held in place by a cap 23 threaded upon the inner portion of the nipple.

Fig. 5 shows still another embodiment of the invention. The cylinder is designated 24, and has a nipple 25, provided with portions 26 and 27 of different tapers. The needle 28 fits upon the portion 27 and a cap 29 fits over the inner portion of the needle, and has a tapered portion 30 that detachably engages the tapered part 26.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A hypodermic injector, comprising a reservoir having a tapered nipple, a needle having its inner end portion interiorly and exteriorly tapered, said needle having its tapered portion fitted upon and surrounding the tapered nipple, and a cap detachably fitted on the nipple and having an interiorly tapered portion that fits against the exteriorly tapered portion of the needle.

2. A hypodermic injector, comprising a reservoir having a nipple, the inner portion of which is threaded, the outer portion being tapered, a needle having its inner portion interiorly and exteriorly tapered, said needle having its tapered portion fitted upon and

surrounding the tapered nipple, and a cap detachably screwed upon the threaded portion of the nipple and having its outer end portion interiorly tapered, said tapered portion of the cap surrounding and fitting against the exteriorly tapered portion of the needle.

3. A hypodermic injector, comprising a cylinder reservoir having a nipple, a needle detachably secured thereto, a reciprocatory plunger element operating in the reservoir, and a stem element, one of said elements being provided with a dovetailed socket that opens through one side and through one end of said element, the other element having a dovetailed projection extending through the open end thereof and being detachable through the open side, the open end of said dovetailed socket being closed by the wall of the cylinder reservoir when the parts are in place therein, to prevent their detachment.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

DANIEL SCOTT REESE.

Witnesses:

FRANK STRYKER,
JACOB BUSCH.