

No. 720,381.

PATENTED FEB. 10, 1903.

J. N. RANGER.

HYPODERMIC SYRINGE.

APPLICATION FILED NOV. 20, 1900.

NO MODEL.

Fig. 1.

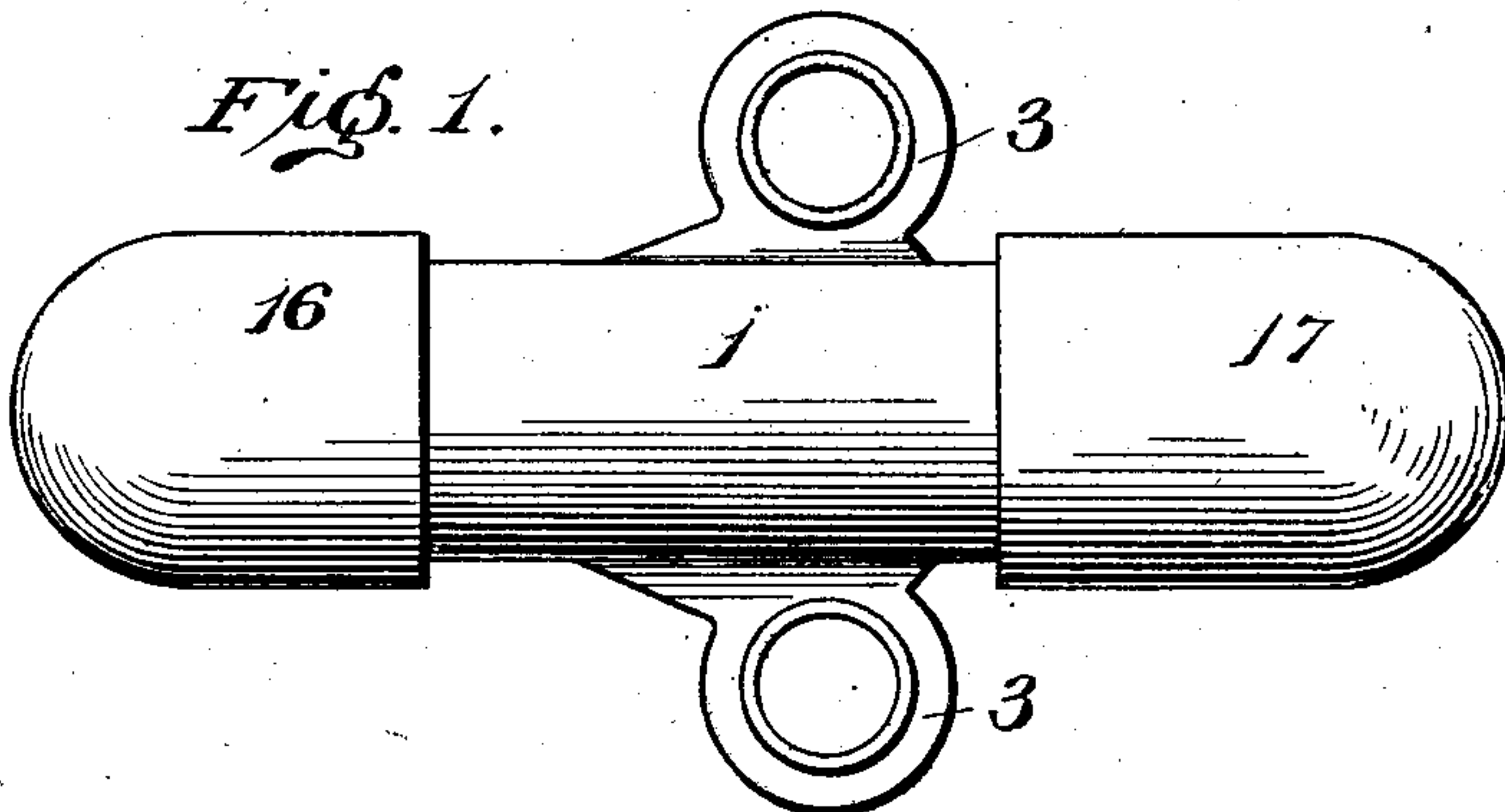


Fig. 2.

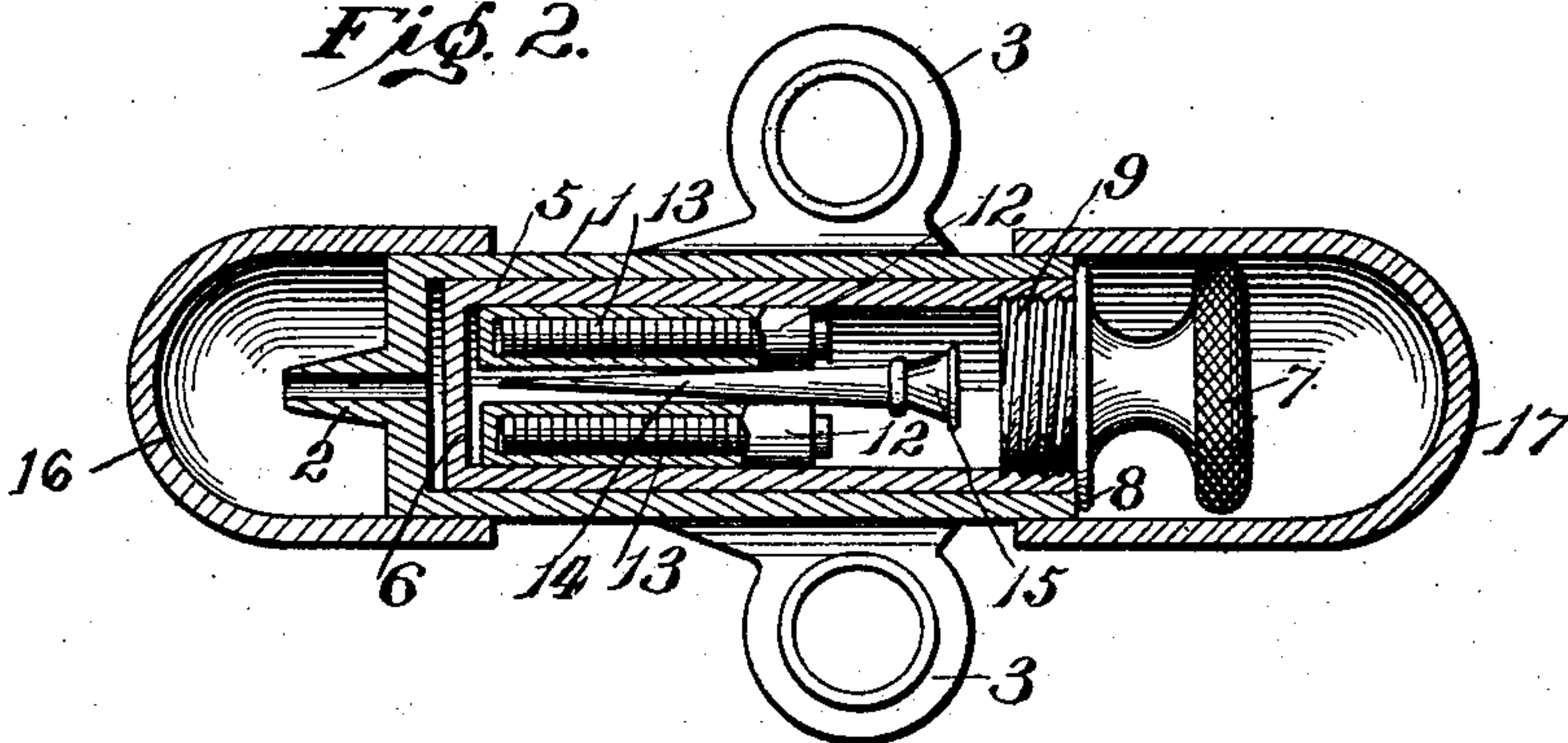


Fig. 3.

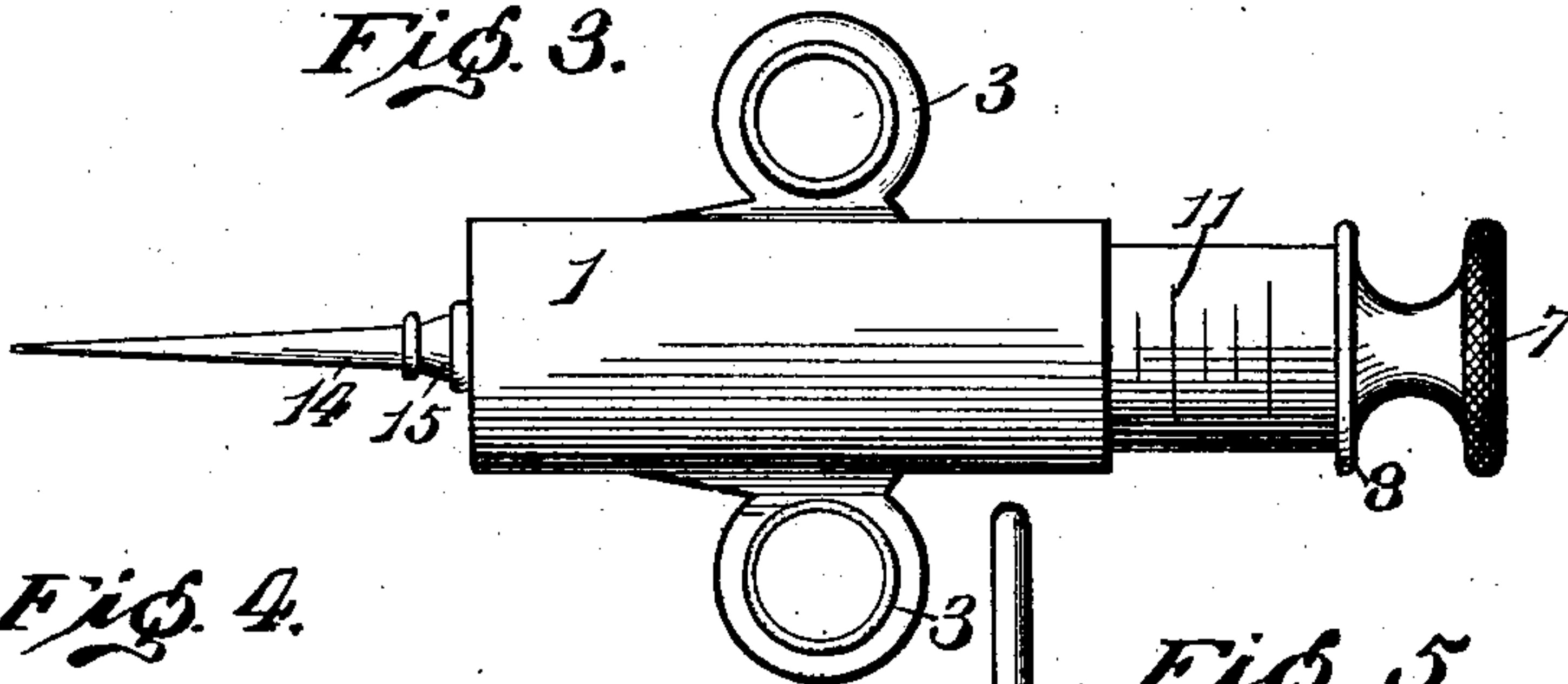


Fig. 4.

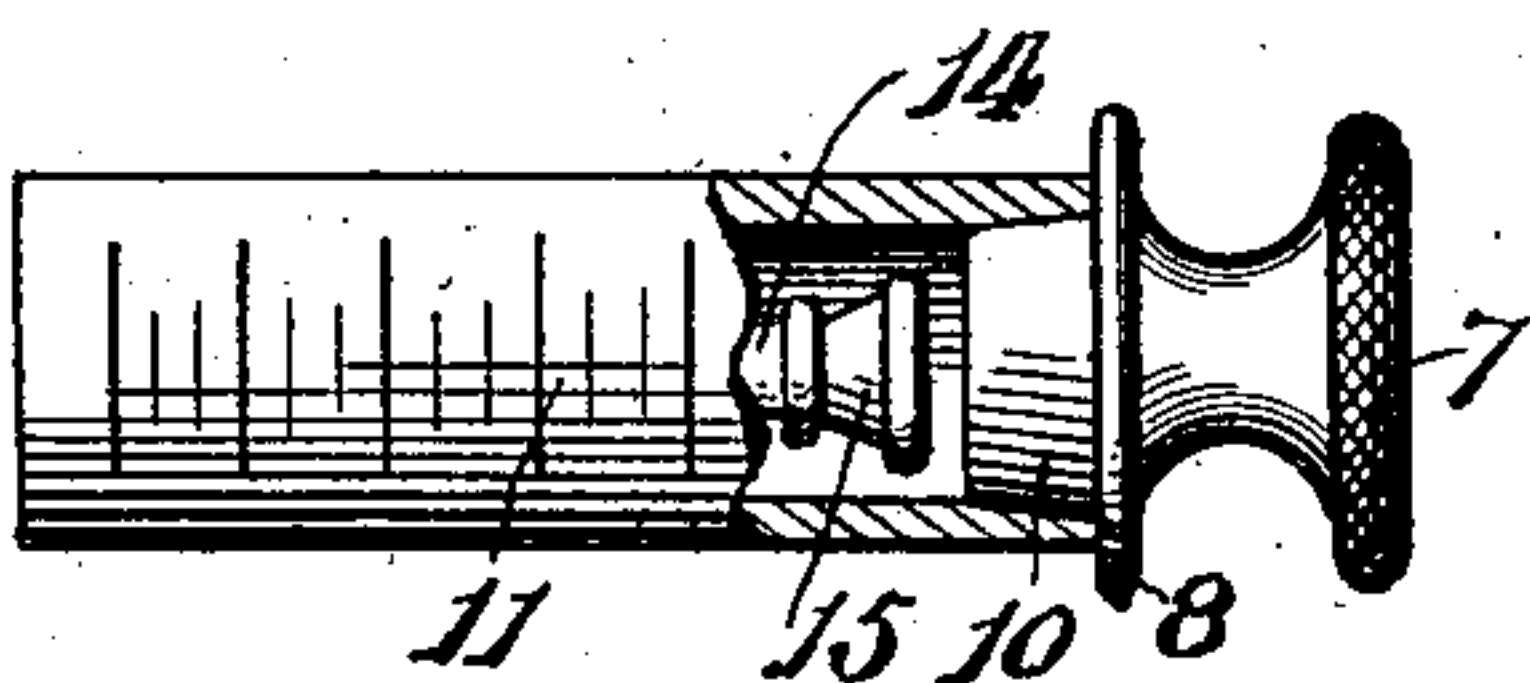
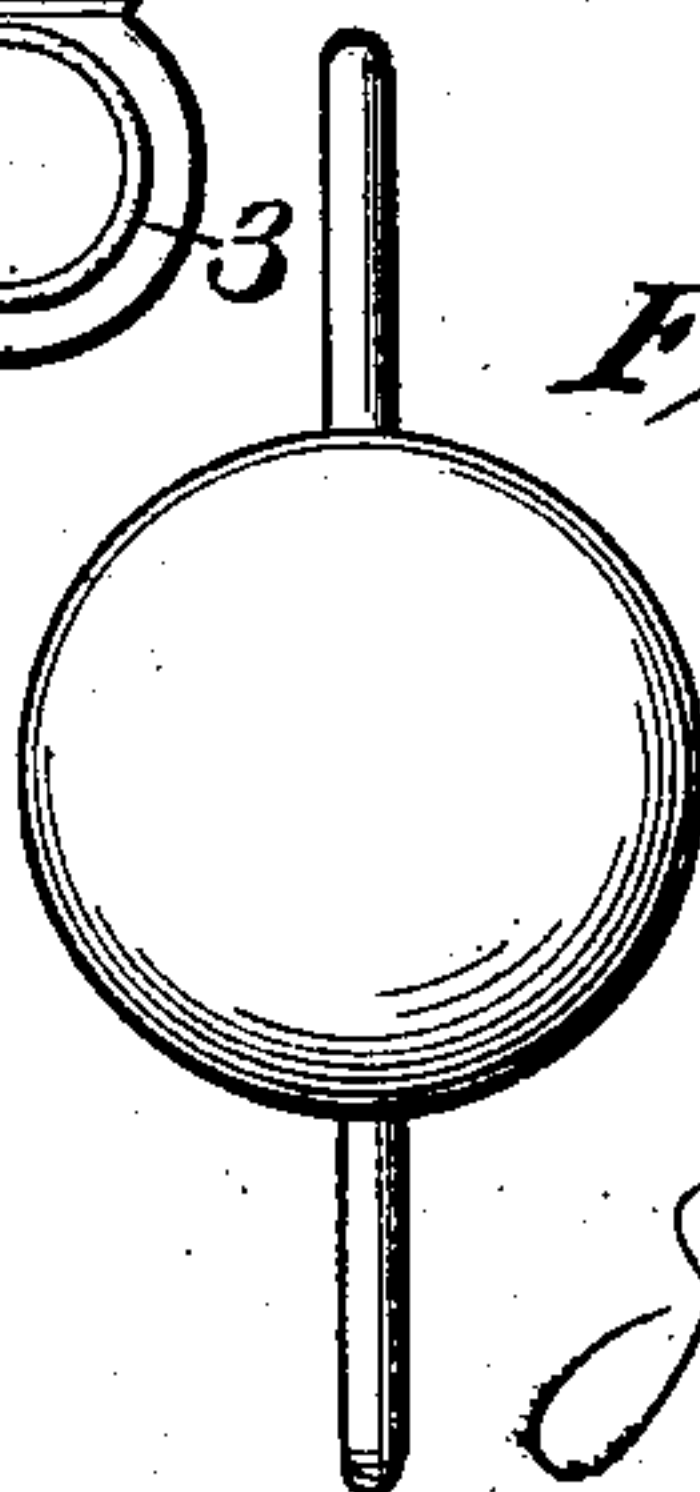


Fig. 5.



Witnesses

*E. W. Stark*  
*Sarah V. Lockwood*

Inventor  
*John N. Ranger*  
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his Attorney



# UNITED STATES PATENT OFFICE.

JOHN NEWTON RANGER, OF EVANSVILLE, INDIANA.

## HYPODERMIC SYRINGE.

SPECIFICATION forming part of Letters Patent No. 720,381, dated February 10, 1903.

Application filed November 20, 1900. Serial No. 37,104. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN NEWTON RANGER, a citizen of the United States, residing at Evansville, county of Vanderburg, State of Indiana, have invented certain new and useful Improvements in Hypodermic Syringes, of which the following is a specification.

This invention relates to hypodermic syringes.

My object is to provide a hypodermic syringe of improved construction and of few parts compactly arranged to render it of convenient size to be easily carried in the pocket.

A further object is the provision of a hypodermic syringe which will be light and not liable to break or corrode and devoid of packing, washers, or other easily-breakable parts or such as will soon become damaged through use, so as to impair the usefulness of the syringe, my purpose being to provide a syringe which will be strong, durable, and easily rendered cleanly and aseptic, and thereby prevent the lodgment of germs and the disastrous results so often brought about by these defects in hypodermic syringes as usually constructed with joints.

Another object of my invention is the provision of a hypodermic syringe adapted to carry for convenient access in a compact and novel manner the medicine to be used in connection therewith.

A still further object of the invention is to provide a hypodermic syringe having finger-grips on the barrel or cylinder and independent protecting-caps removably engaged with the barrel at the respective ends thereof and adapted to protect the needle-nipple and head of the piston.

Having the foregoing objects in view, the invention consists of a hypodermic syringe embodying certain improved features and novel combinations of parts, all of which are set forth in detail hereinafter and recited in the appended claim.

In the accompanying drawings, Figure 1 is a view of the complete device; Fig. 2, a longitudinal section of the same; Fig. 3, a view with the caps removed, showing the piston drawn out and the needle in position; Fig. 4, a detail view illustrating a modified form of piston-head, and Fig. 5 an end view of the syringe.

By preference I construct the different parts of the device of metal in order to give strength and durability; but this does not preclude the use of other suitable materials.

The barrel or cylinder of the syringe is shown at 1, the same being provided with a tapered hollow needle-post 2 at one end and being open at its opposite end. Projecting from opposite sides of the barrel and rigidly connected thereto are finger-grips 3, having openings therethrough for the insertion of the fingers of the user. These grips are located intermediate the ends of the barrel.

The numeral 5 designates the piston. This is a hollow cylinder closed at its inner end 6 and open at its opposite end, the same snugly fitting the interior of the barrel in an air and fluid tight manner. The head 7 of the piston is made in the form of a knurled plug having a flange 8 overlapping the ends of the piston and the barrel and provided with a screw-threaded portion 9, which is engaged with interior screw-threads in the mouth of the piston. As a substitute for the screw-threaded portion 9 I sometimes prefer to employ a tapering plug 10, fitted in the swaged mouth of the piston, as shown in the modification of Fig. 4. The exterior of the piston is provided with suitable graduations 11, which by their coincidence with the mouth of the barrel indicate the amount of fluid injected. The hollow cylindrical piston affords a convenient receptacle for vials 12, containing tablets 13 of medicine intended to be used with the syringe. Between the vials is packed the needle 14, having the cap 15, which is to be fitted over the needle-post 2. The vials and the needle (one or more may be used) are packed in the piston and hold themselves there.

I employ caps 16 and 17, preferably rounded at their ends to give a finished configuration, which are fitted over the ends of the barrel or cylinder and held there by friction. It will be observed that these caps house the piston-head and needle-post, respectively, protecting the entire syringe, and the grips 3 protrude from the sides of the barrel between the inner ends of said caps. By thus employing independent caps, which fit over the ends of the barrel and are there held by friction only and which have no intermediate



connection with each other such as would render the employment of grips projecting from the barrel impossible, I am enabled to use a barrel provided with finger-grips and obtain  
5 the twofold advantage of being able to properly hold the device when in use and keep it incased and protected when not in use.

The caps can be readily removed and the piston-head taken out and the needle removed from the piston and placed on its post.  
10 One or more tablets can then be removed from one of the vials, dissolved, and the resulting liquid poured into the barrel and the piston inserted therein, whereupon the syringe can be used.  
15

By the employment of a simple piston and barrel construction such as I have shown and described packing, rings, washers, and destructible parts are done away with and I  
20 provide a syringe which can be cleansed and rendered aseptic very easily and whose usefulness does not become impaired after continued use. At the same time by the provision of a hollow piston as a receptacle for  
25 the medicines and the needles a compact spring is had, while the use of the caps pro-

fects the parts when the syringe is not in use and at the same time permits the use of grips on the barrel.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 30

The combination with a hypodermic syringe having a barrel open at one end and provided with a needle-nipple at the other end 35 and finger-grips connected thereto at its sides and intermediate or substantially midway its open and nipple ends, of a hollow piston in said barrel, a plug-screw threaded in said piston, a flange on said plug overlapping said 40 piston and adapted to prevent the piston from being forced too far into the barrel, and caps telescoping over the ends of the barrel and adapted to protect the plug and the needle-nipple. 45

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN NEWTON RANGER.

Witnesses:

JOHN F. HARPER,

P. C. RHOADES.