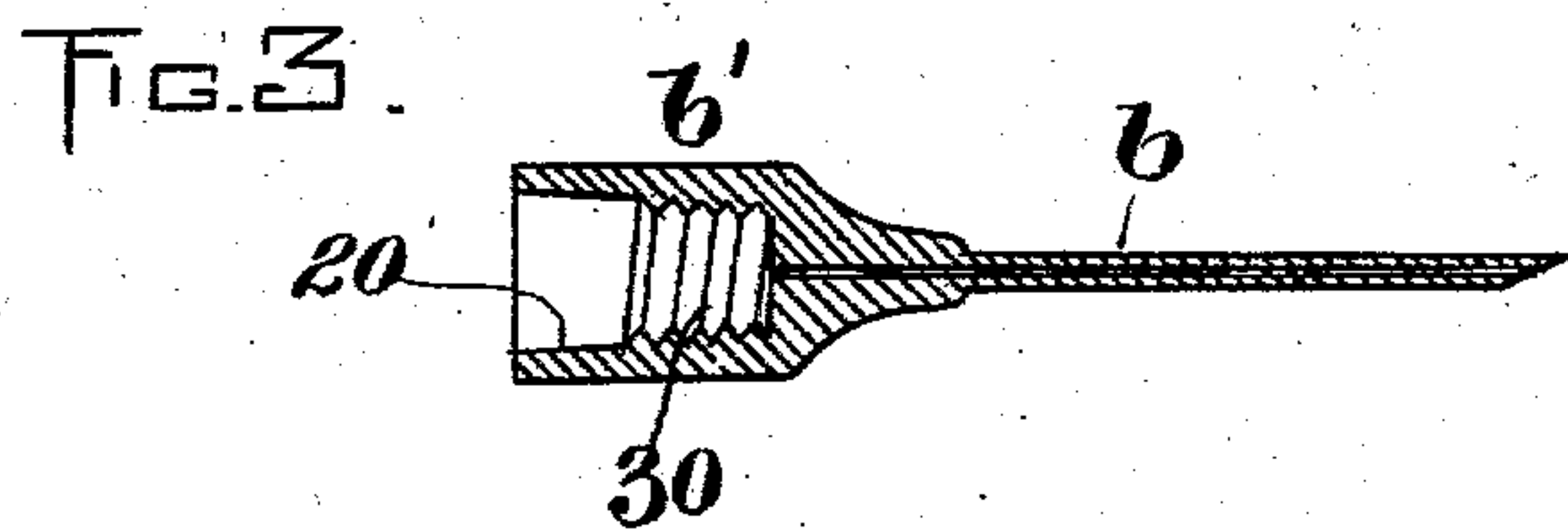
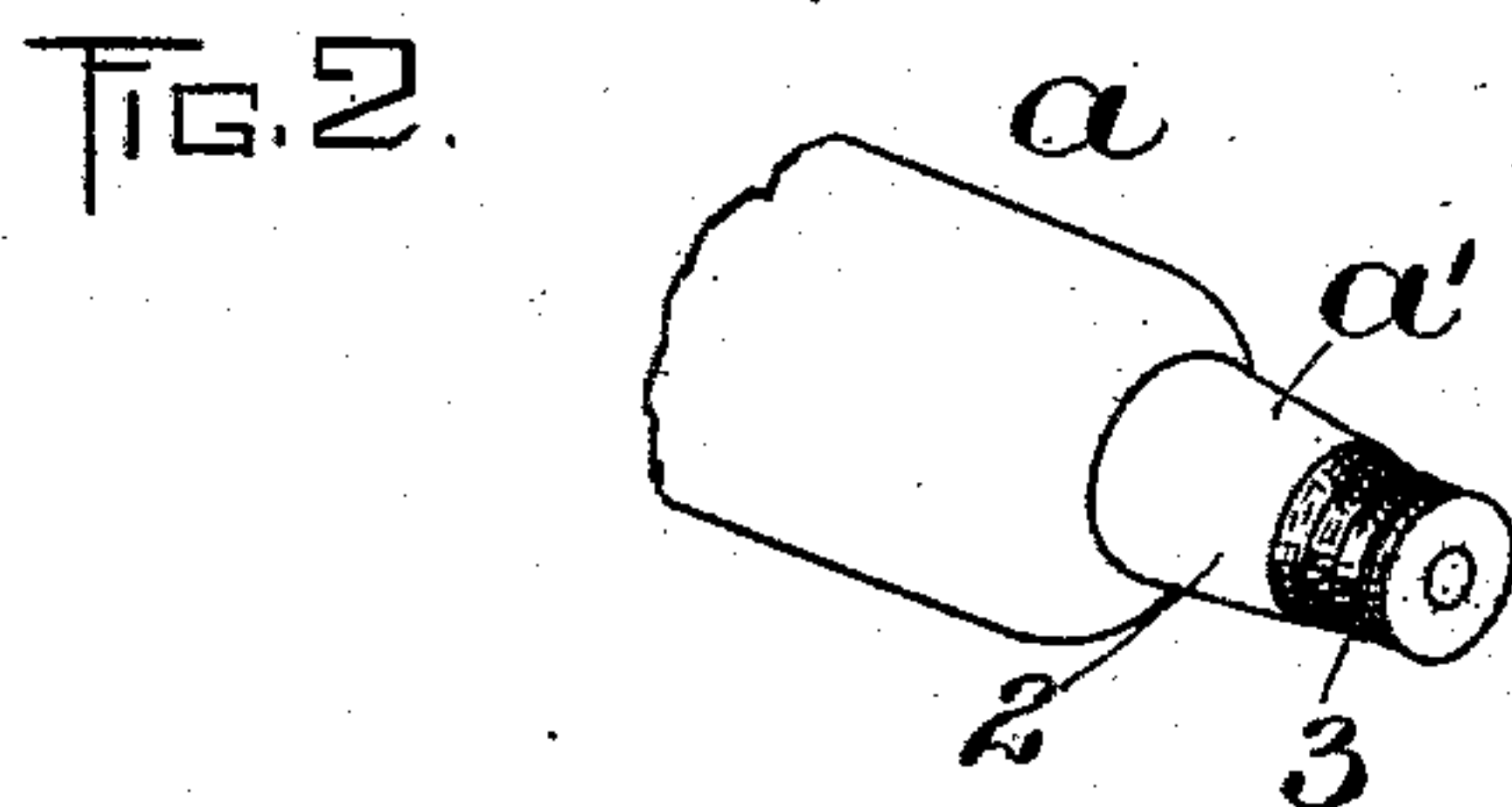
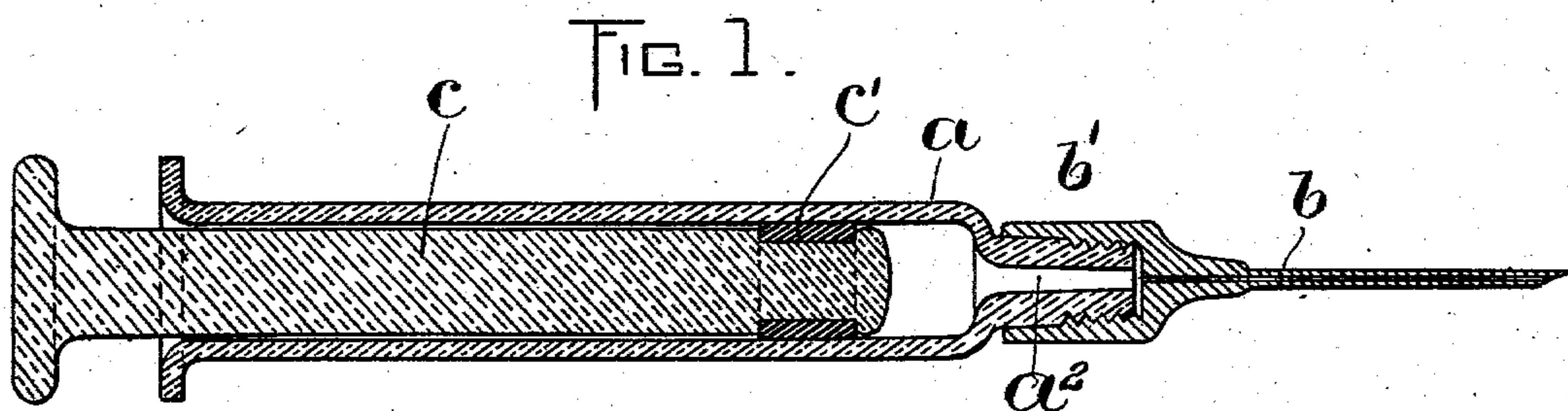


No. 730,557.

PATENTED JUNE 9, 1903.

P. J. McELROY.
HYPODERMIC SYRINGE.
APPLICATION FILED FEB. 11, 1902.

NO MODEL.



WITNESSES:

George Pezzetti
P. H. Pezzetti

INVENTOR:

Patrick J. McElroy
by Wright, Brown & Lushington
Attys.

UNITED STATES PATENT OFFICE.

PATRICK J. McELROY, OF CAMBRIDGE, MASSACHUSETTS.

HYPODERMIC SYRINGE.

SPECIFICATION forming part of Letters Patent No. 730,557, dated June 9, 1903.

Application filed February 11, 1902. Serial No. 93,540. (No model.)

To all whom it may concern:

Be it known that I, PATRICK J. McELROY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Antiseptic Syringes, of which the following is a specification.

This invention relates to hypodermic syringes, and has for its object to provide a syringe of this character with a coupling for connecting the tubular needle and the barrel of the syringe, which coupling shall be composed entirely of rigid material adapted to be readily cleansed and sterilized, no absorbent packing material being required.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a longitudinal section, on an enlarged scale, of a syringe embodying my invention. Fig. 2 represents a perspective view of one end of the syringe-barrel and the coupling member formed thereon. Fig. 3 represents a sectional view of the tubular needle and its coupling member detached.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a barrel of a syringe, the same being composed of glass or other vitreous material. On one end of the barrel *a* is formed an extension *a'*, which is of the same material and integral with the barrel, said extension containing the outlet-passage *a²*. The inner portion 2 of the external surface of the extension is tapered and ground, so that it forms a tapered cylindrical surface. The outer portion 3 of the extension is provided with a screw-thread. The diameter of the outer portion 3 does not exceed and is preferably somewhat less than the diameter of the smaller end of the inner portion 2.

b represents the tubular needle of the syringe, the same being provided with a socket member *b'*, which is formed internally to receive the extension *a'*. The outer portion 20 of the internal surface of the socket member *b'* is tapered and ground to accurately fit the inner portion 2 of the extension *a'*. The inner portion 30 of the socket member is in-

ternally screw-threaded to engage the screw-thread on the outer portion 3 of the extension. When the socket member *b'* is applied to the extension *a'* and screwed home thereon, the surfaces 2 and 20 form a slip-joint, which is tightly closed and held closed by the cooperation of the threaded portions 3 and 30 of the extension and the socket member. The socket member *b'* is preferably made of metal, the extension *a'* being, as already stated, preferably made of glass.

It will be seen that the described construction provides for a liquid-tight connection between the barrel *a* and the needle *b* without the employment of compressible or absorbent washers or packing material, so that the connecting or coupling members *a'* and *b'* can be readily cleansed and sterilized. The location of the slip-joint surface 2 at the inner portion of the extension *a'* enables the diameter of said portion 2 to exceed that of the threaded portion 3, thus giving the extension *a'* the maximum strength at its junction with the barrel of the syringe and affording an efficient area of frictional surface.

It will be seen that my improved coupling combines in one structure a screw-joint and a ground slip-joint, the former preventing accidental separation of the members of the coupling and the latter making the coupling proof against the passage of liquid between its members.

The portion 3 may be considered a screw-threaded nipple and the portion 2 a neck connecting the nipple with the body of the barrel and constituting a seat for the socket member, said neck constituting also a strong connection between the threaded nipple and the body of the barrel.

The piston is composed of a body *c*, of glass, and a packing *c'*, of asbestos. It will be seen, therefore, that the barrel *a* and extension *a'* being also made of glass, the entire structure, with the exception of the needle and its socket, is entirely acid-proof, so that it is not affected by the acid solutions which may be used. Furthermore, the fact that the body of the piston is made of glass and its packing made of asbestos enables it, as well as the glass barrel, to be subjected to any sterilizing heat below the melting-point of glass, 2,500°. Consequently both the piston and the bar-

rel are free from danger of being affected by the acid solutions which may be used and may also be subjected to ample sterilizing heat. The needle and its socket constitute a
5 relatively inexpensive part of the structure and may be discarded after one use.

My invention provides for a secure and liquid-tight joint between the syringe-barrel and the needle without the employment of a
10 washer and in such manner as to enable the members of the joint on the syringe-barrel to be made entirely of glass and integral with the barrel. The screw-section adjacent to the ground section enables a liquid-tight
15 joint to be readily obtained by screwing the socket member of the needle to the proper point, and then when the needle is to be removed any tendency of the ground joint to stick may be readily overcome by means of
20 the coacting threads of the nipple and socket.

I claim—

An antiseptic syringe comprising a glass barrel having a coupling member at its delivering end, a portion of said member being tapered and ground and another portion screw- 25 threaded, and a tubular needle having a socketted coupling member, one portion of which is tapered and ground, while another portion is threaded, the ground portions of the two members forming a slip-joint, while the 30 threaded portions form a screw-joint, whereby the surfaces of the ground joint may be engaged and held in engagement.

In testimony whereof I have affixed my signature in presence of two witnesses.

PATRICK J. McELROY.

Witnesses:

C. F. BROWN,

E. BATCHELDER.