

No. 748,424.

PATENTED DEC. 29, 1903.

A. SCHMIDT.
HYPODERMIC SYRINGE.
APPLICATION FILED MAY 25, 1903.

NO MODEL.

Fig. 1.

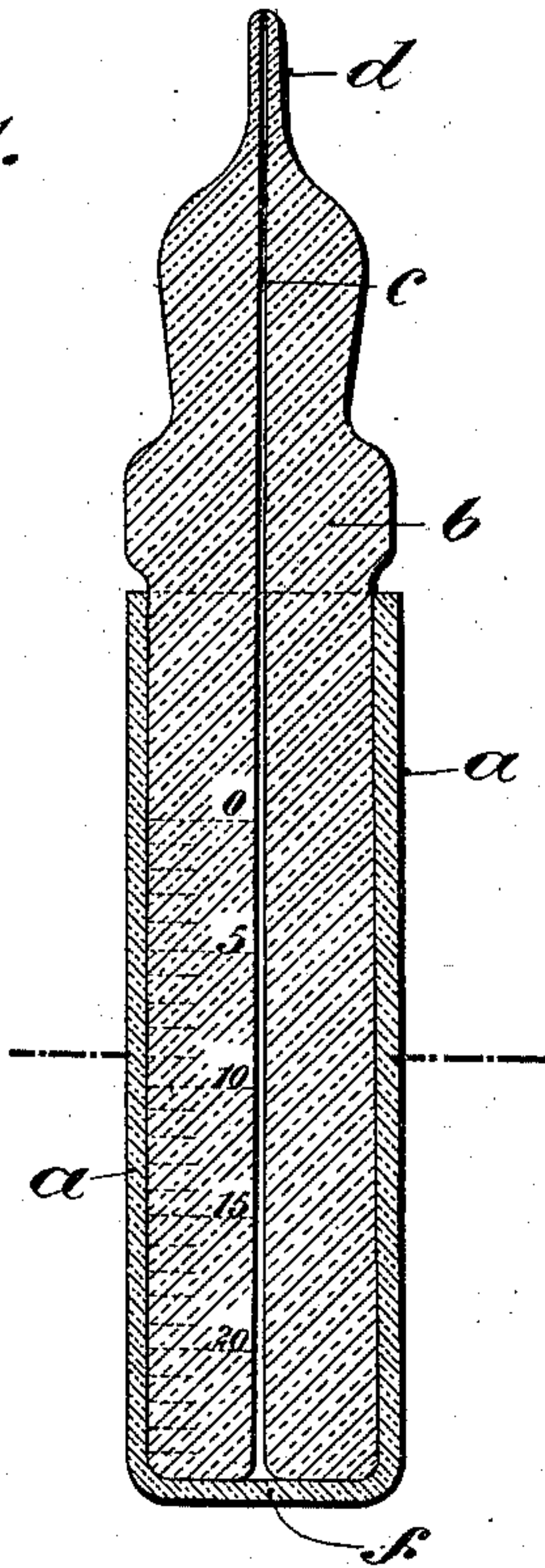
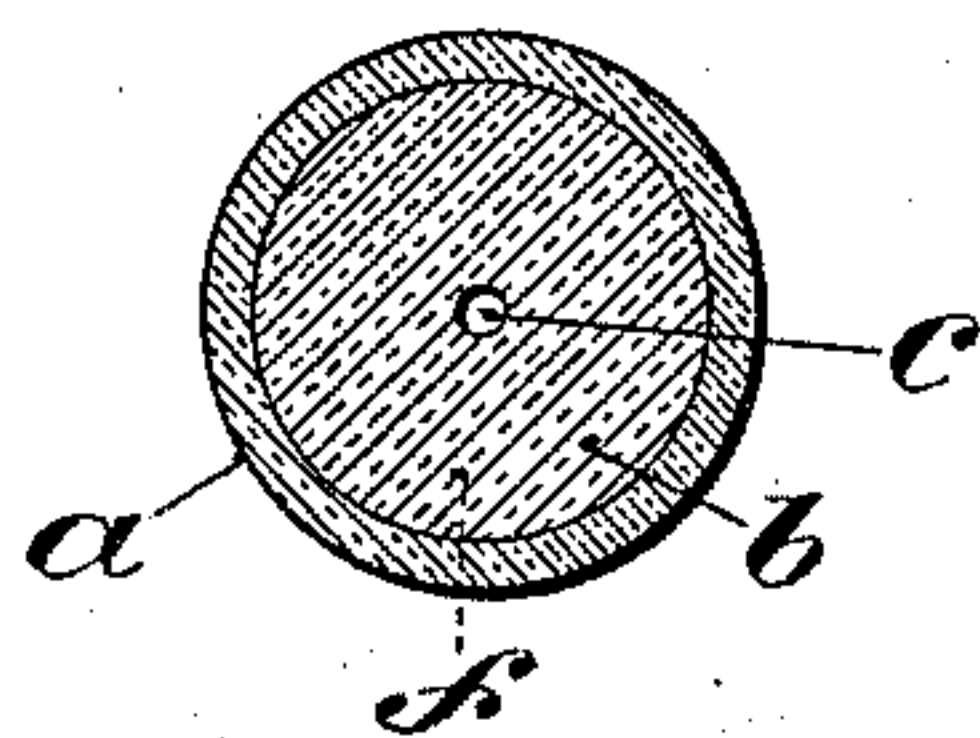


Fig. 2.



Witnesses:

James L. Norris, Jr.

W. B. Keefe

Inventor

Arno Schmidt

By

James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

ARNO SCHMIDT, OF WEIMAR, GERMANY.

HYPODERMIC SYRINGE.

SPECIFICATION forming part of Letters Patent No. 748,424, dated December 29, 1903.

Application filed May 25, 1903. Serial No. 158,736. (No model.)

To all whom it may concern:

Be it known that I, ARNO SCHMIDT, a subject of the Grand Duke of Saxe-Weimar, residing at Weimar, in the Grand Duchy of Saxe-Weimar, German Empire, have invented certain new and useful Improvements in Hypodermic Syringes, of which the following is a specification.

My invention relates to improvements in syringes. Hitherto the syringes in use for hypodermic injections if in order to charge the syringe the liquid was poured into the tube—that is to say, if it was not preferred or not preferable to charge it by suction—the cannula or the nozzle for the insertion of the needle had to be held closed. The piston was thereupon inserted. This is laborious, on the one hand and, on the other hand, in either case, air-bubbles are likely to be formed in the liquid, which cannot be avoided and which, as is well known, may be very injurious to the patient. To avoid these evils and to provide a syringe for hypodermic injections or the like made entirely of glass or the like, and therefore completely aseptic and easy to manipulate as well as to clean, is the object of my invention.

The annexed drawings show the syringe described on an enlarged scale, wherein—

Figure 1 is a longitudinal section of the syringe with the piston pushed home completely. Fig. 2 is a cross-section.

The syringe according to my invention consists of a tube *a*, closed at one end—that is to say, without cannula—and open at the other end, at which the piston *b*, contrary to the arrangement adopted in the syringes hitherto in use, carries the cannula *c* and at its outer end a nozzle *d* for the insertion of a hollow needle of any known form. The piston *b* is carefully ground into the tube and accurately covers with its inner end face *f* the bottom of the tube, which is graduated in the known manner, so that the tube is completely discharged.

The syringe is charged either by immersing the outer end of the piston in the liquid and withdrawing the tube, whereby the liquid is sucked into the tube, completely filling the existing cavity without forming any air-bubbles, or on removing the piston from the tube the liquid may be poured direct into the tube up to the desired graduation-line. Thereupon the piston is reinserted in the tube and any air remaining in the interior of the tube and piston is expelled through the cannula. Thus injections may be made in the most convenient manner and without keeping the tube closed in order to charge it in any manner—for instance, with the finger—and without any risk of introducing air into the system of the patient through the syringe.

Having now particularly described and ascertained the nature of my invention and in what manner the same is to be performed, I declare that what I claim is—

1. A syringe consisting of a tube and a piston, both of glass and in a single piece, one end of the tube being closed, and the piston having a cannula extending entirely through the same and also fitting throughout its entire length closely within the tube.

2. A syringe consisting of a tube and a piston, both of glass, and in a single piece, one end of the tube being closed, and the piston having a cannula extending entirely through the same and of approximately equal diameter throughout its length, said piston fitting throughout its entire length closely within the tube.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARNO SCHMIDT.

Witnesses:

CARL OTTO WILLIAM KARST,
ALBERT LOUIS MAX REICH.