

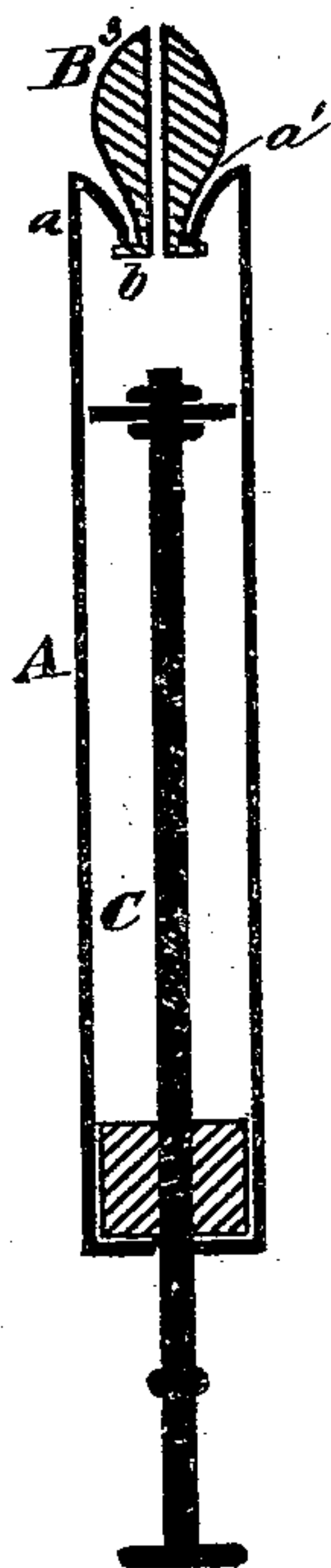
(No Model.)

J. A. FLEXNER.  
SYRINGE.

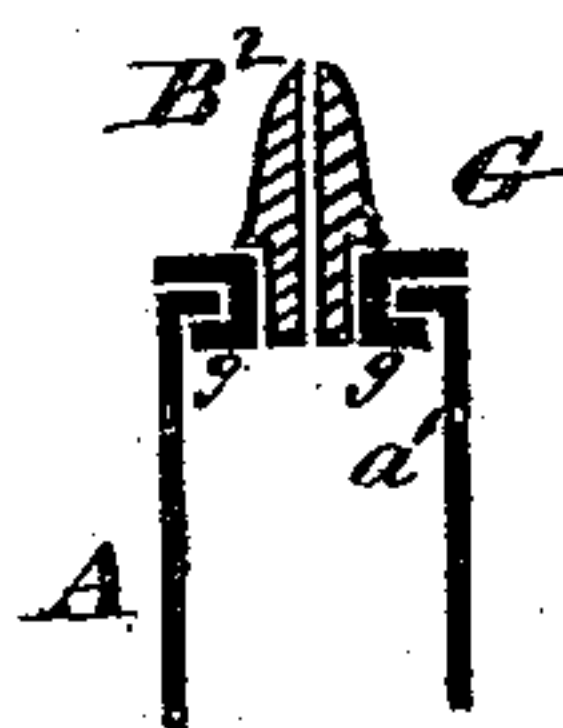
No. 478,583.

Patented July 12, 1892.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

Frank Pardon,  
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# UNITED STATES PATENT OFFICE.

JACOB A. FLEXNER, OF LOUISVILLE, KENTUCKY.

## SYRINGE.

SPECIFICATION forming part of Letters Patent No. 478,583, dated July 12, 1892.

Application filed September 25, 1891. Serial No. 406,862. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB A. FLEXNER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Urethral Syringes and Methods of Preparing Urethral Injections; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has relation to urethral syringes; and it consists in certain peculiarities in the construction thereof, substantially as hereinafter described and claimed.

The object of my invention is to provide a simple, inexpensive, and practical urethral-syringe, by the use of which the inconvenience and disadvantage incident to the carrying around of the injections in liquid form is obviated.

As urethral syringes are generally and preferably made of glass and are consequently fragile, I preferably provide a suitable case having a receptacle for the tablets or powders to carry my syringe in, thus making the whole very convenient for carrying about in a trunk or traveling-bag or pocket.

In the drawings, Figure 1 is a longitudinal sectional view through a middle line of the syringe and tip. Figs. 2, 3, and 4 are similar views of modifications of the tip and end of the barrel of the syringe.

A represents the barrel of the syringe.

$a$  represents the inwardly-beveled edge of the tip end of the barrel, and  $a'$  the aperture in the tip end of same in the modification thereof shown in Fig. 1.

B, B', B<sup>2</sup>, and B<sup>3</sup> represent different forms of tip, which are preferably made of pure rubber, the tip B<sup>3</sup> having on its inner end a holding-flange  $b$ .

C represents the piston.

D represents the syringe-case, preferably made tubular, and E the receptacle for tablets. The tubular case D is open at one end for the reception of the syringe and is pro-

vided with a tubular cap F, divided by a diaphragm  $f$  into two parts  $f'$  and  $f^2$ , the first  $f'$  adapted to fit over the end of D and the other  $f^2$  adapted to receive the tubular flange of the cap  $e$  and form the receptacle E.

G is a washer used in the modification of the tip end of my syringe shown in Fig. 2 to cover the end provided with a stem adapted to fit closely in the aperture in the end of the syringe, which stem is provided around its inner end with a holding-flange  $g$ . An aperture through this washer into the barrel of the syringe is large enough to admit the insertion of tablets or a powder, and is adapted to receive the stem of the tip B, which it holds by friction and pressure, and which can be readily pulled out and inserted again.

In the form of syringe which I prefer the tip end is constructed, as shown in Fig. 4, with an aperture of the same size as the barrel of the syringe and formed by merely leaving the cylinder of which the barrel consists open at that end. The tip B is constructed with its lower part cylindrical and adapted to fit into the cylindrical barrel of the syringe through its open end and its upper part tapering conically to its vent. The friction between the cylindrical surface of the tip and the cylindrical walls of the syringe holds the tip sufficiently firm in place, while its construction makes it easy to withdraw and replace it.

To prepare the syringe for use, the tip is removed, a soluble medicinal tablet or powder dropped through the aperture left by the removal of the tip into the barrel, the barrel filled with water, and the tip replaced, when a slight shaking will dissolve the tablet or powder and the injection will be ready for use.

The tablets or powders might be carried and dissolved in other vessels and taken up in a syringe in the usual way; but the other vessel is not always at hand, and there is sure to be some waste and the proper injection cannot be as accurately administered as when the powder or tablet is dissolved in the barrel of the syringe.

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

The herein-described urethral syringe, con-

sisting of the cylindrical barrel having an opening in its forward end adapted to admit medicinal tablets or powders into the barrel, an elastic tip having a conical forward end  
5 and a longitudinal passage through it, said tip being removable from said barrel to permit of the insertion of the tablets or powders and held therein by its inherent elasticity,

and a piston operating within said barrel, all substantially as described. 10

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

JACOB A. FLEXNER.

Witnesses:

JNO. B. TILFORD,  
CHAS. D. SHANK.