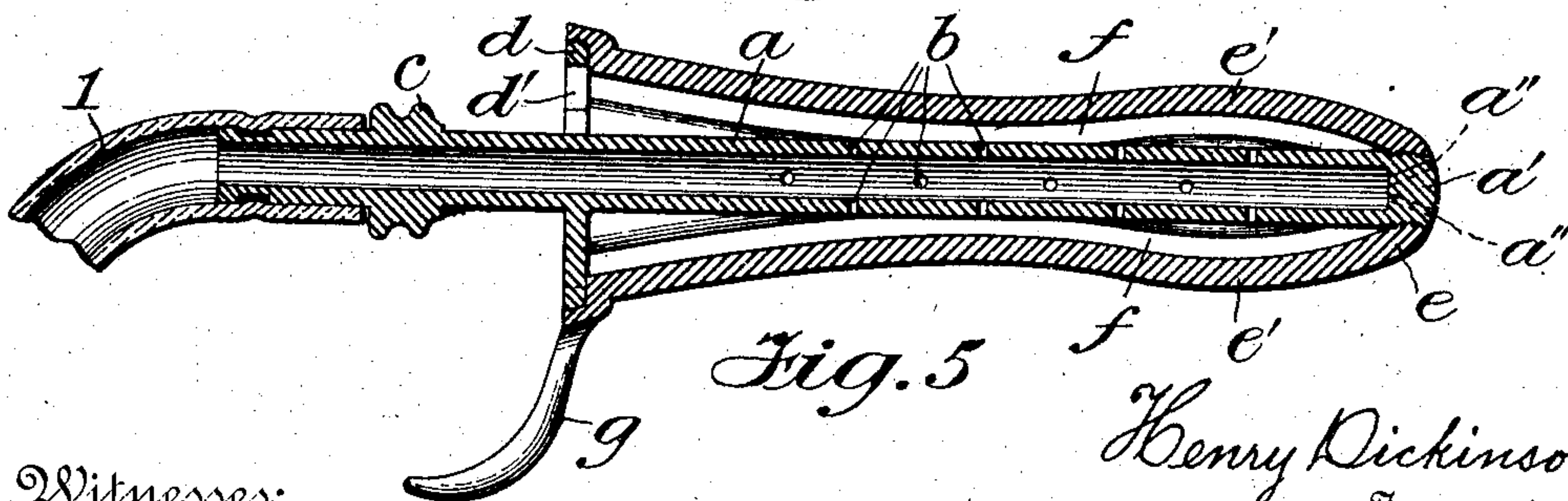
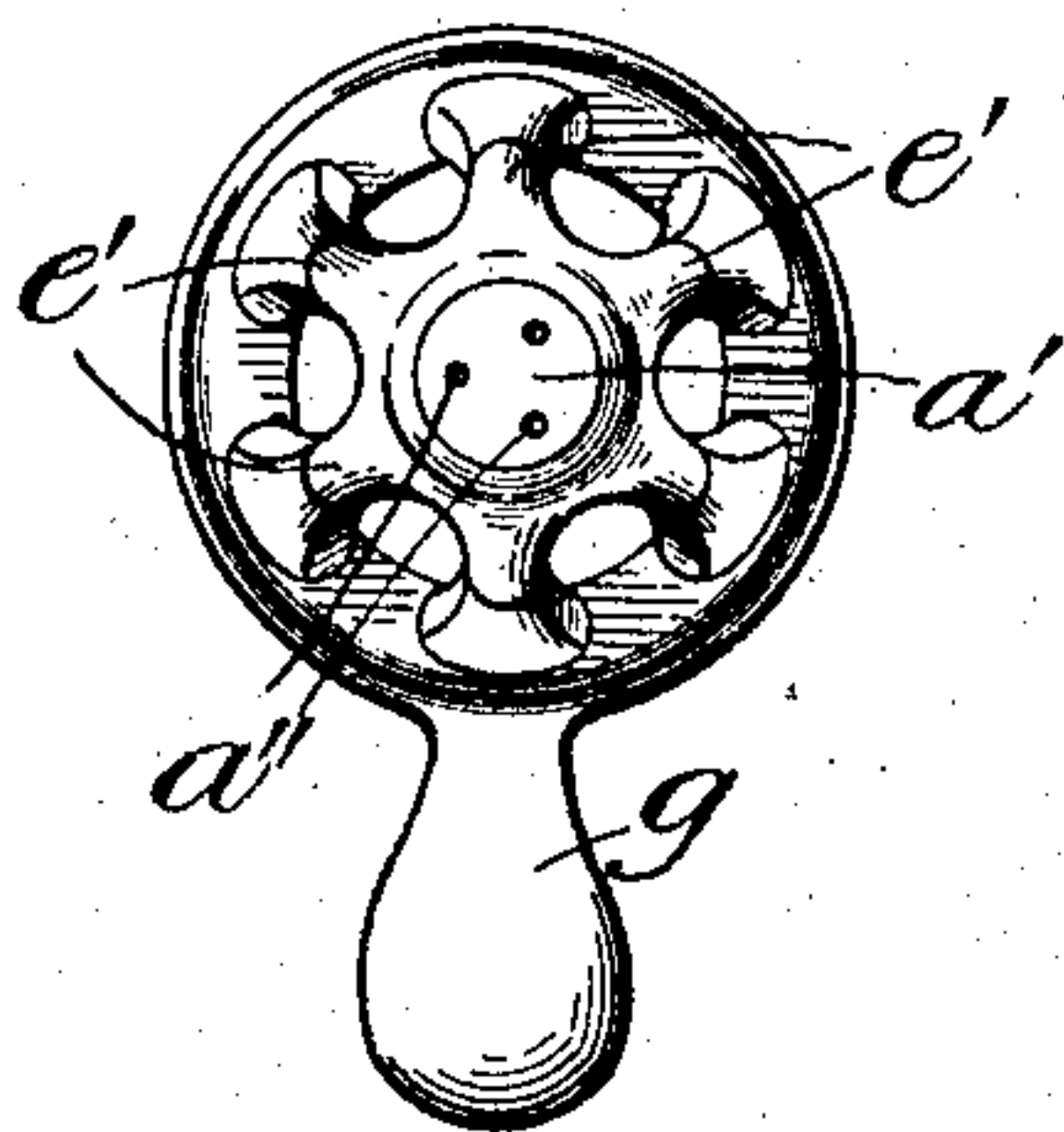
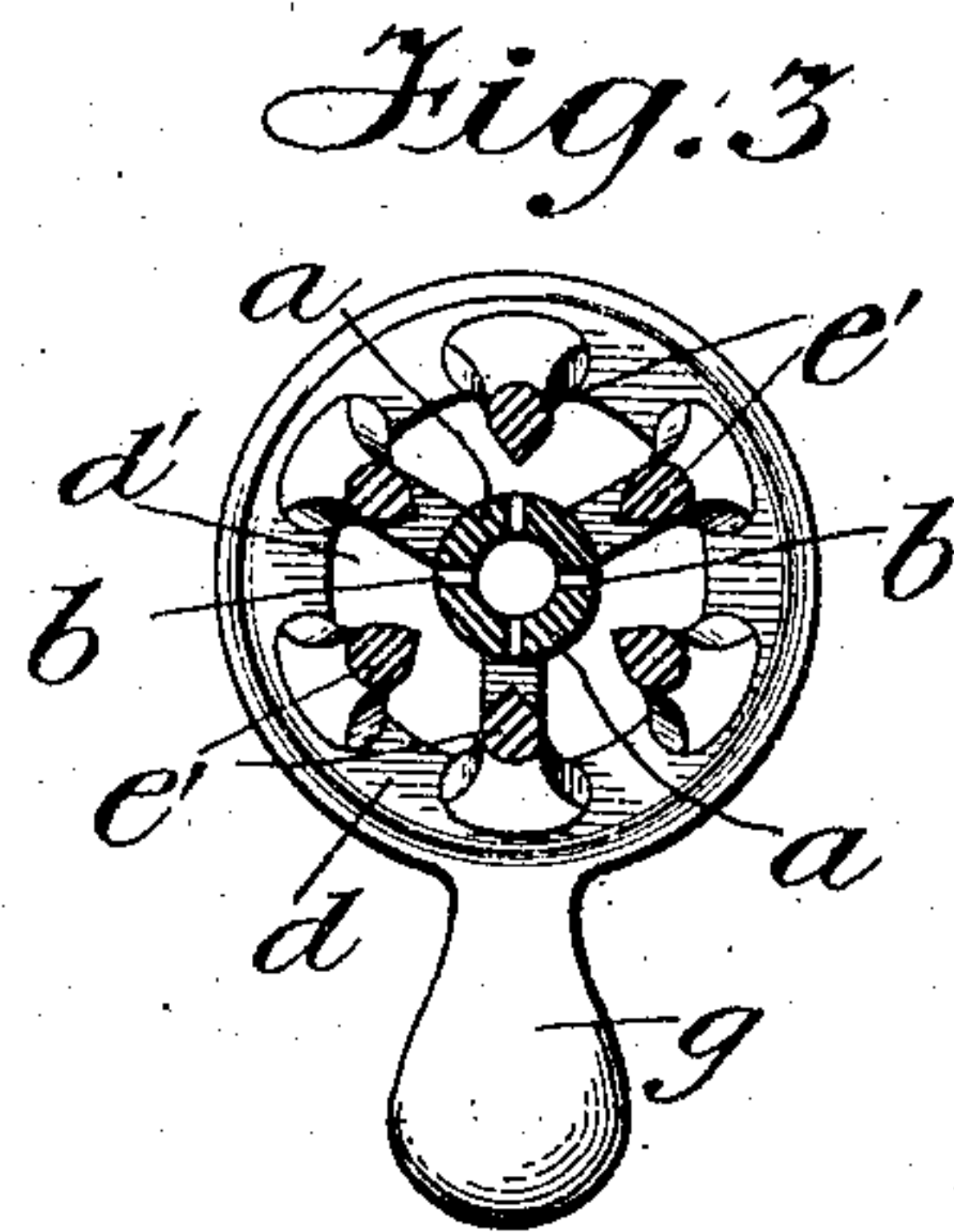
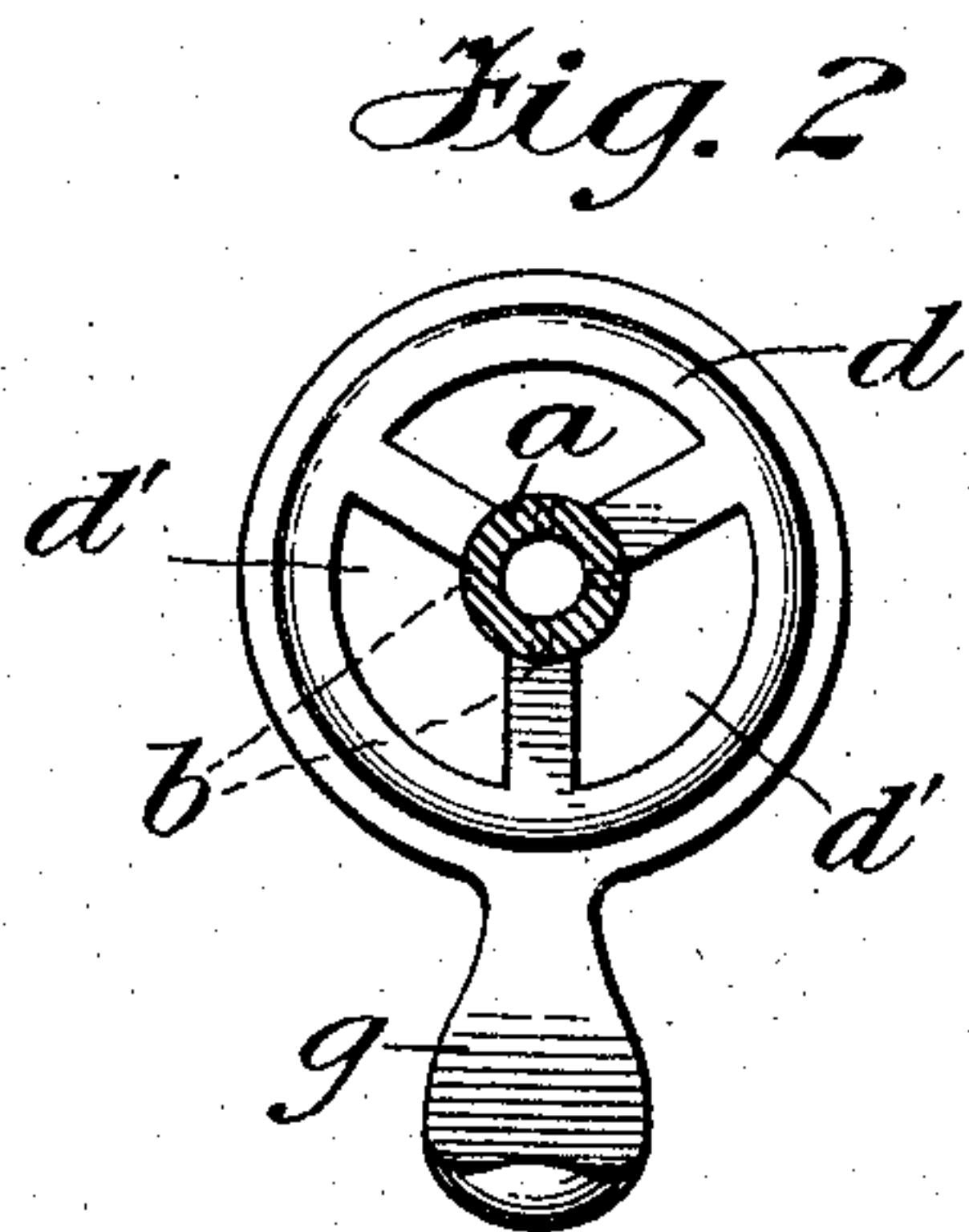
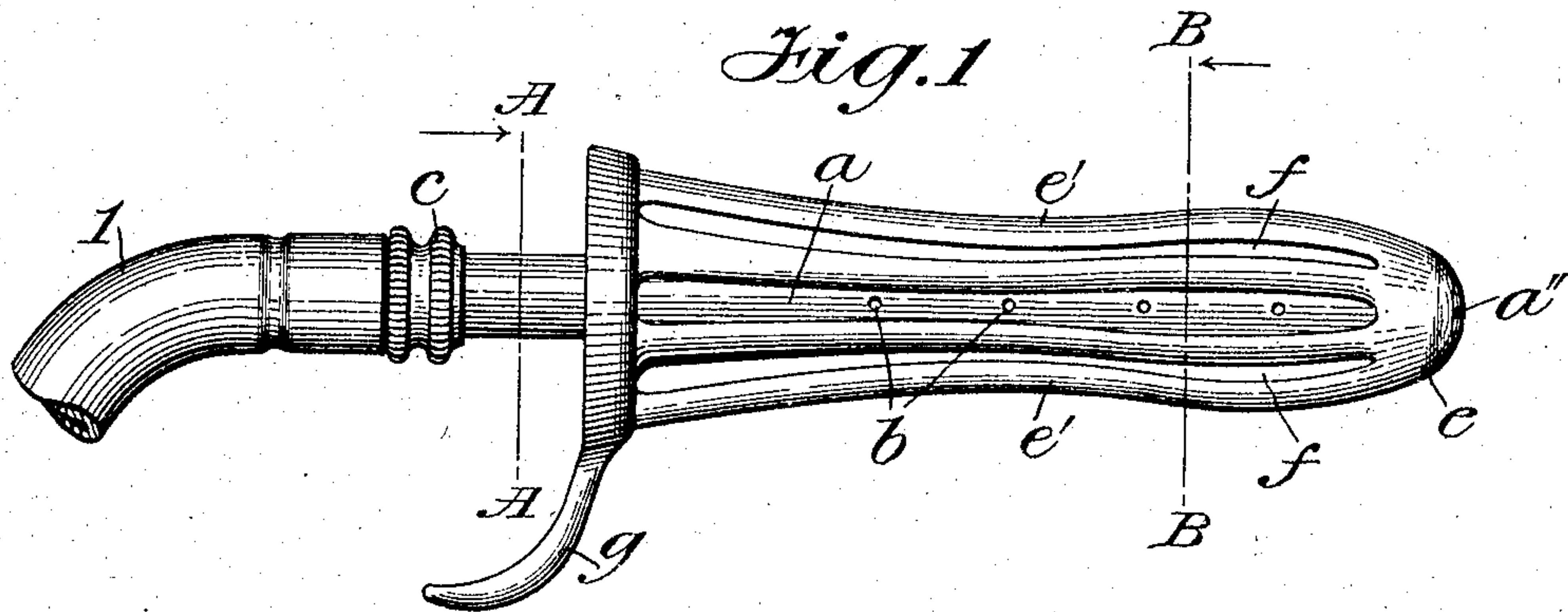


No. 780,710.

PATENTED JAN. 24, 1905.

H. DICKINSON.  
NOZZLE FOR SYRINGES.  
APPLICATION FILED NOV. 19, 1903.



Witnesses:  
Chas. J. Clagett,  
Freda Schulz

Henry Dickinson,  
Inventor,  
By his Attorney, Cha. H. Davis.



# UNITED STATES PATENT OFFICE.

HENRY DICKINSON, OF FLUSHING, NEW YORK.

## NOZZLE FOR SYRINGES.

SPECIFICATION forming part of Letters Patent No. 780,710, dated January 24, 1905.

Application filed November 19, 1903. Serial No. 181,812.

*To all whom it may concern:*

Be it known that I, HENRY DICKINSON, a citizen of the United States, residing at Flushing, in the county of Queens and State of New York, have invented a new and useful Improvement in Nozzles for Syringes, of which the following is a specification.

My present invention pertains to improvements in nozzles—such, for instance, as those which are used for syringes; and the objects of my invention are to provide said nozzles with means for distending any flexible and distensible parts into which the nozzles may be inserted, the object of said distention being to insure a thorough and complete flooding or washing of the inner surfaces of the distended parts by means of the liquid which is injected through the nozzle, a further improvement being comprised in means which I provide for rotating the distending means, thus uncovering in turn all parts of the inner surface before referred to and exposing the whole of the latter to the action of the injected liquid.

In the drawings, Figure 1 is a longitudinal elevation of a nozzle and of a part of a supply-pipe. Fig. 2 is a section through the line A A, Fig. 1, looking to the right in said figure. Fig. 3 is a section through line B B, Fig. 1, looking to the left in said figure. Fig. 4 is a right end elevation of the nozzle, parts being removed; and Fig. 5 is a central longitudinal section corresponding to Fig. 1.

Reference characters are relatively alike throughout the drawings.

Referring to the drawings, 1 designates a part of a supply-pipe of a syringe. (Not shown.) A tube *a* in the form shown is frictionally connected to said supply-pipe and is perforate, as at *b b*, through its side walls. If desired, the tube *a* may be partially closed at its free end by an end wall *a'*, which may be perforate, as at *a''*. Manually-engageable means, herein shown as a knurled collar *c*, may be circumferentially attached, preferably integrally, to the tube *a* and are designed to be used as hereinafter related. A collar *d* is mounted upon the tube *a* and is preferably integral therewith and is perforate, as at *d' d'*, axially thereof and externally of the tube *a*.

A distender *e* is mounted upon the tube *a*

and is preferably rotatable on said tube, one end of the distender *e* being preferably journaled on the perforate collar *d*, and, as shown herein, the opposite end of the distender *e* is journaled on the free end of the tube *a* by means of a screw-thread. The distender *e* comprises a plurality of separate bars *e' e'*, which are preferably disposed concentrically of the tube *a* and preferably parallelly of the latter and of each other and at such distances apart one from the other and from the tube *a* as to leave suitable outflow-spaces *f f* between all of said members for a purpose hereinafter related. Manually-engageable means, herein shown as a lever or arm *g*, are attached, preferably integrally, to the distender *e* and are designed to be used as hereinafter related.

The operation and advantages of my invention will readily be understood. The nozzle being inserted within flexible and distensible parts distends the latter by forcing the inner walls thereof apart. If the manually-engageable means *c*, which are attached to the tube *a*, be engaged by one hand of the operator and the manually-engageable means *g*, which are attached to the distender *e*, be engaged by the other hand of the operator, the tube *a* may be retained in a stationary position by the former and the distender *e* may be partially rotated or oscillated upon the tube *a* and collar *d* by means of the latter. The tube *a* being perforate—that is to say, having perforations which lead outwardly from the interior thereof—will permit a liquid which may be ejected therethrough to flood or wash the inner surfaces of the distended parts, and the liquid will thereafter flow outwardly from said parts through the outflow-spaces *f f* and through the perforations in the perforate collar *d*. The partial rotation or oscillation of the distender *e* upon the tube *a* and collar *d* permits the injected liquid to contact the whole inner surface of the distended parts.

That form of my invention in which the tube *a* has perforate side walls and a perforate end wall provides for a more widely-diffused operation of the injected liquid, as the latter will contact the inner surfaces of all of the distended parts which are in front of and on all sides of the nozzle.



I claim as new and as my invention—

1. A nozzle which comprises a perforate tube; means for connecting said tube to a supply-pipe; a collar mounted upon the tube and perforate axially thereof externally of said tube; and a distender which is rotatably mounted upon the tube and journaled at one end upon the perforate collar and comprises a plurality of separate bars which are disposed concentrically of the tube and are separated therefrom and from each other by outflow-spaces.

2. A nozzle which comprises a perforate tube; means for connecting said tube to a supply-pipe; a collar mounted upon the tube and perforate axially thereof externally of said tube; a distender which is rotatably mounted upon the tube and journaled at one end upon the perforate collar and comprises a plurality of separate bars; manually-engageable means which are attached to the tube; and a hand-lever which is attached to the distender, and is operative to rotate the distender on the tube.

3. A nozzle which comprises a perforate tube; means for connecting said tube to a supply-pipe; a collar mounted upon the tube and perforate axially thereof externally of said

tube; and a distender which is rotatably mounted upon the tube and journaled at one end upon the perforate collar and comprises a plurality of separate bars which are disposed concentrically of the tube and are separated therefrom and from each other by outflow-spaces.

4. A nozzle which comprises a perforate tube; means for connecting said tube to a supply-pipe; a collar mounted upon the tube and perforate axially thereof externally of said tube; a distender which is rotatably mounted upon the tube and journaled at one end upon the perforate collar and comprises a plurality of separate bars which are disposed concentrically of the tube and are separated therefrom and from each other by outflow-spaces; manually-engageable means which are attached to the tube; and manually-engageable means which are attached to the distender.

In testimony whereof I have signed my name to this application in the presence of two subscribing witnesses.

HENRY DICKINSON.

Witnesses:

FREDA SCHULTZ,  
CHAS. H. DAVIDS.