

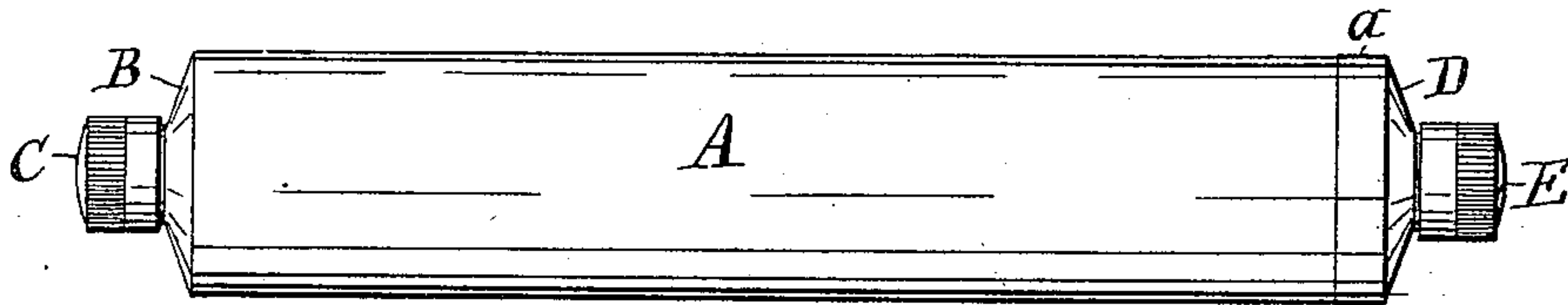
No. 666,443.

Patented Jan. 22, 1901.

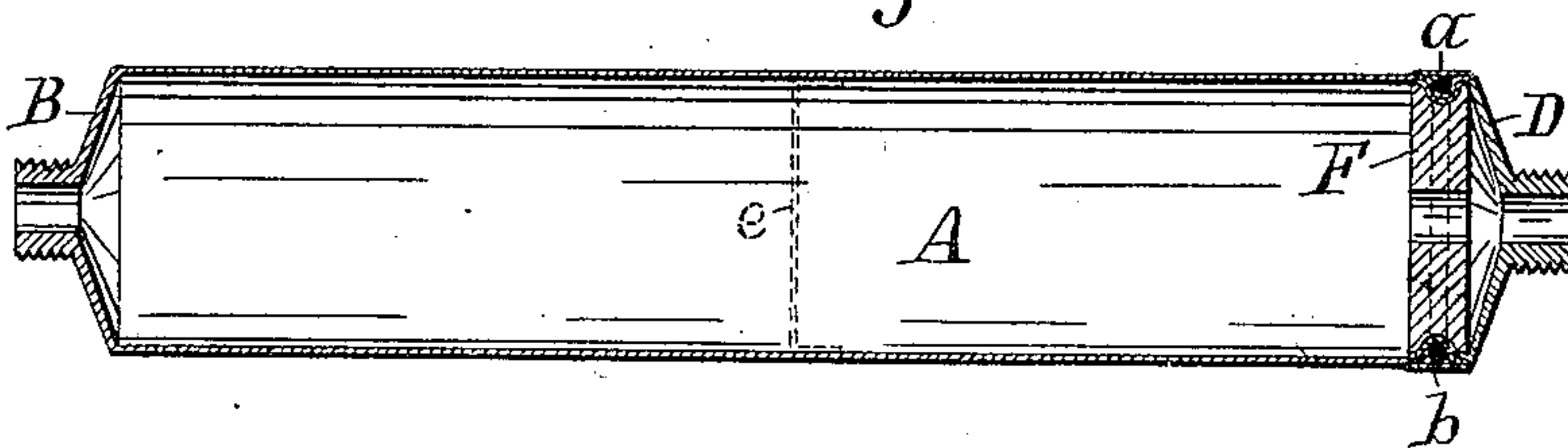
D. SMITH.  
COMPRESSIBLE TUBE.  
(Application filed Dec. 5, 1898.)

(No Model.)

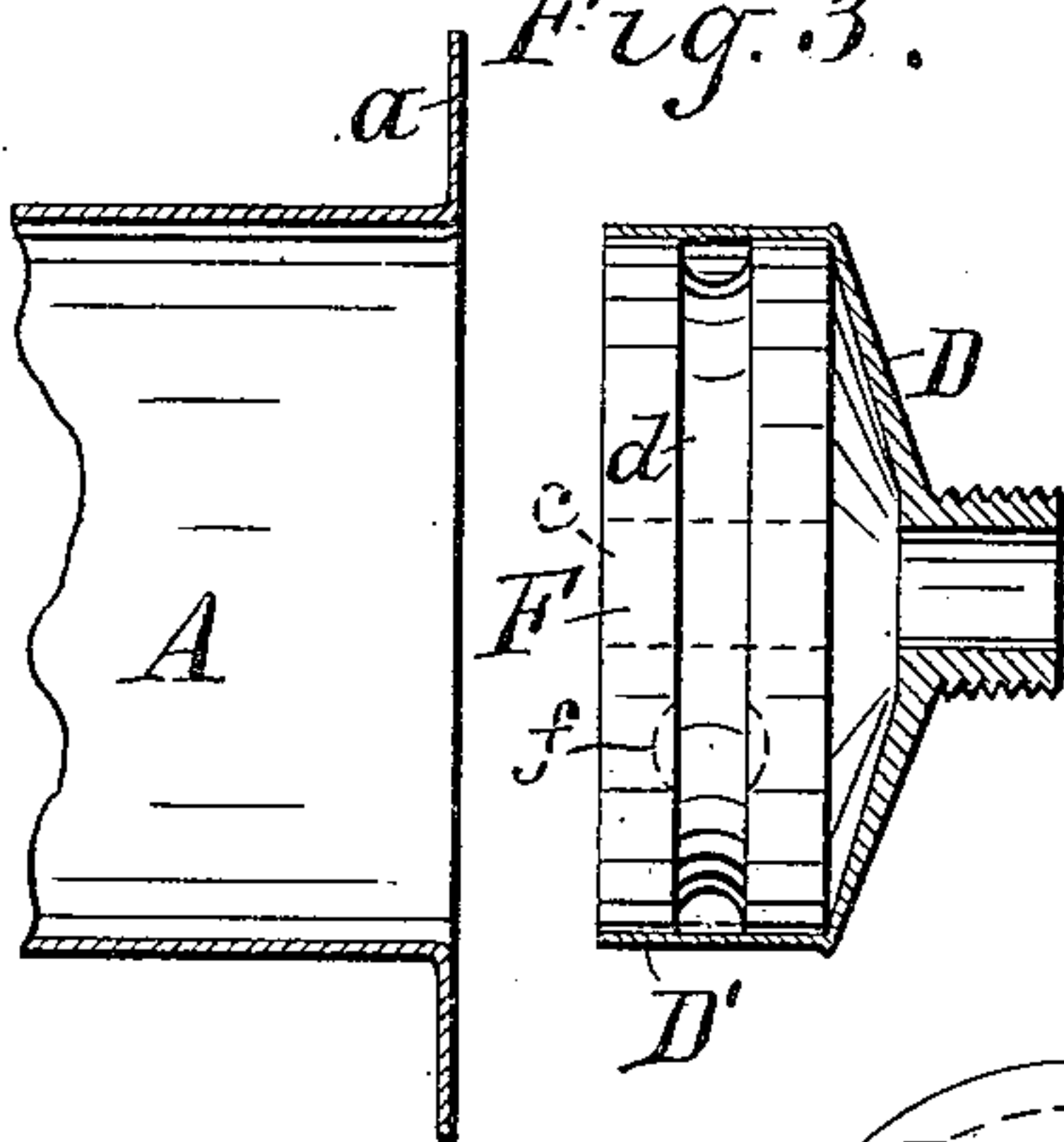
*Fig. 1.*



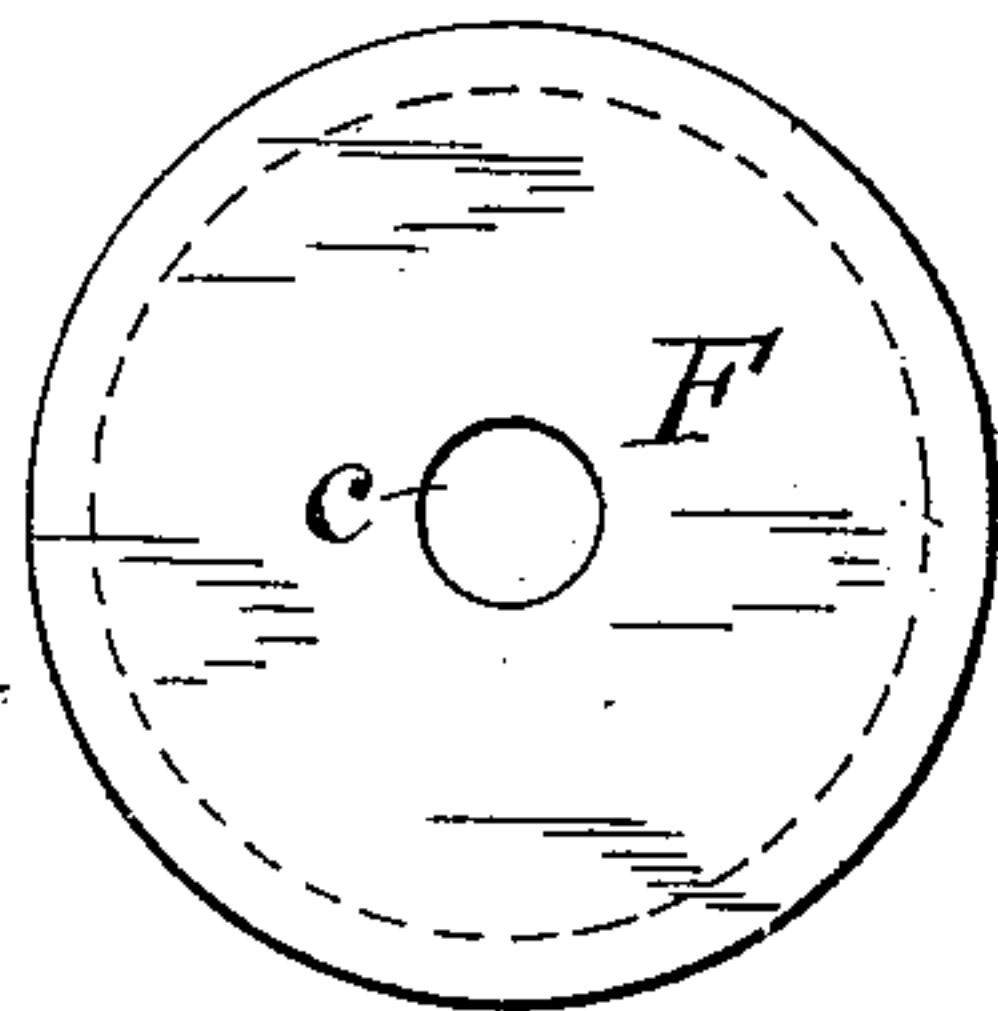
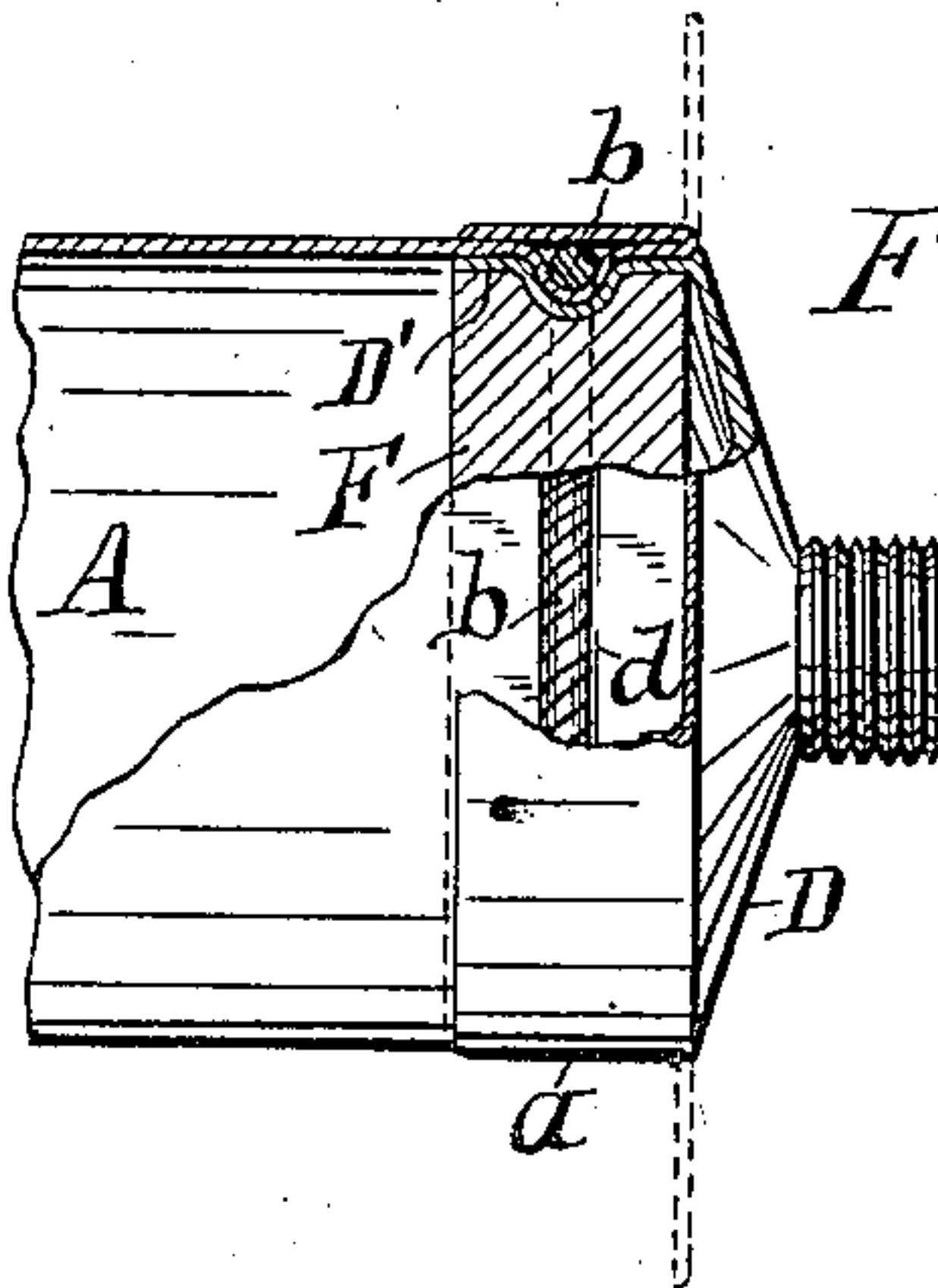
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

Witnesses.

N. M. Newton  
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Inventor:

Darius Smith  
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# UNITED STATES PATENT OFFICE.

DARIUS SMITH, OF SYRACUSE, NEW YORK.

## COMPRESSIBLE TUBE.

SPECIFICATION forming part of Letters Patent No. 666,443, dated January 22, 1901.

Application filed December 5, 1898. Serial No. 698,268. (No model.)

*To all whom it may concern:*

Be it known that I, DARIUS SMITH, of Syracuse, in the county of Onondaga and State of New York, have invented new and useful Improvements in Compressible Tubes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to compressible tubes for containing paints, surgical dressings, and other substances; and the object is to provide a pliable compressible tube with an outlet at each end having a removable cap thereon. Heretofore such compressible tubes have had an outlet with a cap only at one end, the other end being flattened, sealed, and adapted to be folded over upon itself to force out the contents through the outlet at the opposite end.

With my invention the contents may be removed from either end of the tube, which renders it more convenient for use, and when surgical dressings are contained therein allows the surgeon or other user to use the dressing forced from one end of the tube for one purpose and to use the same dressing from the other end of the tube for a different purpose, thus preventing all danger of inoculating disease to different patients treated with the said dressing. This, of course, may be accomplished without a division or partition of any kind in the tube; but in some cases, as when it is desired to have the tube contain two different substances, a flexible or pliable partition may be placed in the tube at any point intermediate its length to separate the substances. The point at which the partition is located may be indicated in any suitable manner upon the outside of the tube, which will serve as a guide to the user, enabling him to compress the tube at the proper place.

To this end my invention consists, broadly, in a compressible or pliable tube having an outlet at each end, which is relatively small, the end of the tube being threaded, and a cap for each outlet to close the same; and my invention consists in certain combinations of parts hereinafter described, and specifically set forth in the claims.

In the drawings hereto annexed and forming a part of my specification, Figure 1 is a side elevation of my improved pliable tube.

Fig. 2 is a central longitudinal sectional view of the same with the caps removed. Fig. 3 shows an enlarged longitudinal section of one end of the tube before the end containing the outlet is inserted preparatory to joining or securing and sealing the parts together, and the same figure shows the sectional view of the end and its sustaining-piece ready to be inserted in the end of the tube. Fig. 4 shows an enlarged side elevation, partly in section, and shows clearly the means employed for securing and sealing the parts together. The other end of the tube is integral with the tube, as usual, though of course both ends may be secured to the tube by the same means shown in Fig. 5, if desired; and Fig. 5 shows an end view of the circumferentially-grooved and perforated sustaining-piece.

Referring specifically to the drawings, A is the pliable and compressible tube, which is preferably formed of metal or an alloy, but may be formed of paper or any other suitable and well-known material that is pliable and impervious.

B is the left-hand end of the tube, which is preferably integral with the tube, and is provided with a small outlet and is threaded on its outer wall, and C is the cap, which is threaded on its inner wall and which serves to close the outlet and hermetically seal the same. D is the opposite or right-hand end of the tube, which is secured to and sealed upon or in the end of the tube itself. E is its cap for closing the outlet in this end of the tube, and F is the circumferentially-grooved and perforated sustaining-piece, which may be made of metal, hard rubber, or wood, preferably the latter, and is of the same diameter as the short tubular projection D' on the end D—that is, the piece F fits closely within this tubular projection and is of substantially the same length. When the piece F is formed of wood, it is preferably saturated and covered with varnish or shellac to render it impervious to the contents of the tube and to prevent it from disintegrating or contaminating or injuring in any way the contained substance. The perforation c in the center of the piece F permits the substance to pass through it.

After the piece F is placed in the tubular projection D', as indicated in the right-hand



part of Fig. 4, and the end of the tube itself is flanged, as shown in the left-hand part of the same figure, the said piece and tubular projection is inserted in the end of the tube, in which it fits quite closely. Then a string or wire *b* is tied or drawn around the whole at the point where the groove *d* is located and the soft thin metal of the tubular projection and also of the tube *A* is depressed into the groove, as shown in Figs. 2 and 5 of the drawings. The knot of the string or twist of the wire, if a knot or twist is made, may be depressed in a large recess made in the piece *F* at a point in the groove, as indicated by broken lines *f* in Fig. 4 of the drawings. After this is done the flange *a* of the tube is turned down over the string or wire *b* and either becomes covered or concealed. The said flange is turned over so nicely and spun down so closely that it is difficult to detect the junction or to discover which end is integral with the tube *A*. In order to show the structure clearly in the drawings, the thickness of the metal has been exaggerated and the right-hand end of the tube appears to be of greater diameter than the other end; but in practice this is not the case, or at least it does not appear to be, as the metal is very thin. The joint thus made is fully as strong as the integral junction at the other end of the tube. A partition *e* is indicated by broken lines in Fig. 2 of the drawings.

I do not desire to be limited to the precise form of junction shown and described herein, for it will be obvious that the same may be varied somewhat without departing from my invention. Nor do I desire to be limited to forming the tube or its end of metal, as other compressible and impervious material may be employed—as, for instance, paraffin-paper. When the tubes are made of paper, the end may be formed of metal.

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

1. A pliable tube having its opposite ends each provided with an outlet which is relatively small and a removable cap for each outlet to close the same, one of said ends being integral with the tube, and the other end secured to the end of the tube by a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, and a binding device compressing the tube and tubular projection within the groove as set forth.

2. A pliable tube having its opposite ends each provided with an outlet which is relatively small, and a removable cap for each outlet to close the same, one of said ends be-

ing integral with the tube, and the other end secured to the end of the tube by a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, a binding device compressing the tube and tubular projection within the groove, and said tube having its end turned back upon itself to cover the binding device, as set forth.

3. A pliable tube having its opposite ends each provided with an outlet, which is relatively small, and a removable cap for each outlet to close the same, one of said ends being integral with the tube, and the other end secured to the end of the tube by a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, a wire band compressing the tube and tubular projection within the groove, and said tube having its end turned back upon itself to cover the wire band, as set forth.

4. A pliable tube having an end provided with an outlet which is relatively small, a removable cap to close the outlet, said end having a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, and a binding device compressing the tube and tubular projection within the groove, as set forth.

5. A pliable tube having an end provided with an outlet which is relatively small, a removable cap to close the outlet, said end having a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, a binding device compressing the tube and tubular projection within the groove, and said tube having its end turned back upon itself to cover the binding device, as set forth.

6. A pliable tube having an end provided with an outlet which is relatively small, a removable cap to close the outlet, said end having a tubular projection integral with the end and within the end of the tube, a circumferentially-grooved and perforated piece within the said projection, a circular band compressing the tube and tubular projection within the groove, and said tube having its end turned back upon itself to cover the circular band and groove, substantially as described and shown.

In testimony whereof I have hereunto signed my name.

DARIUS SMITH. [L. S.]

Witnesses:

H. M. SEAMANS,  
N. M. NEWTON.