

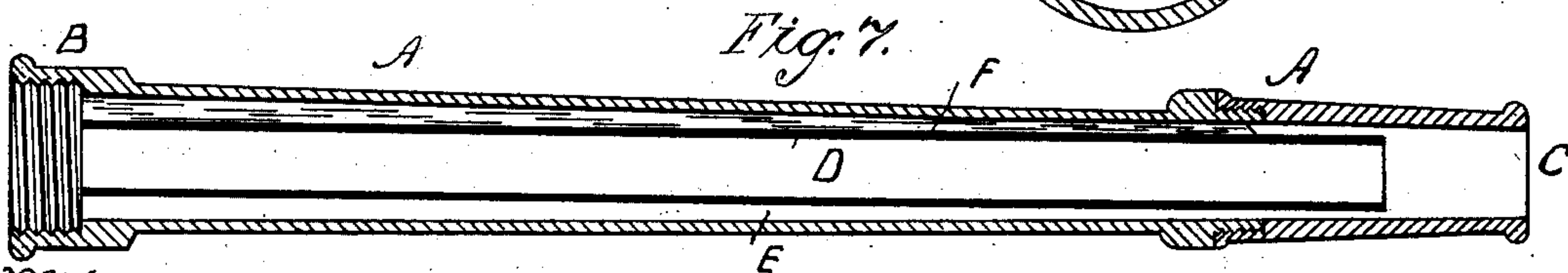
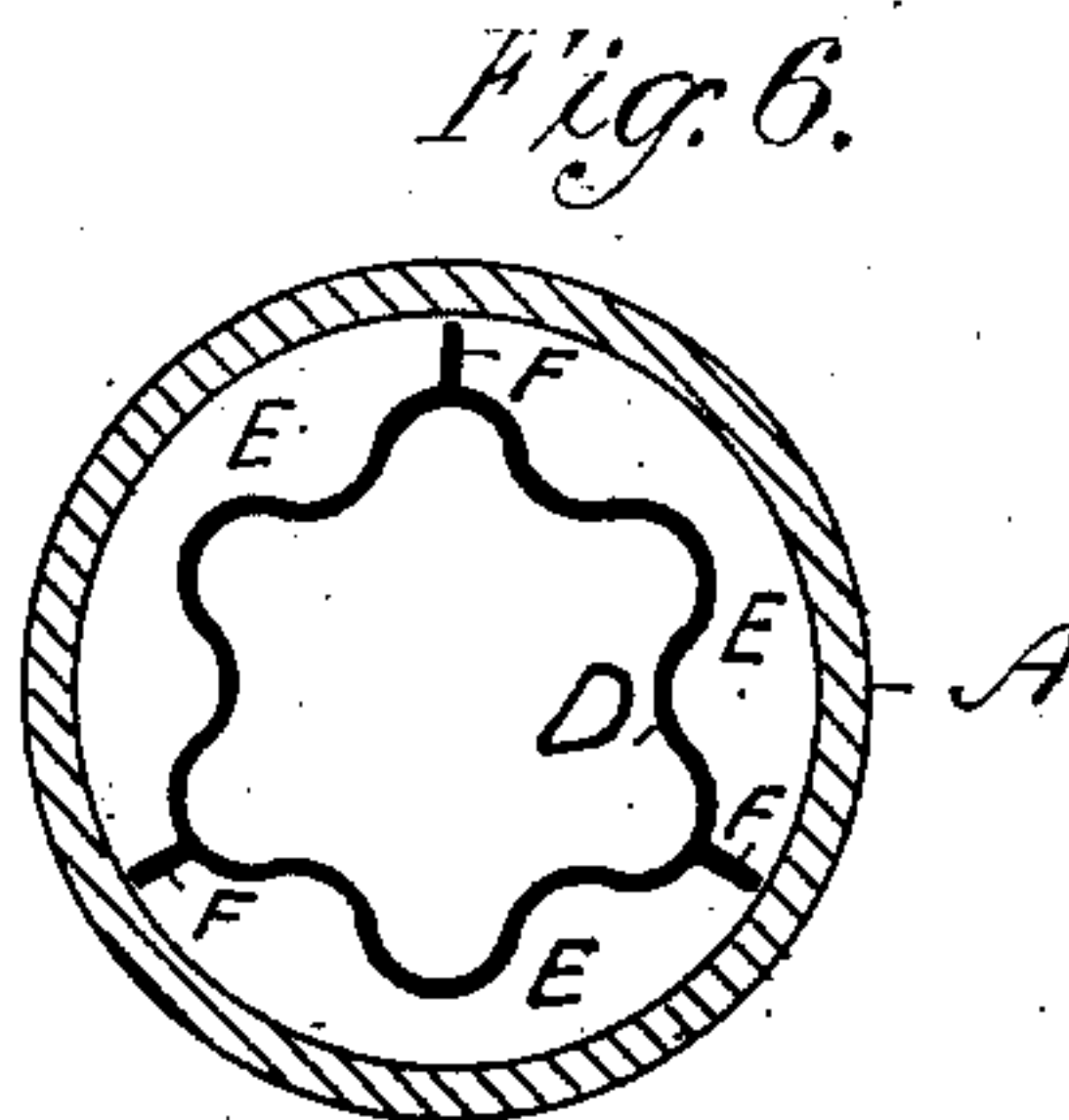
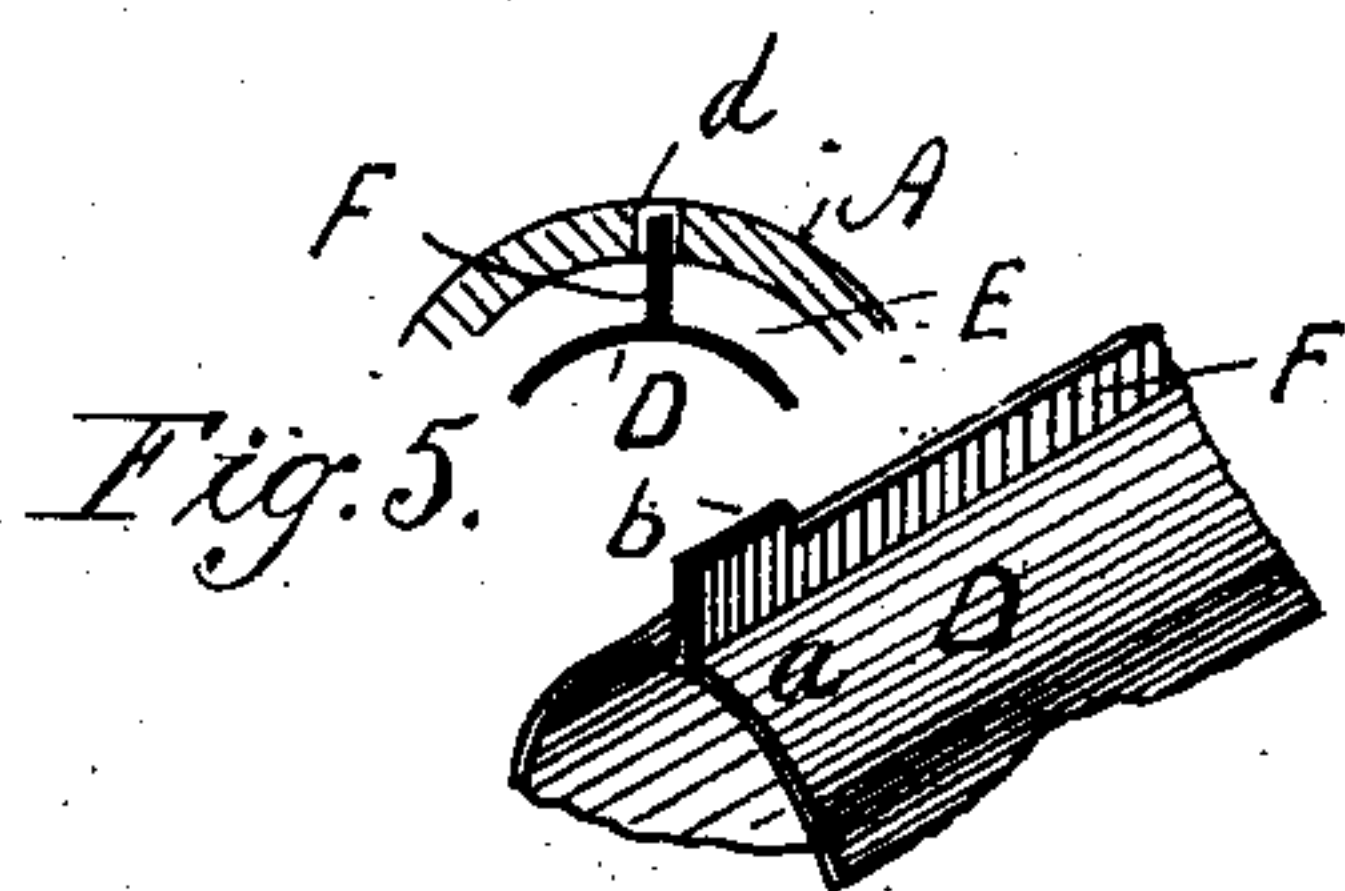
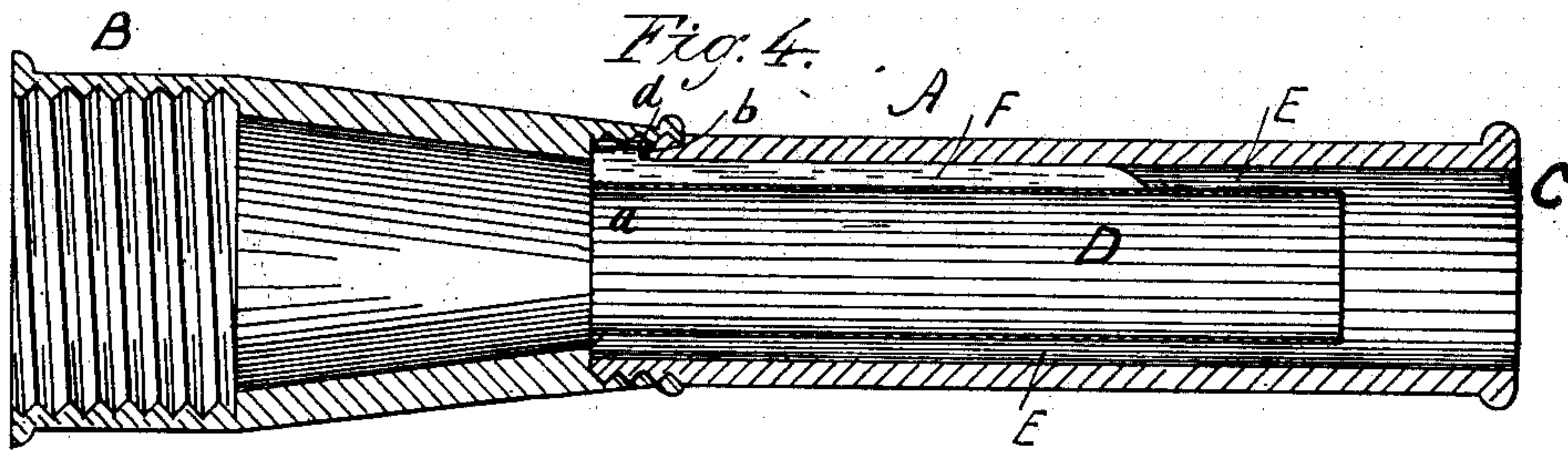
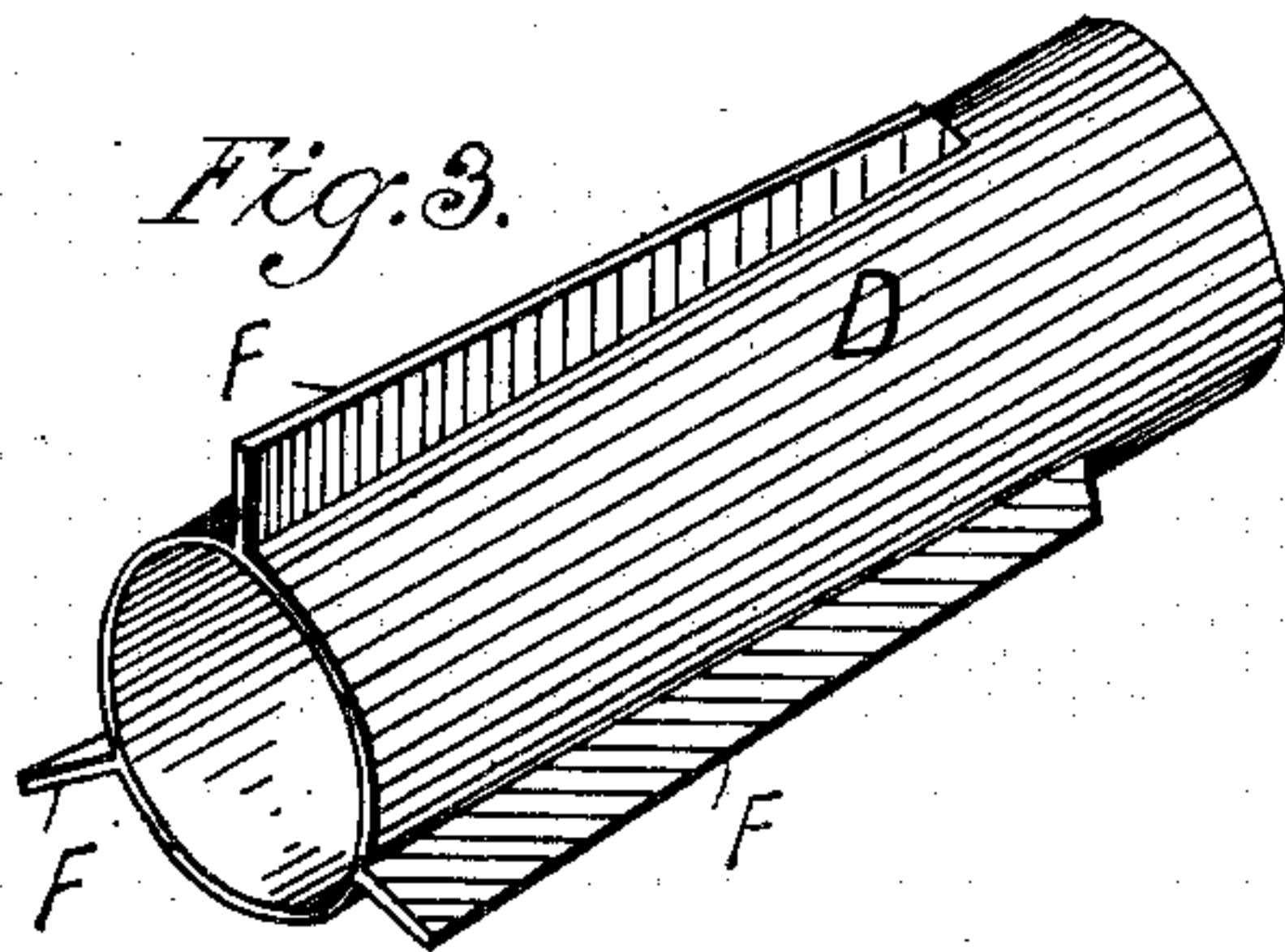
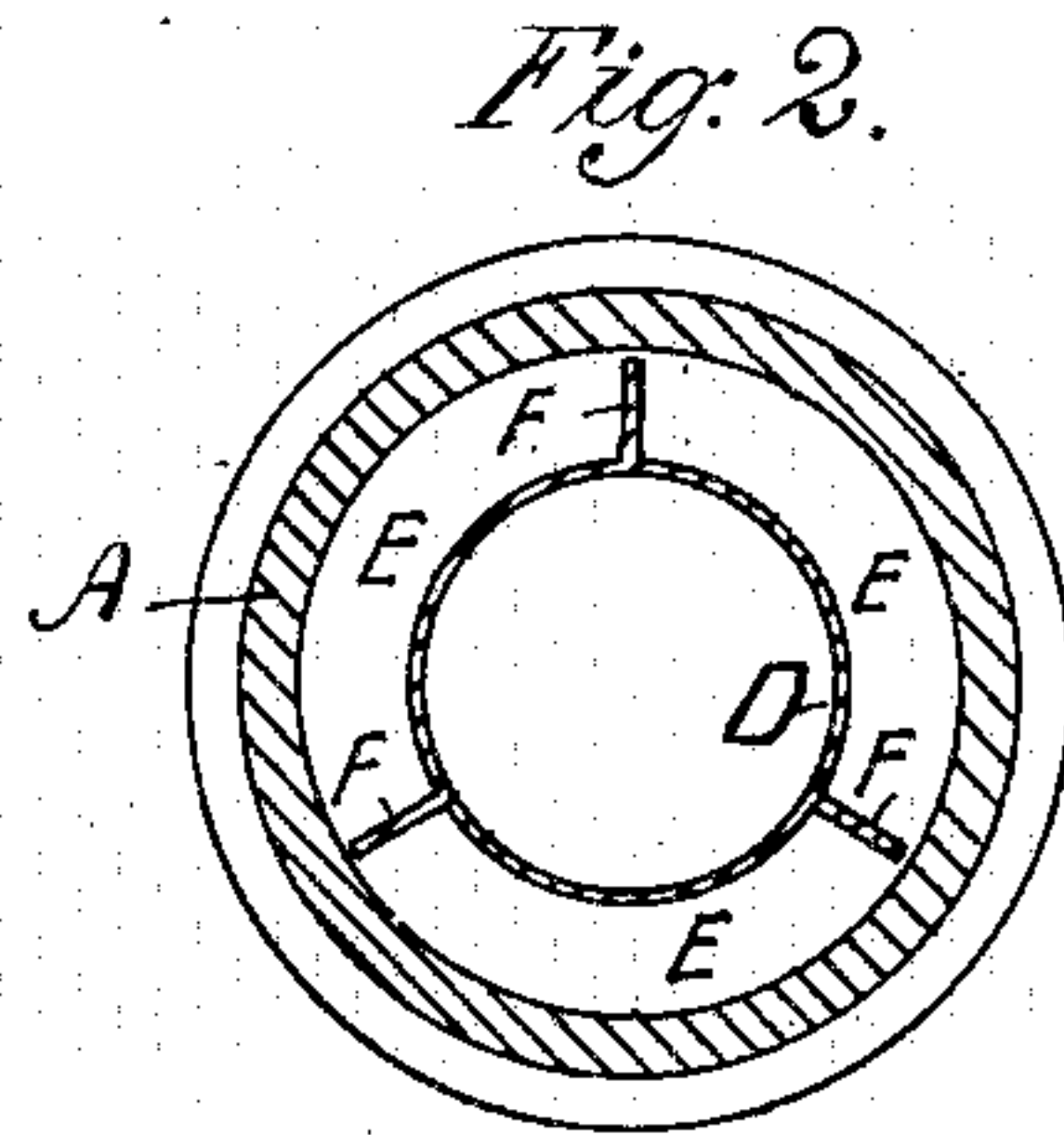
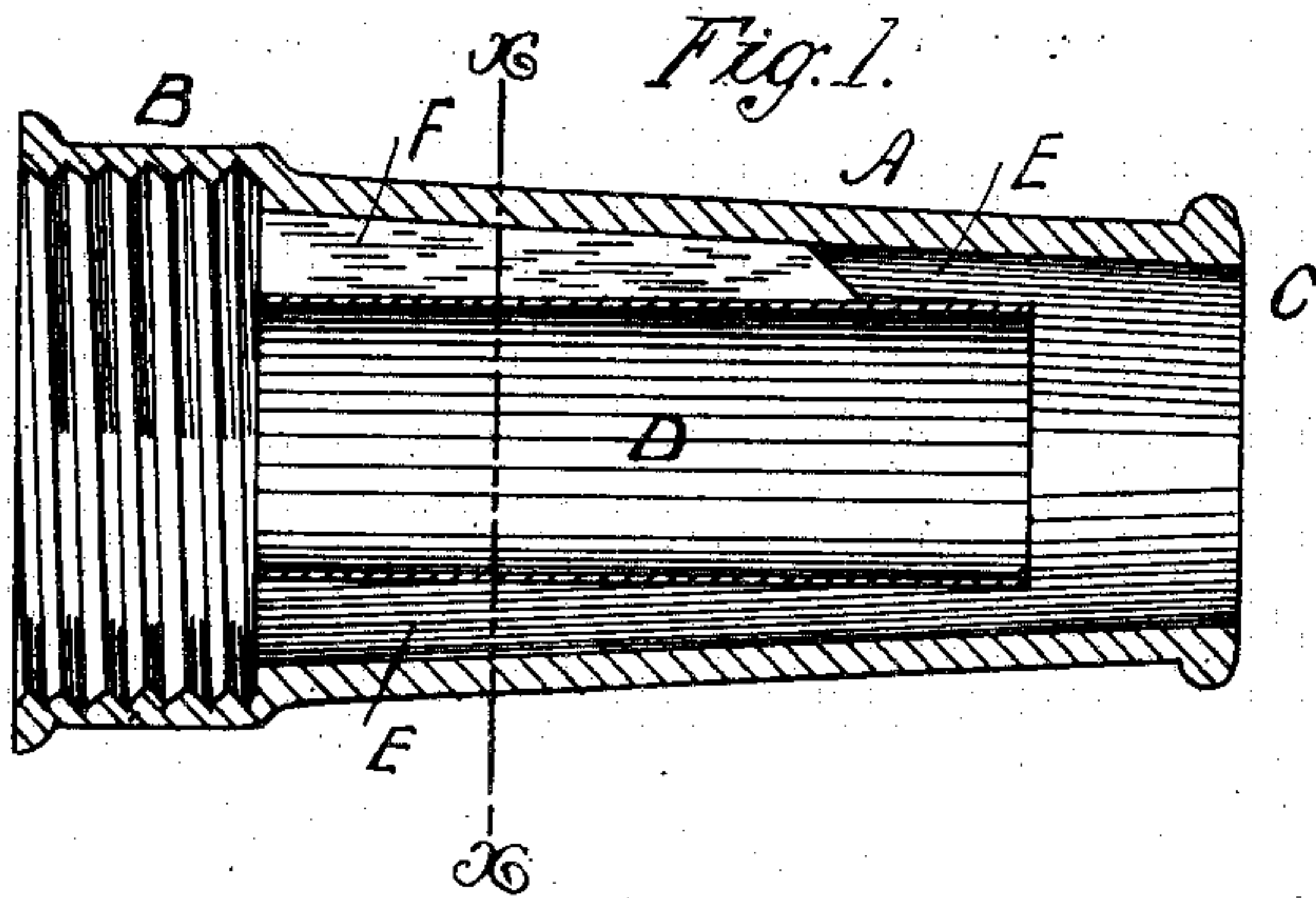
(No Model.)

J. R. HOPKINS.

HOSE NOZZLE.

No. 245,168.

Patented Aug. 2, 1881.



Witnesses:
Wm. S. Bellows
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UNITED STATES PATENT OFFICE.

JAMES R. HOPKINS, OF SOMERVILLE, ASSIGNOR TO EDWIN B. BUCKINGHAM, OF BROOKLINE, MASSACHUSETTS.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 245,168, dated August 2, 1881.

Application filed June 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. HOPKINS, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hose-
5 Nozzles, of which the following is a full, clear, and exact description.

This improved hose pipe or nozzle is composed of two tubes arranged longitudinally—
10 one within the other, and so as to leave a chamber between them, and this chamber along its length is divided into a series of longitudinal water ways or passages in such manner and of such construction as to guide the
15 water which passes through them in straight lines and thus to prevent rotative movement being given thereto, which insures a solid stream of water for an increased distance after leaving the nozzle, all substantially as herein-
20 after described.

In the accompanying plate of drawings, this improved hose pipe or nozzle is illustrated.

Figures 1, 4, and 7 are longitudinal sections, showing the nozzles as of different shapes, but each embracing the improved construction. Fig. 2 is a cross-section on line *xx*, Fig. 1. Fig. 3 is a perspective view of the inner tube detached; Fig. 5, views in detail of the
30 inner tube and its mode of connection with the outer tube shown in Fig. 4; Fig. 6, a cross-section, showing the inner tube as corrugated along its length.

In the drawings, A represents a hose-nozzle, or pipe, or tube adapted at one end, B, to be secured to the line of hose and at the other end, C, for the discharge of the water forced through the hose.

D is a tube inside of the nozzle-tube A. This tube D extends along the length of the nozzle-tube and between the tubes a chamber or space, E, open at each end to the chamber of the nozzle-tube. The chamber E, between the inner and outer tubes, A D, above described, is divided along and in its length by
45 partitions F into a series of longitudinal water ways or passages. These partitions are shown in the drawings as attached to or as a part of the inner tube, D, and as projecting radially therefrom and of a width to extend
50 across the width of the chamber E between the two tubes, inner and outer.

In Figs. 4 and 5, the partitions at their inner end, *a*, are shouldered, as at *b*, and such shoulders interlocked with slits *d* in the outer tube, A, and thus the inner tube is held in position within the outer tube. Such an interlock or some other suitable fastening or stay is essential if the hose tube or nozzle is straight, but not so if the hose tube or nozzle be tapering and the partitions be made to taper toward the discharge end of the nozzle, as is plain from an inspection of Figs. 1 and 7, without further explanation. This division of the outer chamber, E, into a series of chambers, as described, divides and guides the water which passes through them in straight lines and holds such water against receiving any rotative movement, and thus the stream of water as it issues from the nozzle is prevented from spreading, and a solid stream for an increased distance obtained.

In lieu of the inner tube being straight it may be corrugated, as is shown in Fig. 6, and the partitions, instead of extending across the whole width of the chamber E, as has been described, may embrace simply a portion of such width and be made in the form of the corrugations shown in Fig. 6 in the inner tube (the tube being properly supported) or of the outer tube. It is preferable, however, to have the partitions extend across the whole width of the annular chamber E, which is between the two tubes.

The inner tube can extend to the outer end of the nozzle A, if desired, but it is preferable not to do so, as thereby the stream of water will be solid as it passes out.

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

The combination, in a hose pipe or nozzle, of the outer tube with an inner tube, D, provided with the longitudinal partitions F, said partitions dividing the space between the two tubes into separate water-passages, substantially as described.

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

JAMES R. HOPKINS.

Witnesses:

EDWIN W. BROWN,
WILLIAM S. BELLOWES.