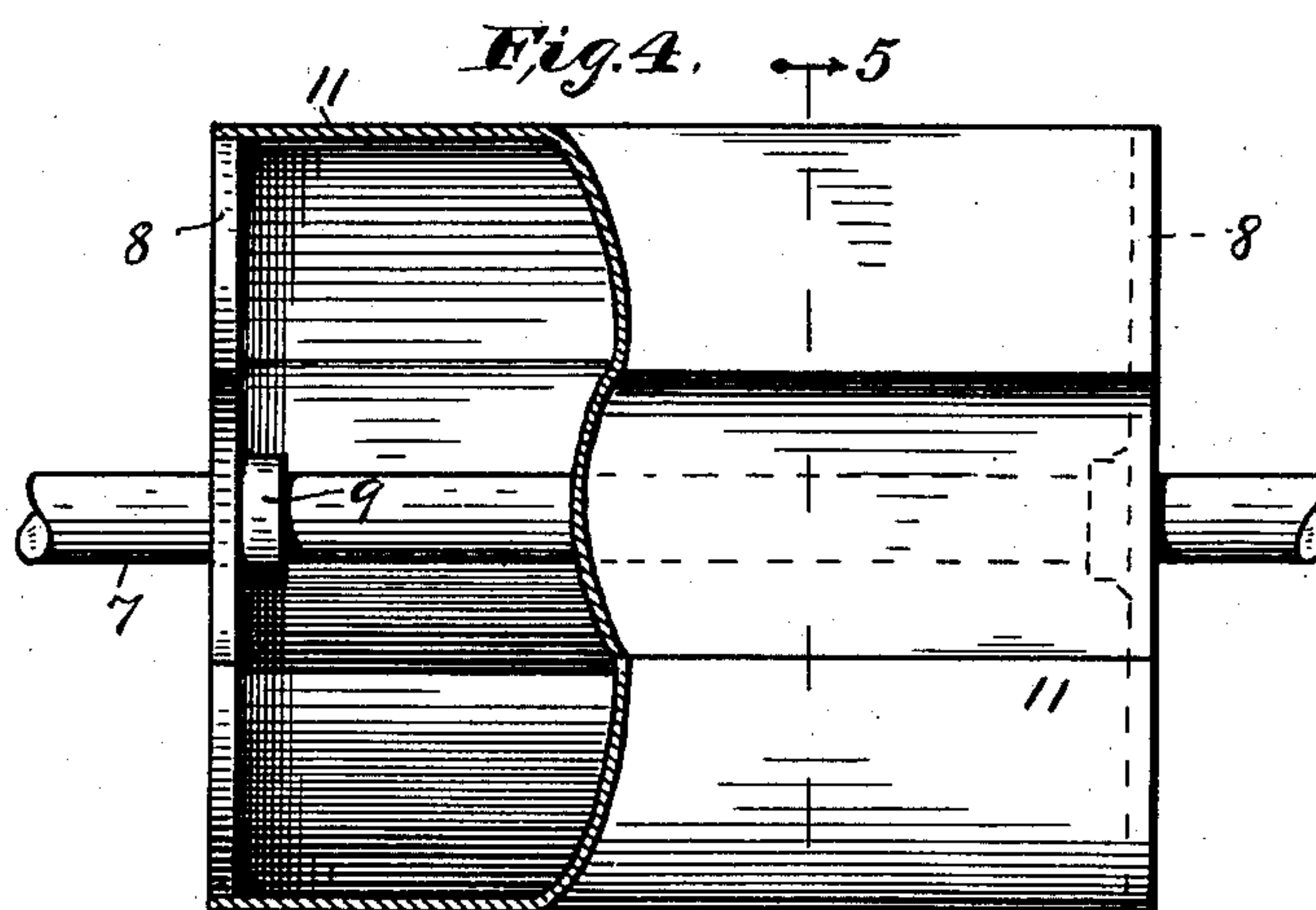
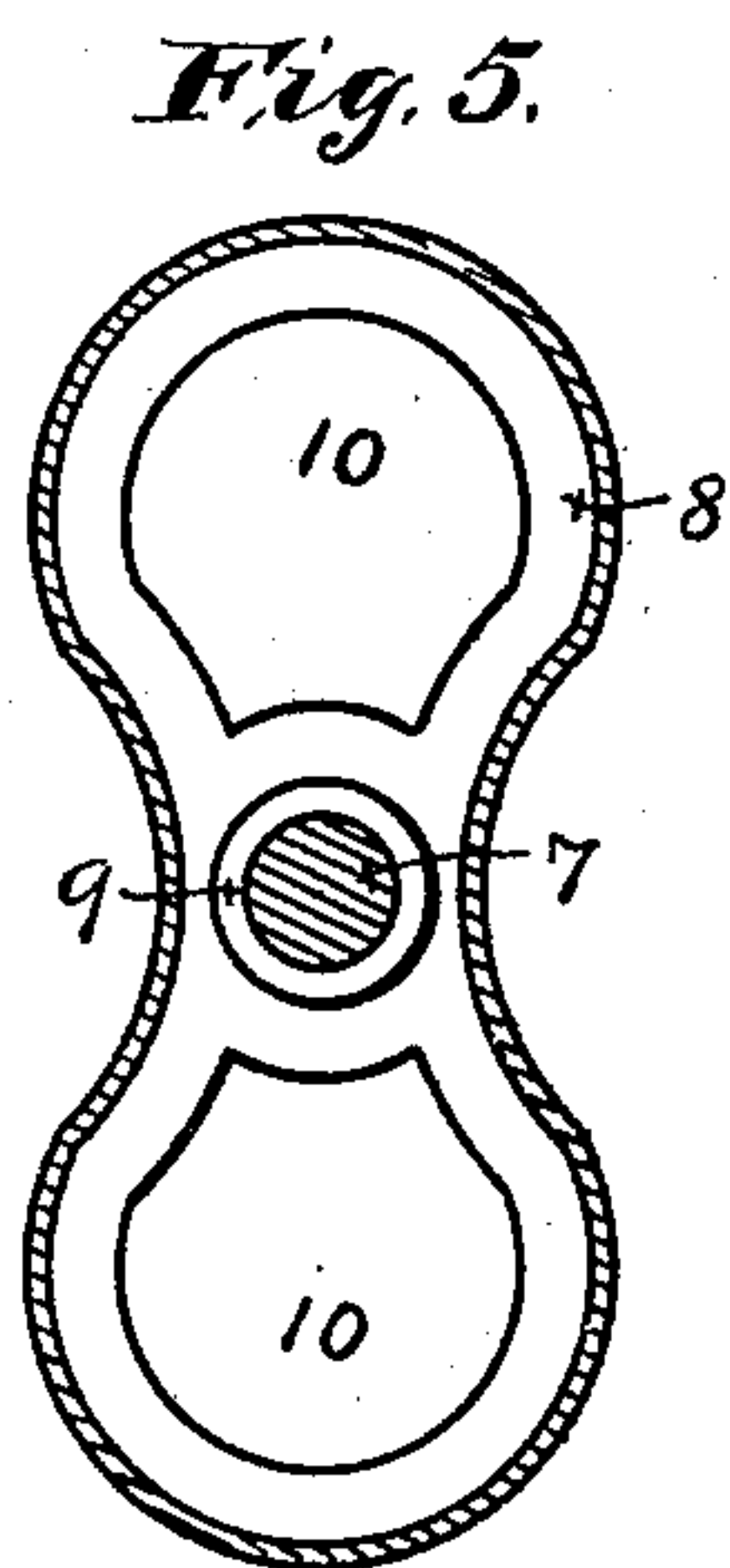
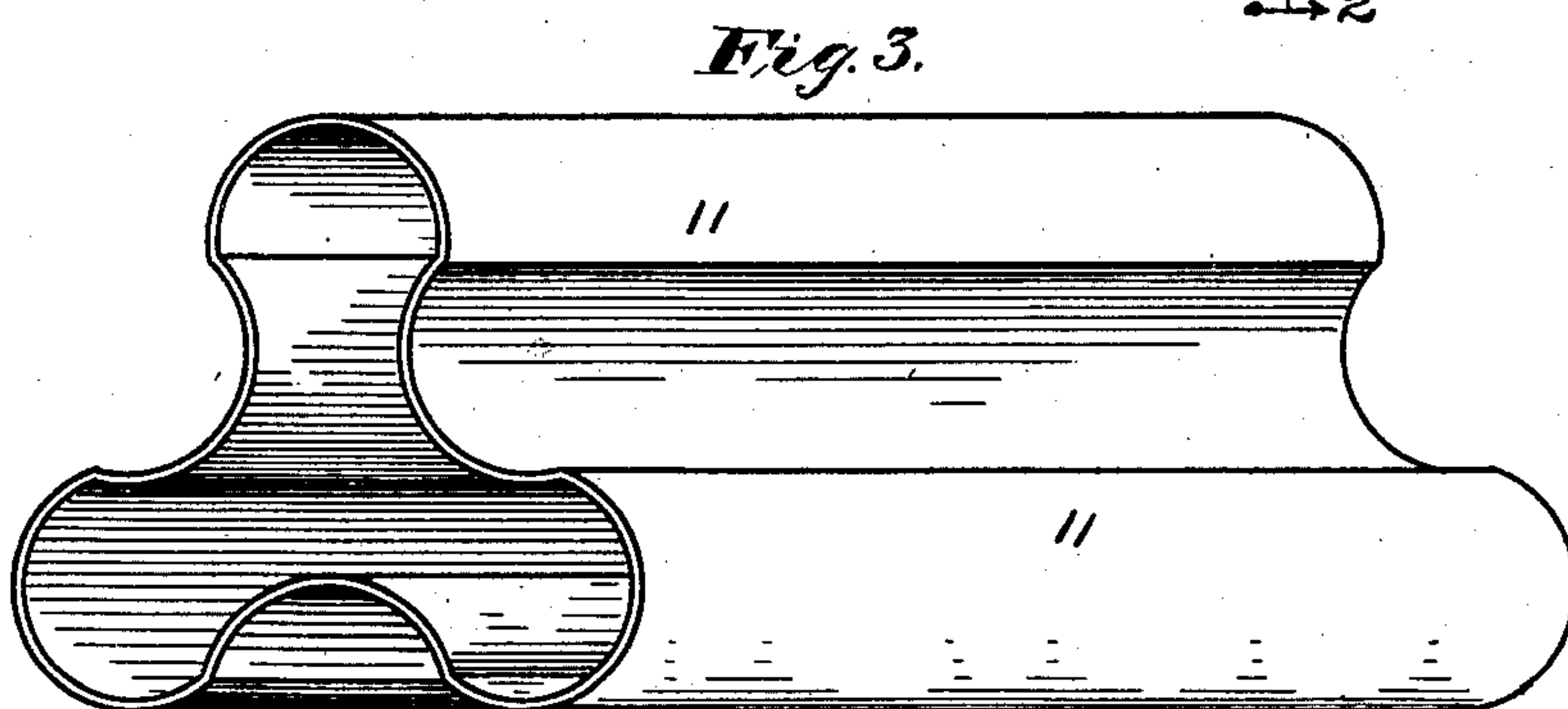
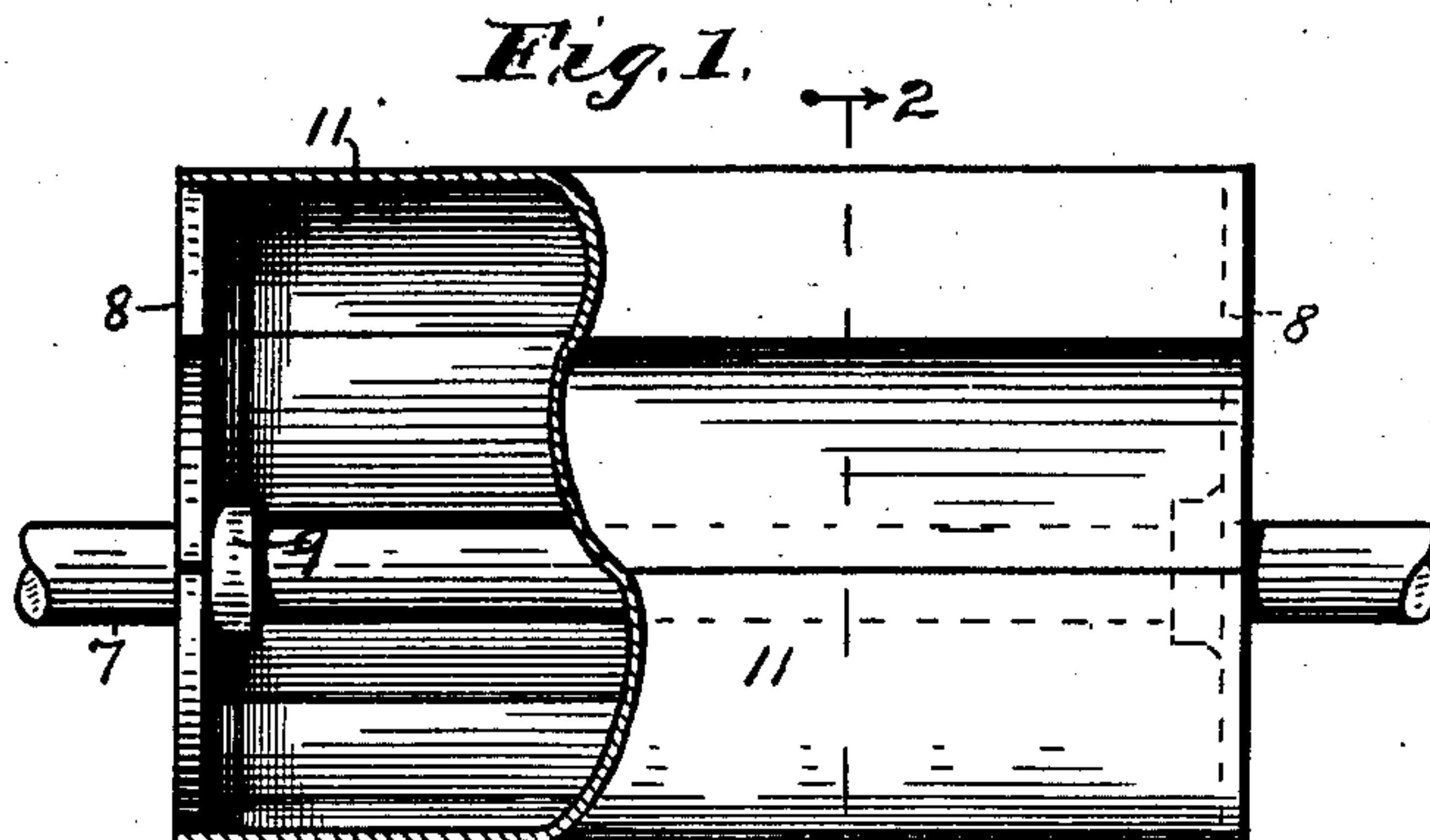
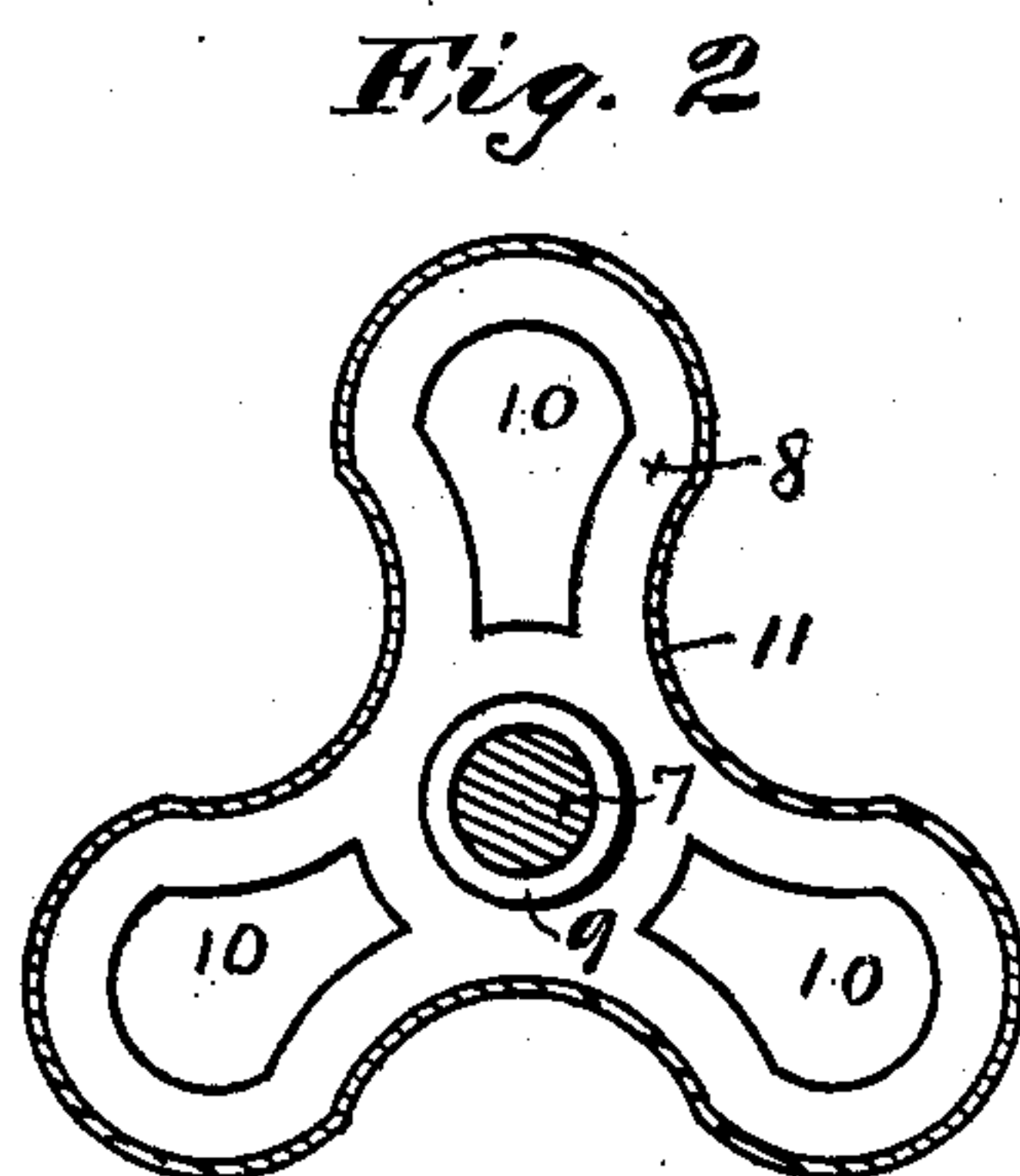


H. A. WAINWRIGHT.
IMPELLER FOR ROTARY BLOWERS OR PUMPS.

APPLICATION FILED FEB. 10, 1903.

NO MODEL.



Witnesses,
John B. Herwood,
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→ 5 Inventor,
Harry A. Wainwright,
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UNITED STATES PATENT OFFICE.

HARRY ARCHIBLE WAINWRIGHT, OF CHICAGO, ILLINOIS.

IMPELLER FOR ROTARY BLOWERS OR PUMPS.

SPECIFICATION forming part of Letters Patent No. 736,039, dated August 11, 1903.

Application filed February 10, 1903. Serial No. 142,718. (No model.)

To all whom it may concern:

Be it known that I, HARRY ARCHIBLE WAINWRIGHT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Impellers for Rotary Blowers or Pumps, of which the following is a specification.

This invention relates to improvements in rotary pumps or blowers for all purposes for which such machines are usually applied, and has special reference to the construction of the piston or impeller used therein.

The object of the invention is to lighten the weight of the impeller without decreasing its strength and to very materially lessen the cost of production in the two important items of cost of material and of labor and time required to shape the material into the finished article.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation and partial section of my invention embodied in a three-lobed impeller; Fig. 2, a transverse section on the line 2 2 of Fig. 1; Fig. 3, a perspective view of the shell of a three-lobed impeller detached from the frame and shaft; Fig. 4, a side elevation and partial section of a two-lobed impeller made in accordance with my invention, and Fig. 5 a transverse section of Fig. 4 on the line 5 5 of said Fig. 4.

Like characters of reference indicate like parts throughout the several views of the drawings.

7 represents the main or driving shaft of usual construction, and 8 the frame-heads, having an outside contour which conforms with the shape of the desired lobes of the impeller. They may be punched or cast and will preferably have the hubs 9 and the open-work 10. As many of these frame-heads will be used as are required to give a substantial support to the shell 11 of the impeller.

The shell 11 is made from sheet metal, which is drawn or pressed accurately to the desired shape of the proposed impeller. Preferably this will be a seamless steel shell; but other materials may be used and may, indeed, not only be desirable but essential in pumping

acids and corrosive liquids and gases; also, instead of a seamless shell the latter may be made of a sheet or plate shaped and joined at its edges by a longitudinal seam.

In carrying out my invention the required number of frame-heads are mounted accurately on the shaft and rigidly secured thereto. Then the shell, which has previously been drawn or pressed to shape, is sprung into position on the frame-heads and is there secured by brazing or in any secure and suitable manner. The impeller is immediately ready for use in the pump or blower without the customary expensive machine-work. As the shell can be produced very rapidly from a minimum weight of metal and the frame-heads are likewise quickly and inexpensively produced, it is obvious that by means of my invention I can effect a great saving of labor, time, material, and consequently of money, in the production of impellers, and can produce a much lighter article than has been heretofore produced.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. An impeller for a rotary blower comprising a series of supporting frame-heads mounted on a shaft and formed of the contour desired for said impeller and a thin metallic shell formed of one piece and of like contour and sprung upon said frames, whereby a seamless impeller is provided of light and durable construction, substantially as set forth.

2. An impeller for rotary blowers comprising a series of supporting-frames of the contour desired for the periphery of said impeller mounted on a shaft and a metallic shell formed of like contour and of a single plate from end to end of the impeller mounted upon said frames, whereby an impeller is provided which will not leak and will be of light and durable construction, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Chicago, Illinois, this 5th day of February, A. D. 1903.

HARRY ARCHIBLE WAINWRIGHT. [L. S.]

Witnesses:

S. GOOCH LEITCH,
CHAS. BROWN.