

No. 747,654.

PATENTED DEC. 22, 1903.

R. W. SHAW.
PROPELLER.

APPLICATION FILED JUNE 9, 1903.

NO MODEL.

Fig. 1.

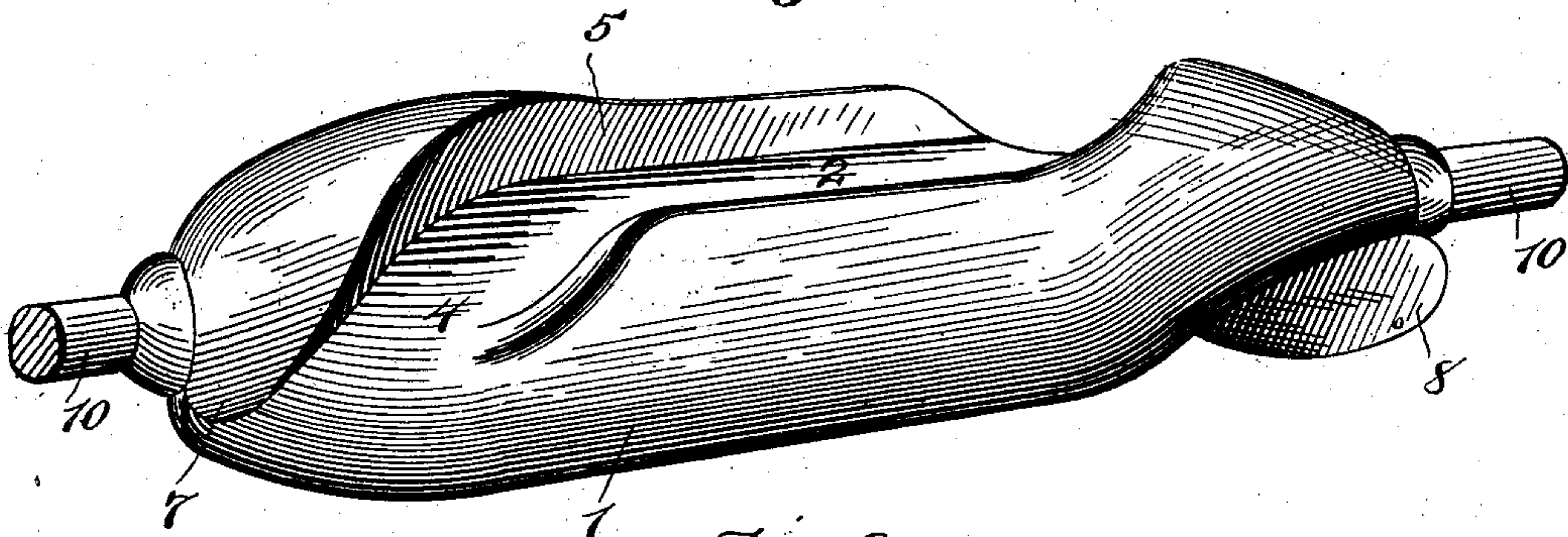


Fig. 2.

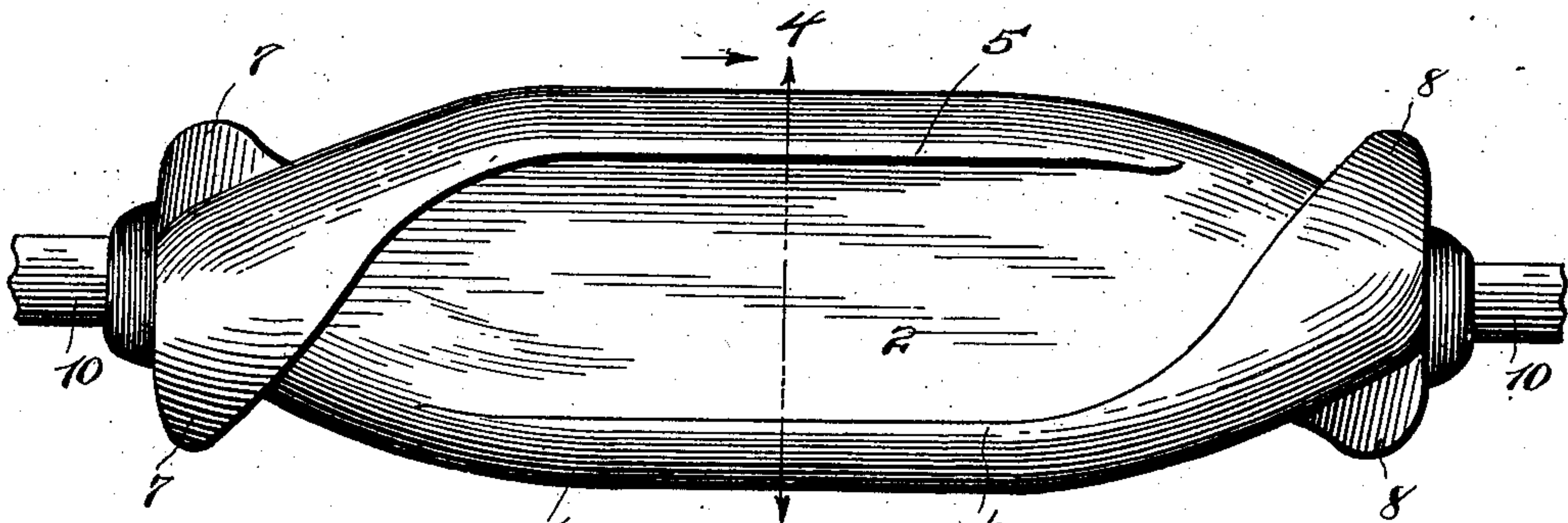


Fig. 3.

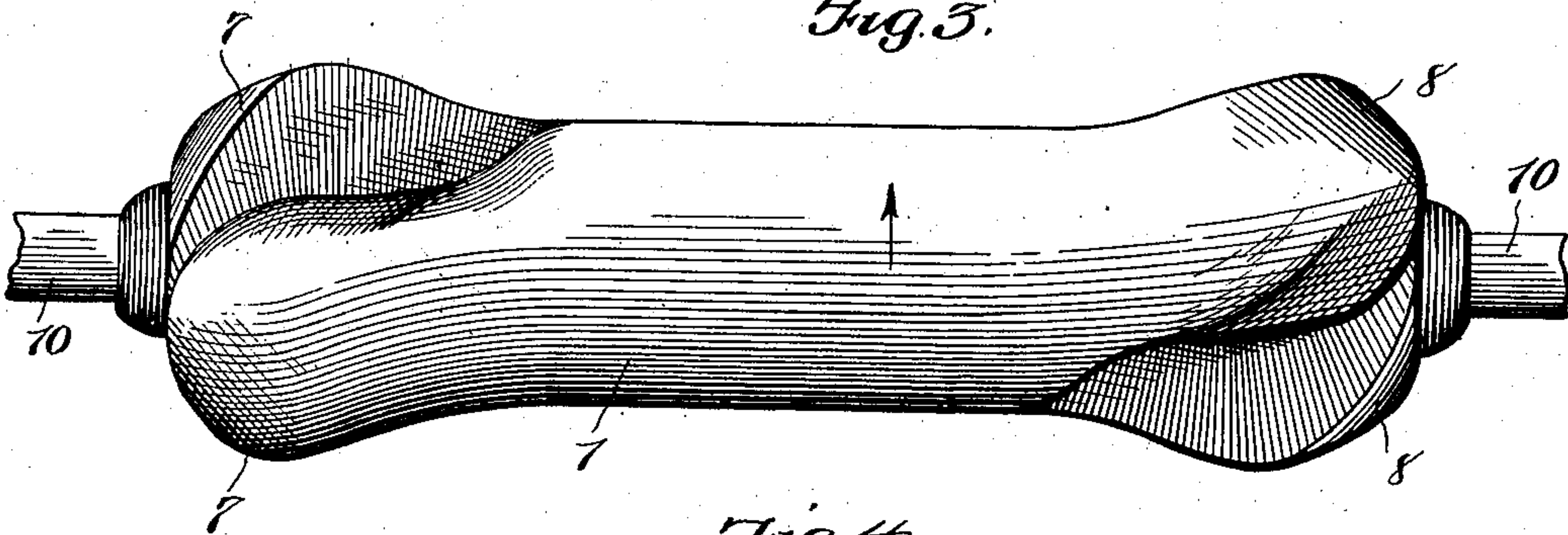
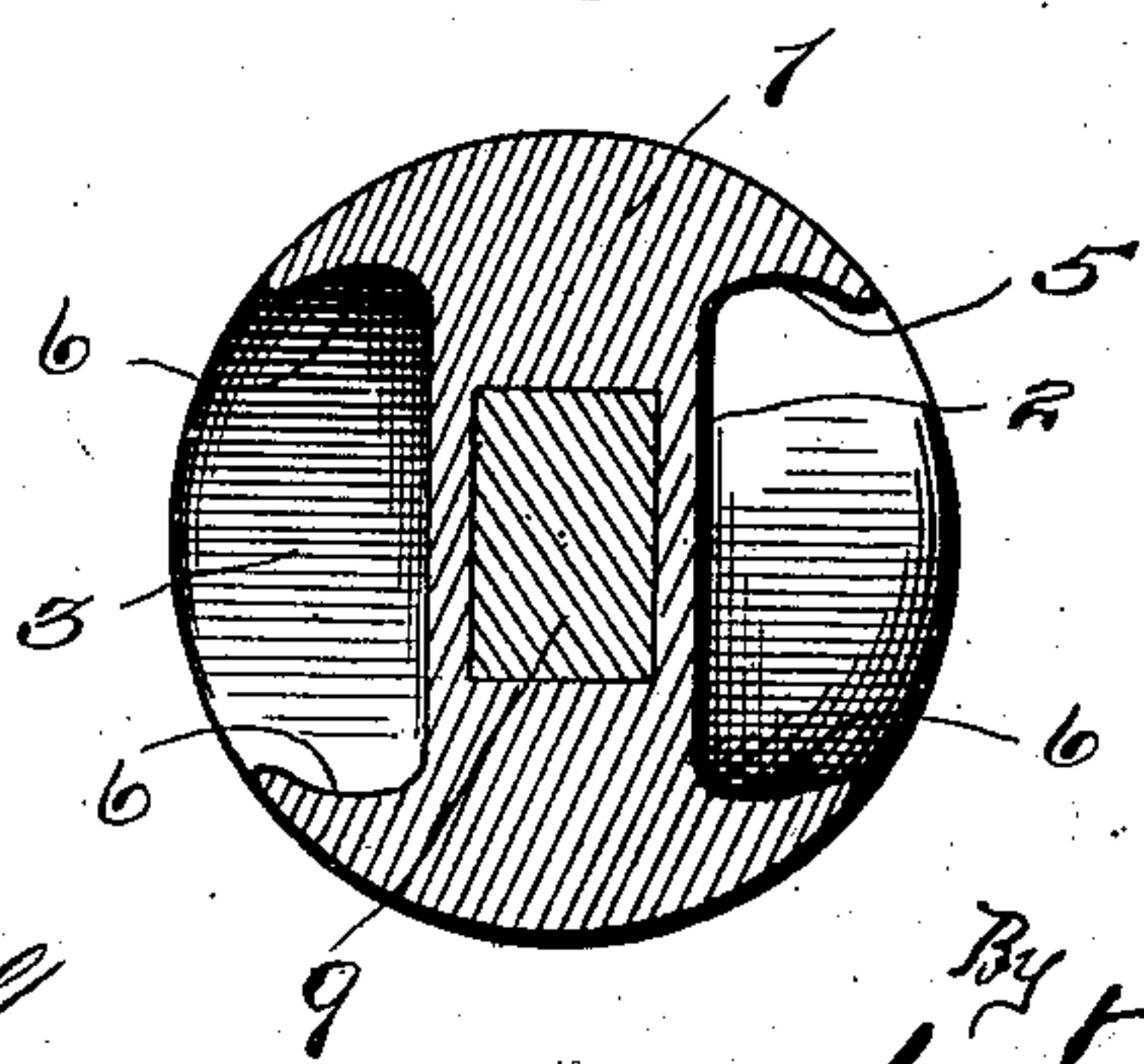


Fig. 4.



WITNESSES

R. A. Bowell
C. S. Frye

INVENTOR

By R. W. Shaw.
W. J. Fitzgerald
Attorney.

UNITED STATES PATENT OFFICE.

ROBERT WILLIAM SHAW, OF STAMFORD, CONNECTICUT.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 747,654, dated December 22, 1903.

Application filed June 9, 1903. Serial No. 160,723. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WILLIAM SHAW, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Propellers; and I do hereby 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.

My invention relates to propellers for steamboats or the like, and more particularly to that variety commonly designated as a "screw-propeller;" and it consists of certain novel features of construction and arrangement of parts, as will be hereinafter clearly set forth, and pointed out in the claim.

The prime object of my invention, among others, is to provide a propeller which will prove equally efficient and reliable when driven or rotated positively or reversely, the power or force exerted being the same.

Other objects and advantages will be hereinafter clearly apparent, reference being had to the accompanying drawings, which are made a part of this application, and in which—

Figure 1 shows a perspective view of my invention complete. Fig. 2 is a side elevation thereof. Fig. 3 shows a top plan view of the propeller illustrated in Fig. 2, while Fig. 4 shows a transverse section of Fig. 2 on line 4 4.

In order to conveniently designate the various details of my invention and cooperating accessories, numerals will be employed, the same numeral applying to a similar part throughout the several views.

In carrying out my invention I provide a body portion 1, substantially cylindrical in outline, except that each side thereof is provided with a longitudinally-disposed recess 2 and 3, said recess being so formed that it will merge into or terminate in an oblique channel-like extension, as indicated by the numeral 4, there being a continuous side wall 5 and 6 upon each side of the channel.

The side wall 5 gradually terminates into the lip 7, while at the opposite end of the body portion 1 the side wall 6 terminates in

the lip 8, this construction being common to both sides, and it will therefore be obvious that said lips will act as screw-blades upon the water and will direct the same through channels 2 or 3, as the case may be.

By reference to Fig. 4 it will be observed that the walls 5 and 6 are concave upon their outer surfaces, thereby insuring that said walls will "lay hold upon the water," so to speak, and the tendency will be that the water will pass along through the channels 2 and 3 and thence rearwardly past the rear lips 7 or 8, according to the movement of the boat.

As hereinbefore stated, the main purpose of my invention is to permit the propeller to be instantly reversed in its rotation and to insure that its force upon the water will be equally efficient for moving the boat in either direction. Assuming that the right-hand side of the drawings will be toward the bow of the boat and, conversely, that the left side of the drawings will represent the stern of the boat, it is obvious that when the propeller is turned in the direction indicated by the arrow in Fig. 3 the lips 8 will engage with the water and that the portion of the water in the channels 2 and 3 will be forced rearwardly by said lips, but that no obstruction or friction will result from the position of the lips 7, but that the water will be permitted to freely pass said parts. When, however, my propeller is rotated reversely, the lips 7 will lay hold of the water and cause the same to move in the channels 2 and 3, and since the lips 7 and 8 are oppositely disposed with respect to each other the lips 8 will present no obstruction to the free passage of the water from the ends of the channels 2 and 3.

It will thus be seen that my improved propeller will be equally efficient whether driven positively or reversely and that the boat may therefore be easily and reliably controlled.

It will be understood that the lips 7 and 8 project laterally coincident or substantially coincident with the maximum circumferential line of the body portion of my propeller and that a maximum area of water will be engaged thereby, and in view of the curvature of the side walls 5 and 6 the water so engaged by said lips will be directed backward

through the channels 2 and 3 to pass out freely and without obstruction at the rear end of said channels.

It will, furthermore, be observed that the
5 construction of the lips 7 is a substantial duplication of the construction followed in producing the lips 8, and I therefore call particular attention to the arrangement of parts described, wherein I make it possible to re-
10 verse the movement of the boat by simply reversing the rotation of my propeller.

It will be understood that my propeller may be made of any preferred material and any proper size deemed necessary to meet all re-
15 quirements, and in order to accommodate a proper power-shaft I form centrally in the body portion a longitudinally-disposed angular opening, preferably oblong, as shown in Fig. 4, and adapted to receive the shaft 9,
20 each end of which is provided with suitable channels 10, designed to rest in proper bearings, it being understood that one of said channels may be extended through suitable stuffing-boxes in the wall of the hull for the
25 attachment of power.

Believing that the advantages and manner of applying my invention to use have thus been made clearly apparent, further description is deemed unnecessary.

What I claim as new, and desire to secure 30 by Letters Patent, is—

The herein-described reversible propeller comprising a body portion substantially cylindrical in design and provided upon diametrically opposite sides with channels 2 and 3, the side walls whereof terminate or gradu- 35 ally merge into extensions or lips 7 and 8, whereby when the body portion is rotated in one direction one set of said lips will act positively upon the water, while the other set of 40 lips will present no obstruction to the free passage of the water, all combined substantially as specified and for the purpose set forth.

In testimony whereof I affix my signature 45 in presence of two witnesses.

ROBERT WILLIAM SHAW.

Witnesses:

JOHN W. RICHARDSON,
WM. F. WATERBURY.