

(No Model.)

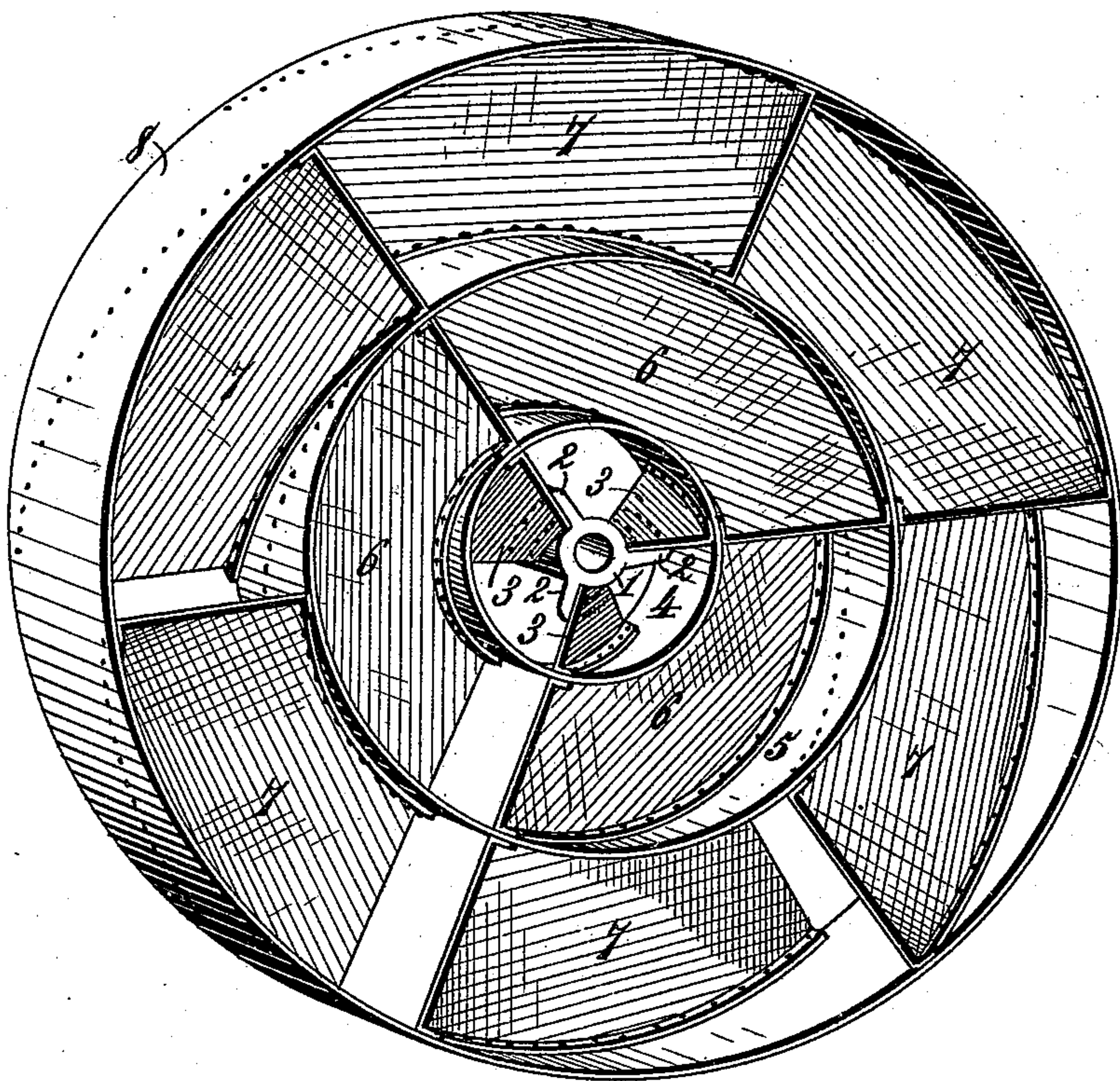
2 Sheets—Sheet 1.

E. J. PARKER.
PROPELLER WHEEL.

No. 551,647.

Patented Dec. 17, 1895.

Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

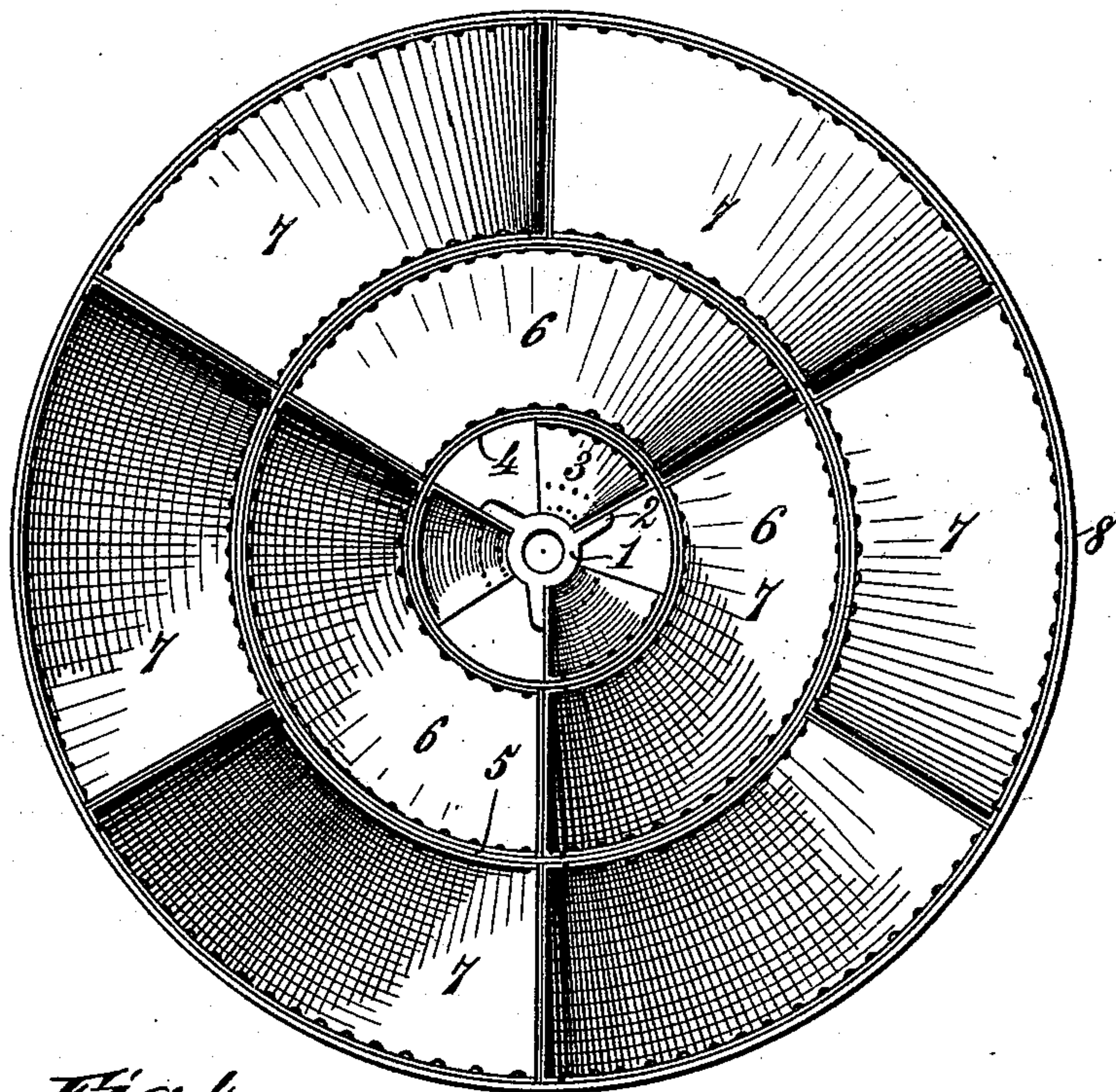


Fig. 3.

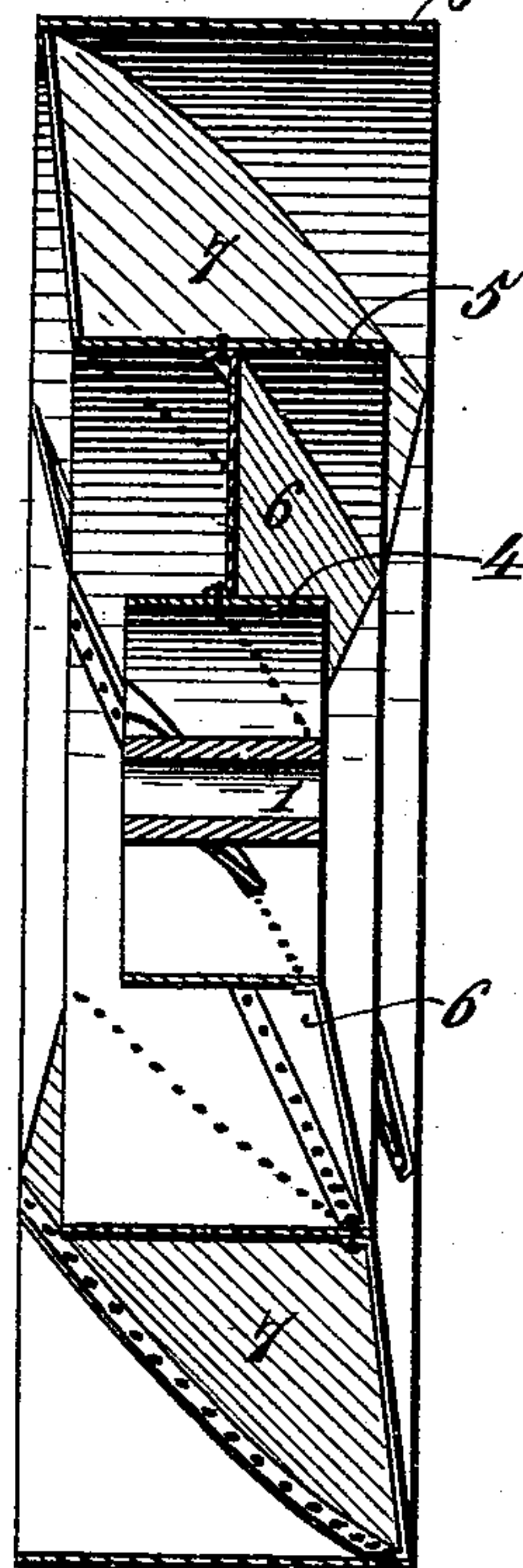


Fig. 4.

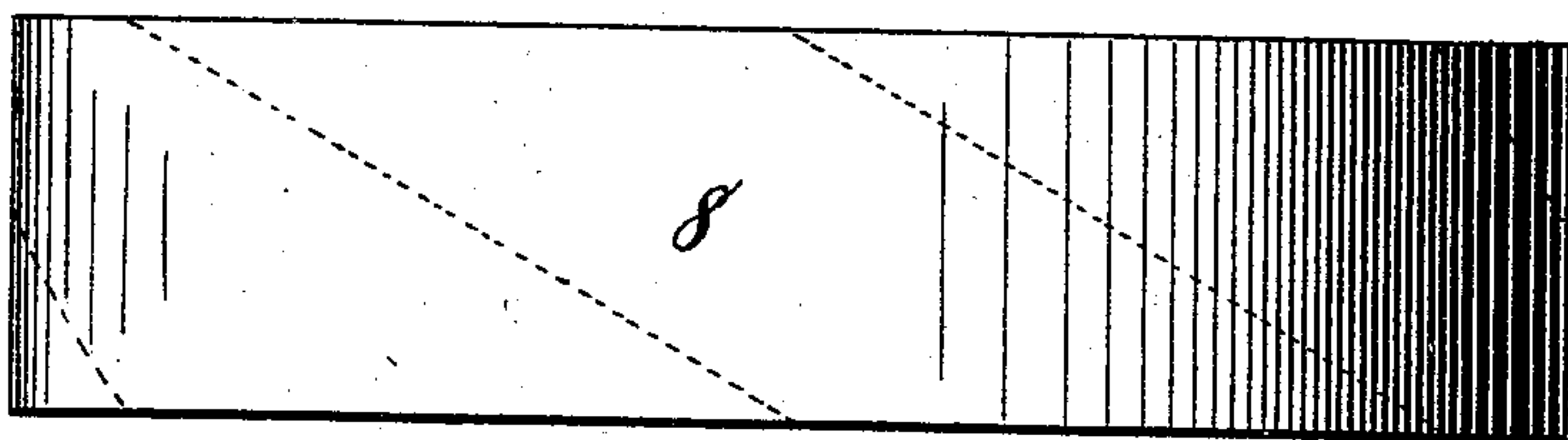


Fig. 5.

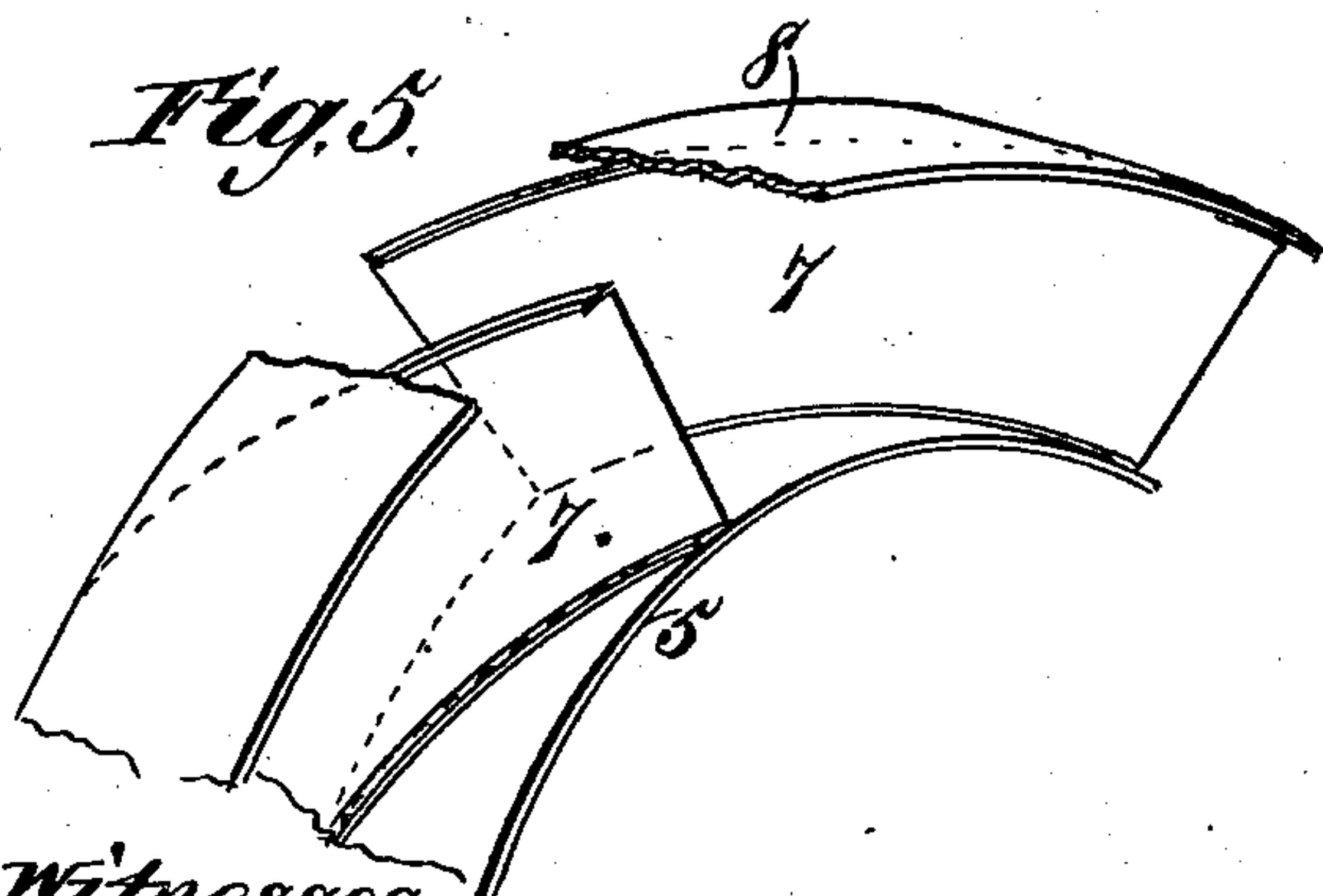


Fig. 6.

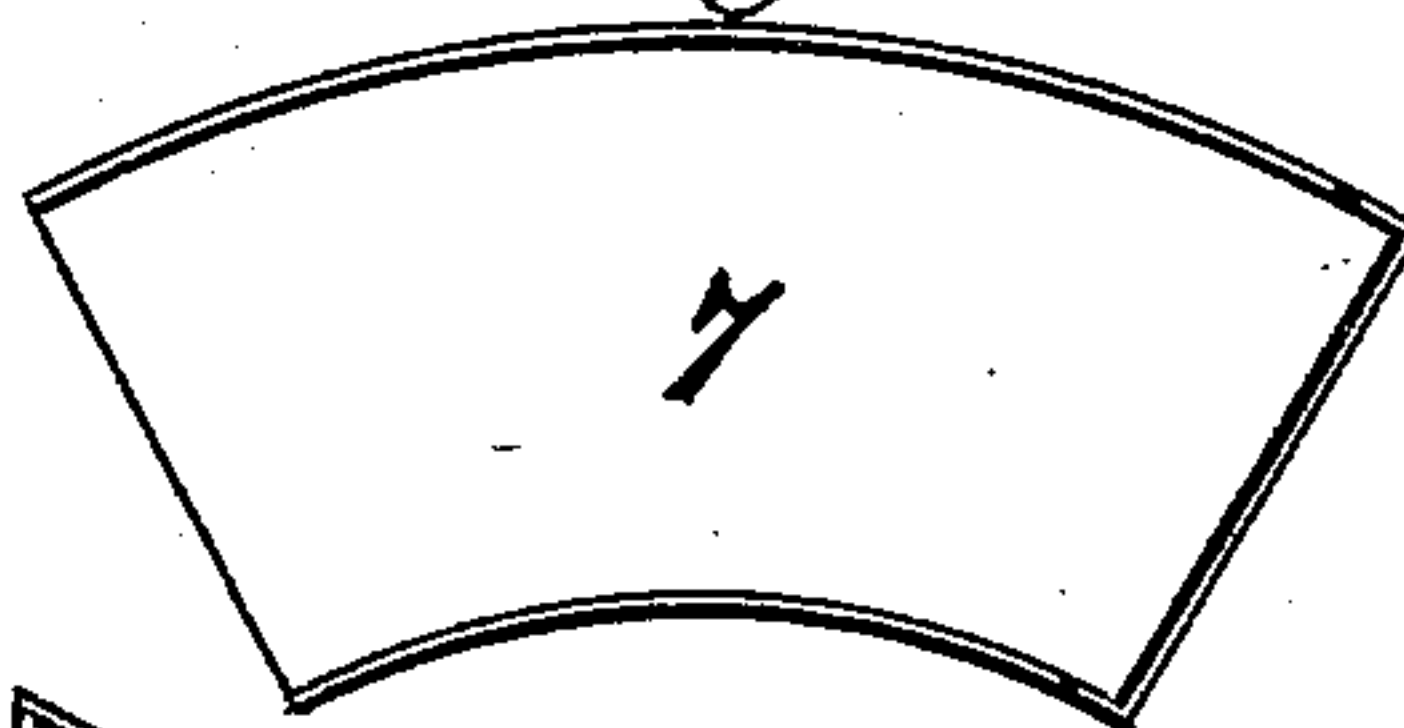
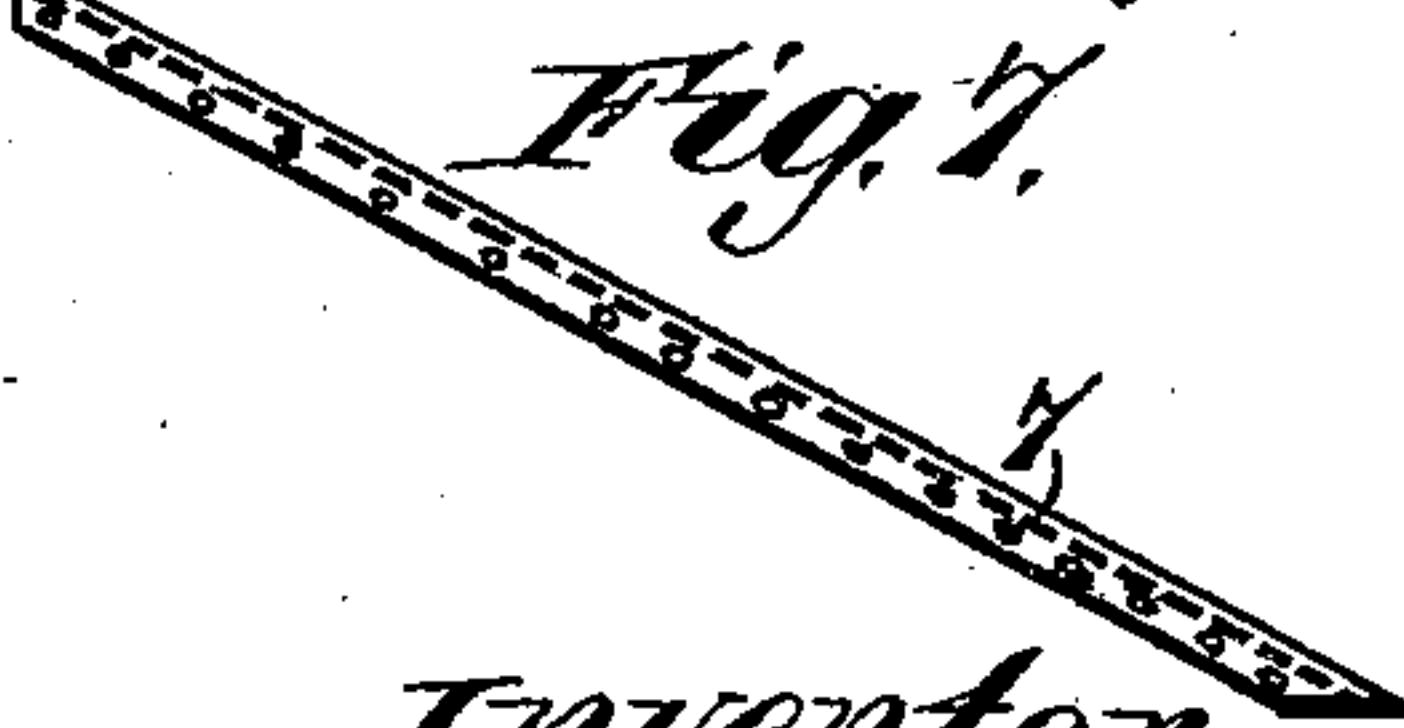


Fig. 7.



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UNITED STATES PATENT OFFICE.

ELISHA J. PARKER, OF DALLAS, TEXAS.

PROPELLER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 551,647, dated December 17, 1895.

Application filed August 24, 1895. Serial No. 560,374. (No model.)

To all whom it may concern:

Be it known that I, ELISHA J. PARKER, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Propeller-Wheels, of which the following is a specification.

My invention relates to propeller-wheels for steam and other vessels, my purpose being to provide a propeller for steamships, or for smaller vessels driven by steam or other power, the propeller having such construction as to give an increased speed to the vessel at an expense of less power than is usually expended. It is my aim, in other words, to provide a propeller by which a maximum speed may be obtained without a proportionate increase in the motive power employed. This result I obtain by providing a construction which will avoid the lateral resistance of the water and enable the power of the propeller to be applied in the line of movement of the vessel, instead of being diffused, more or less, in all directions.

My invention consists, to these ends, in the novel features of construction and in the new parts and combinations of parts hereinafter fully explained and then particularly pointed out in the claims.

To enable those skilled in the art to which my invention pertains to fully understand and to make and use the same, I will now describe said invention in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a perspective view of a propeller constructed in accordance with my invention. Fig. 2 is a view in front elevation, showing the working face of the propeller. Fig. 3 is a central vertical section of the parts shown in Fig. 2. Fig. 4 is a view of the same in edge elevation, showing the lines of attachment of the buckets or wings of the propeller to the outer band. Fig. 5 is a detail perspective of a portion of the outer series of wings, a part of the external band being broken away. Fig. 6 is a view of one of the wings detached from the wheel. Fig. 7 is an edge elevation of the same.

In the said drawings, the reference-numeral 1 indicates the hub or sleeve of the propeller, by which it is mounted on its shaft.

From the outer or cylindrical face of this hub project, at equal intervals, arms or supports 2, which afford attachment to the first or inner series of wings or buckets 3. These wings, like all others employed in my propeller, consist of plates of metal which are perfectly flat throughout their entire extent, the pitch or angle at which they are arranged being determined by the size of the vessel and the speed to be attained.

The first or inner series of wings 3 are of relatively short length and terminate at a band or circular shell 4, which is concentric with the hub or sleeve. The edges of the wings 3 are secured strongly to the inner face of the band 4 in any suitable manner, the preferred method being to turn the edge of the wing at a right angle and bolt or rivet through the same and through the band. I may, however, cast the whole structure in one or more parts—as, for example, in halves or other divisional parts—and unite the said portions in any suitable manner.

Between the band or shell 4 and a concentric band 5 I arrange a second or intermediate series of wings or buckets 6, of somewhat greater dimensions, both in breadth and length, each wing being, like the wings 3, perfectly flat throughout its whole extent. The wings 6 are secured to the bands or shells 4 and 5 in the manner already explained, and one edge of each of the wings 3 is substantially in the same line with the corresponding edge of one of the wings 6.

It will be noticed from Fig. 3 that by reason of the increased dimensions of the intermediate series of wings 6 the band 5 is of greater width than the band 4, and the distance separating the two bands is greater than that between the sleeve 1 and the band 4.

A third series of wings or buckets 7 is arranged between the band or shell 5 and an external band 8, concentric with the sleeve 1. The external series of these wings is preferably double the number of the intermediate wings 6, and thus the edges of the alternate wings in the external series coincide with the radial lines of the edges of the second series. Moreover, throughout both series of wings the edge of one lies substantially in the same axial plane with the alternate edge of the next succeeding wing, as shown in Figs. 3, 4,

and 5. In other words, a plane intersecting the bands 4, 5, and 8 and the axis of the propeller will coincide with the edge of one wing between the bands 5 and 8, and also 5 with the edge of the adjacent wing between the same bands, but between their opposite edges. The same arrangement also characterizes the intermediate series of wings 3.

The external series of wings are also of 10 somewhat greater width and length than the intermediate series, and thus the width of the external shell 8 and the distance separating it from the band 5 are greater than the corresponding dimensions of the band 5 and 15 the space between it and the band 4.

It should be noted that the intermediate series of wings may be four, or even more, in number, according to the size of the wheel. So, also, the outer series of wings will be cor- 20 respondingly increased.

I usually place the flat wings in each series at an angle of inclination of about thirty degrees, but this angle may be varied. As the outer series travel at greater speed than the 25 inner, I may, in some cases, arrange the outer series of wings at a greater or less angle than that of the inner wings, these matters being regulated by the weight of the vessel, the speed of the wheel and the speed to be attained by 30 the vessel.

By my invention I can utilize, or render efficient, at least sixty per cent. of the motive power developed, which is largely in excess of the power which is utilized under present con- 35 structions. Moreover, by the manner of in-

closing the wings concentrically I prevent the lateral diffusion of the force and direct it in lines parallel with the line of movement of the vessel.

By placing twin-propellers of this form up- 40 on a vessel, I can provide an aggregate area of wings equal, or nearly so, to the submerged lateral face of the vessel, thus giving the propellers full and absolute control of the ship and enabling very high speeds to be obtained. 45

What I claim is—

1. A propeller for vessels and boats consisting of a plurality of concentric series of wings, or buckets, separated by bands, or shells, the forward edge of one wing being substantially 50 in line with the rearward edge of the adjacent wing, substantially as described.

2. A propeller consisting of a hub, or sleeve, having flat wings, or buckets mounted thereon, a concentric band to which the ends of said 55 wings are attached, an intermediate series of flat wings between said bands and a second, concentric band, and an external series of flat wings between the latter band and an external, concentric band, the wings in the inter- 60 mediate and external series being of greater dimensions than those in the adjacent, inner series, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 65 nesses.

ELISHA J. PARKER.

Witnesses:

ALBERT H. NORRIS,

THOS. A. GREEN.