

No. 864,755.

PATENTED AUG. 27, 1907.

W. T. MOONEY.
PROPELLING MECHANISM FOR BOATS.

APPLICATION FILED DEC. 22, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

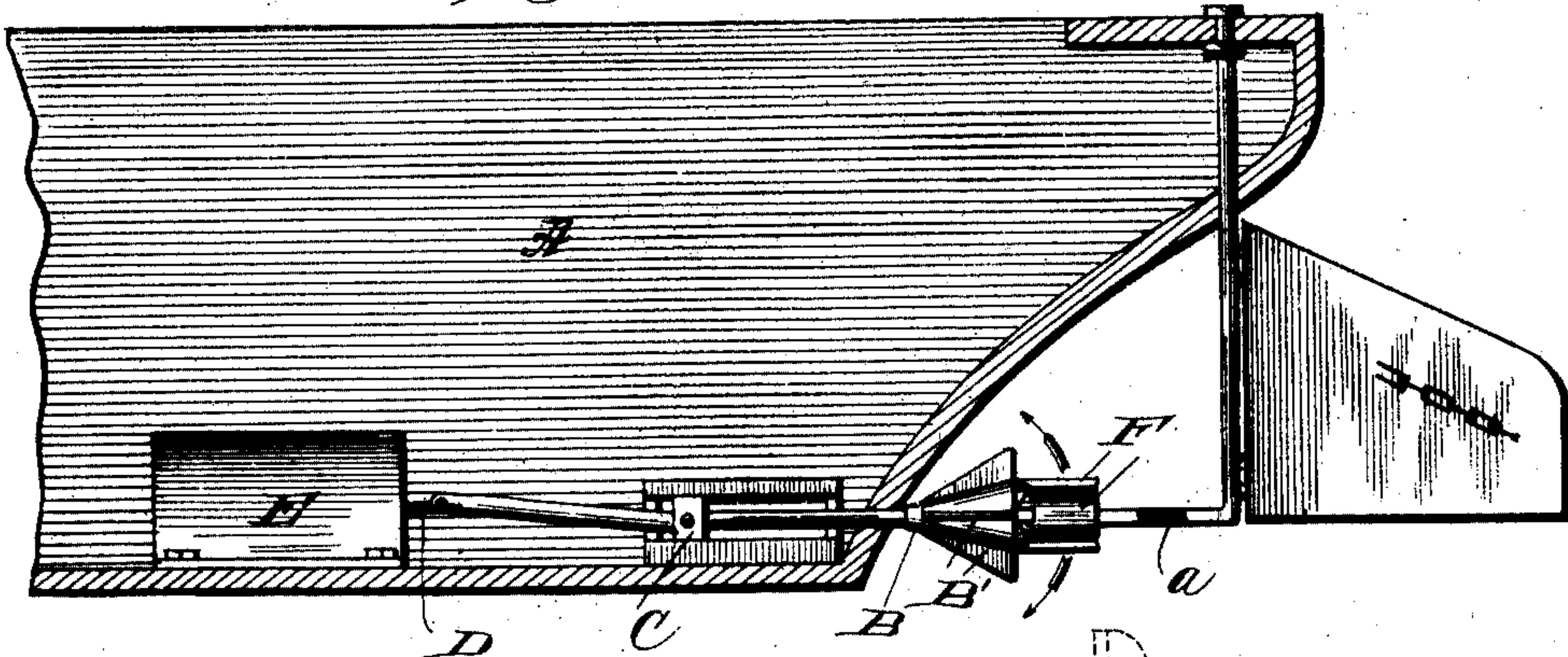


Fig. 2.

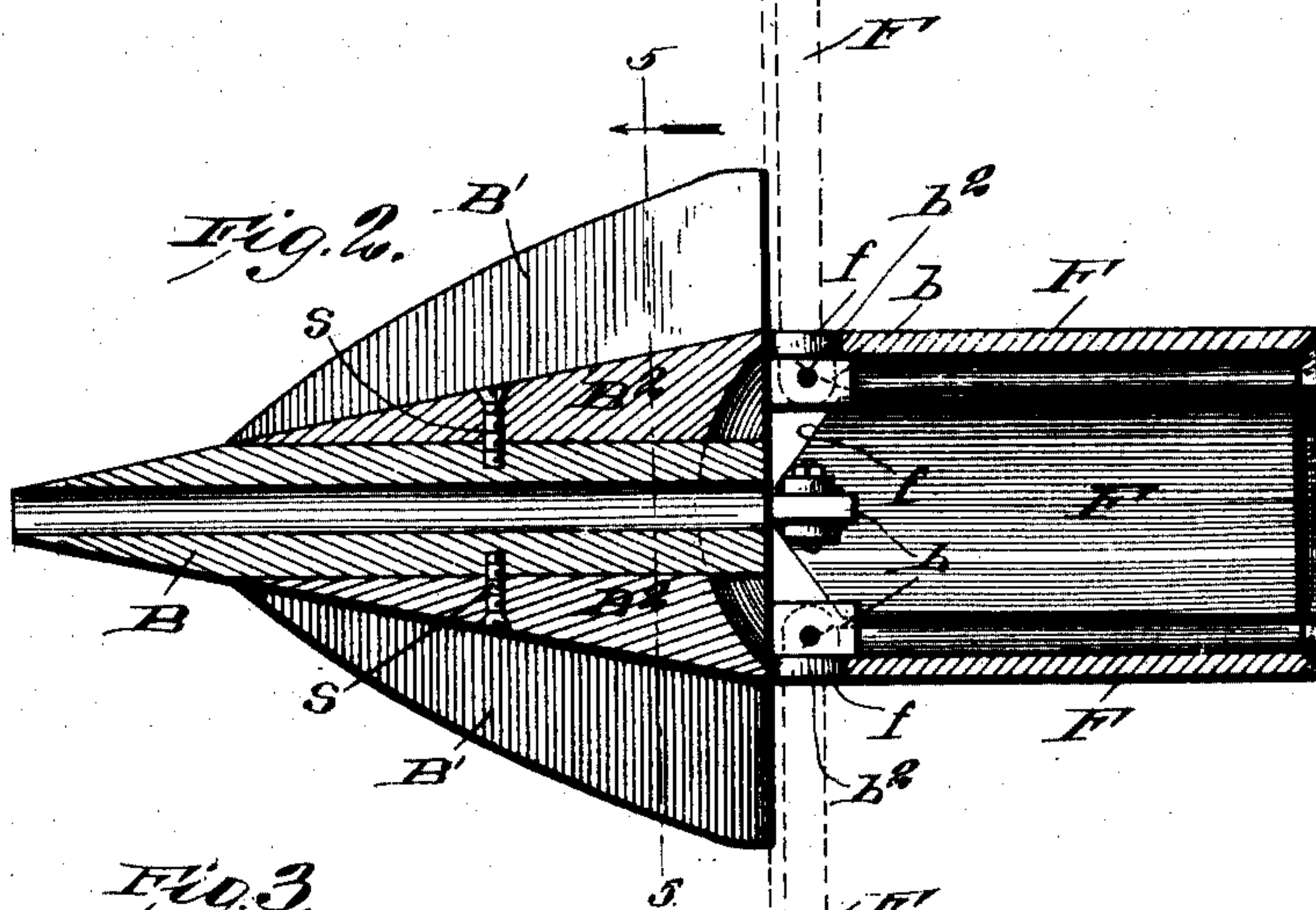
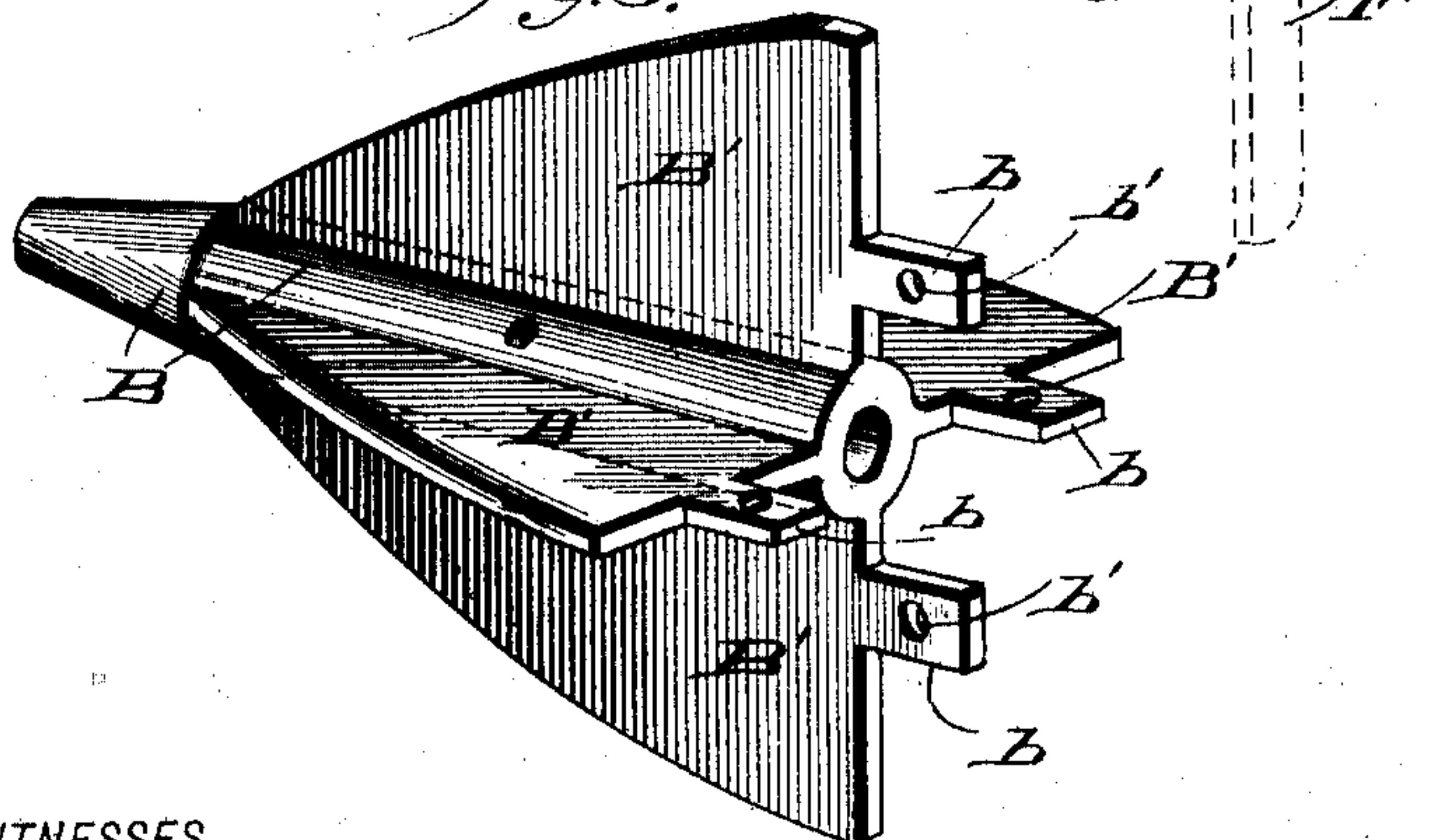


Fig. 3.



WITNESSES
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2 SHEETS—SHEET 2.

Fig. 4.

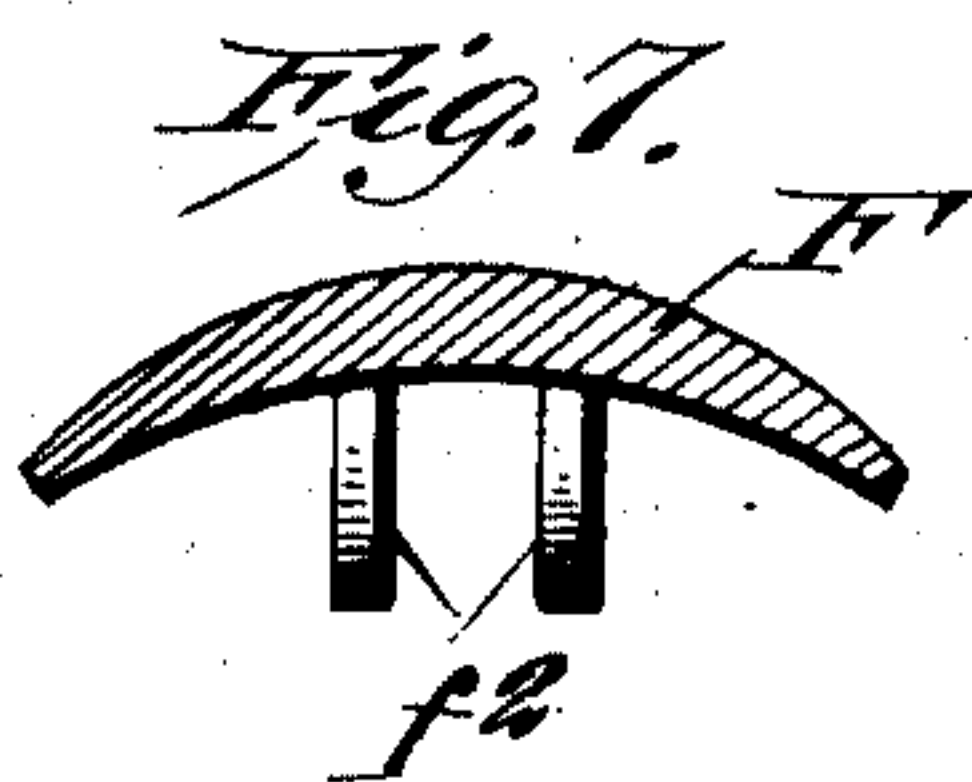
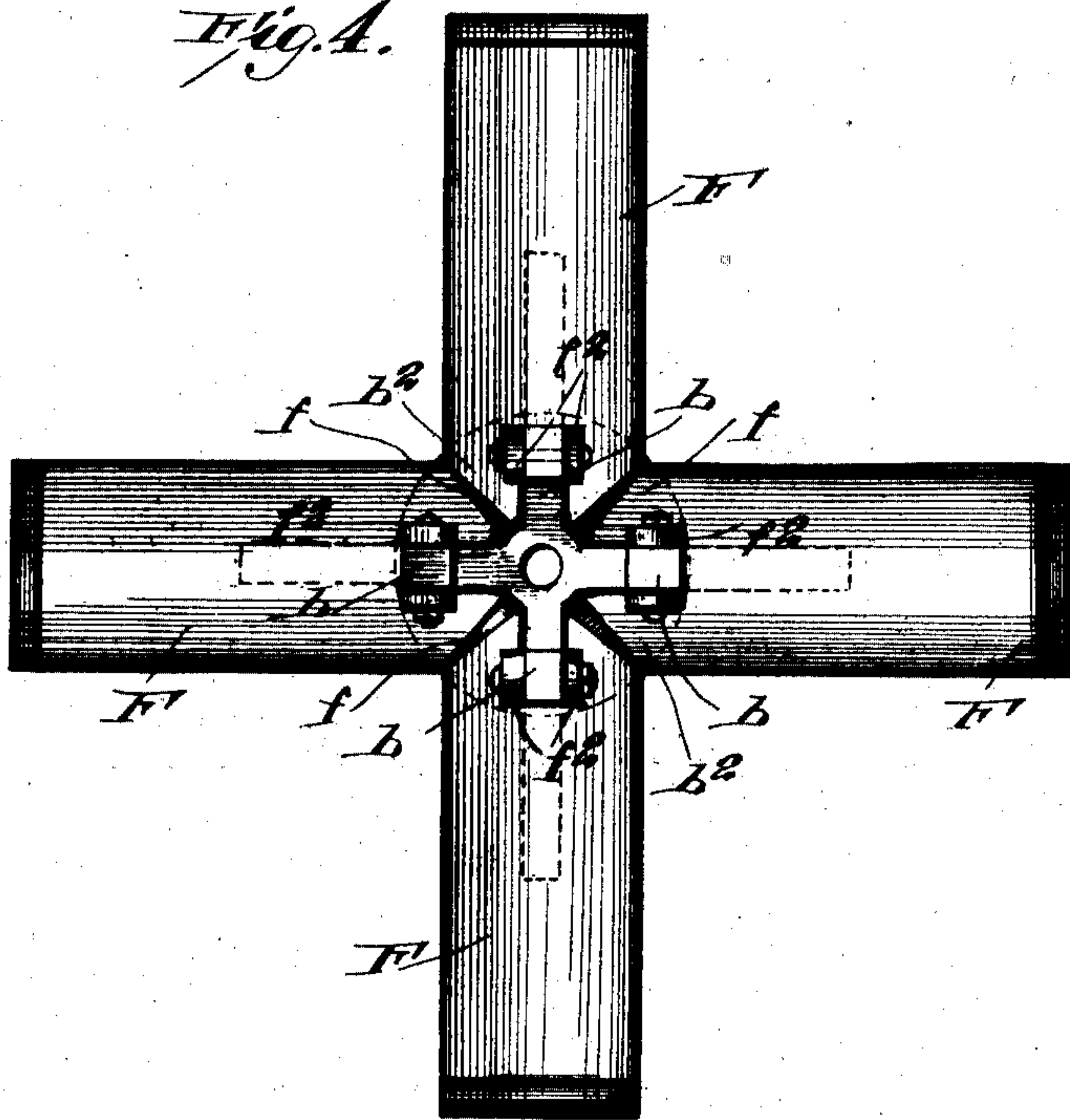


Fig. 5.

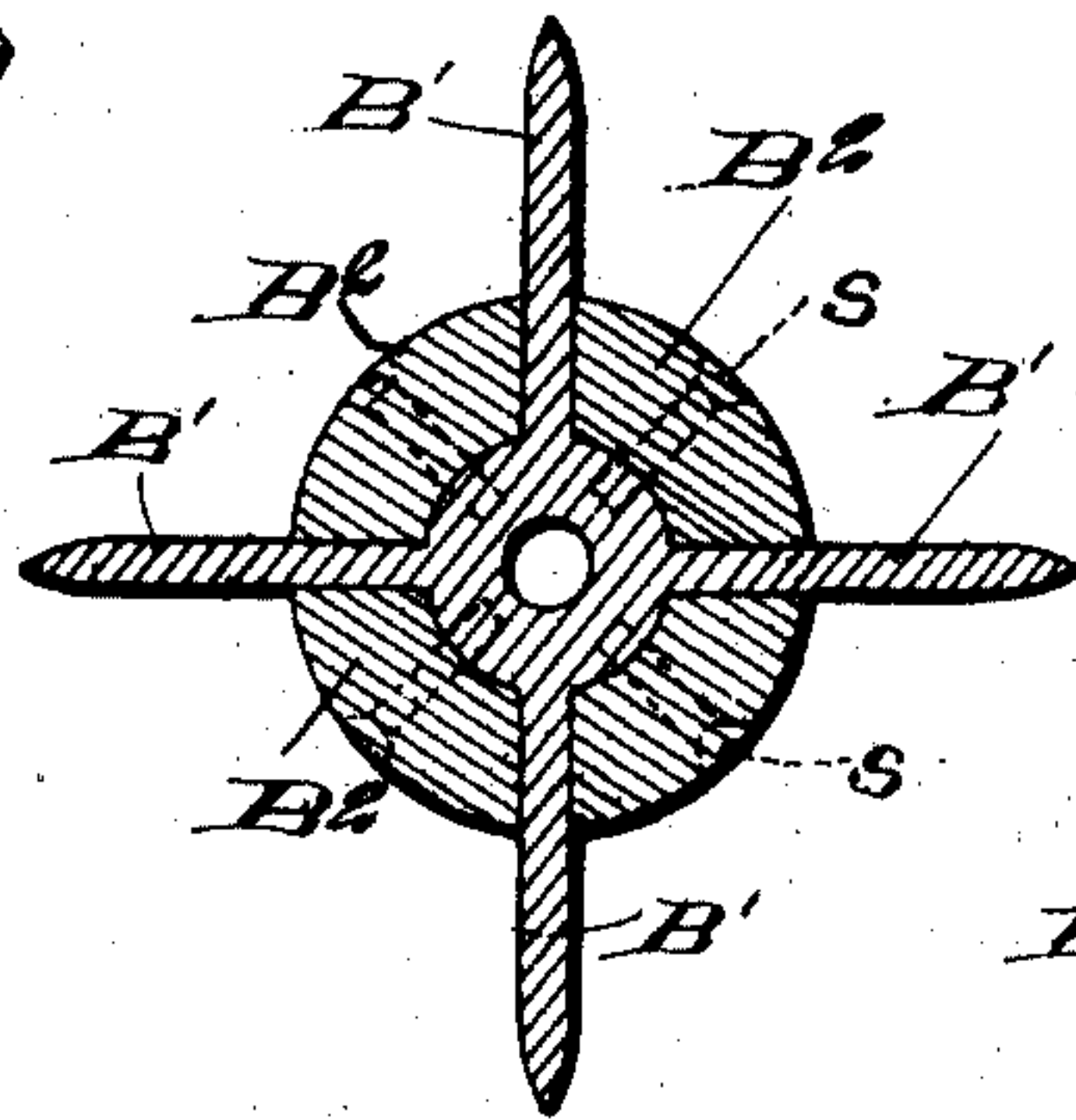


Fig. 8.

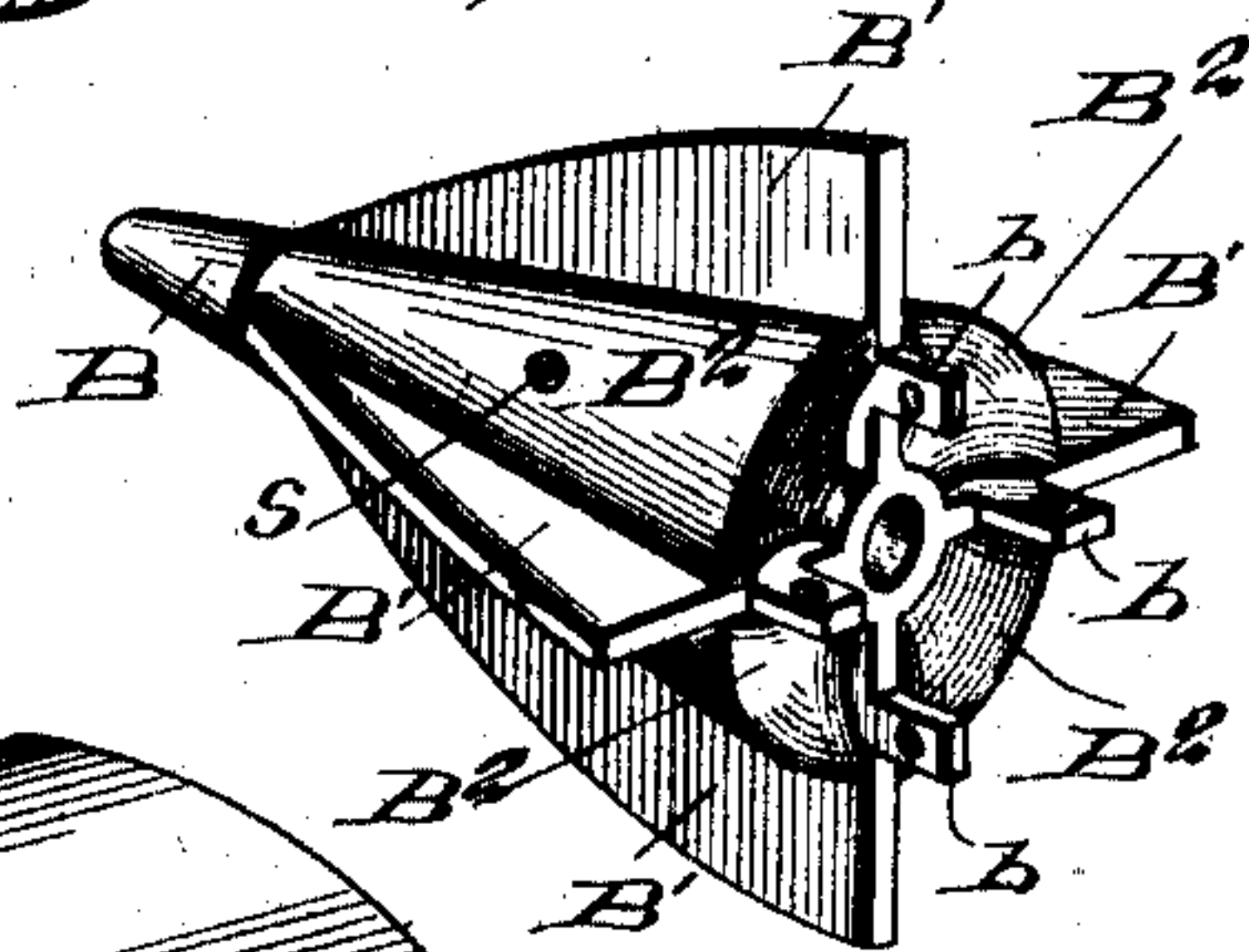
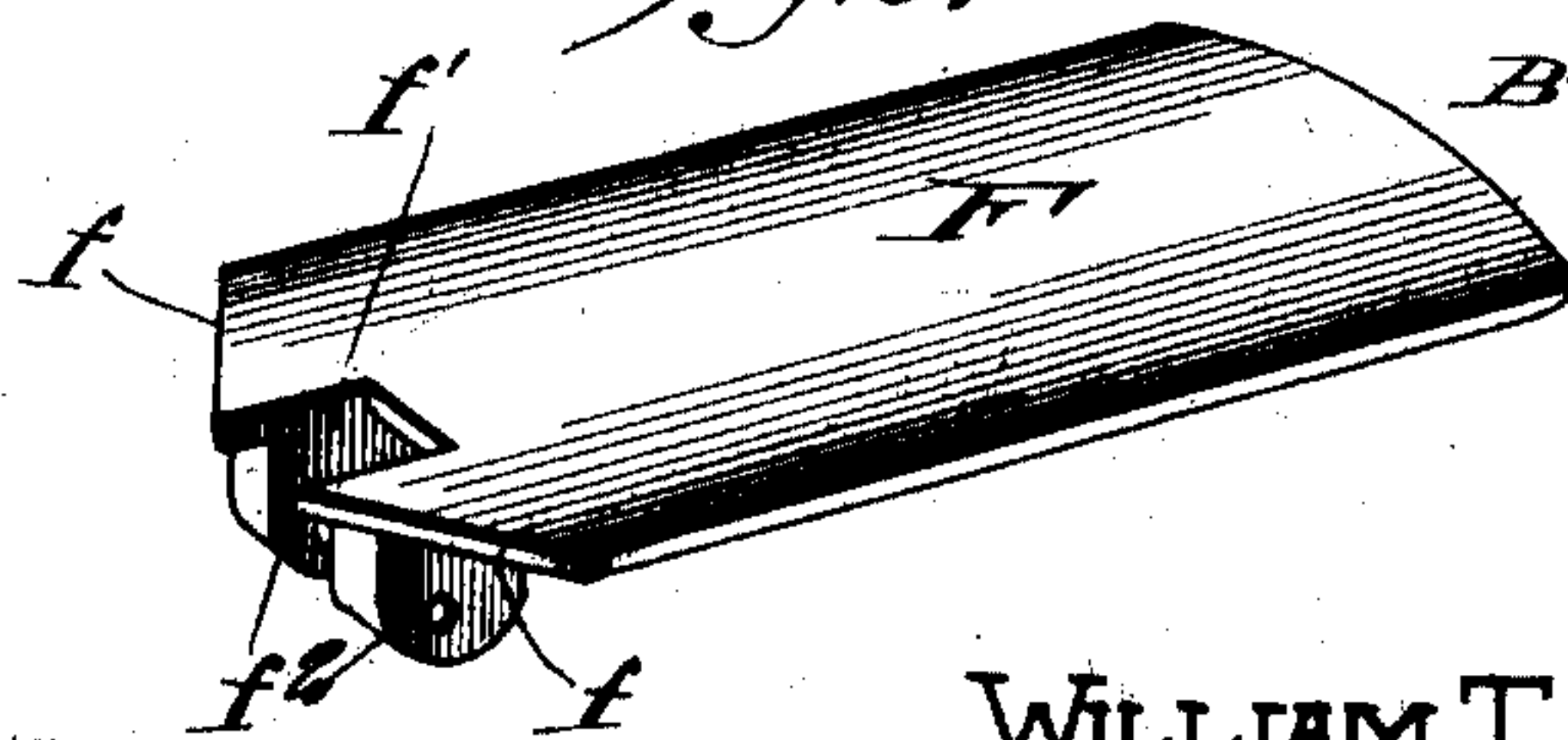


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM T. MOONEY, OF PARSONS, WEST VIRGINIA, ASSIGNOR OF ONE-FOURTH TO LOUIS D. GASTEIGER, OF DOBBIN, WEST VIRGINIA.

PROPELLING MECHANISM FOR BOATS.

No. 864,755.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed December 22, 1906. Serial No. 349,051.

To all whom it may concern:

Be it known that I, WILLIAM T. MOONEY, a citizen of the United States, and a resident of Parsons, in the county of Tucker and State of West Virginia, have invented a new and useful Improvement in Propelling Mechanism for Boats, of which the following is a specification.

My invention relates to improvements in propelling mechanism for boats and has for its object to provide a propeller which shall be simple and by means of which great power may be secured.

A further object is to provide a propelling device which will act in a direct line with the length of the boat and directly against the water, the propeller itself being so constructed that it will automatically open and close during the backward and forward movements thereof, so that it in forcing the boat ahead will be opened or expanded and present a large area to the water and during its forward movement be folded or closed in order to present little surface and resistance to the water.

With these and other objects in view my invention consists in certain novel features of construction, arrangement and combination of parts as will be hereinafter fully described and pointed out in the claims, reference being had to the accompanying drawings, in which,

Figure 1 is a sectional elevation of a portion of a boat showing my improvements applied. Fig. 2 is a longitudinal section of the propeller detached from the operating shaft. Fig. 3 is a perspective view of a portion of the propelling device. Fig. 4 is a rear elevation of the complete propeller with the wings in position to drive the boat forwardly. Fig. 5 is a vertical section taken on line 5—5 of Fig. 2. Fig. 6 is a perspective view of one of the wings detached. Fig. 7 is a cross section of one of the wings. Fig. 8 is a perspective view of the propeller with the hinged wings detached.

In carrying out my invention, upon the horizontal portion of the rudder supporting frame of a vessel A (said horizontal portion being represented by *a*) I mount a shell or pipe B the forward end of which is thinned down to a knife edge so as to substantially coincide with the exterior of the horizontal shaft *a*; this pipe or shell B has projecting radially therefrom and integral therewith the fins B' which begin near the forward end of the pipe B and increase in height to the rear end of same, where they terminate in vertical faces, having the rearwardly projecting lugs *b* extending therefrom, said lugs being provided with a perforation, the purpose of which will presently appear; the outer edges of the radial fins are brought to a knife edge so that they will cut the water and offer little or no resistance in moving backwardly.

Between the radial fins B' are placed the sectors B² which fit upon the pipe of shell B having their forward ends brought to a knife edge, and then rising gradually to the rear forming, when all combined, a substantially cone-shaped shell around the shaft; the upper edge of the rear ends of these sector shaped sections B² extend to the rear face of the radial fins B', while the rear wall of said sections are hollowed out as shown in Fig. 2, to form a curved chamber in the rear of the propeller. These sector shaped sections are to be secured to the shell B between the radial fins by set screws *s*, as shown in Fig. 2, or by other suitable means, and the pipe or shell B is secured to the horizontal shaft *a* in a similar manner. The forward end of the shaft on which the pipe or shell B is mounted is to be coupled up with the crosshead and piston rod C and D of a reciprocating engine E carried in the hold of the boat.

The lugs *b* which project rearwardly from the fins B' are provided, as stated, with a perforation *b'* through which are to be passed the pins *b*² by means of which the wings F of the propeller are pivotally fastened to said lugs; the upper surface of the lugs *b* is substantially horizontal so that the wings F when folded downwardly as far as they will go will rest upon said lugs and form a cylindrical chamber at the rear, the lugs being so positioned with relation to the sector shaped sections B², that the wings when in a horizontal position coincide with the upper rear edge of said sector shaped sections. The wings F, which are four in number corresponding to the fins B' and the sector shaped sections B², consist of a main or body portion which is convex on its outer surface and concave on its inner surface; the wings are beveled off in reverse directions at their forward ends as indicated by *f f*, and have a central rearwardly extending slot *f'* at the forward end thereof; from the under surface of the wings at their forward ends and at each side of the slot *f'* are the ears *f*² *f*² which are perforated to receive the pin or bolt *b*² before mentioned.

The rudder supporting rod may be made hollow to avoid compression of water.

In the position shown in Fig. 1 the propeller is drawn in preparatory to a rear stroke; if now the propeller shaft B is forced rearwardly by the engine E, the wings will be forced upwardly and forwardly by the water until they strike against the rear faces of the radial fins B' and in that position their farther rearward movement offers great resistance to the water and causes the boat to move ahead at great speed, by virtue of the concave inner faces of the said wings, the sharpened fins B' passing smoothly through the water and offering little or no resistance thereto. It will be noticed, as shown in Fig. 2, that the wings F are so positioned that when closed they form a cylindrical continuation of the

Cone-shaped sectors upon the hollow shell B and that by reason of such position and the fact that the rear edges of the wings are beveled off to a knife edge that as soon as the shaft and wings commence to move rearwardly that the wings will immediately be forced to their open and operative position. It will be further noticed that by concaving the rear face of the cone-shaped portion B' that the shaft B is given great resisting force to the water such concavity acting in conjunction with the wings.

The fins B' act as supports and braces for the wings when open and cause said wings when open to act practically as a solid wall.

It will thus be seen that I produce a propelling device which is simple, cheap and efficient, and one by means of which a boat may be driven at great speed and with much less resistance to the water than the ordinary screw propellers.

It is obvious that I may use any type of motive power for reciprocating the propeller shaft.

I claim:

1. In a propelling mechanism for boats, the combination with a reciprocating cone-shaped member having radial fins projecting from the outer surface thereof, and radially arranged wings pivotally secured to the rear end of said cone-shaped member adjacent to said fins, the fins adapted to support said wings in their open or operative position.

2. In a propelling mechanism for boats, the combination with a cone-shaped reciprocating member having its rear

face concaved, of radial wings pivotally secured to the said rear face of said member adjacent to said concavity and adapted to abut said rear face when in an open position.

3. In a propelling mechanism for boats the combination with a cone-shaped reciprocating member, lugs projecting from the rear face thereof, wings pivotally secured to said lugs, said wings having a central slot at their front ends and beveled front edges extending from said slot to the outer edges of the wings.

4. In a propelling mechanism the combination with a cone-shaped reciprocating member having a concaved rear end, and radial fins projecting from the outer surface thereof, of lugs projecting rearwardly from said member, wings pivotally secured to said lugs, the outer surface of said wings being convexed and their inner faces concaved, said fins forming a support for the wings when in their open or operative position.

5. In a propelling mechanism for boats, the combination with a hollow cone-shaped reciprocating member, having its rear end concaved and radial fins projecting from the outer surface of said cone-shaped member, lugs projecting rearwardly from said concavity, wings pivotally mounted on said lugs, the inner surface of said wings having a slot at their forward end and having their front edges beveled reversely from said slot to their outer edges.

6. In a propelling mechanism for boats, the combination with a cone-shaped reciprocating member having its rear face concaved, of radial wings having convex outer surfaces, and concaved inner faces, said wings pivotally secured to the said rear face of the cone-shaped member adjacent to the concavity therein.

WILLIAM T. MOONEY.

Witnesses:

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