

J. SUTHERLAND.  
 Manufacture of Propellers.

No. 47,137.

Patented April 4, 1865.

Fig. 1.

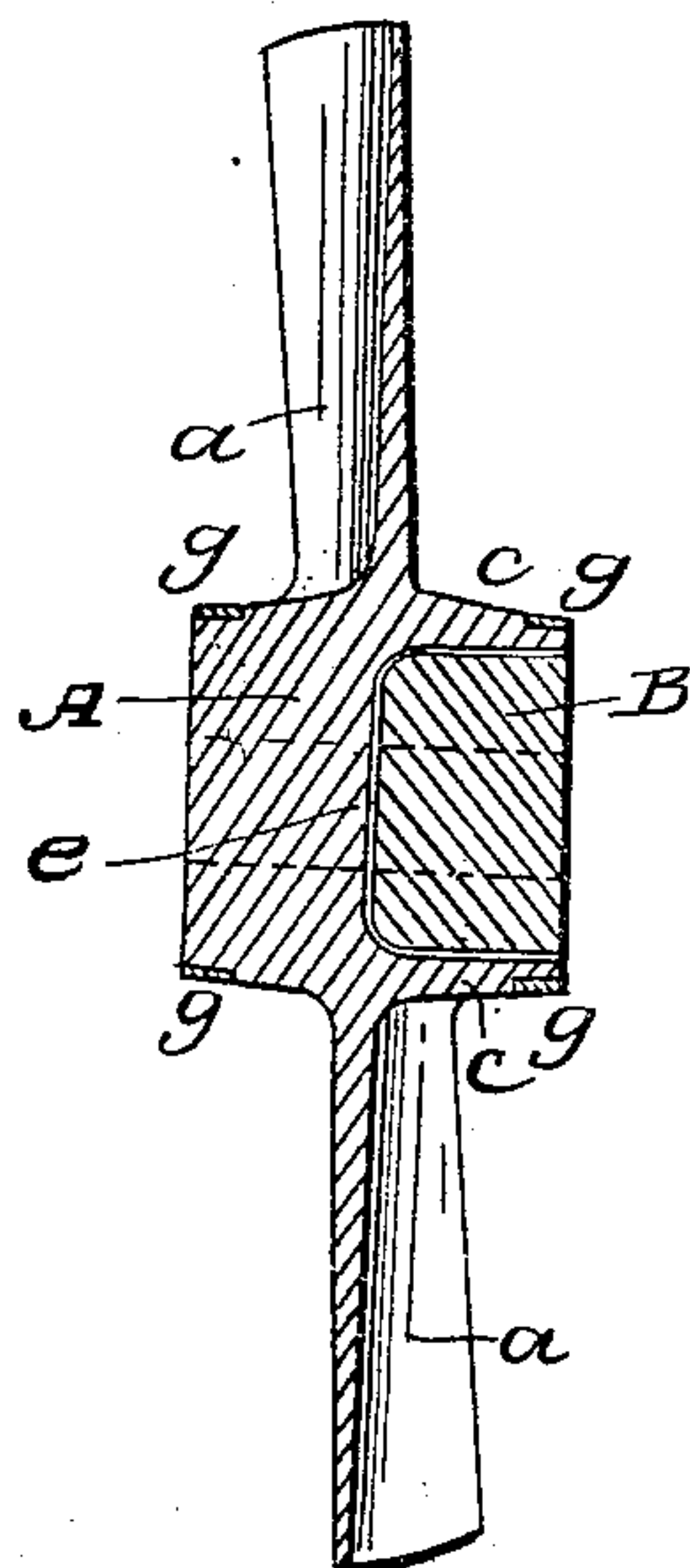


Fig. 2.

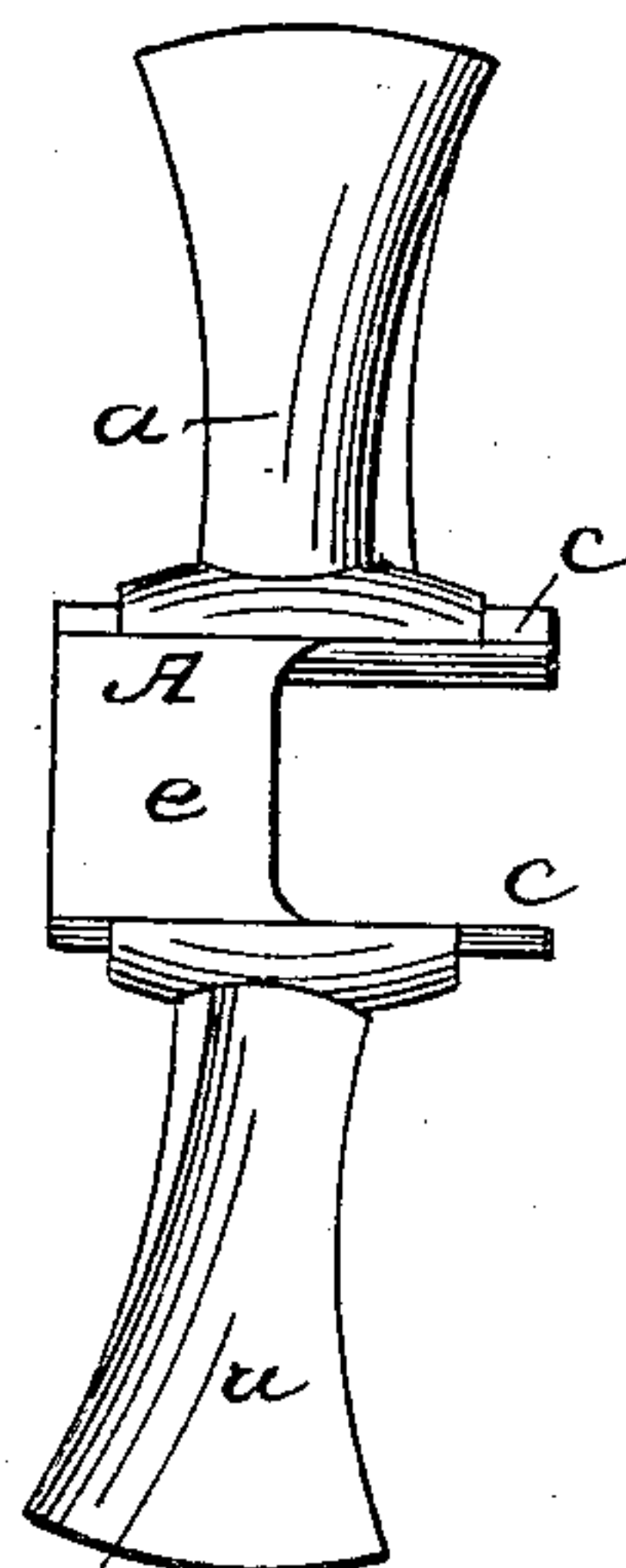


Fig. 3.

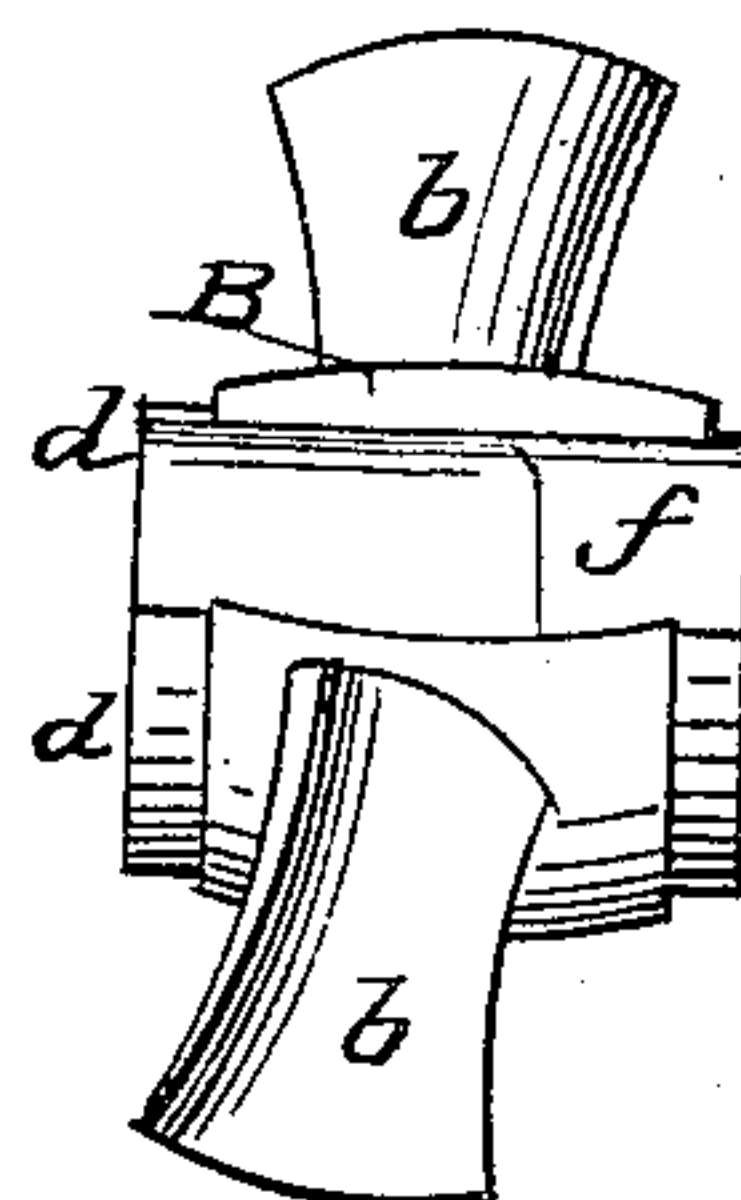
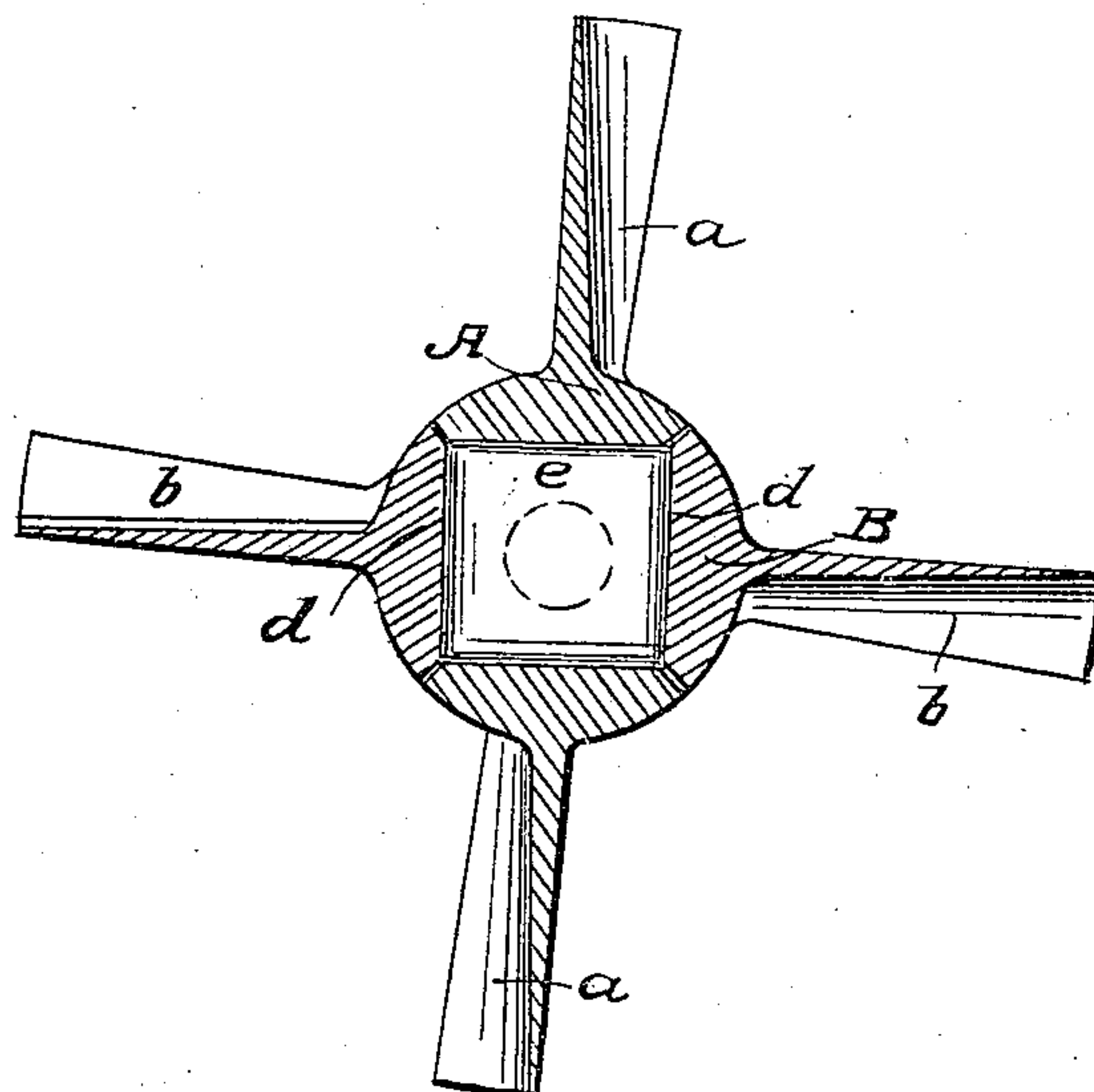


Fig. 4.



Witnesses:  
 Wm. F. Fenn  
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# UNITED STATES PATENT OFFICE.

JAMES SUTHERLAND, OF NEW YORK, N. Y.

## IMPROVEMENT IN MANUFACTURE OF PROPELLERS.

Specification forming part of Letters Patent No. 47,137, dated April 4, 1865.

*To all whom it may concern :*

Be it known that I, JAMES SUTHERLAND, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Propellers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of this invention. Figs. 2 and 3 are detached perspective views of the two parts from which the propeller is made. Fig. 4 is a transverse vertical section of the same.

Similar letters of reference indicate like parts.

This invention consists in constructing the propeller in two parts by so forming the hubs of each half that the same fit together and form a perfect hub and propeller-wheel, thus allowing the wheel to be forged of wrought-iron, and producing a propeller of superior strength, lightness, and durability.

My propeller is made of two halves, A and B, as shown in Figs. 2 and 3. The hub of each half carries two wings, *a b*, and said hubs are cut out, as shown, so that they will fit together and make a perfect hub, as shown in Figs. 1 and 4 of the drawings. Both hubs of the two valves are formed precisely equal, each being provided with two prongs, *c d*, and with a recess, *e* or *f*, the prongs *c* of one hub being made to fit into the recess *f* of the other hub, and vice versa, and after the two halves have been fitted together they are fastened by means of rings *g*, placed round the ends of the hub, as shown in Fig. 1.

The two halves of my propeller can be forged out of wrought-iron, having the hub of each solid, and working it out to the requisite shape by suitable machinery, and a propeller can thus be obtained which is light, strong, and durable. It is true the original cost of my propeller will be greater than that of an ordinary propeller made of cast-iron, but it will pay itself in a few trips, for the ordinary propellers are liable to break and necessitate repairs at short intervals, and if the time is calculated during which the vessel has to lay idle it will be found the difference in the cost of my propeller over that of ordinary construction will appear as a mere trifle.

My propeller may, however, also be made of cast metal, and in that case the principal advantage is that the weight of the parts to be cast is reduced one-half. If one-half turns out, bad the other can be used and the loss is only half, and furthermore the parts are easier handled, and they can be cast so that very little fitting is required to put them together and complete the wheel. After the two halves rings are secured together and fastened by the rings *g*, the wheel is ready to be bored for the shaft, and it is keyed to the same in the usual manner.

I claim as new and desire to secure by Letters Patent—

Constructing a propeller out of two parts by forming the hub of each part substantially as herein shown and described, and fitting the two parts together, as and for the purposes set forth.

JAMES SUTHERLAND.

Witnesses:

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