

F. Wittram.

Screw Propeller

N^o 93,848.

Patented Aug. 17, 1869.

Fig: 1

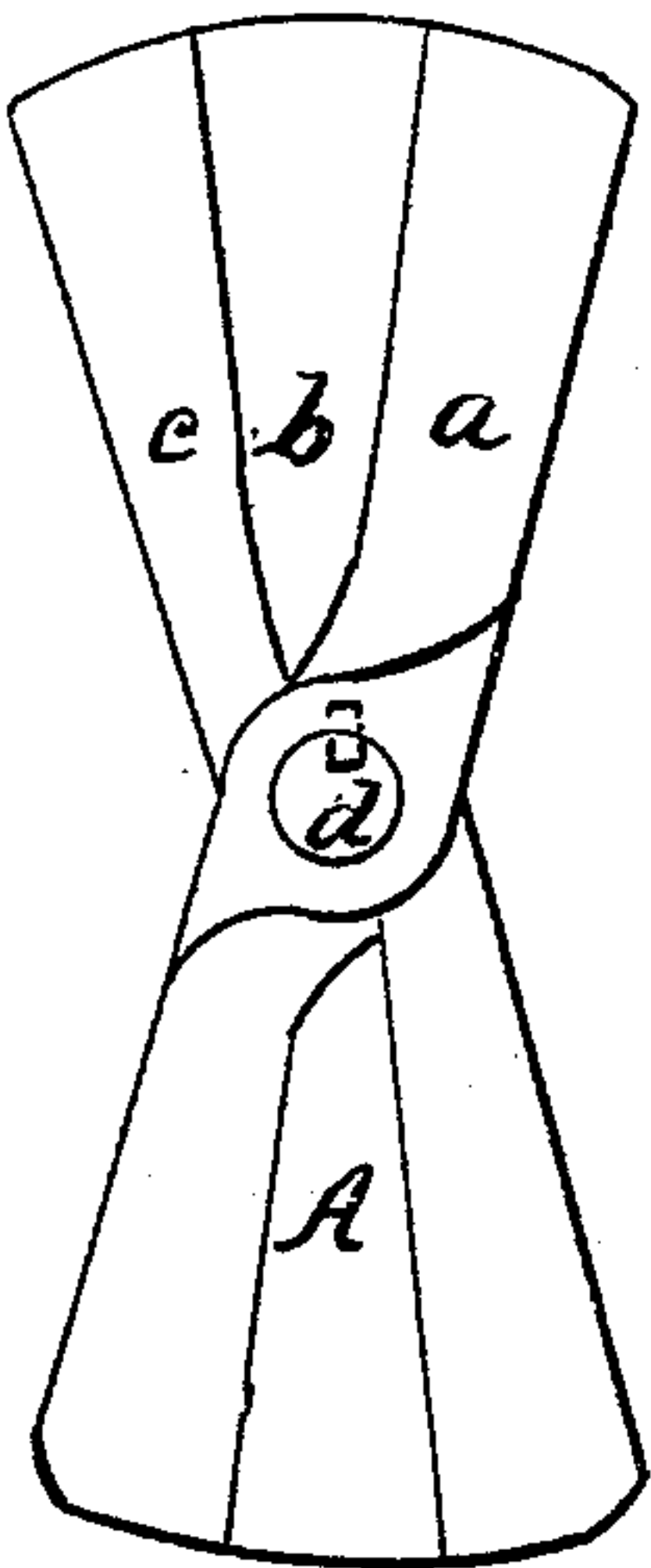


Fig: 2

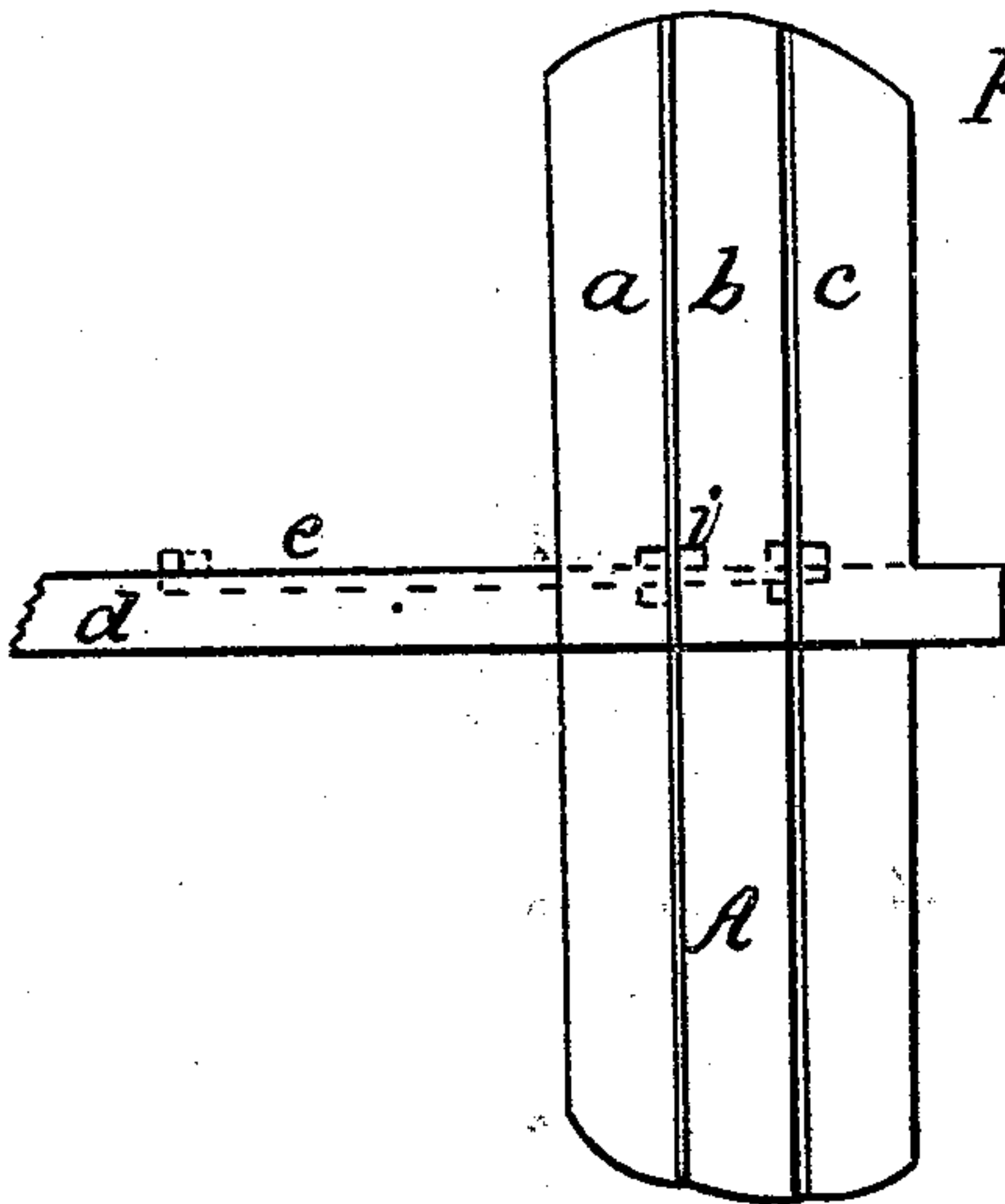
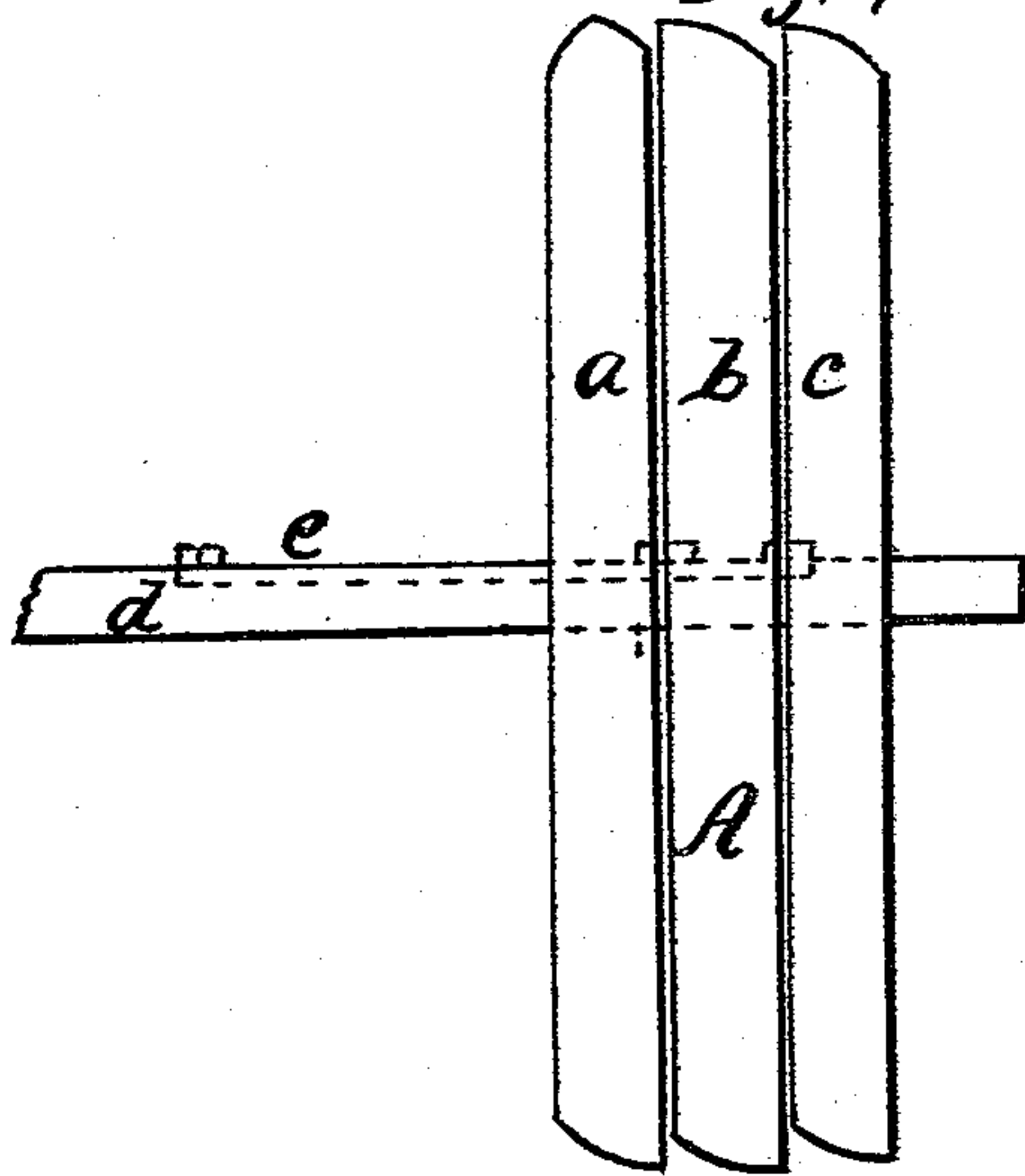


Fig: 3



Fig: 4



Witnesses.
Edw. F. Brown
G. Gaither

Inventor
Frederick Wittram

United States Patent Office.

FREDERICK WITTRAM, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 93,848, dated August 17, 1869

IMPROVEMENT IN SCREW-PROPELLERS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, FREDERICK WITTRAM, of the city and county of San Francisco, in the State of California, have invented certain new and useful Improvements in Screw-Propellers; and I hereby declare that the following is a full, clear, and exact description thereof, reference being made to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view of a two-armed screw-propeller, ready for use;

Figure 2, a side view of fig. 1;

Figure 3, a front view of the same propeller; when not required for propulsion; and

Figure 4, a side view of fig. 3.

The letters of reference indicate the same parts in the different figures.

My invention relates to propellers which are used as auxiliaries to sailing vessels or on canal-boats, and has for its object what may be called reefing or reducing the area of the resisting surface of the propeller, when the vessel is moved by wind, or other means than power applied to the screw-shaft, without resorting to any of the expensive or complicated methods of elevating the screw, now in use.

To accomplish the desired end, I construct a screw-propeller of any desired form or pitch, in two or more vertical sections, perpendicular to the axis of rotation. In the present instance, I divide it into three parts, *a*, *b*, and *c*. One of these is keyed or otherwise fixed to the shaft *d*, the others are made to work freely upon the shaft.

When the propeller is to be used to propel the vessel, the several parts, *a*, *b*, and *c*, are secured together by any convenient means forming a complete screw-propeller, as shown in figs. 1 and 2.

When sails are used, the sections are disengaged and secured together in a line with each other, as shown in figs. 3 and 4, presenting a minimum of surface of resistance to the passage of the water aft.

The sections, in the present instance, are secured together in either of the above-mentioned relative positions, by a bolt, *e*, working in a groove in the shaft *d*, and carrying studs *i*, which, when the bolt is forced aft from the interior of the vessel, or in any other convenient manner, take into suitable gains or notches in the hubs of the sections.

When the bolt is withdrawn to a proper distance, the studs enter into annular grooves in the hubs, which permit free revolution of the sections in changing their relative positions.

I do not limit myself to sections of any particular form of what is known as the screw-propeller, nor to the number of arms or blades used, or sections into which it may be divided, nor to any special devices for securing said sections in position; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The propeller *A*, when constructed in two or more sections, and so arranged, in connection with the bolt *e* or its equivalent, that the sections can be secured together upon the shaft *d*, forming a complete whole, or in a line with each other, substantially as described, for the purpose of decreasing the area of resistance to the water, as set forth.

FREDERICK WITTRAM.

Witnesses:

G. GAITHER,
EDM. F. BROWN.