

No. 613,211.

Patented Oct. 25, 1898.

T. MAKEPEACE & A. S. FOWLES.

SCREW PROPELLER.

(Application filed Feb. 12, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 2.

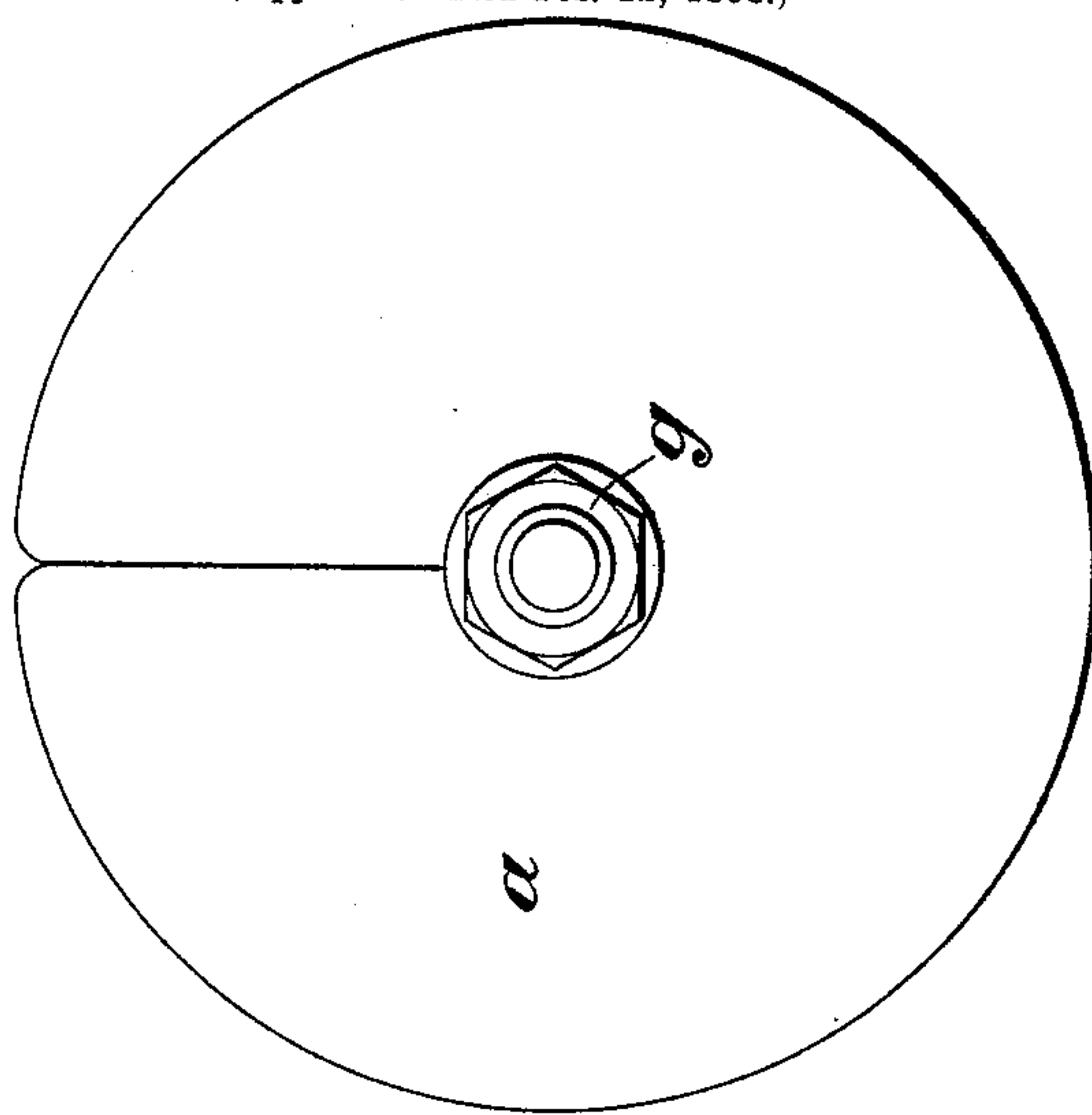
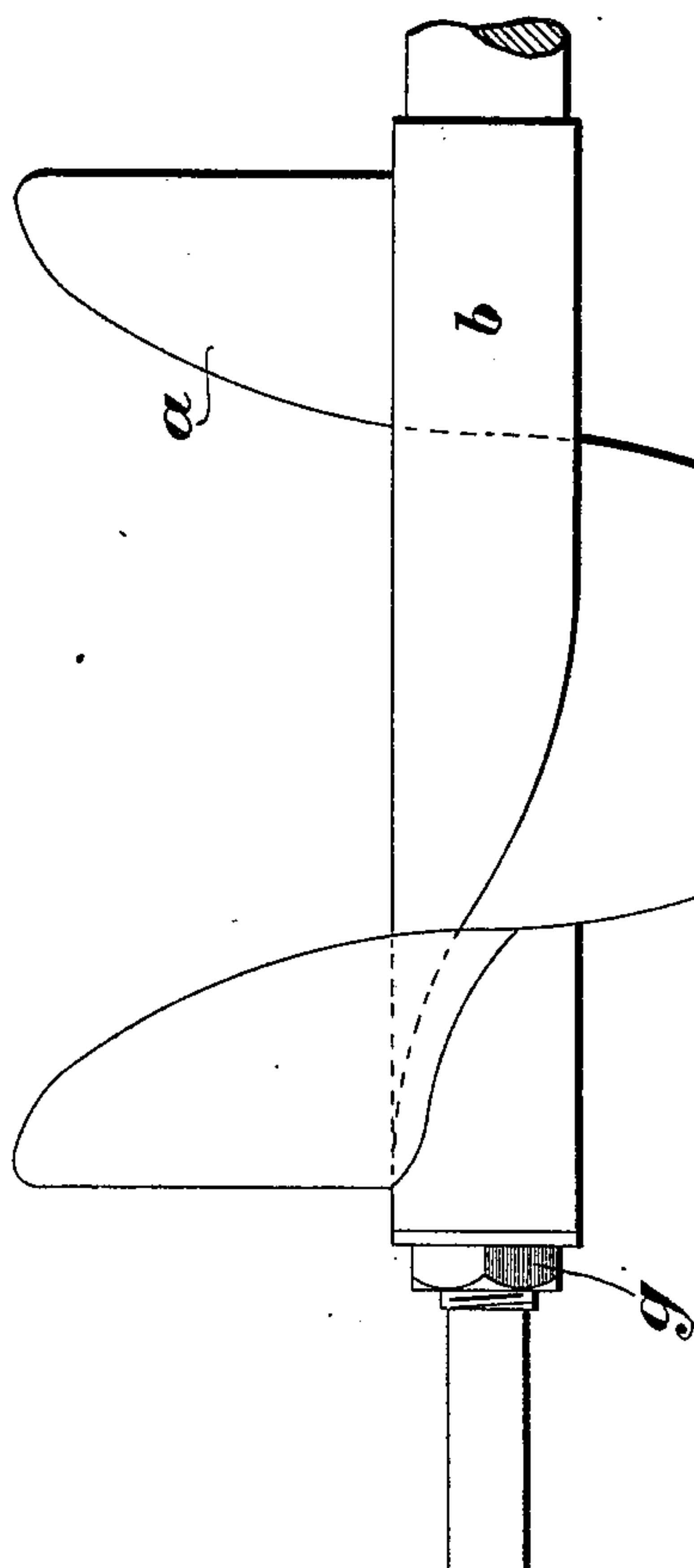


Fig. 1.



Witnesses.

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Inventors.

Thomas Makepeace
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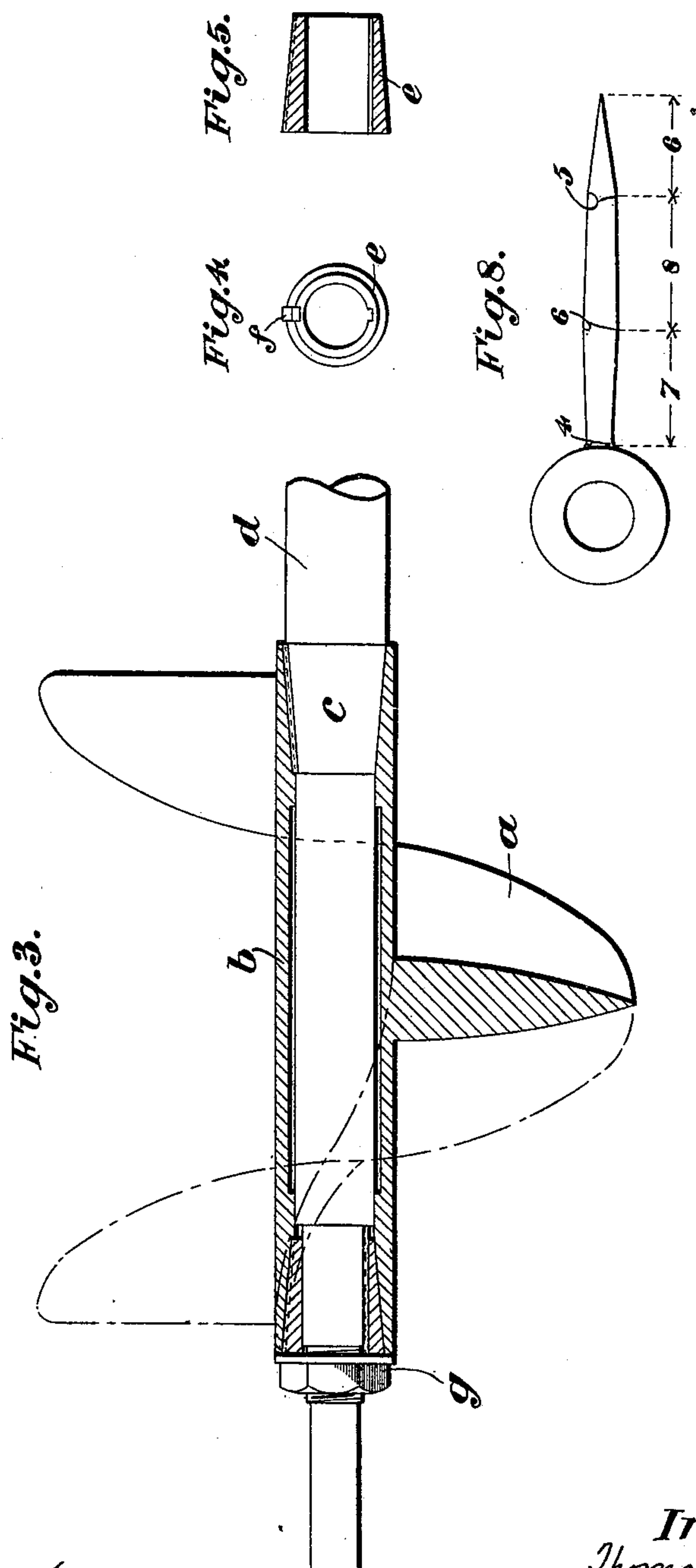
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3 Sheets—Sheet 3.

Fig. 6.

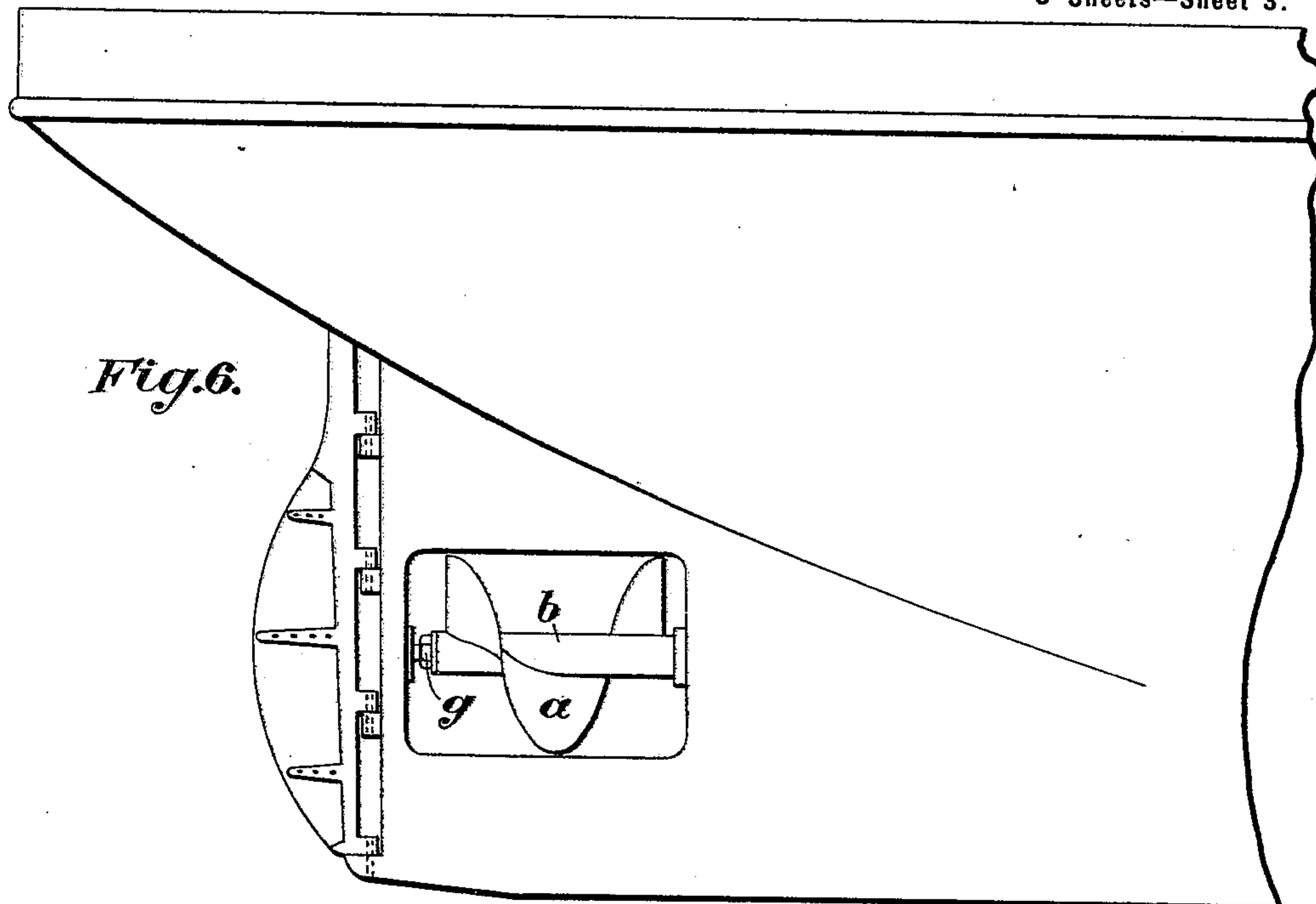
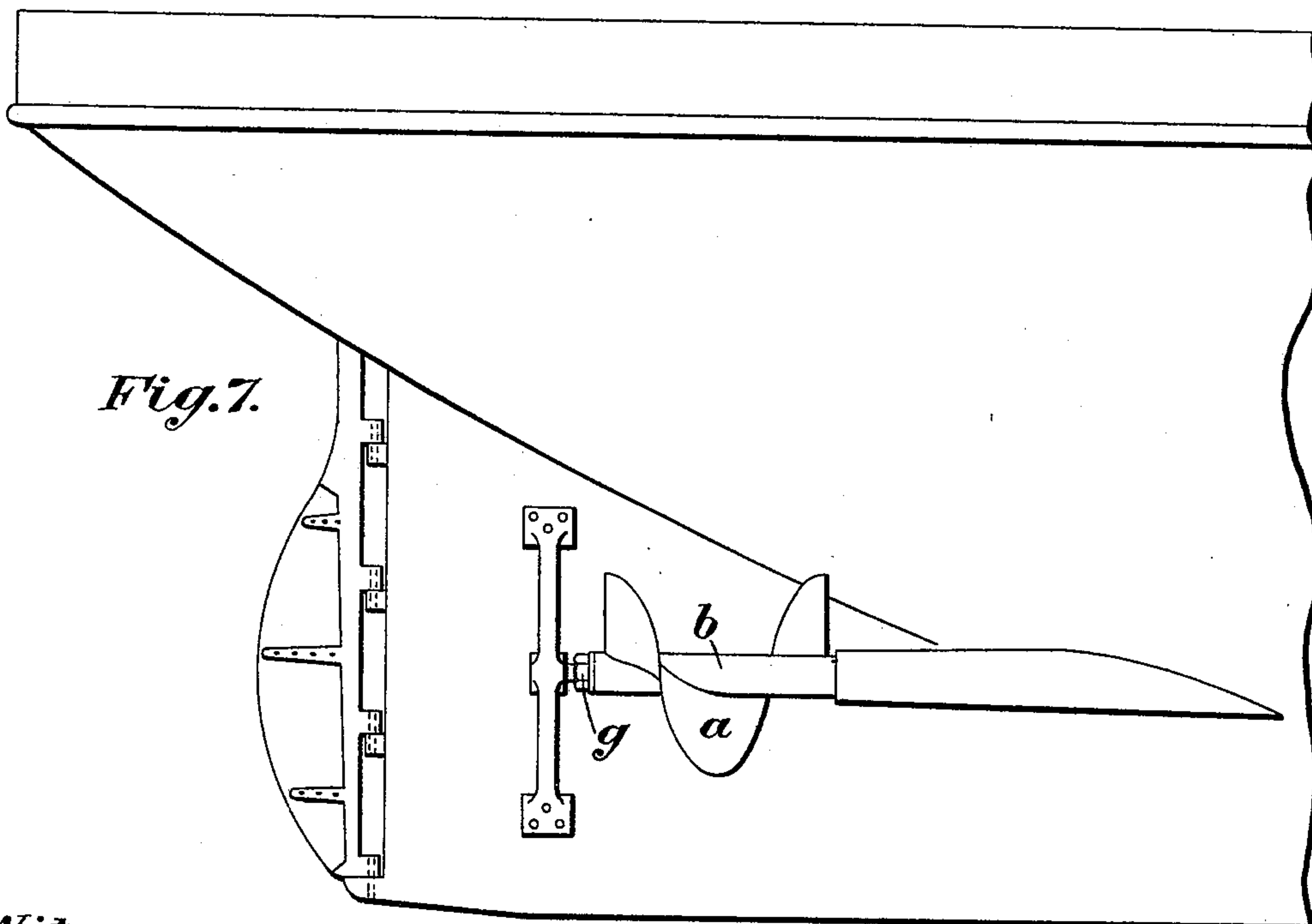


Fig. 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS MAKEPEACE, OF RYDE, AND ARTHUR S. FOWLES, OF COWES,
ENGLAND.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 613,211, dated October 25, 1898.

Application filed February 12, 1898. Serial No. 670,102. (No model.)

To all whom it may concern:

Be it known that we, THOMAS MAKEPEACE, residing at Hawthorn Villa, Pellhurst road, Ryde, and ARTHUR STRATTON FOWLES, residing at Cartrons, Cowes, in the Isle of Wight, England, subjects of the Queen of Great Britain and Ireland, have invented certain new and useful Improvements in Screw-Propellers; and we 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.

This invention for improvements in screw-propellers has for its object to provide a propeller having a higher efficiency than is possible with screw-propellers as at present constructed and also to reduce the vibration of the vessel due to the motion of the propeller, and thereby increase the comfort of passengers; and it consists, essentially, of a screw-blade of constant pitch formed integral with a central boss or sleeve and making one complete revolution about it, the said boss or sleeve being symmetrically formed and so secured to the screw-shaft that either end of the screw-blade may be made to lead as desired.

In the accompanying drawings, Figure 1 shows a side elevation of a screw-propeller constructed according to this invention. Fig. 2 is an end elevation, and Fig. 3 a longitudinal section, of the same. Figs. 4 and 5 are an end elevation and a section, respectively, of a bush for securing the screw to the screw-shaft. Fig. 6 is an elevation of the stern end of a vessel fitted with a single screw, and Fig. 7 is a similar view arranged for twin-screw propellers. Fig. 8 shows a cross-section of screw-blade.

A screw-blade *a* of constant pitch is formed integral with a central boss or sleeve *b* and makes a complete revolution about it. The said boss or sleeve is symmetrically formed, each end being bored conical to fit the corresponding conical part *c* of the screw-shaft *d*. The propeller is maintained axially on its shaft *d* by means of a conical bush *e*, having a feather *f*, corresponding to the feather or other key on the part *c* of the shaft, and is finally secured thereon by means of a nut *g*. As both ends of the boss or sleeve *b* are similarly coned, the propeller can be easily reversed on its shaft, if desired, as will be readily understood.

In practice we prefer to proportion the cross-section of screw-blade as shown in Fig. 8—that is to say, to divide the blade into three parts, measured radially from the root to the edge in the proportions of seven, eight, and six, the relative thickness of the blade at those parts being as four, six, and five, respectively, as shown.

What we claim, and desire to secure by Letters Patent, is—

In a screw-propeller the combination of a screw-blade formed with a boss or sleeve having internal conical ends, a shaft having a conical part fitting in one end of the said boss or sleeve and a conical bush secured on the said shaft and fitting in the other end of the said boss or sleeve substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS MAKEPEACE.
ARTHUR S. FOWLES.

Witnesses:

ALBERT JONES,
WALTER J. SKERTEN.