

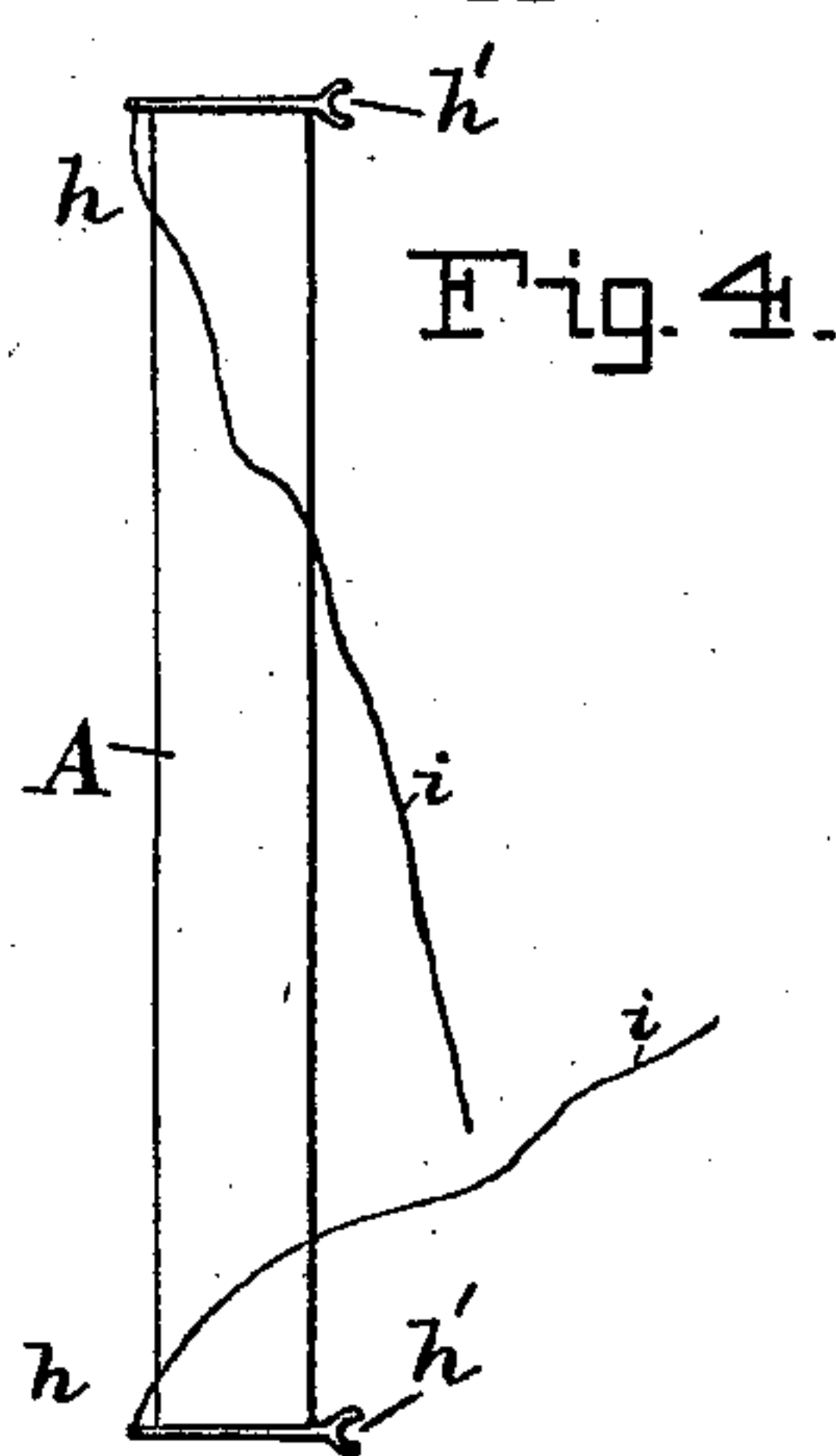
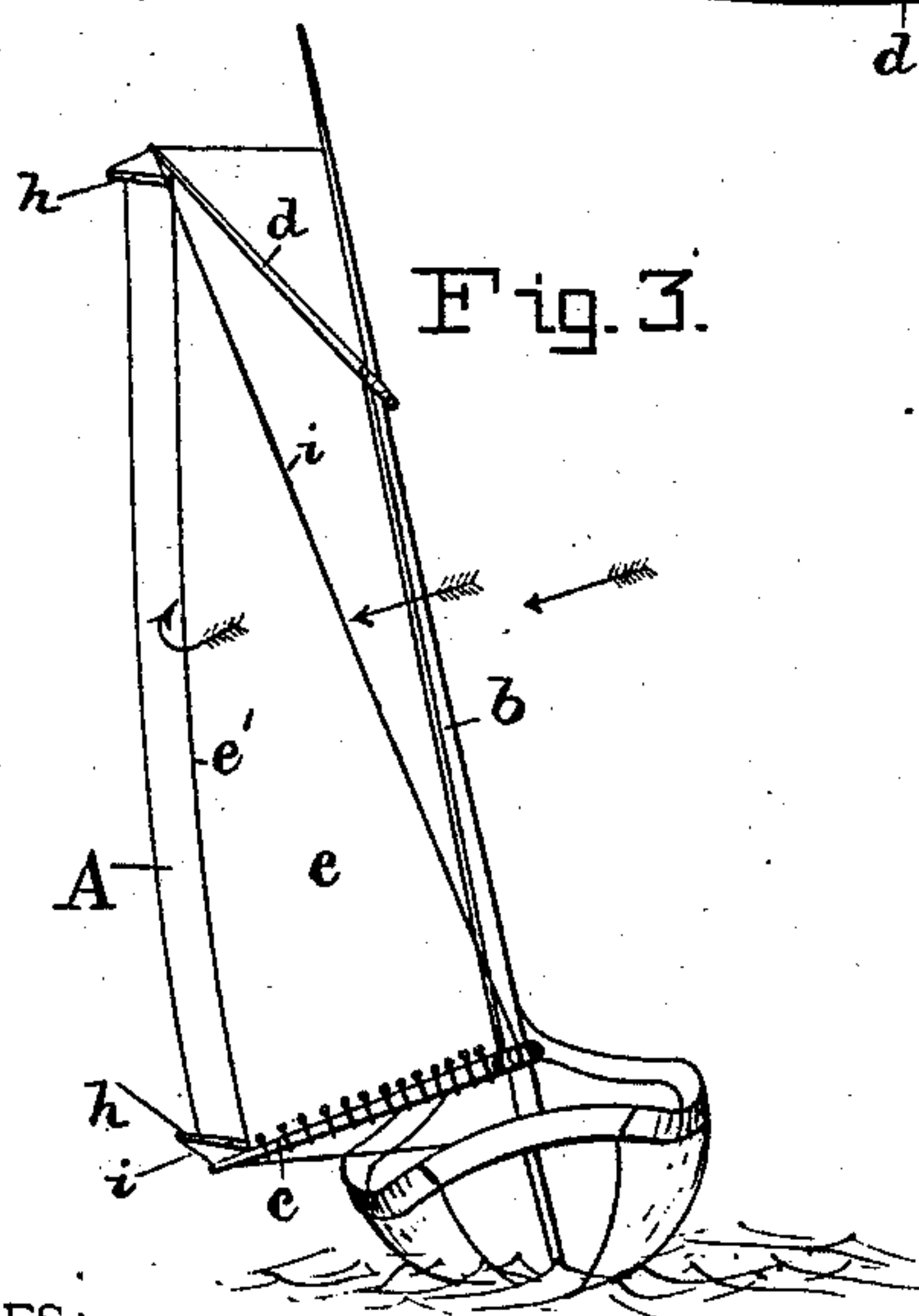
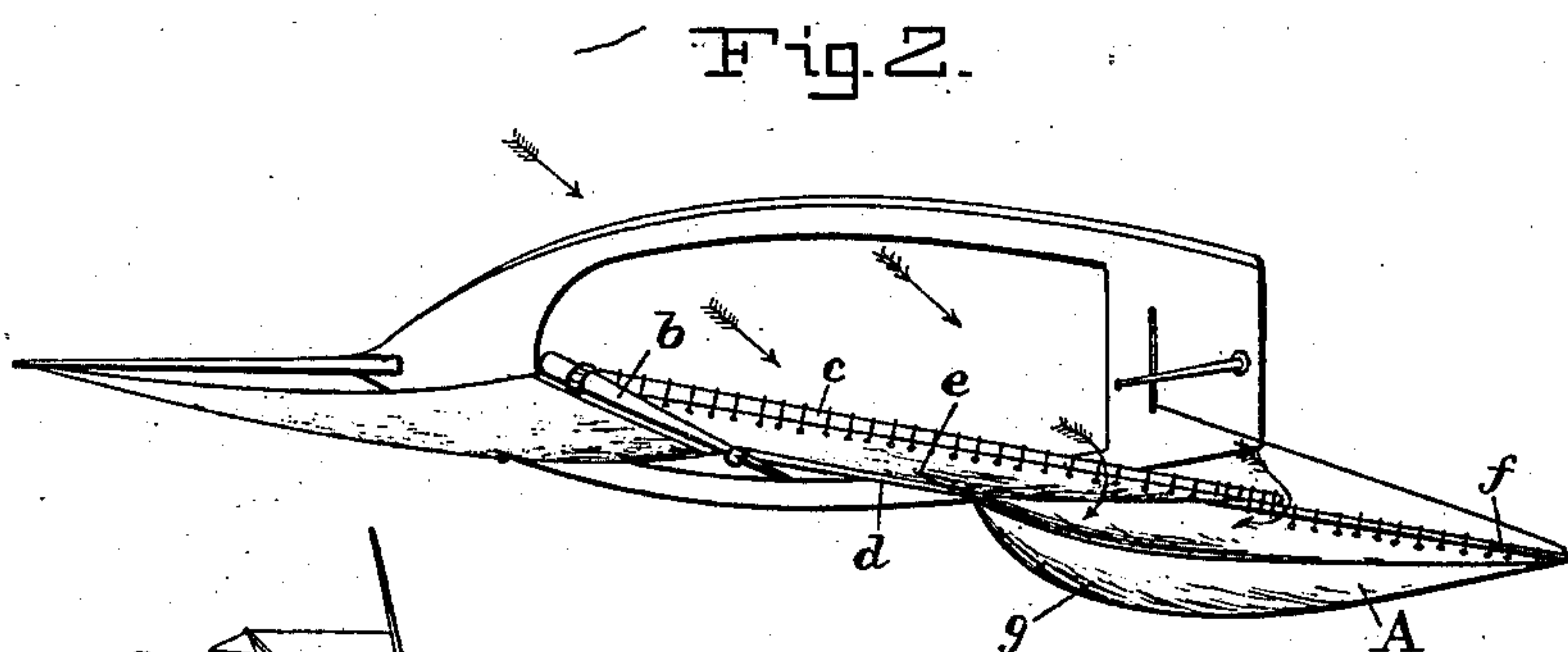
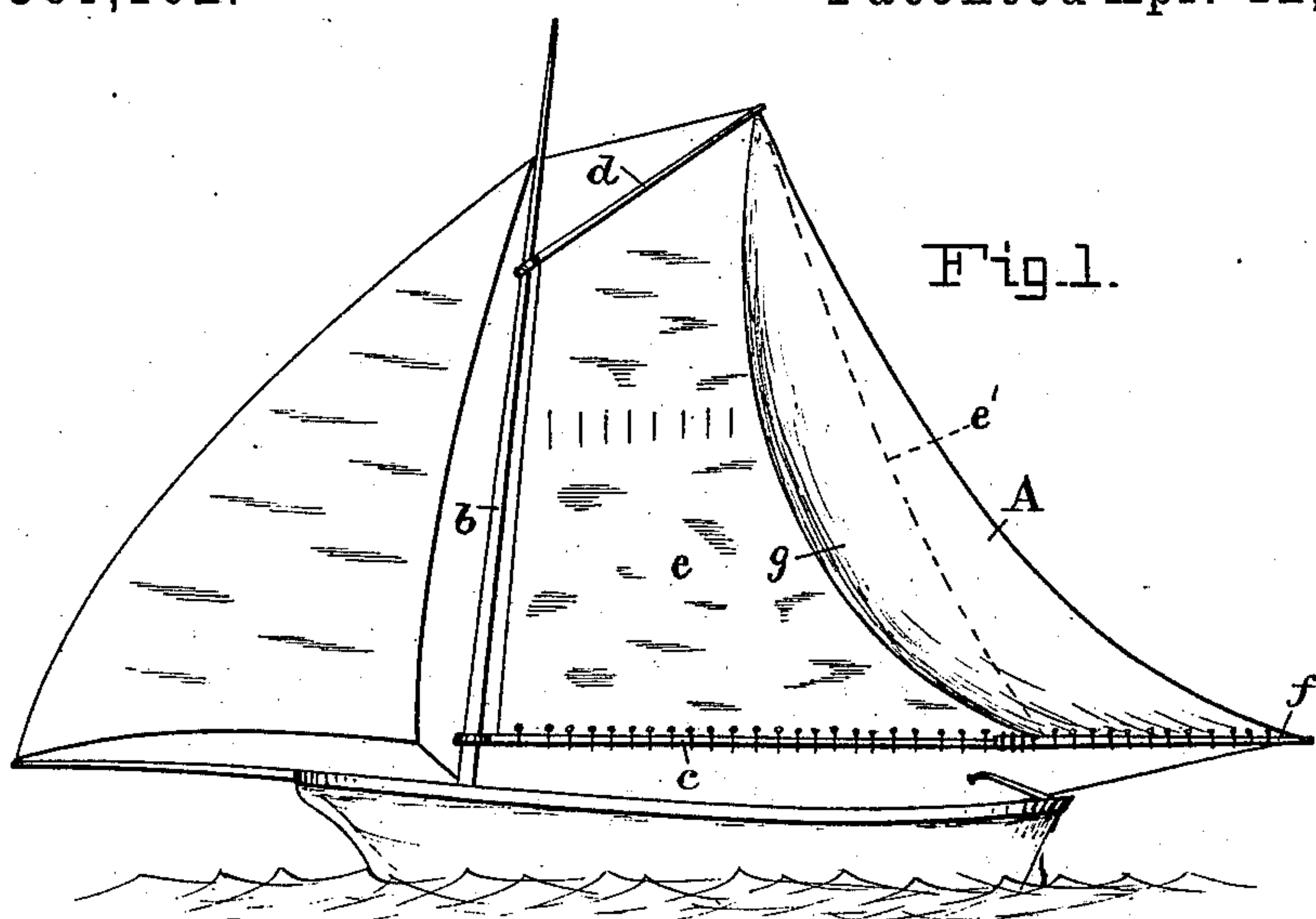
(No Model.)

J. C. WHEEDEN.

SAIL FOR VESSELS.

No. 361,102.

Patented Apr. 12, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES C. WHEEDEN, OF BALTIMORE, MARYLAND.

SAIL FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 361,102, dated April 12, 1887.

Application filed October 6, 1886. Serial No. 215,440. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. WHEEDEN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Sails, of which the following is a specification.

My invention relates to an improved supplementary sail for sailing-vessels, the object of which is to more perfectly utilize the wind and thereby impart to the vessel a greater speed than is possible by the ordinary sails now in use.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a sailing-vessel, showing the improved sail. Fig. 2 is a top view of the same. Fig. 3 is a stern view of a vessel, showing my improved sail applied in a modified manner. Fig. 4 is a view of the sail separately, showing the modified form illustrated in Fig. 3.

The improvement consists of the supplemental sail A, and is applicable to the sails of any vessel, but is here shown applied to a vessel whose sails are of the "fore-and-aft" class.

In order that my new sail and the advantages to be derived from its use may be fully understood, it will be necessary to refer briefly to the ordinary rig of sailing-vessels, comprising the mast *b*, the boom *c*, the gaff *d*, and the sail *e*, stretched between the boom and yard.

My improvement is the supplemental sail A, applied to the lee side of an ordinary sail, *e*, as shown. In Figs. 1 and 2 my supplemental sail A has its bottom attached to an outrigger, *f*, slung or lashed to the boom *c*, and its top to the outer end of the gaff *d*. The position of the supplemental sail A is on the lee side of the ordinary sail, *e*, and is adjacent to the after leech, *e'*, thereof. This supplemental sail has sufficient fullness between its top and bottom to sag and form a bag, *g*, as shown.

Thus rigged the sails operate in the following manner: When the vessel is sailing against the wind—for instance, as indicated in the drawings by the straight arrows—the wind impinges diagonally against the ordinary sail,

e, and presses that sail in a well-known manner, and then the wind escapes the surface of this sail at the after leech, *e'*, whereupon it has a reflex action or forward movement on the lee side of the ordinary sail, as indicated by the curved arrows. It will be seen that my supplemental sail A receives the reflex-acting wind which escapes the ordinary sail, and said wind acts upon the supplemental sail A in a direct manner—that is, forward in the direction of the vessel's movement—and thereby increases greatly the propulsive force on the vessel.

In Figs. 3 and 4 the supplemental sail has a form differing from that shown in Figs. 1 and 2, and is attached at the lee side of the ordinary sail somewhat differently; but it operates essentially in the same way and produces the same kind of a result. In the modification shown the supplemental sail A has its top and bottom attached to yards *h*, each of which has a crotch-parrel, *h'*, to set against the upper gaff, *d*, or boom *c* of the ordinary sail. These yards *h*, which support the supplemental sail, are slung to the ordinary yard and boom in any suitable way, and project therefrom on the lee side at an angle. When thus rigged the supplemental sail will sag and form a bag to receive the reflex wind. This form of rig should have suitable brace-ropes, *i*, to sustain and adjust it.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination, with an ordinary sail, of the supplemental sail A, secured on the lee side of the ordinary sail—at bottom to an outrigger attached to the boom, and at top to the end of the gaff—the said supplemental sail being baggy, as at *g*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES C. WHEEDEN.

Witnesses:

JNO. T. MADDOX,
JOHN E. MORRIS.