

C. ALBRECHT.
ADJUSTABLE KEEL FOR SHIPS OR BOATS.

APPLICATION FILED MAY 28, 1904.

Fig. 1

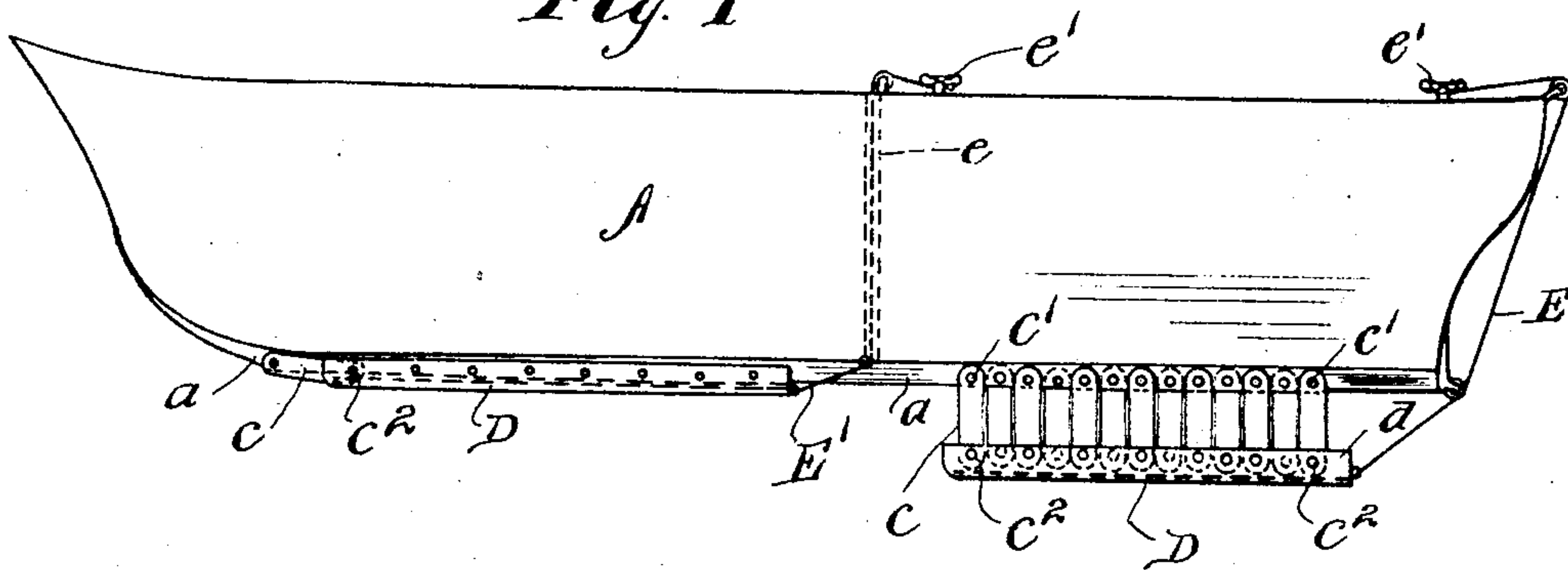


Fig. 2

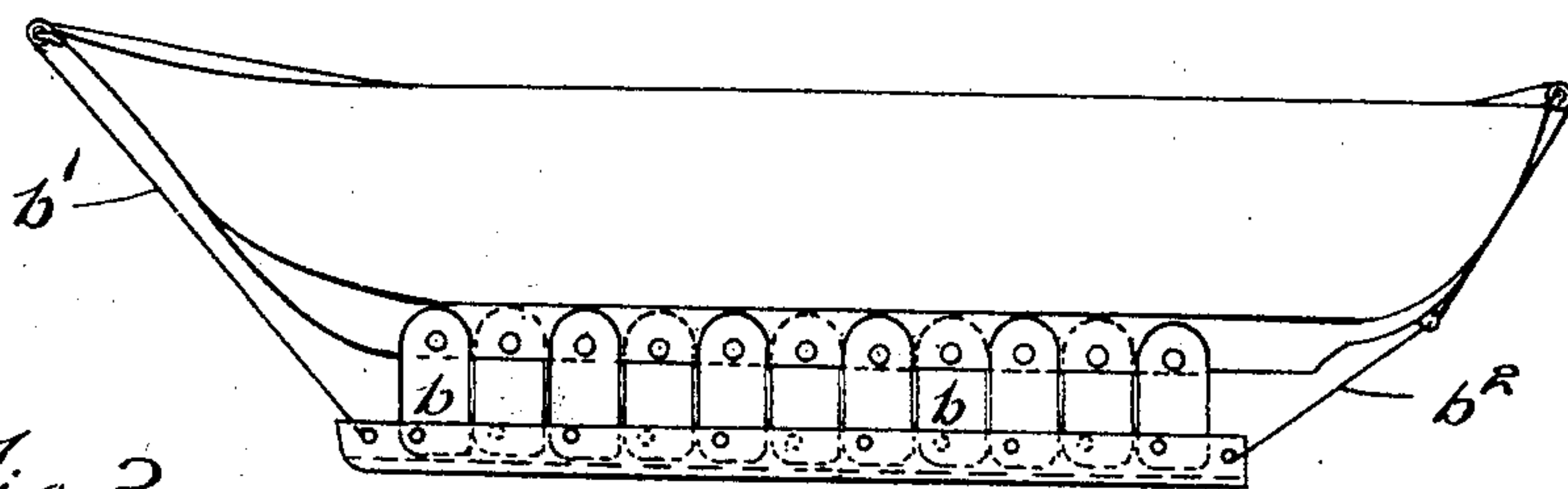


Fig. 3

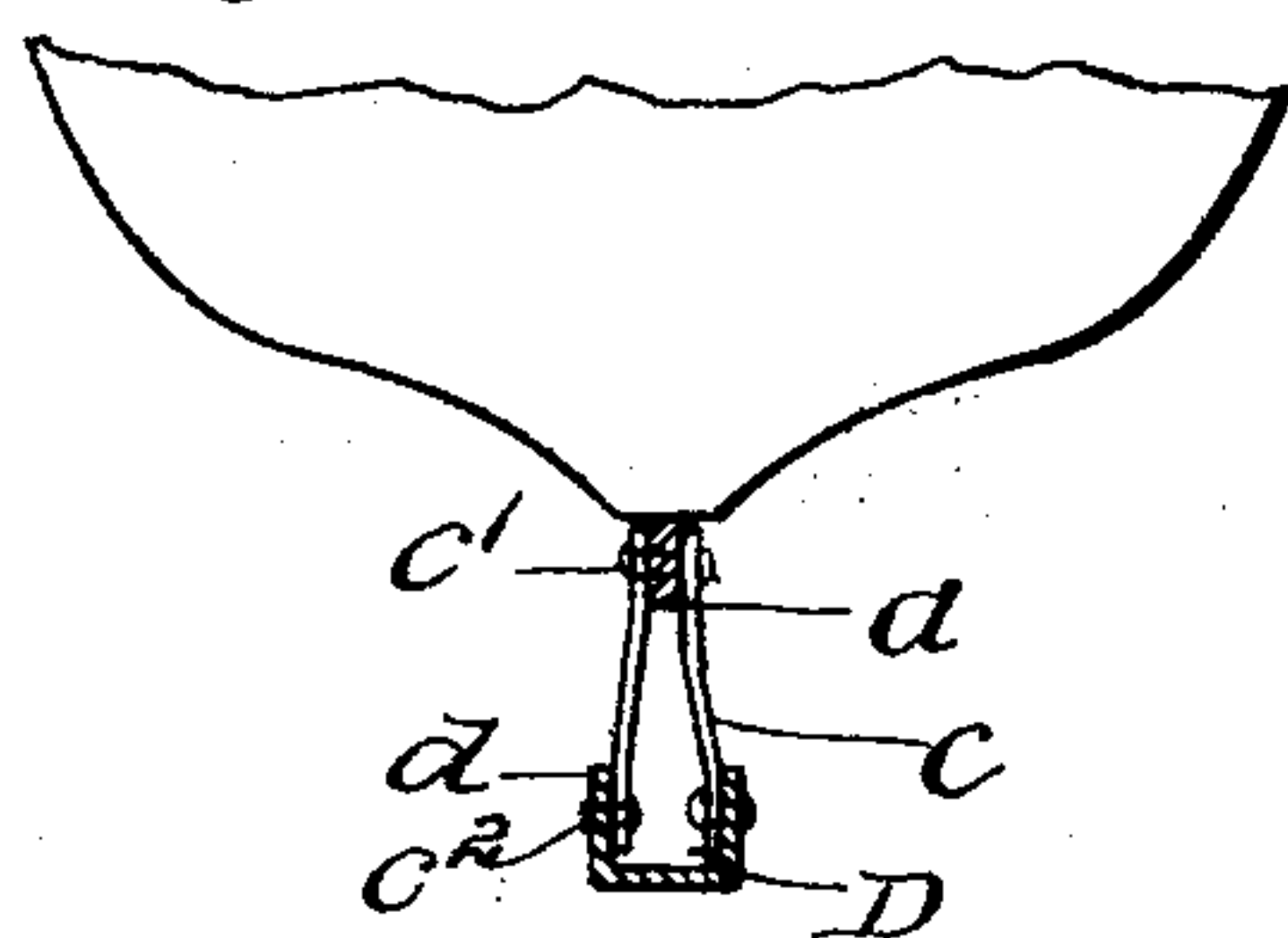


Fig. 4

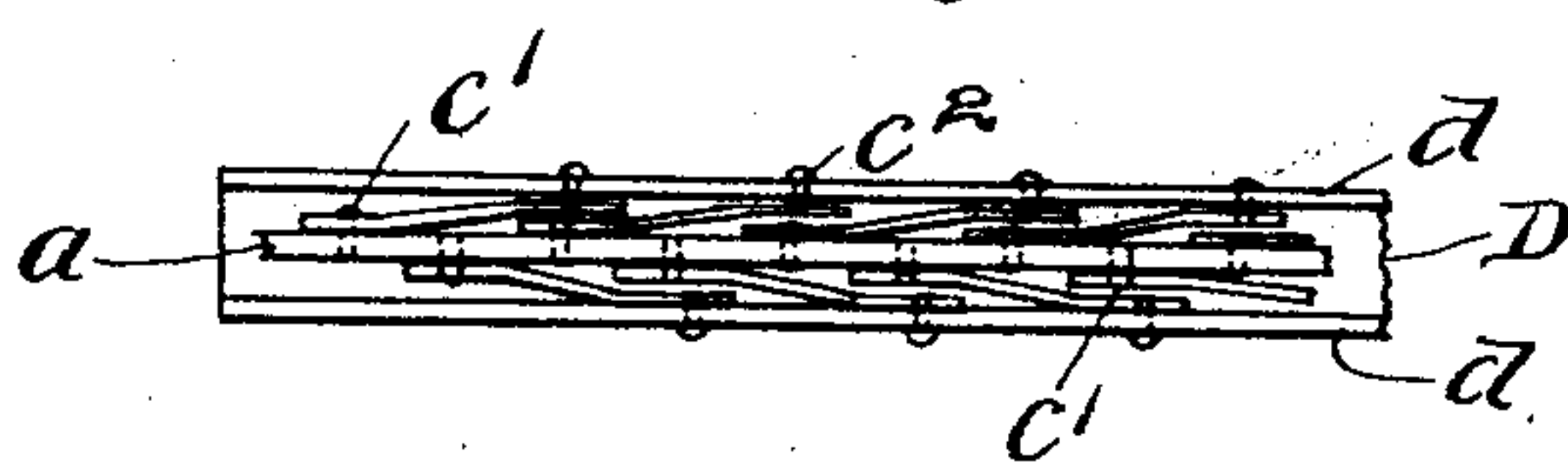
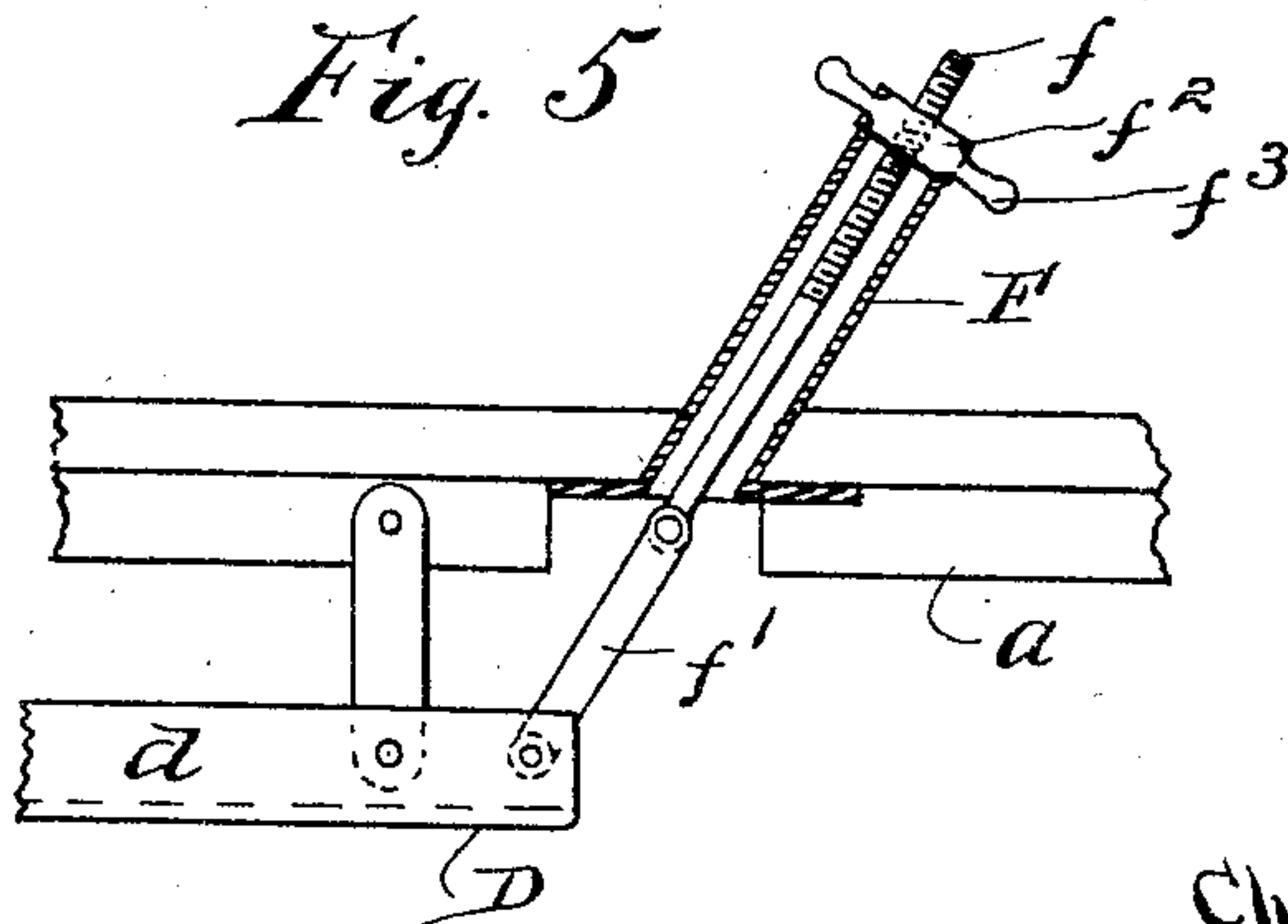


Fig. 5



Witnesses:

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE KEEL FOR SHIPS OR BOATS.

SPECIFICATION forming part of Letters Patent No. 785,849, dated March 28, 1905.

Application filed May 28, 1904. Serial No. 210,148.

To all whom it may concern:

Be it known that I, CHARLES ALBRECHT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Keels for Ships or Boats, of which the following is a specification.

This invention relates more particularly to an adjustable or drop keel which may be attached to the ordinary keel of a boat or to a false keel secured to the bottom of the boat. Its objects are to provide a device which may be readily adjusted to project down into the water or folded up along the keel proper and which will effectually act to prevent the boat from tipping and will also assist in holding the boat to a true course.

It consists in the combination, with a ship or boat, of a series of pivoted plates which are connected with a bottom bar or channel and means for swinging the bar to draw the plates up against the bottom of the boat and in such other features as will be pointed out hereinafter.

In the accompanying drawings, Figure 1 represents a boat or ship of some considerable length, which is provided with two sections of drop-keel embodying this invention. Fig. 2 is a side view of a boat having an adjustable keel constructed of plates relatively wider in proportion to their length than those shown in Fig. 1. Fig. 3 is a sectional end view of the adjustable keel. Fig. 4 is a top plan view of a portion of the keel removed from the boat. Fig. 5 is a detail showing a modified form of raising apparatus.

A represents a boat, which is provided with a stationary keel *a* of the ordinary form of construction. A number of plates or broad flat links *c* are pivoted to the keel, as shown at *c'*. These plates are preferably arranged on opposite sides of the keel, and when brought to a vertical position they form substantially a continuous surface. The lower ends of these links or plates are pivoted at *c''* to the upwardly-extending flanges *d*, to a channel-bar *D*. The arrangement is such that when the bar *D* is pulled or forced backward or forward it will carry up the lower ends of all of

the links and fold said links along the sides of the stationary keel. This may be done by means of ropes or cables *E E'*, which are rove over suitable sheaves, as shown in Fig. 1. In the arrangement shown in Fig. 1 the adjustable keel is formed in two sections, one being shown in a raised position and the other in a lowered position. The rope *E'* for the forward section is preferably drawn up through a pipe, as indicated at *e*, and is fastened in any suitable manner, as by means of cleats *e'*.

The plates *c* may be of such length that when the series is folded up the free end of one cleat will overlap the pivot end of the next succeeding cleat, as indicated in Fig. 1. In this case it is necessary to offset or bend the plates, as shown in Figs. 3 and 4, to allow clearance for the free ends. When the adjustable keel is folded up, the lower bar or channel *D* will inclose and protect the plates and the keel proper.

In the modified form of construction shown in Fig. 2 the plates *b* are made of sufficient breadth in relation to their width that when the adjustable keel is folded up the lower end of one plate will not overlap the next plate. The weight of the channel and plates will ordinarily be sufficient to cause them to drop into operative position by gravity; but in this instance I have shown a forward rope *b'*, by means of which the adjustable keel may be drawn down to operative position when the back rope *b''* has been released. In some instances it may be desirable to provide other means for raising and lowering the adjustable keel than by using the ropes above described. One form of such means is shown in Fig. 5, in which a pipe or tube *F* is rigidly secured in the bottom of the boat and extends upward to a point above the water-line. A threaded rod *f*, working through this pipe, is connected, by means of a link *f''*, to the channel *D*. At the upper end of the pipe *F* is a nut *f''*, which engages with the threaded end of the rod *f* and also with the end of the pipe. This nut is provided with handles *f'''*, whereby it may be turned to draw up the rod, and consequently the channel *D*, and therefore fold up the adjustable keel.

It will be noted that with a device of the character herein set forth boats may be made of much lighter draft and greater width, and the adjustable keel will at all times maintain
5 them in an upward and steady position. A ship, such as a battle-ship, provided with this device will not "turn turtle" when slightly injured, as frequently occurs with ships of ordinary construction. It will also
10 be noted that if the adjustable keel strikes any obstruction it will swing back and again adjust itself to proper position. When the body or ship reaches shallow water, the adjustable keel is folded up to allow for the dif-
15 ference in depth.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

An adjustable keel comprising a series of plates pivoted to the bottom of a boat, said
20 plates being bent to overlap one another when folded up, a channel-bar, to which said plates are pivoted, adapted to inclose said plates when folded, and a rope or the like for drawing up said channel-bar to fold said ad-
25 justable keel.

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Witnesses:

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