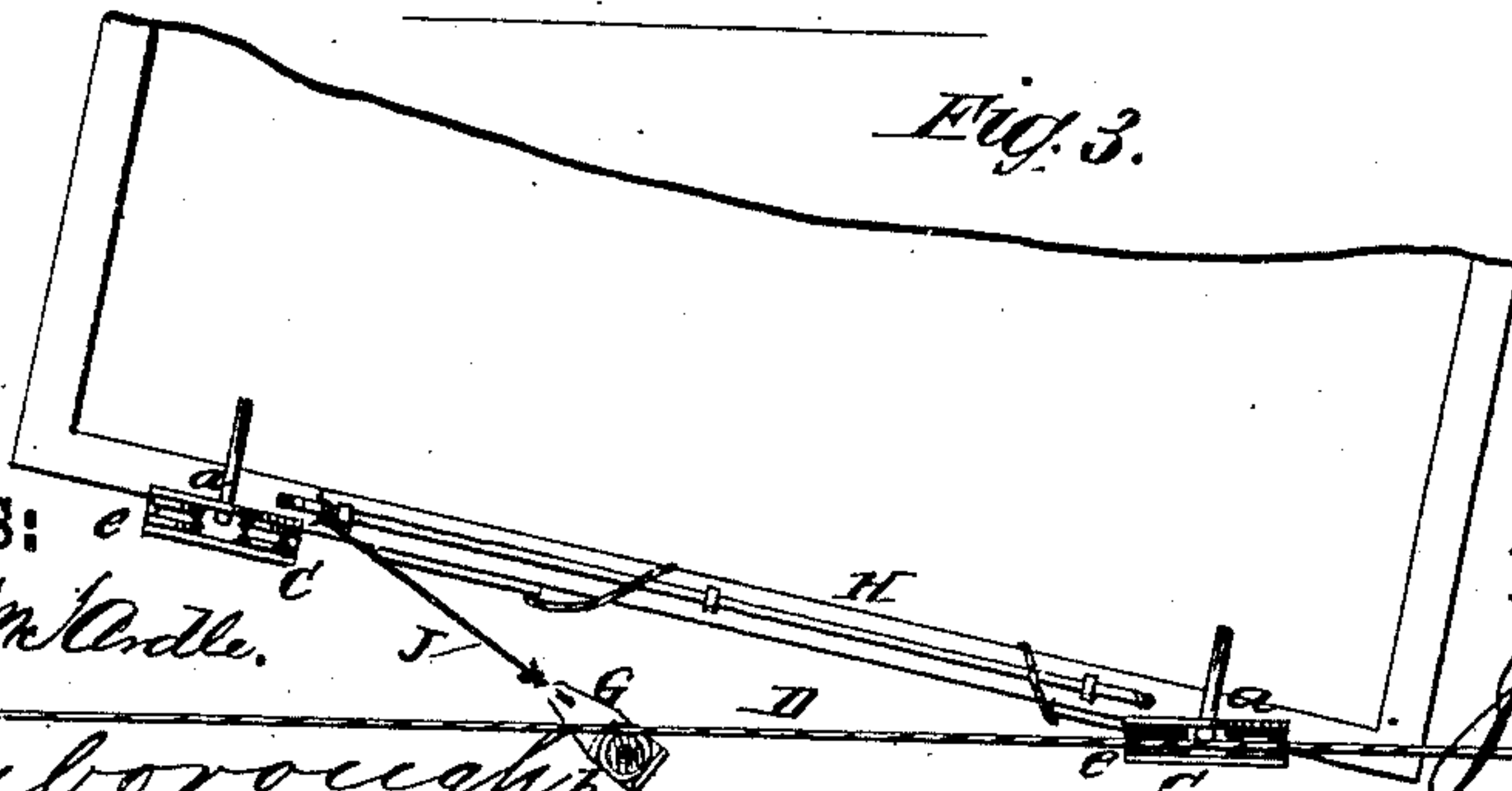
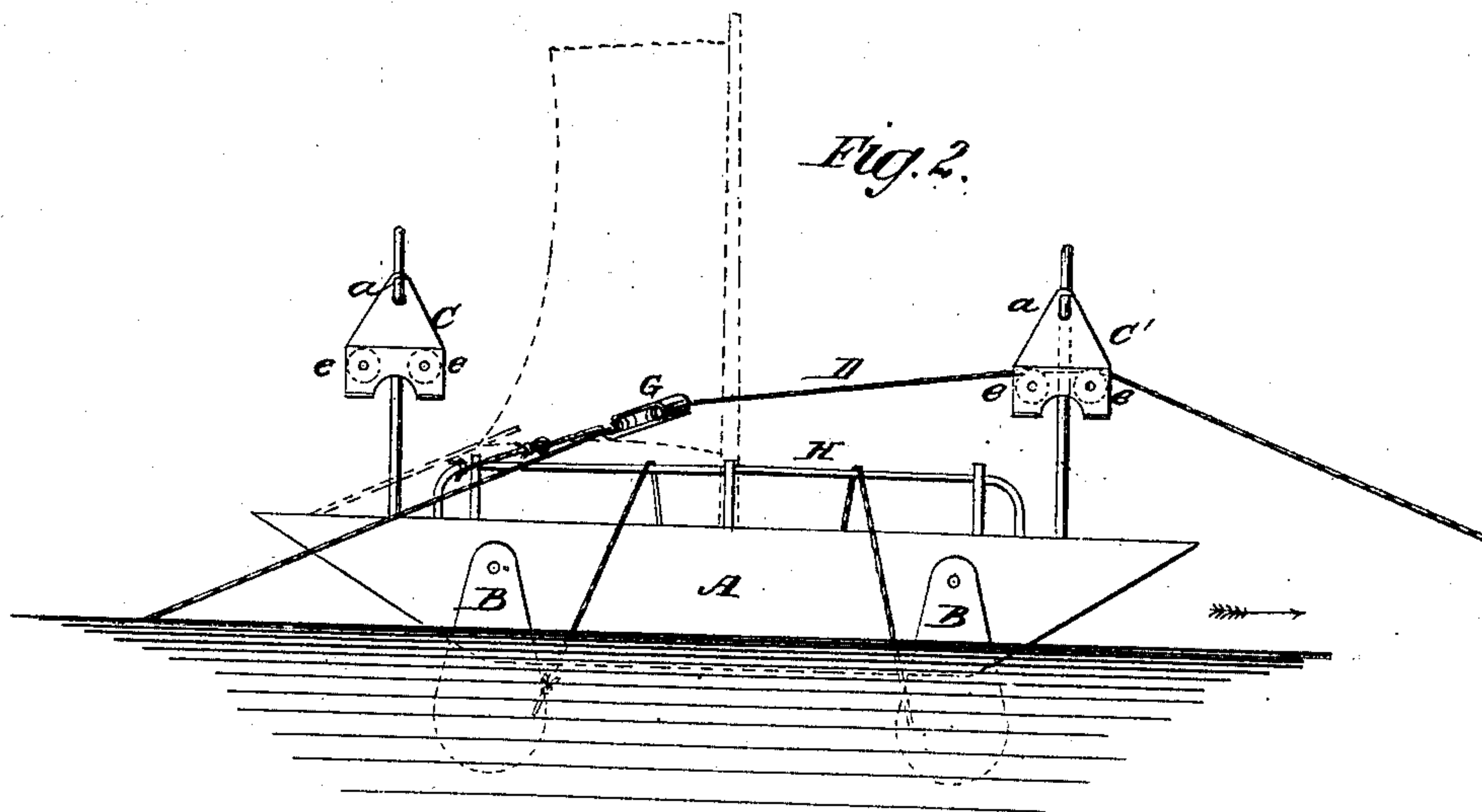
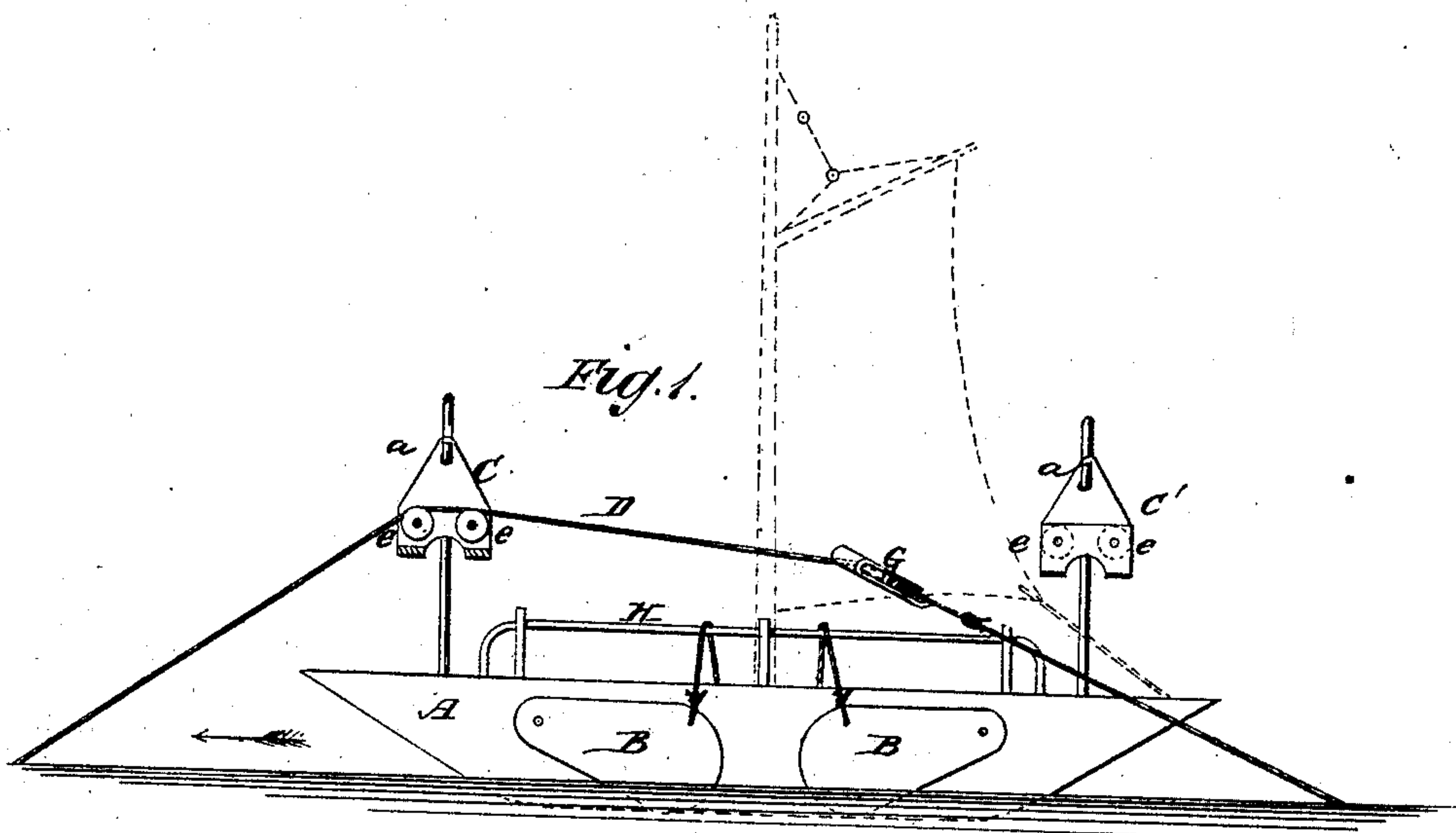


J. G. DENSMORE.  
Ferry-Boat.

No. 196,566

Patented Oct. 30, 1877.



WITNESSES:

Francis McArdle.

J. H. Scarborough.

INVENTOR:

J. G. Densmore.

BY

*Mumford*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOSEPH G. DENSMORE, OF WEST DRESDEN, MAINE.

## IMPROVEMENT IN FERRY-BOATS.

Specification forming part of Letters Patent No. **196,566**, dated October 30, 1877; application filed August 18, 1877.

*To all whom it may concern:*

Be it known that I, JOSEPH GORHAM DENSMORE, of West Dresden, in the county of Lincoln and State of Maine, have invented a new and Improved Mode of Propelling Ferry-Boats, of which the following is a specification:

The object of this invention is to facilitate the passage of boats across rivers where there is a current; and the nature of my invention consists in the construction and arrangement of parts, as will be hereinafter explained, and then indicated in the claim.

In the annexed drawings, Figure 1 is a view showing the water-boards raised and the guide-rope arranged for the boat to move in the direction indicated by the arrow. Fig. 2 is a similar view of the same parts, showing the water-boards down and the guide-rope arranged so that the boat will move in the direction indicated by the arrow in front of it. Fig. 3 is a top view of Fig. 2, part of the boat being broken away.

Similar letters of reference indicate corresponding parts.

The letter A designates a flat-boat or scow of the usual well-known construction. On one side of this boat I strongly pivot two or more directors, B B, which are preferably made of the shape shown in the drawing, but which may be of any other suitable shape. These directors are for the purpose of affording a large extent of surface for the current of water to act against, the force of which I utilize for propelling the boat across a river. It is desirable to have the lower ends of the directors B rounded, so that they will rise in shallow water and not offer any resistance to the movement of the boat. Ropes or chains may be attached to the directors for the purpose of raising and lowering them.

C C' designate two swinging brackets, which are loosely attached to hooks *a a*, formed

on the upper ends of standards which rise from one side or gunwale of the boat. Each one of the swinging brackets C C' bears two grooved pulleys, *e e*, over which is passed a rope, D. This rope is carried across a river and made fast on each shore. Sufficient slack should be allowed the rope D to have it sink out of the way of vessels ascending and descending the river. If desired, a wire cable may be used, instead of a hemp rope. G designates a block, which is provided with a grooved pulley, *b*, and which is attached to the guard-rail H by means of a rope or chain, J.

To start the boat across the river, the rope D is passed over the pulleys *e e* of one of the swinging brackets C C' and around the pulley *b* of the block G. The boat is adjusted at an angle with respect to the rope D, so that the current will strike the directors B B at an angle, which may be increased or diminished at pleasure by giving more or less rope to the pulley-block G.

Sometimes I shall use a sail, (indicated by dotted lines, Figs. 1 and 2;) but, for all ordinary purposes, the force of the current, acting against the directors, will move the boat ahead.

To make a return trip the rope D is shifted to the pulleys *e e*, at the opposite end of the boat, and the pulley-block G is also shifted. These adjustments are represented by Figs. 1 and 2.

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

The combination of the swinging elevated brackets C C', constructed as described, carrying pulleys *e e*, and the guide-block G and rope or chain J, with the boat A and rope D, as and for the purpose set forth.

JOSEPH GORHAM DENSMORE.

Witnesses:

AMOS E. PURINGTON,  
CHARLES JACK.