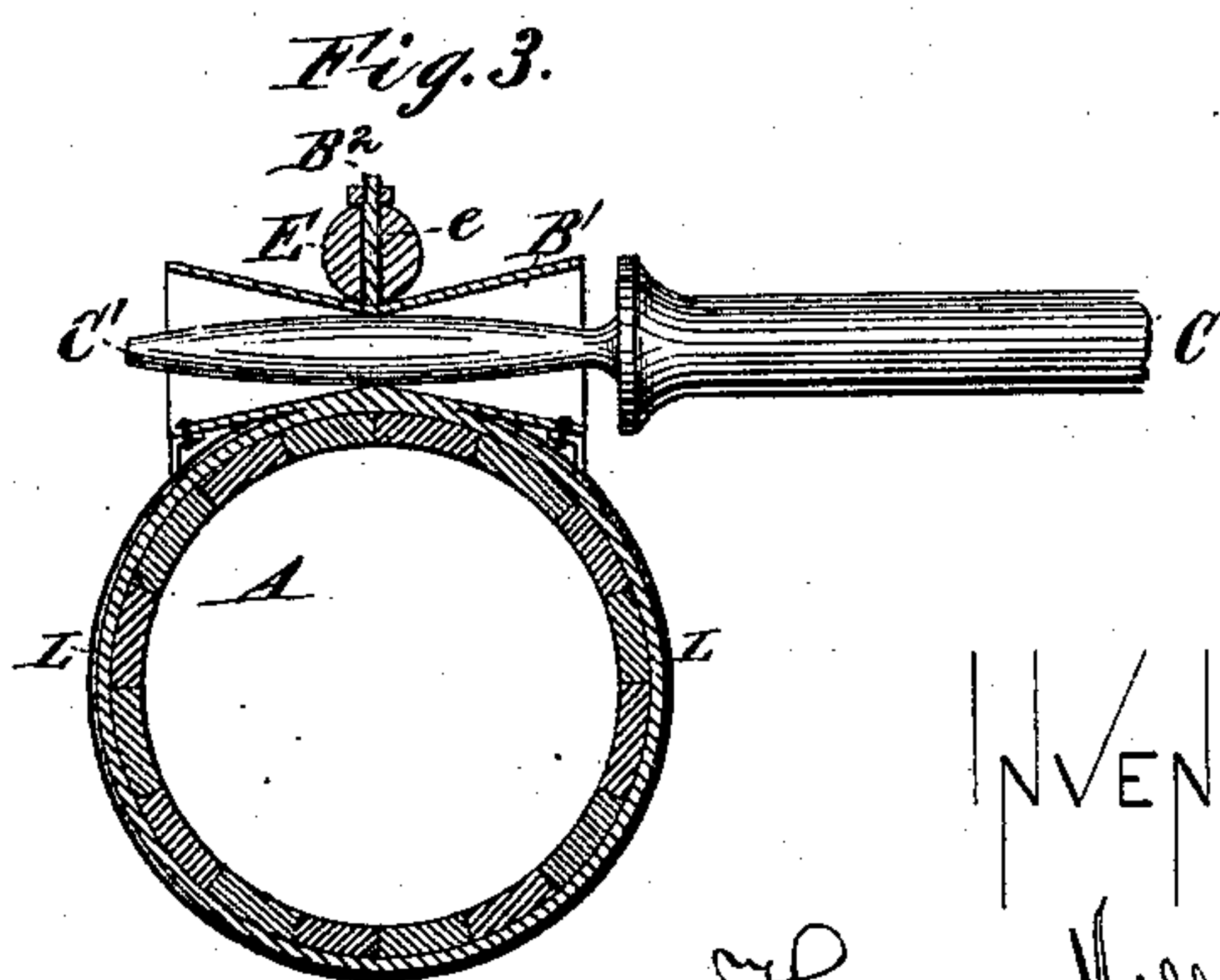
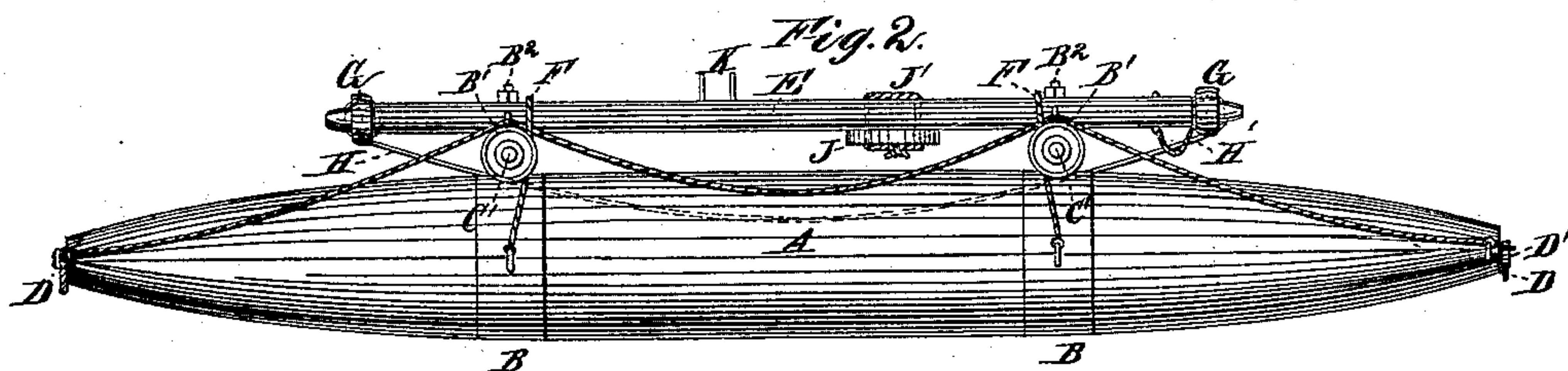
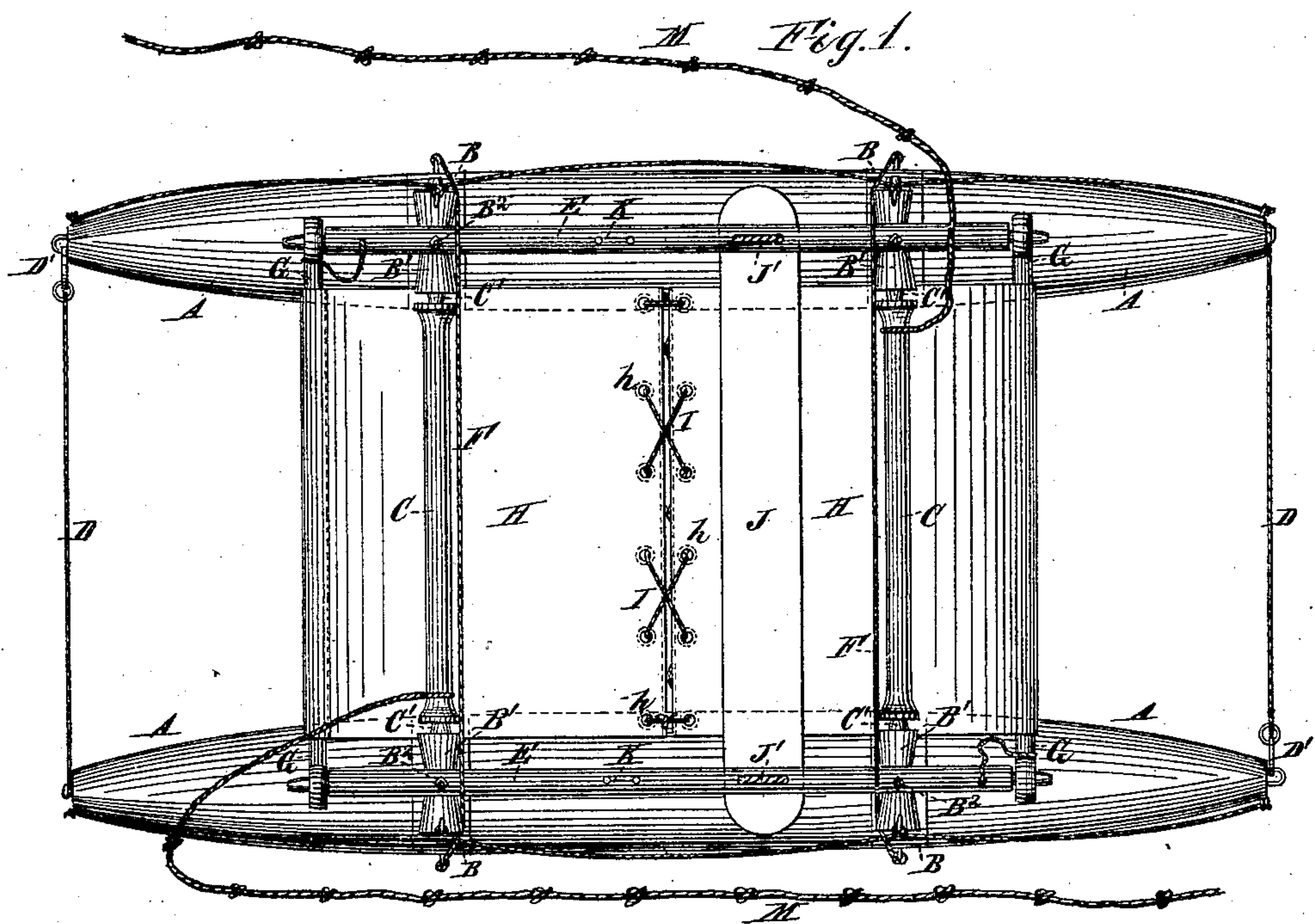


(No Model.)

H. MILLER.
Life Raft.

No. 237,574.

Patented Feb. 8, 1881.



WITNESSES.

J. H. ^{son} Master
I. N. Kaib.

INVENTOR

Henry Miller
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J. D. Watson

UNITED STATES PATENT OFFICE.

HENRY MILLER, OF CHAPPAQUA, NEW YORK.

LIFE-RAFT.

SPECIFICATION forming part of Letters Patent No. 237,574, dated February 8, 1881.

Application filed October 13, 1880. (No model.)

To all whom it may concern :

Be it known that I, HENRY MILLER, a citizen of the United States, residing at Chappaqua, Westchester county, in the State of New York, have invented certain new and useful Improvements relating to Life-Preservers and Life-Saving Floats, of which the following is a specification.

The device may be made of small size for the use of a single person; but I will first describe it as of considerable size, and adapted to support several. It is intended to be carried on vessels in a folded or packed condition, and is by its construction readily put in condition for use and lowered into the water.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a plan view of my improved float. Fig. 2 is a corresponding side view, and Fig. 3 is a partial section on a larger scale, showing one of the joints.

Similar letters of reference indicate like parts in all the figures.

A A are long floats, composed of staves of wood or other suitable material, in proper form, put together with tight joints and secured by hoops. The wood may be chemically prepared to enable it the better to withstand drying and wetting. The construction is analogous to that of a common barrel, but with the ends pointed to facilitate the movement of the completed structure under sail or by rowing, paddling, or other suitable means. Each float is covered with sheet metal L, soldered so as to form a water-tight casing. (See Fig. 3.)

At a convenient distance apart on each of the floats A, are permanently fixed two stout hoops, B B, carrying peculiarly-formed eyes B', which have long holes approximating to tubes with their axes in a plane at right angles to the axis of the float. These eyes or tubes B' flare both ways from the center to the right and left, making them funnel-shaped at each end.

C C are transverse connections, formed with shoulders near each end, as shown. The round tenons C', which extend beyond the shoulders, are adapted to apply in the eyes or tubes B'.

The tenons C' are thickest in the middle of their length, and taper each way therefrom. It follows from the double-funnel form of the eyes B' and from the converse form of the tenons C' that the floats are allowed to oscillate independently by rising and sinking at either end to a sufficient limit to allow the device to work with great freedom in a seaway. The floats may also, by virtue of this connection, lie one considerably in advance of the other.

D D are flexible ties, of ratlin stuff or other suitable material, fastened permanently to one of the floats, and provided with a snap-hook, D', at the other end, which latter is adapted to engage in a stout eye fixed in the end of the opposite float.

In spreading the device for use, the rigid pieces C C' are set in place, and the connections D D' stretched across the ends and secured.

On the top of each of the eyes B' is a pintle, B².

E E are longitudinal pieces of wood having holes *e e* adapted to match on the pintles B².

F F are small ropes extended from small eyes B³ on the bands B, as shown.

G G are transverse pieces fitted on reduced ends of the longitudinal pieces E.

H H are pieces of canvas secured to the end pieces, G, respectively, and stretch from one toward the other, to constitute a deck. They are secured by a small rope or lacing rove through the grommets *h*. The tennons on the ends of the longitudinal pieces E are tapered both ways like the tenons C'. The holes in the transverse pieces G are tapered in the opposite direction—that is to say, they are smallest in the middle and largest at each end. It follows that the joint formed by the junction of the pieces G and E works freely, like the joint between the parts B' and C'.

J is a seat, secured to the longitudinal pieces E by cords J' rove through holes, as shown. These connections being made intentionally loose gives liberty for the working required.

K K are rowlocks, fitted in the position shown.

Oars may be added to the equipment of each float, or kept in convenient positions to be readily accessible in cases of emergency.

M M are knotted cords of sufficient length

to serve in lowering my floats from the upper deck of the vessel on which they are used. So soon as it is in the water, the upper ends of the cords being secured to the vessel, the parties to embark on the float lower themselves, the knots aiding their hands in keeping a proper hold while they descend hand over hand.

The whole device may be made smaller and used as a life-preserver for a single person. In such case the canvas H H will be formed with a sufficient hole in the middle to allow for the body of a stout person, or the canvas and its attachments G and the longitudinal pieces E may be omitted altogether. In short, the small construction requires only the floats A, with their hoops B, eyes B', and transverse pieces C C', with their joints formed as shown, to allow the required oscillation, and the ropes D, to keep the parts reliably together. In the life-preservers the longitudinal ropes F may be omitted.

Straps or cords over the shoulders to suspend the preserver to the person may be used. I propose to furnish with these preservers and tied to each a small paddle, for use to aid in progress through the water.

Modifications may be made. A series of ropes may serve alone instead of the canvas H to form the support for the persons. A stout net may take the place of the canvas H. The transverse pieces G may be widened considerably, so as to serve as commodious seats; but I esteem it important that the ends be narrow to allow the free working of these parts as well as of the others, when the structure is subjected to severe and irregular strains in lying crosswise, or, still worse, quartering in a heavy sea. The transverse pieces C may be of small size, with enlargements or collars to form the shoulders near their ends, or they may be large all the way.

I believe that my device may be used with some success with the floats of solid wood or other material in a solid form; or, they may be made hollow, of papier-maché, or various other materials properly sized, and made water-proof; but I prefer the wood staves, as first described. The joints of the staves may be joined by water-proof glue.

To stow the apparatus in a small compass, the parts may be separated and the several rigid pieces laid parallel to each other, and lashed around with the same or different pieces of rope. I esteem it important that all the parts of the complete structure be lashed or other-

wise securely fastened together; but I can make the parts more portable by stowing together simply one float, A, with one transverse piece, C C', one longitudinal piece, E, and one of the transverse pieces G, with its attached half of the deck-fabric H.

Taking care to make all my parts of uniform size, so that any two pieces will match together if applied at random from any part of the ship, my apparatus may for some reasons be considered preferable in that form; but a simpler plan is to lash firmly together all the parts constituting a complete float.

Lashing means may be provided for lashing helpless persons on the deck-fabric H.

A slide or guard of wood or other material in the form of a strip may be attached to the under side of each float to receive the friction of the side of the vessel and prevent the hoops from being knocked loose in the act of throwing over the float.

The flexible material H, besides forming a support for passengers, which I term a "deck," performs an important function in keeping the top transverse pieces, G, connected with the longitudinal pieces E. This function is very important in case any accident should break one of the end connections D.

I claim as my invention—

1. The eyes B', having considerable length transverse of the structure, in combination with the floats A, rigid parts C C', and ties D, the connections B' C' being made to fit tight at the mid-length of each joint, and with liberal play at each end to allow the structure to work freely, as herein specified.

2. In combination with a pair of floats, A, braced at a suitable distance apart by transverse pieces C, with flexible joints, as specified, the top frame, E G, having also flexible joints and flexible deck H of fibrous material, all arranged so as to be free to oscillate with the motion of the sea, as herein specified.

3. The pintles B² above the eyes B' on the floats A, in combination with the longitudinal pieces E e, connected to the transverse pieces G, with provisions H for supporting the occupants of the float, as herein specified.

In testimony whereof I have hereunto set my hand at Chappaqua, New York, this 9th day of October, 1880, in the presence of two subscribing witnesses.

HENRY MILLER.

Witnesses:

IDA MILLER,
CORA MILLER.