

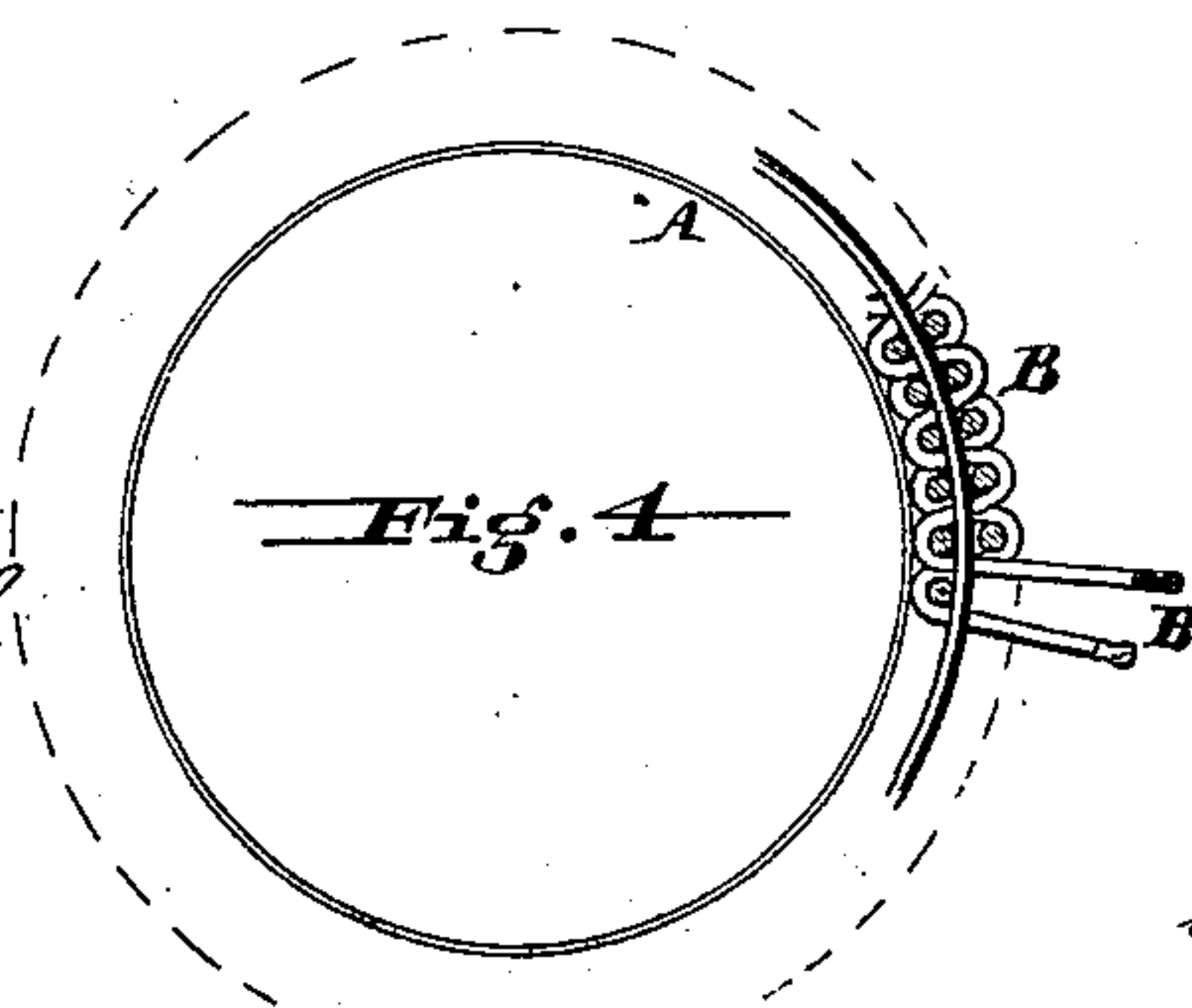
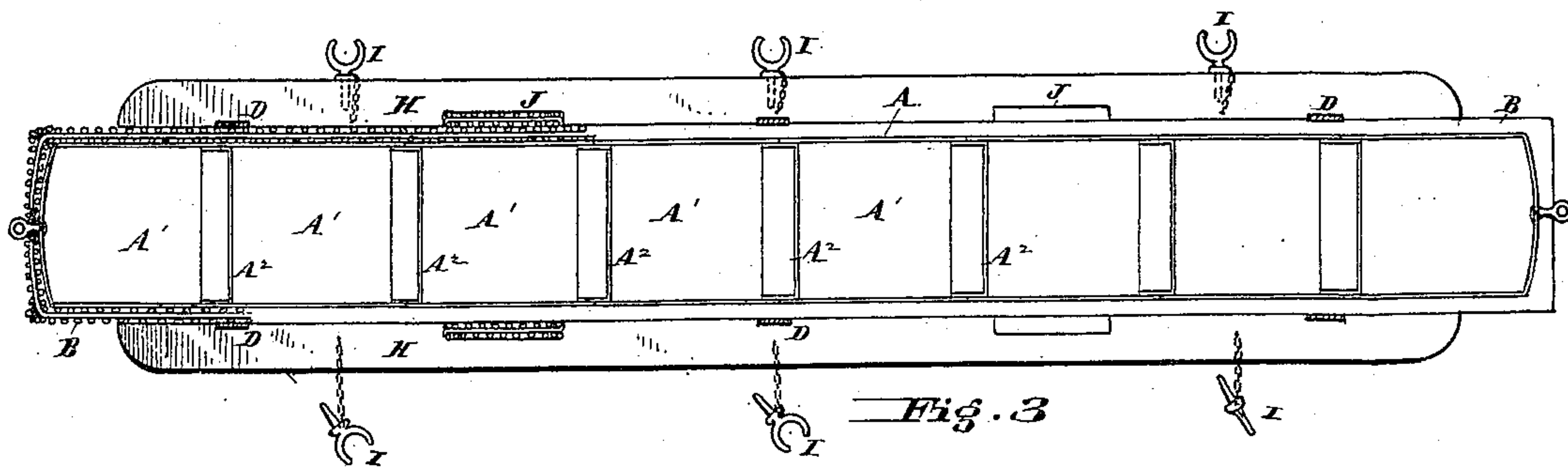
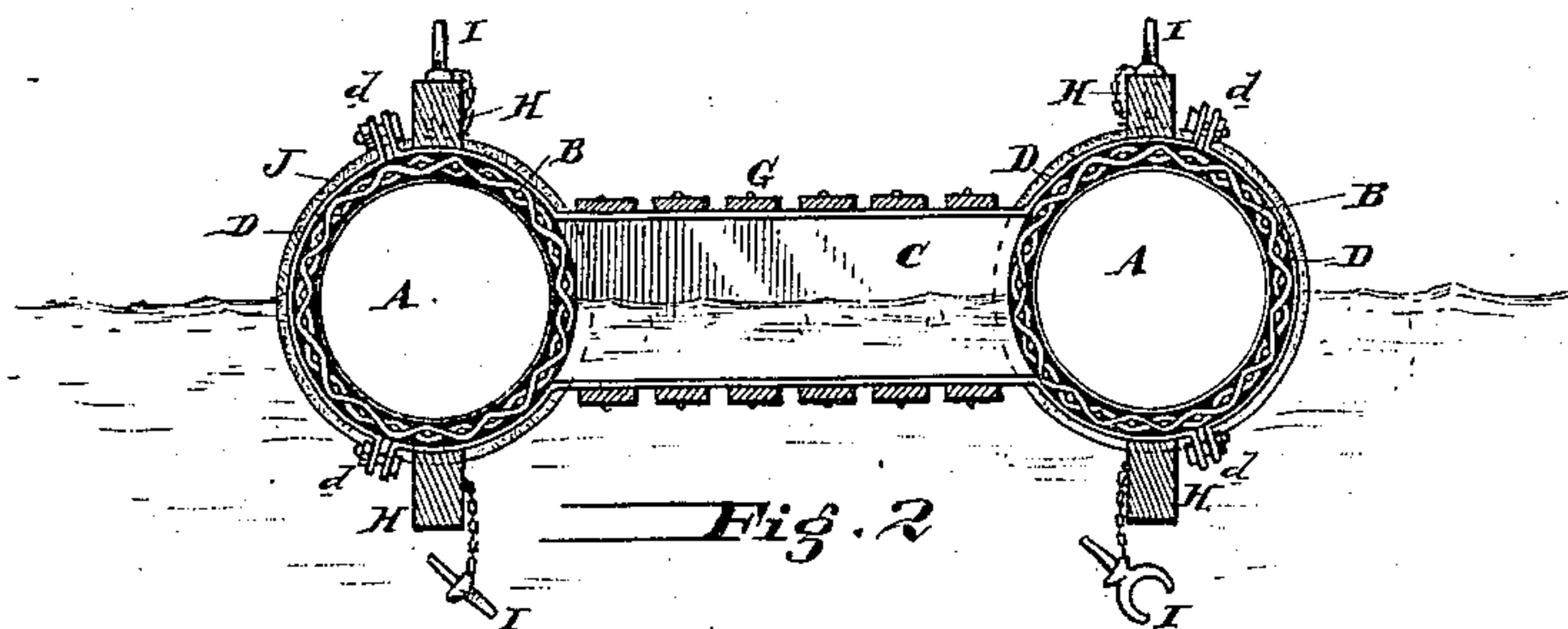
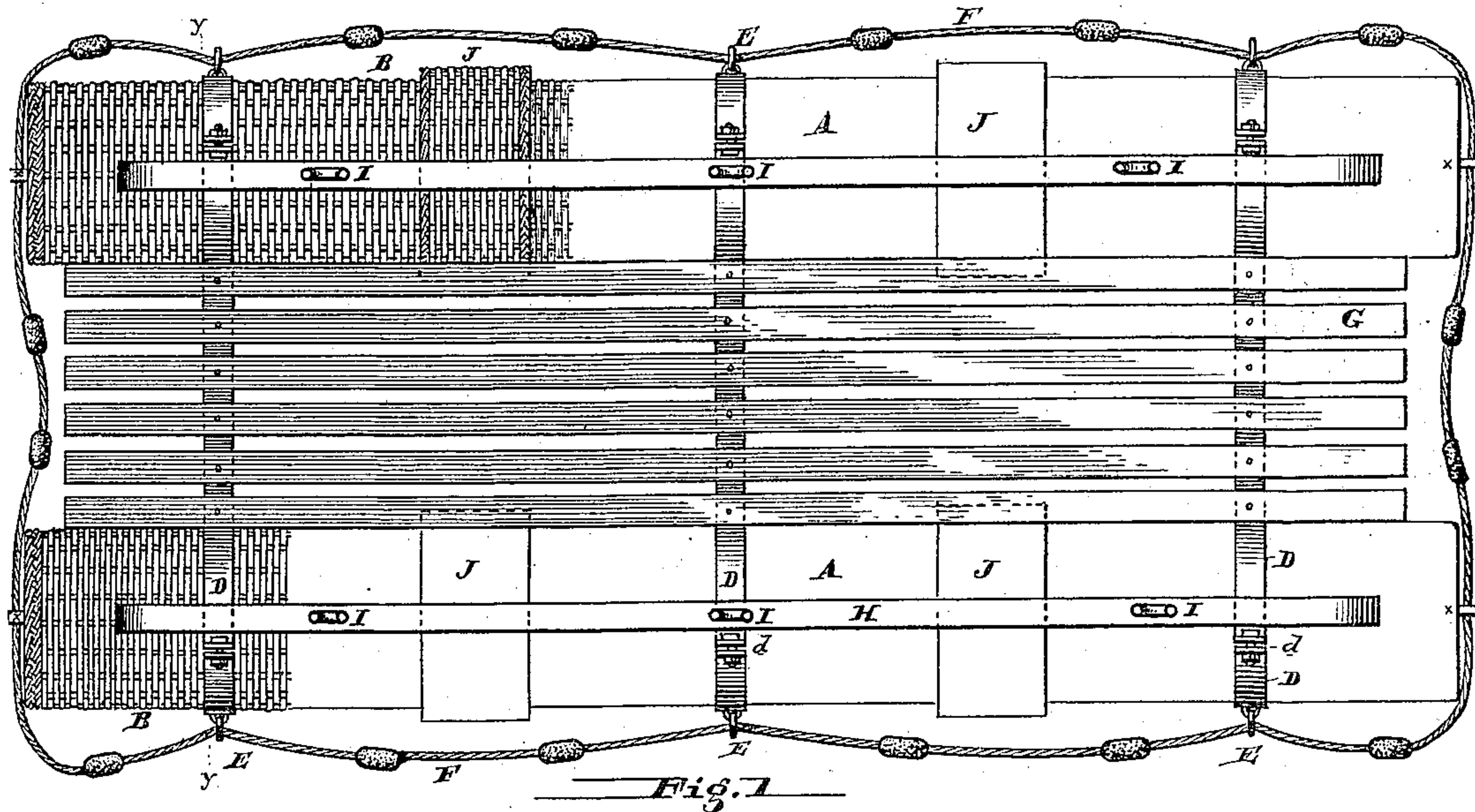
(No Model.)

J. CONE & F. S. GROVES.

LIFE RAFT.

No. 312,256.

Patented Feb. 17, 1885.



Attest
George E. Hummel
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Inventors
Jonathan Cone and
Frederic S. Groves
By their atty.
[Signature]

UNITED STATES PATENT OFFICE.

JONATHAN CONE, OF BRISTOL, AND FREDERIC S. GROVES, OF PHILADELPHIA, PENNSYLVANIA.

LIFE-RAFT.

SPECIFICATION forming part of Letters Patent No. 312,256, dated February 17, 1885.

Application filed September 6, 1884. (No model.)

To all whom it may concern:

Be it known that we, JONATHAN CONE, of Bristol, Bucks county, and State of Pennsylvania, and FREDERIC S. GROVES, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Life-Rafts, of which the following is a specification.

Our invention has reference to life-rafts; and it consists in the buoyant or floating cylinders made of metal covered with rattan, willow, or other light, flexible, and durable wood woven or plaited together to form a strong and durable covering, affording a perfect protection to the cylinders without a material increase in the weight of the raft, and in details of construction, all of which is fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

Heretofore life-rafts have been made with heavy iron cylinders formed of short sections or compartments firmly riveted together, the said cylinders being unprotected on the outside. These cylinders are supposed to be made of iron sufficiently heavy to prevent rupture when dashed against the vessel's side in launching; but practice has shown that when they are made any way near such a strength they become too heavy to handle. The result is that these cylinders are made comparatively light to admit of handling, and invariably become ruptured in launching in a heavy sea; and, secondly, the iron around the rivets rusts out, and these rafts, after lying upon the deck for a period of a couple of years without use, are found to leak so badly as to be rendered unserviceable. Life-rafts have also been made of light iron cylinders subdivided into compartments and covered with canvas, the space between the cylinders and canvas being filled with finely-cut cork, the object of which is to protect the iron cylinders from direct concussion with the side of the vessel in launching, and form a cushion which prevents rupture to said light iron cylinders. By this means the said cylinders were enabled to be made light without danger of rupture; but the defect in this construction of raft consists in the fact that water from rain or when washing decks, &c., soaks through the canvas, and is

retained by the cork, making the covering very heavy, and in time rots the canvas, allowing ingress of water and egress of the protecting-cork. Besides the above objections, the canvas was required to be painted often, thereby increasing the weight of the raft, and destructive youths were ever tempted to cut the canvas to ascertain what was within.

In addition to the above, it has been proposed to form an elliptical life-raft, the cylinders of which are composed of an inner cylinder of rattan covered with canvas to make it water-tight, and an outer case of rattan. This construction is objectionable, in that the canvas will cut and rot in time, and with much usage would soon leak badly.

The general arrangement of cylinders and deck is substantially similar to that shown in Letters Patent to Jonathan Cone, No. 155,500, September 29, 1874. Therefore, in this application we do not make any claim thereto.

The object of our invention has been to overcome the above existing objections to life-rafts as at present constructed by using light galvanized iron formed into compartments by soldered joints, and covering the cylinders so formed with rattan, willow, or their equivalent, woven or plaited thereon, thereby providing a most durable and protective covering to the cylinders, and at the same time one that embodies lightness and cleanliness. There is no place for the retention of water, and the natural vitreous coating of rattan presents a most suitable surface to resist the action of the elements—fire, wind, and water.

In the drawings, Figure 1 is a plan view of a life-raft embodying our improvements. Fig. 2 is a cross-section of same on line *yy*. Fig. 3 is a longitudinal section of one of the uncovered cylinders, and Fig. 4 is a sectional view, showing a modified form of covering of rattan.

A are the two parallel cylinders, and are formed of short sections *A'*, having heads *A''*, of galvanized iron, the sections being firmly secured together by soldering. These cylinders are usually made from twelve to sixteen feet in length, and are covered on the body, and preferably on the ends also, with a strong casing of rattan, willow, or their equivalent, B, which are woven or plaited to form a compact and

uniform covering. The rattan may be woven in a single layer, as shown in Fig. 2, or it may be formed of a double layer, as indicated in Fig. 4, the particular manner of weaving or plaiting being immaterial to our invention. The case may be re-inforced or strengthened by the extra bands J of woven rattan. As water is liable in time to split the ends of the rattan if unprotected, we coat the ends B' (see Fig. 4) with water-proof cement or thick varnish, or, if desired, metallic caps may be placed over the ends and clamped thereon. Care is also taken that all free ends of the rattan are bound and tucked in such a manner that they have no tendency to become exposed, so that if an end should start to split the rupture would not extend far. We prefer to form the covering of rattan in its unsplit condition, so as to avail ourselves of its vitreous coating and greater durability. These rattan-covered cylinders are kept apart by wooden or metal pieces or frames C, to which said cylinders are secured by iron bands D, being securely clamped by tightening said bands through the agency of the take-up bolts d. These cylinders may be secured together in any other manner desired; and instead of two only one cylinder may be used; or a large number of cylinders may be secured together in the same raft.

E are rings secured to the bands D, or to the cylinders, and through which the life-line F is passed, as shown.

G are slatted floors, secured upon the edges of the pieces C, so that there is a floor above the water-line whichever side of the raft turns up in the water.

H are longitudinal timbers, secured to the bands D or cylinders upon their upper and bottom edges, into which the oar-locks I are secured.

We do not limit ourselves to the particular shape of the raft shown, as our invention has particular reference to the construction of the buoyant cylinders, and these may be greatly modified in shape, if desired, though the cylindrical shape with flat heads is perhaps most practical.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A life-raft consisting of two metallic cylinders having flat ends, and provided with a covering of rattan or its equivalent, fitting closely to said cylinder and forming flat ends, the edges thereof being re enforced or made very strong by plaiting, in combination with the two decks supported a short distance below the tops of each of said cylinders, and bound together by suitable bracing, substantially as and for the purpose specified.

2. In a buoyant cylinder for a life-raft, the combination of a galvanized iron cylinder, formed in compartments, and having its seams soldered, and an inclosing-case of woven or plaited rattan or its equivalent, substantially as and for the purpose specified.

In testimony of which invention we hereunto set our hands.

JONATHAN CONE.

FREDERIC S. GROVES.

Witnesses:

E. H. BAILEY,

GEO. McKEOWN.