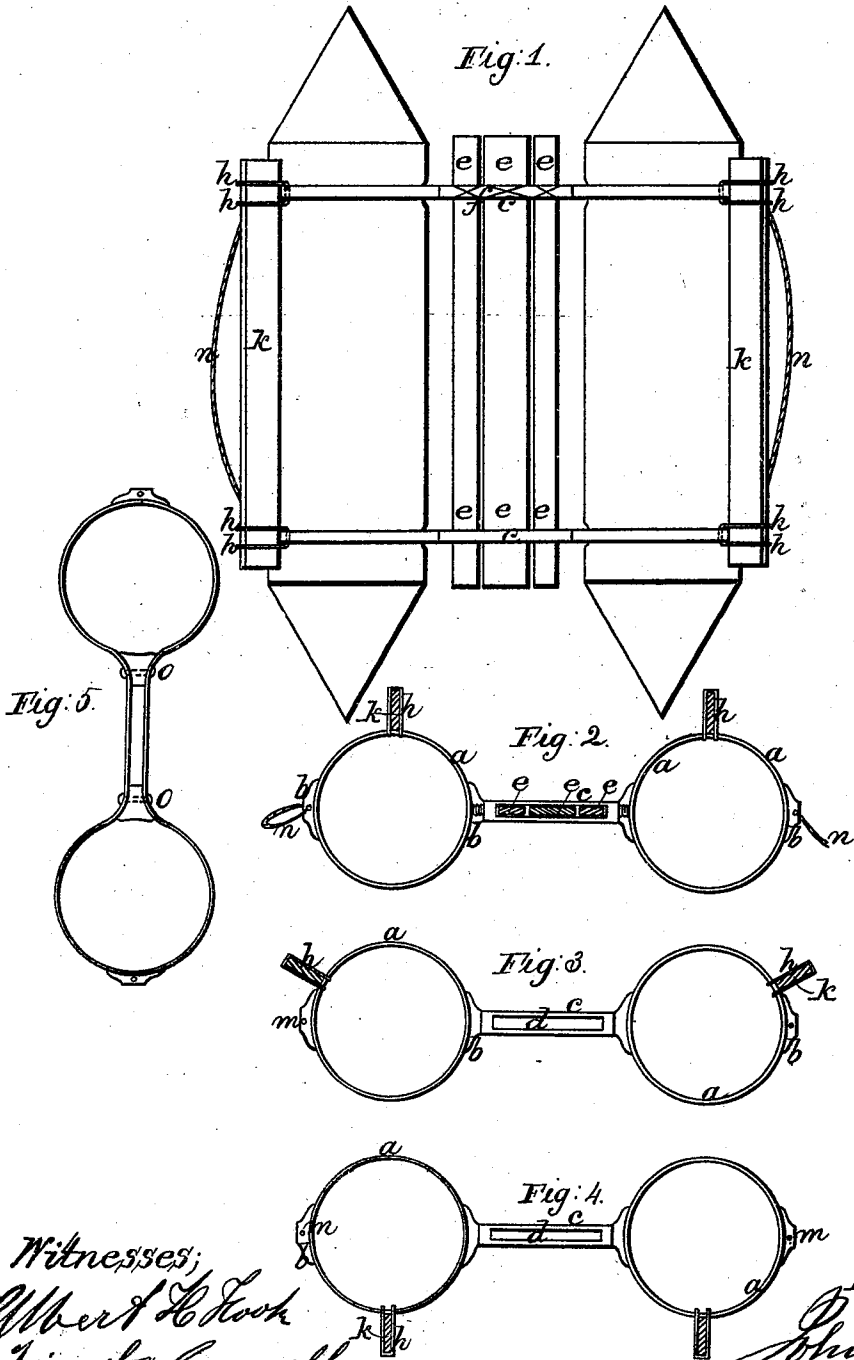


J. Rider. Life Boat.

N^o 100,191.

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Witnesses;
Albert H. Cook
Timothy Cornwell

Inventor;
John Rider

United States Patent Office.

JOHN RIDER, OF NEW YORK, N. Y.

Letters Patent No. 100,191, dated February 22, 1870.

IMPROVEMENT IN LIFE-RAFTS.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, JOHN RIDER, of the city, county, and State of New York, have invented certain Improvements in the Construction of Life-Rafts, or Balsas; and that the following is a clear and correct description thereof, reference being had to the annexed drawings, of which—

Figure 1 is a plan view.

Figures 2, 3, and 4 are vertical cross-sections.

Figure 5 represents a modification of the fastenings.

My invention has reference to those life-rafts which are constructed of a number of air-bags of a cylindrical shape, when inflated with air, and made of India-rubber cloth.

Heretofore, these bags or cylinders were provided with flanges on opposite sides, which contained eyelets for the purpose of lacing the cylinders together; an unreliable fastening, as the eyelets and the flanges themselves were liable to tear, and in order to build a deck it was necessary to place a wooden frame-work upon the cylinders. A raft so constructed, in being thrown overboard, was not certain to be right side up in the water.

My improvements are designed to obviate these difficulties, and form a raft that cannot be injured, is easy to be put together, and will always be right side up when thrown from the deck of a vessel into the water, as will be seen from the following description.

I surround each cylinder with two or more strong hoops, *a*, made of wood or other elastic material, each hoop having at opposite points two brackets, *b*, fastened thereto, and each bracket has a female thread cut therein, into which bars *c* can be screwed.

These bars *c* are also made of wood or other elastic material, and are provided with a male screw at each end, and a slot, *d*, and screw into the brackets *b* to hold each pair of hoops together.

Two pairs of hoops or more thus combined and held together, would form a fastening for a raft, such as shown in fig. 1, consisting of two cylinders, the deck being constructed of boards, *e*, which are to be inserted into the slots of the cross-bar *c*, and secured in their proper position by lacing, as shown at *f*, fig. 1, or otherwise.

In order to make a raft consisting of more than two cylinders, more cross-bars *c* and hoops *a* are to be added to the original pairs, the decks of the rafts being between the cylinders, and on line with their centers. It is immaterial which side-up the apparatus may happen to be on the water, and the cylinders, when inflated with air to their full compass, will be held in position most effectually by the hoops which encircle the said cylinders.

Another improvement consists in the arrangement of a board, *k*, of about the length of the cylinders, which can be affixed to the hoops *a* in a radiating position, by loops *h*, which are passed through between the hoops and the surface of the bags or cylinders, and surround the board *k* laterally, or by any other convenient fastening.

By means of these loops, the board can be placed in every desired position.

When placed in a vertical position on top of the bags, as shown in fig. 2, it may serve as the means to affix rowlocks thereto when oars are to be used.

When placed on the side of the bags, as in fig. 3, it will act as a guard to prevent the sea from washing over the raft, and when in a vertical position below the bags, as in fig. 4, it can be used as a keel for the raft, if desired.

The brackets of those hoops which surround the outside cylinders are furnished each with a hole, *m*, as seen in figs. 2, 3, and 4, in which a rope, *n*, can be fastened, running along the side of the raft, to give persons outside in the water a hold on the raft.

I do not limit my invention to the particular construction of the fastenings for holding the air-bags together, as the principle involved therein can be carried out in various ways, and one modification I have shown in fig. 5, which represents the fastenings of a pair of air-bags made of continuous strips of wood or other material, bent under the action of heat into such a shape as to conform with the general outline of a pair of hoops, and the slotted connecting-bars between them, which strips when riveted together, as shown in fig. 5 at *o o*, will form perfect circles around the bags, and a slot for the deck.

Having now fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of the hoops *a*, when connected with the bars *c*, as described.
2. the combination of the connecting-bars, the hoops, and the collapsible cylinders, substantially as described.
3. The adjustable bars *k*, in combination with the hoops, as set forth.
4. The slotted bar *c* in combination with the hoops *a* and slats *e*, all substantially as described.

JOHN RIDER. [L. s.]

Witnesses:

EDW. CAVANAUGH,
JOHN MURPHY.