No. 734,118. PATENTED JULY 21, 1903.

H. S. CARLEY.

LIFE RAFT.

APPLICATION FILED MAY 14, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

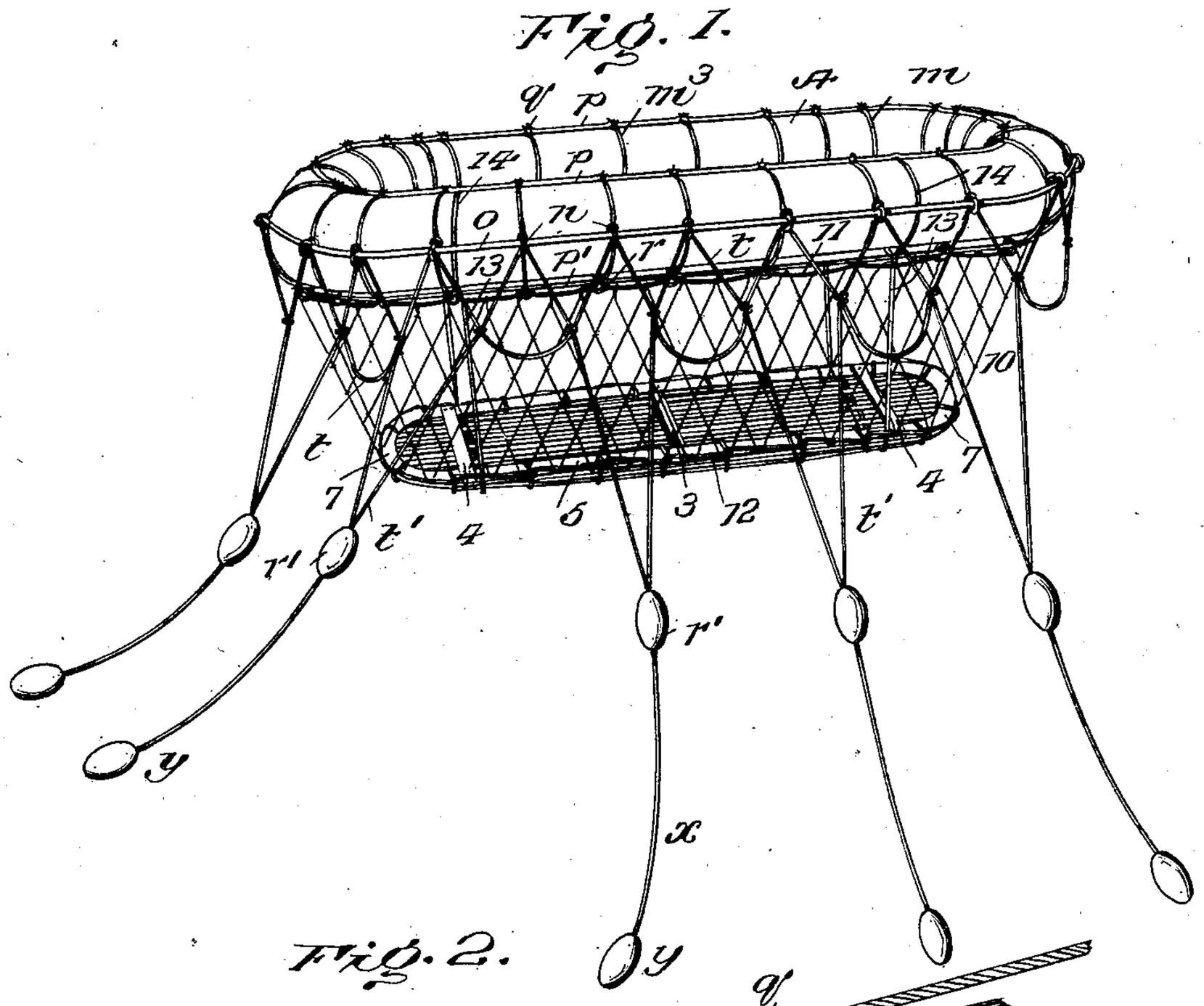
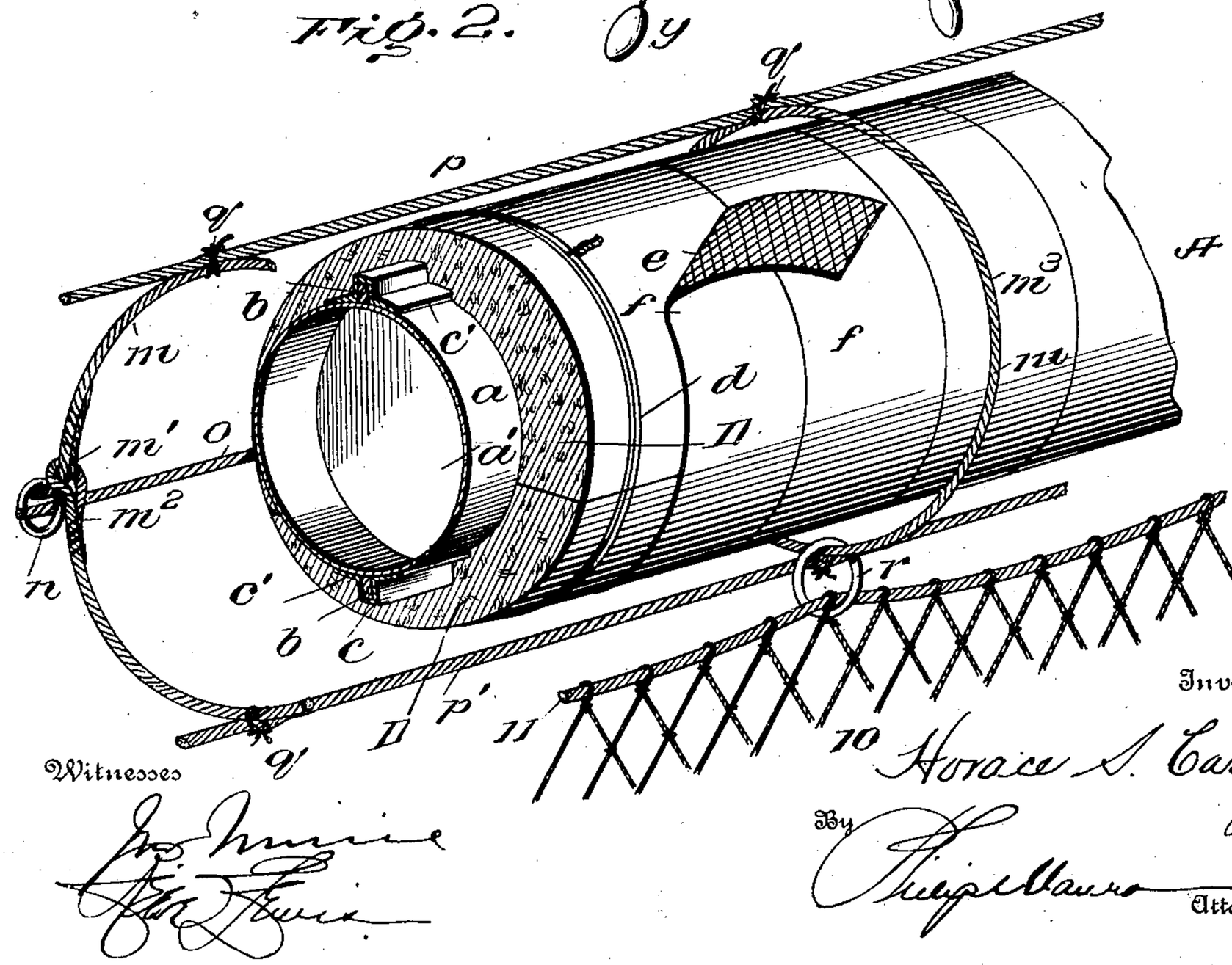


Fig. 2.



Witnesses

Inventor

Horace S. Carley

By Philip Mauro Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 734,118. PATENTED JULY 21, 1903.

H. S. CARLEY.

LIFE RAFT.

APPLICATION FILED MAY 14, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

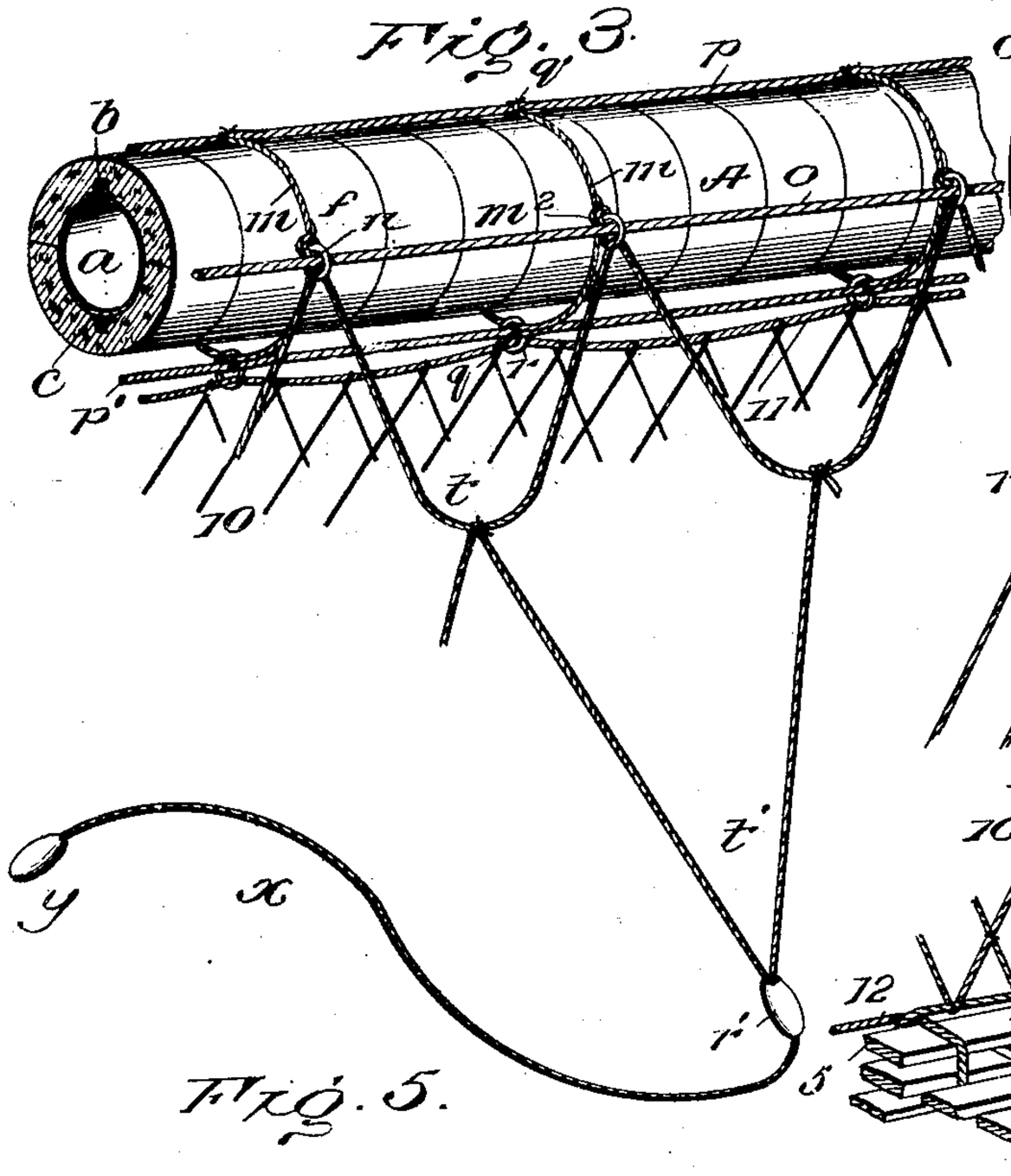


Fig. 4.

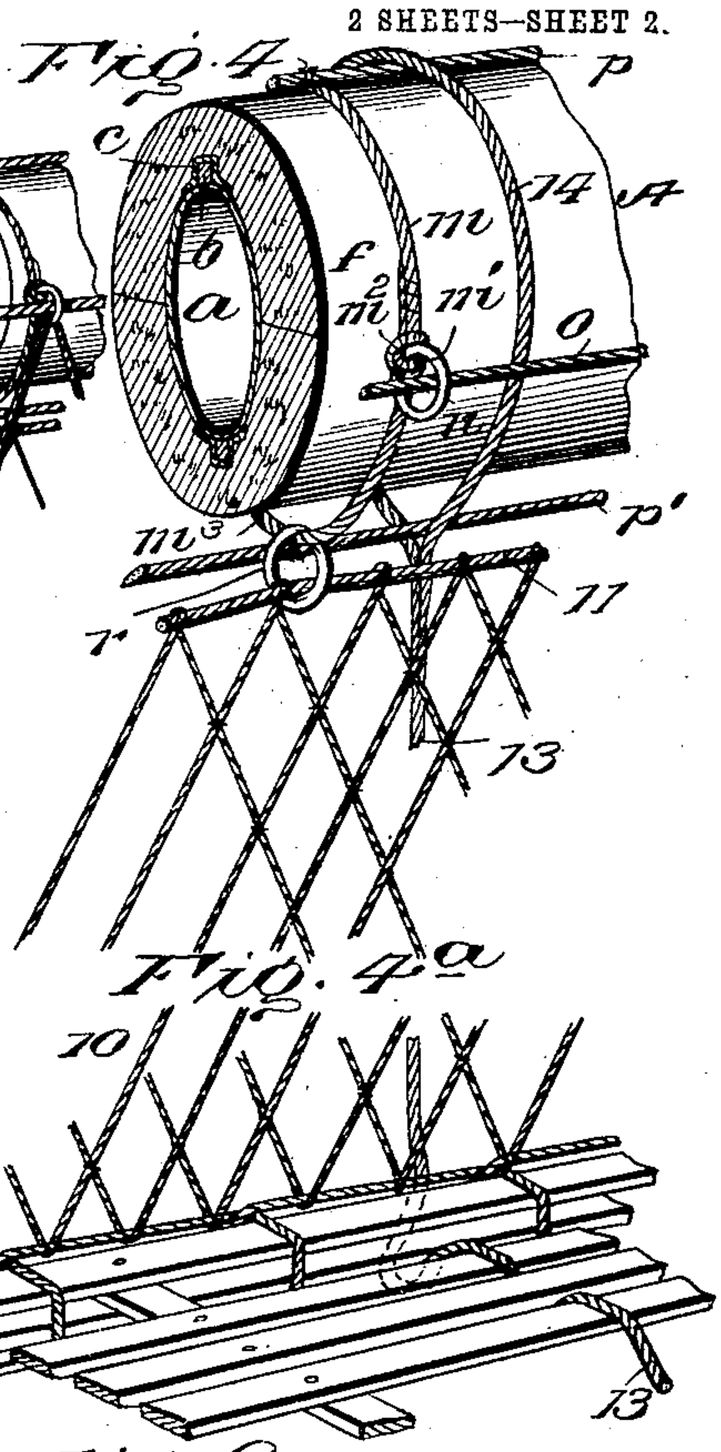
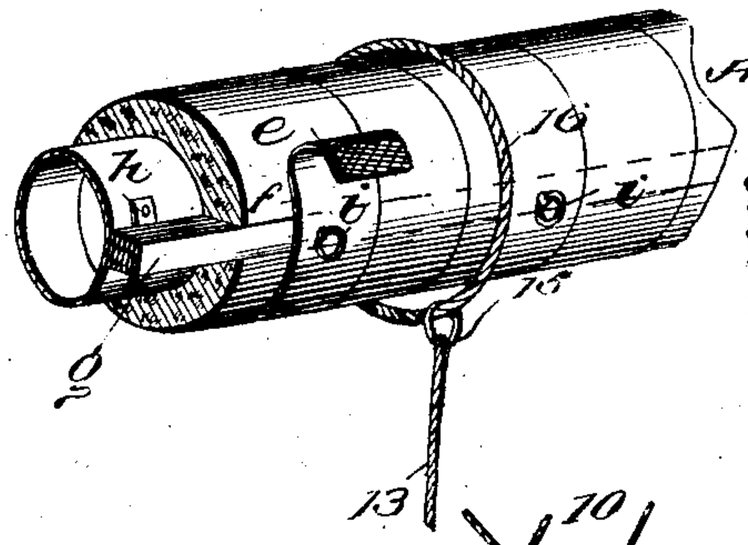


Fig. 4a.

Fig. 5.

Fig. 6.



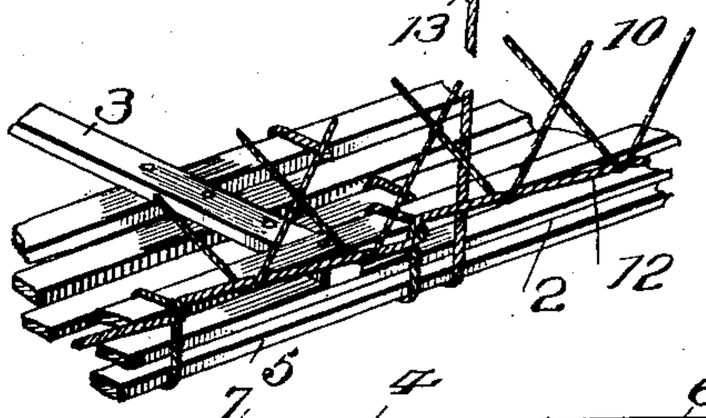
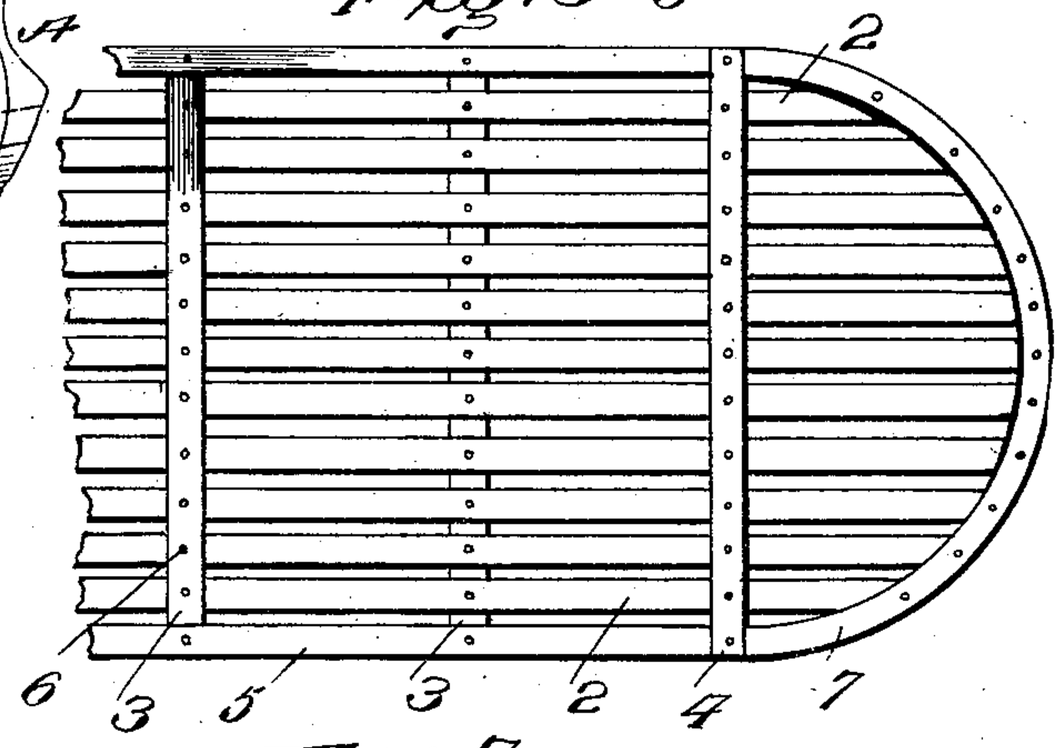
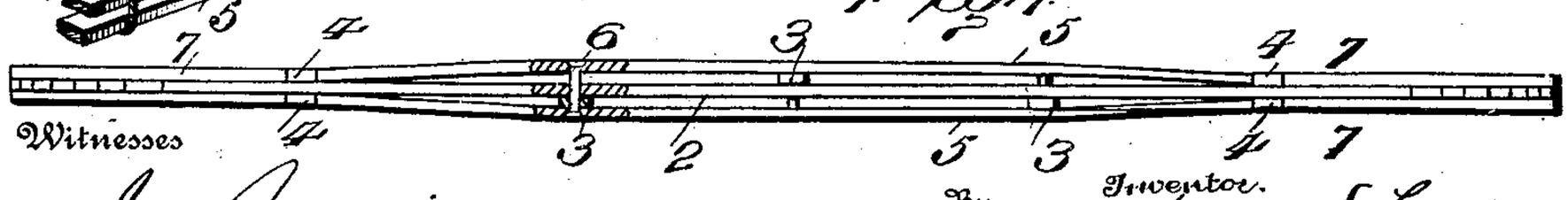


Fig. 7.





Witnesses

Inventor.
Horace S. Carley

By Philip Mauro Attorney.

THE NORRIS PETERS CO., PHOTO LITHO., WASHINGTON, D. C.

No. 734,118. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

HORACE S. CARLEY, OF HYDEPARK, MASSACHUSETTS, ASSIGNOR TO CARLEY LIFE FLOAT COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF WEST VIRGINIA.

LIFE-RAFT.

SPECIFICATION forming part of Letters Patent No. 734,118, dated July 21, 1903.

Application filed May 14, 1902. Serial No. 107,302. (No model.)

To all whom it may concern:

Be it known that I, HORACE S. CARLEY, a resident of Hydepark, Massachusetts, have invented a new and useful Improvement in Life-Rafts, which invention is fully set forth in the following specification.

This invention relates to collapsible reversible life-boats of the type shown in my Patent No. 627,979, of July 4, 1899, and comprises improvements upon the patented structure which increase the strength, durability, and carrying capacity of the life-boat and provide other advantages, all of which will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view showing the preferred embodiment of my invention. Fig. 2 is an enlarged detail inside view of part of the float and of the netting suspended therefrom. Fig. 3 is an outside view of the same. Fig. 4 is an outside view of parts of the float and net. Fig. 4ª is an inside view of part of the bottom and net. Fig. 5 is a similar view looking from the outside, showing a modified construction. Fig. 6 is a plan view of part of the bottom, and Fig. 7 is a longitudinal sectional view of the same.

A is a continuous annular float, preferably of oval shape, having an inner air-tube *a*, of thin sheet metal, which may be divided interiorly into compartments by metallic disks *a'*, Fig. 2, secured therein at intervals and serving also to add rigidity to the tube and prevent it from collapsing. *b b*, Fig. 2, are strengthening-ribs, of metal or wood, extending along the top and bottom of the tube. These ribs are secured to the tube and inclosed by covers, each extending the length of the tube and formed of sheet metal bent over the rib at its middle part *c* and soldered or otherwise secured to the tube at its edges *c' c'*. Tube *a* is inclosed in a thick layer of compressed cork or cork composition, formed in two sections D D of semicircular cross-section, held at intervals by wire bindings *d*. About the cork I wind overlapping convolutions of a covering composed of wire-cloth *e* on the inside and canvas *f* on the outside, saturated with a waterproofing composition. The float thus produced will be waterproof as well as air-tight. A coating of waterproofing-paint may be applied over the exterior, if desired.

In the construction shown in Fig. 5 I employ a single rib *g*, extending about the periphery of tube *a*, composed of a number of wooden strips secured together and fastened at intervals to the tube by metal bands *h*, soldered to the tube. In this construction the edges of the cork sections abut against opposite sides of the rib, and eyes or rings *i* for the various ropes may be secured by screws passing through the outer covering into the wooden rib.

Referring to Figs. 1, 2, and 3, *m* represents flexible rings of rope or other suitable material extending around the float, the respective rings being arranged at intervals along the continuous body of the float. Each ring *m* is preferably formed of a single piece of rope looped at both ends, the loop *m'* at one end passing through the loop m^2 at the other end and then through a metallic ring *n* at the outside of the float, as most clearly shown in Fig. 2. A continuous rope *o*, extending longitudinally about the periphery of the float, passes through the rings *n*. *p p'* are draw-ropes extending continuously along the top and bottom edges of the float and across the rope rings *m*, to which they are securely attached by bindings *q* of cord or in any other suitable way. After ropes *p p'* are secured to the rings *m* they are drawn up tightly, thus pulling the outer halves of the rings *m* tightly against the periphery of the float, but leaving the inner halves m^3 thereof (between the bindings *q* at top and bottom) slightly slack, so that the rings *r* can run freely on this part of the rings when the boat is reversed. As will be understood, the several ropes about the float constitute a practically indestructible framework securely and rigidly attached to the float by which the bottom and other parts are supported. Around the outside of the float are a series of alternating short loops *t* and long loops *t'*, formed by ropes laced through the rings *n*. At the ends of the long loops, in which a person may stand upright at the side of the boat, are floats *r*, from which extend life-lines *x*, with floats *y* at their outer ends. The several

floats which serve to hold the lines near the surface of the water may be painted bright colors, so as to be readily seen by persons in the water in the vicinity of the boat.

Referring to the improved construction of bottom, (shown particularly in Figs. 4 to 7,) 2 represents a series of longitudinal slats, and 3 represents transverse slats alternately located above and below the longitudinal slats and secured thereto. At each end of the bottom I also provide two other transverse slats 4 4, arranged opposite each other on the top and bottom of slats 2. Above and below the outermost slat 2 at each side of the bottom are bracing-slats 5 5, which terminate against the transverse slats 4 and are slightly bowed, so that they pass over and rest against the ends of transverse slats 3. Bolts or rivets 6, Fig. 7, are passed through the two bracing-slats 5, the slat 2, and the ends of transverse slats 3. The ends of slat 2 at each end of the bottom are secured between two semicircular slats 7 7, the ends of which bear against the edges of the transverse slats 4.

10 is a net which depends from the float and supports the bottom. It is connected at its upper edge to rings *r* by a rope 11 laced therethrough. A rope 12 is laced through the lower edge of the net and looped at intervals around the brace-slats 5 5 and the outermost slat 2, located between slats 5.

As an additional support to the bottom I provide ropes 13 13, Figs. 1, 4, and 4ª, laced through the bottom and at their ends formed in loops 14 about the float, or instead of being looped around the float the ends of ropes 13 may be fastened in rings 15, Fig. 5, larger rings 16 passing through the latter and around the float.

As will be readily understood, the boat herein described may be stored in a collapsed condition on board of a ship or vessel, at a wharf or dock, or at any other place where it is likely to be needed. When thrown overboard, no matter which side strikes the water the bottom will drop through and be suspended beneath the float.

What I claim is—

1. In a collapsible reversible life-raft, a buoyant body of annular or similar continuous form, a bottom, a flexible part secured at one edge around the edge of the bottom, rings or eyelets arranged at suitable intervals along the other edge of said flexible part, flexible rings around the buoyant body passing through the eyelets on the flexible part, and draw-ropes extending longitudinally along the buoyant body attached to the flexible rings and drawing the same tightly against the outer surface of said body but leaving them loose at the inner surface thereof so that the eyelets or rings on the flexible part can run freely on the flexible rings.

2. In a collapsible reversible life-raft, a buoyant body of annular or similar continuous form, a bottom, a flexible part secured at one edge around the edge of the bottom, rings or eyelets arranged at suitable intervals along the other edge of said flexible part, flexible rings around the buoyant body passing through the eyelets on the flexible part, a rope extending longitudinally around the outer surface or periphery of the buoyant body and connected to the flexible rings, and draw-ropes extending longitudinally along the buoyant body attached to the flexible rings and drawing the same tightly against the outer surface of said body but leaving them loose at the inner surface thereof so that the eyelets or rings on the flexible part can run freely on the flexible rings.

3. In a collapsible reversible life-raft, a buoyant body of annular or similar continuous form, a bottom, a flexible part secured at one edge around the edge of the bottom, rings or eyelets arranged at suitable intervals along the other edge of said flexible part, flexible rings around the buoyant body passing through the eyelets on the flexible part, a rope extending longitudinally around the outer surface of the buoyant body and passing through small rings or eyelets on the flexible rings respectively, and draw-ropes extending longitudinally along the buoyant body attached to the flexible rings and drawing the same tightly against the outer surface of said body but leaving them loose at the inner surface thereof so that the eyelets or rings on the flexible part can run freely on the flexible rings.

4. In a collapsible reversible life-raft, a buoyant body of annular or similar continuous form, a bottom, a flexible part secured at one edge around the edge of the bottom, rings or eyelets arranged at suitable intervals along the other edge of said flexible part, flexible rings around the buoyant body passing through the eyelets on the flexible part said flexible rings being formed of rope having a loop at one end passing through a loop at its other end, a small ring on each of the first-mentioned loops, a rope extending longitudinally around the outer surface of the buoyant body and passing through the small rings on the flexible rings, and draw-ropes extending longitudinally along the upper and lower sides of the buoyant body attached to the flexible rings and drawing the same tightly against the outer surface of said body but leaving them loose at the inner surface thereof so that the eyelets or rings on the flexible part can run freely on the flexible rings.

5. In a life-raft of the kind described, a buoyant body of annular or similar continuous form comprising an inner tube, a longitudinally-extending strengthening-rib on said tube, buoyant material about the tube, and a covering consisting of wire-cloth and canvas impregnated with a waterproofing material.

6. In a collapsible reversible life-raft, a buoyant body of annular or similar continuous form, a rigid open-work bottom composed of longitudinal slats with spaces between,

transverse slats above and below the longitudinal slats and secured thereto, and longitudinal bracing-slats at opposite edges of the bottom abutting at their ends against transverse slats and passing over the ends of intermediate transverse slats, and a net or similar flexible part by which the bottom is suspended from and below the buoyant body.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HORACE S. CARLEY.

Witnesses:
CHARLES LEWIS,
GEORGE W. CHAPMAN.