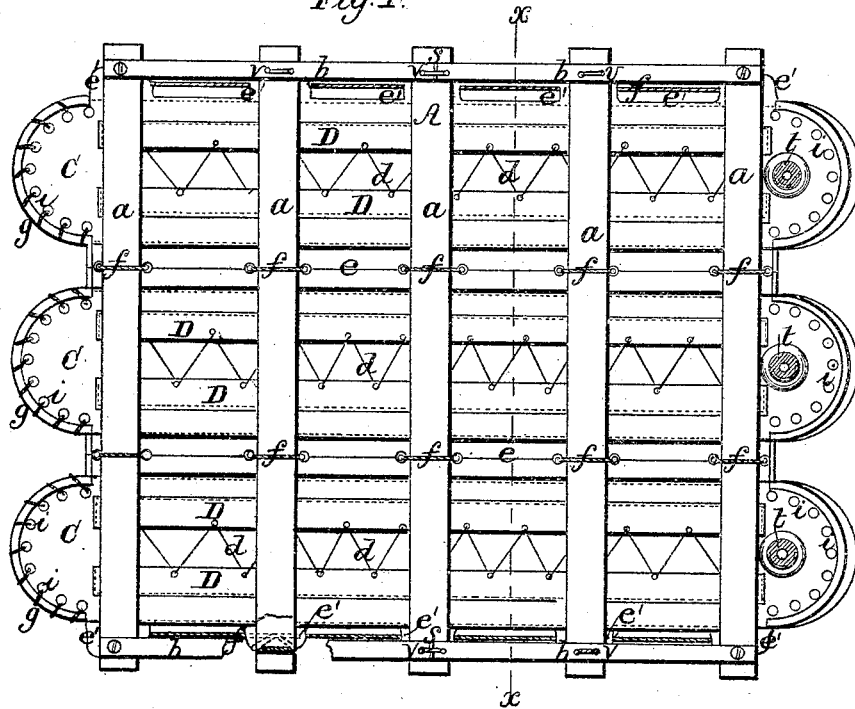


*E. L. Perry*  
*Life Boat.*

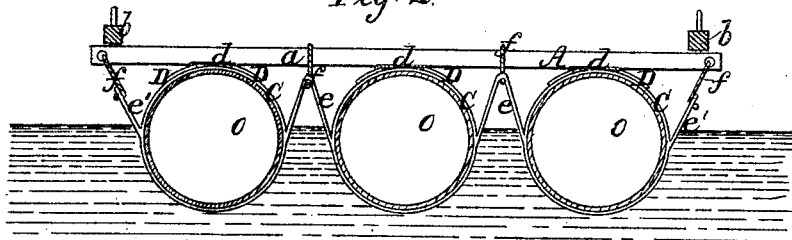
*N<sup>o</sup> 45,073.*

*Patented Nov. 15, 1864.*

*Fig. 1.*



*Fig. 2.*



*Witnesses;*  
*Wm. M. Minton*  
*C. L. Topple*

*Inventor;*  
*Edward L. Perry*  
*"*

# UNITED STATES PATENT OFFICE.

EDWARD L. PERRY, OF NEW YORK, N. Y.

## IMPROVED LIFE-RAFT.

Specification forming part of Letters Patent No. 45,073, dated November 15, 1864.

*To all whom it may concern:*

Be it known that I, E. L. PERRY, of the city, county, and State of New York, have invented new and useful Improvements in Life-Rafts and Surf-Boats; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan of a life-raft made after my invention. Fig. 2 is a transverse section of the same, taken on the line *x* in Fig. 1.

Similar letters of reference indicate like parts.

My object is to construct a life-raft which shall combine great buoyancy, strength, and portability, and which shall ride securely over surf and breakers.

A represents the raft ready for receiving its load. A wooden or other framing, composed of thwarts *a* and gunwales *b*, rests upon and is secured to the body of the raft. The thwarts *a* furnish seats for the rowers and passengers, and the gunwales *b* serve to hold the spars or thwarts in their proper position, and furnish means for supporting rowlocks. The body of the raft is composed of two or more cylinders made of duck or other suitable material of the requisite strength and flexibility, and of a diameter commensurate with the intended capacity of the raft. The cylinders are to be made by joining their seams securely in the best manner, and they are permanently connected together, so that the several cylinders compose a single body or structure, by means of membranes *c*, of duck or the same material of which the cylinders are made, which are either joined to the body of the cylinders at their sides or along the lines of their seams, or form an unbroken or uncut part of the duck or other material. The membranes are attached to the several cylinders at opposite points in the same horizontal plane. On the outer sides of the outer cylinders are also attached sectional membranes *c'*, which are placed beneath each thwart, and are connected to their ends by means of ropes *f*. The membranes *c* are nearly of the same length as the cylinders, and are also lashed to the thwarts by ropes *f*.

The top of each cylinder is provided with two stays, *D*, of duck or other suitable material,

which are drawn together by lacing-cords *d*, when it is desired to decrease the diameter of the several cylinders. The ends of the cylinders are open, and are furnished with eyelets *i*, which receive lacing-cords *g*, by means of which their ends or the edges of their open sides are brought close together, so as to be in contact. Each cylinder *C* is furnished with a cylinder or tube, *O*, made of gutta-percha or india-rubber, or of cloth combined with one or the other of such materials, so as to be air and water tight.

Nozzles *t* are fitted in the tubes *O* near their ends, by means of which they are inflated and collapsed. These nozzles are each to be fitted with suitable air-valves, which can be opened and closed at pleasure. The nozzles *t* are passed up through collars made in the cylinders *C* for that purpose.

The thwarts and gunwales are lashed to each other and to the sectional membranes *c* by means of ropes which are reeved through holes *V*, cut in both the thwarts and gunwales.

The gunwales *b* are made in sections, the inner ends whereof are secured together by an overlap-joint at *S*, the said joints being fastened by means of the rope which passes through the holes *V*. The outer ends of the sections are pivoted to the ends of the outer thwarts *a*, respectively, so that when the lashings which pass through the holes *V* are slipped the sections of the gunwales can be swung around to lie upon the thwarts to which they are pivoted.

It will be seen that the deck of my raft is substantially composed of the upper surfaces of the cylinders *C* and the membranes *c*.

When the raft is to be stowed away, it is first hoisted out of the water and laid upon the deck of the vessel to which it belongs, when the gunwales are laid upon the outer or end thwarts, as above explained, and the valves in the nozzles *t* are opened to allow the air vessels or tubes *O* to collapse. The raft is then rolled up or folded upon itself, like a carpet, and laid away for future use. When occasion arises for its use, it is unrolled and spread out, the gunwales are secured in their positions, as seen in Fig. 1, the air-vessels *O* are inflated through their nozzles *t*, when the valves of the nozzles are closed, and the raft is thrown overboard.

The air-vessels *O* are wholly incased and

protected by the cylinders C, the material of which is to be of such a character as to be able to endure the strain of the inflated air-vessels without injury and without being weakened thereby, and also to protect the air-vessels from fracture or injury from abrasion or blows when the raft is in a surf or passing through breakers, or when it comes in contact with any other obstacles.

I construct the cylinders C and the air-vessels O of such lengths and diameters relatively that the latter cannot be inflated when inclosed in their cylinders to their full capacity, and if the cylinders should stretch by use to a diameter which will permit the inflation of the air-vessels to their full measure, I diminish their diameters by lacing up the stays D until they are reduced to a proper size. They can also be shortened by cutting off their ends and making new eyelet-holes therein. The object of this method of construction and adjustment of the relative sizes of the cylinders and air-vessels is to preserve the latter from becoming weakened or strained by the force of the air compressed therein, and to cause all that force to be sustained by the several cylinders C. The air-vessels, therefore, by my invention will never be inflated to their full capacity.

In cases of shipwreck, and whenever my raft is used as a means of rescuing human life, the thwarts *a* can be filled with passen-

gers and rowers, and the construction of the parts is such as to allow a great number of ropes to be lashed to the raft as holdfasts and supports. The gunwales can be supplied with oar-locks, and masts can be stepped in the thwarts, if desired, and a stern oar may be provided, if necessary or desirable.

The gunwales in this example of my invention are made of wood; but they may be made of rubber or gutta-percha, permanently lashed or bolted to the thwarts. When so made, they need not be swung around to lie upon the outer thwarts, nor need they then be made in sections.

I do not claim a raft constructed after the invention claimed by Samuel B. Broad, of New York, in his Letters Patent dated May 8, 1830; but,

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

1. The cylinders C, attached by membranes to the framing of the raft, and provided with stays D and lacing-cords *d*, substantially as described and represented.

2. In combination with the above, the inner elastic air and water proof sacks O, for the purpose set forth.

EDWARD L. PERRY.

Witnesses:

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C. L. TOPLIFF.