J. M. Woodward.

Life Raft.

No. 21,462. Patented Sep. 7, 1858.

Fig. 1.

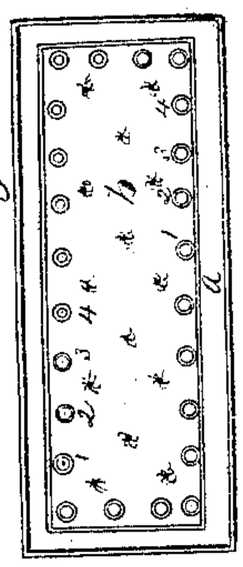


Fig. 2.

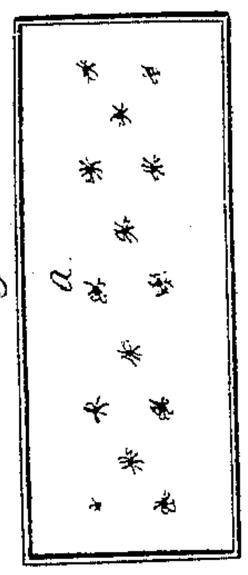


Fig. 3.

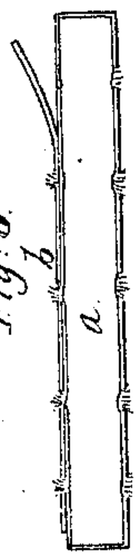


Fig. 4.

Fig. 5.

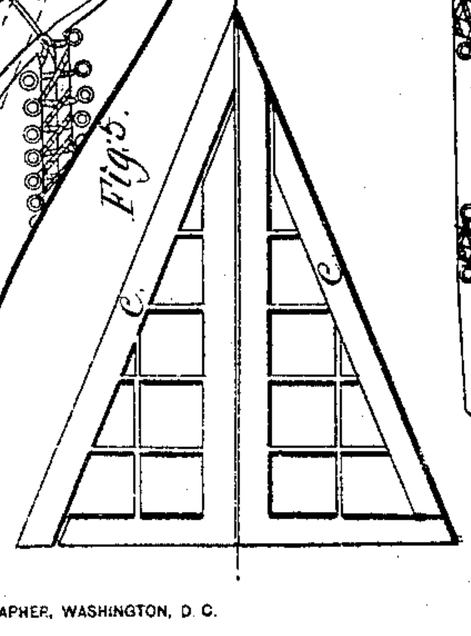


Fig. 6

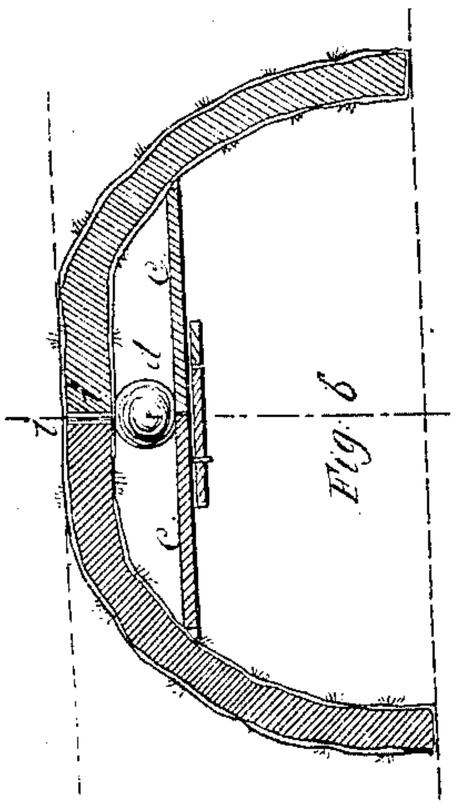


Fig. 7.

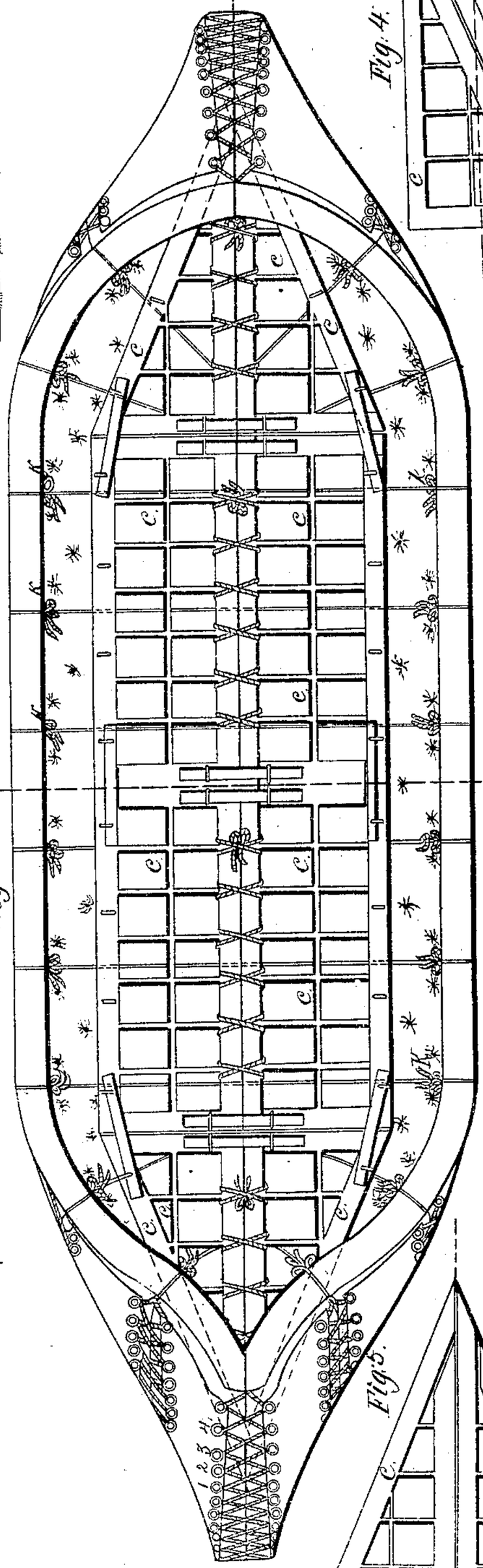
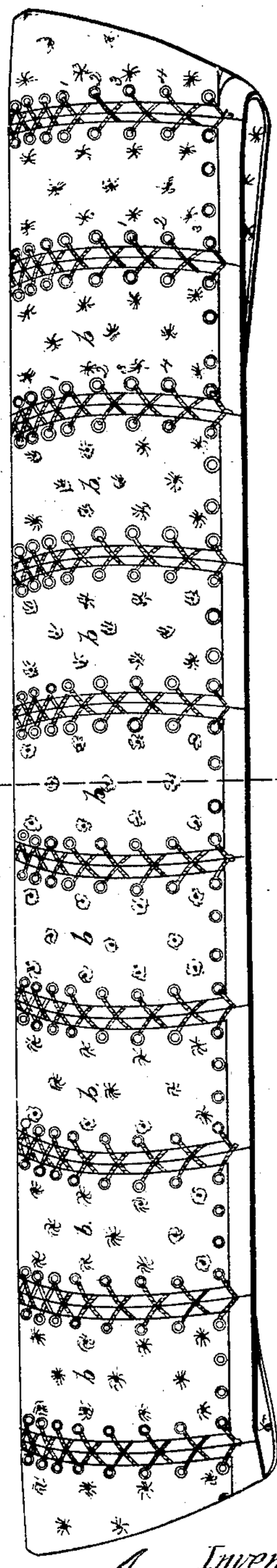


Fig. 8.



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UNITED STATES PATENT OFFICE.

JABEZ M. WOODWARD, OF NEW YORK, N. Y.

LIFE-BOAT CONSTRUCTED OF MATTRESSES.

Specification of Letters Patent No. 21,462, dated September 7, 1858.

To all whom it may concern:

Be it known that I, JABEZ M. WOODWARD, of the city, county, and State of New York, mechanical engineer, have invented certain new and useful improvements in the manner of preparing and constructing mattresses for berths and state-rooms and in the supporting bars or frames forming the bottoms of the berths for the purpose of their being combined and readily converted into boats or life-rafts for saving passengers in cases of emergency, useful chiefly in ocean steamers or other large ocean vessels used for the transportation of passengers; and that the following is a full and exact description of my said improvements and of the manner of constructing the same and of converting the same into boats, reference being had to the accompanying drawings, making part of this my specification.

The object of my invention and improvements is to provide on board ocean and coasting steamers and vessels carrying large numbers of passengers on voyages a safe and reliable means for preserving life in case of the sinking of the vessel independent of the ordinary boats and life-boats so called, and which means can be used and applied without encumbering the vessel, or adding to the ordinary expense of fitting out. To effect this object, I propose to use the mattresses of the berths, and the bottoms or supporting frames of the berths, constructed and prepared in the manner hereinafter described and capable of being put together in a few minutes by the ordinary seamen of the vessel so as to form a buoyant and safe boat or life-raft.

In the accompanying drawings, Figure I, represents the bottom or under side of a ship's mattress and of the stout sheet of canvas or duck sewn upon it, and the eyelet holes in the canvas. Fig. II, is the opposite side of the mattress. Fig. III, is the side edge with a part of the canvas raised. Figs. IV and V, represent the manner of constructing the supporting strips or bottom frame of the berth. Fig. VI, is a cross section through the center of a boat composed of the mattresses and frames and put together according to my plan. Fig. VII, is a top view or plan of the boat as constructed of the mattresses, frames and fastenings. Fig. VIII, is a side elevation showing the mattress and manner of binding them together.

In all the figures the same letters represent the same parts.

I construct the mattress in shape, size, and thickness like the ordinary berth mattress; but instead of filling them with hair or feathers, I use for a filling some material which shall be comfortable and suitable for sleeping upon, and shall at the same time be buoyant in the water; and I prefer for this purpose cork shavings, because they are soft, durable and elastic, and free from dirt or vermin, and also have great lightness and buoyancy; these mattresses are usually about six feet in length; two feet six inches in width, and six inches thick.

Upon one (the under) side of the mattress is sewed a piece of strong duck or canvas which covers the mattress on that side except a narrow border all around; and at the edges of the piece of canvas are eyelet holes all around strongly stitched and hemmed so as to bear the lacing and strain of a rope through them as shown in Fig. I, *a* being the mattress, *b*, the canvas, 1, 2, 3, &c., being the eyelet holes.

These mattresses are to form the bottom and sides of the boat—and will answer very well for this purpose, without any other materials in addition than the ropes which are to bind them together.

For stiffening the boat and forming a diaphragm floor upon the inside upon which the passengers and stores and water may be placed, I use the bottom boards or frames of the berths, and any spar such as is always at hand on board any steamer or vessel. For this purpose the supporting pieces of the berths should be made into two frames of a right angled and triangular shape as shown in Fig. IV, *c*, *c*, which when put together with the two longest sides in contact will form an oblong square, as in Fig. IV; but when placed together with the longest sides outward and with the two acute angles in contact they will form a triangle as seen in Fig. V. The object of this arrangement is to form a frame and diaphragm of the requisite sharpness for the bow and stern of the boat, the intermediate part of the diaphragm and frame being laid in a rectangu-

lar form as in Fig. IV and Fig. VII. These frames should be of open work in squares or parts of squares as shown in the drawings.

To give the boat when put together stiffness between stem and stern I use a spar seen in section in Fig. VI, at *d*, and running the whole length of the boat from bow to stern.

To construct the boat of the mattresses they are laid upon the deck with the canvas side upward; a sufficient number to form a boat, say about twenty-five feet in length.

The mattresses being laid with their ends edge to edge, the whole length, a rope of suitable size is passed through the eyelet holes of each contiguous sheet of canvas attached to the mattresses, and drawn tight so as to lash the ends of the mattresses into close contact, as seen at *i*, *i*, Fig. VI. The mattresses thus lashed, are then turned over with their canvas sides outward; the spar *d*, is then laid, in the middle along the whole length, and to the spar *d*, are lashed and secured the berth frames arranged as shown at Figs. IV and V and Fig. VII. The mattresses are then lashed together by the eyelets at the sides, the length of the sides of the boat as shown in section Fig. VI, and in side elevation Fig. VIII. Where the boat diminishes in size at the ends by the sharpening of the bow and stern the mattresses are drawn together at their upper ends by the lashings as seen in Fig. VII.

A strengthening rope should be passed around the whole length of the inside of the boat, at the gunwales, through rings or loops attached to the mattresses as shown in Fig. VII at *k*, *k*, *k*. These loops or rings may be permanently fixed to the mattress when made, or may be drawn through between each mattress and fastened to the outer lashings, when the boat is put together. Attached to the loops, or to the gunwale rope are ropes for fastening at the other end to the diaphragm floor frames to hold them in place.

By drawing the lashings as above described strongly together, the spaces between the mattresses will be made water tight, or sufficiently so, for security—and if there should be leaks the buoyancy of the mattresses will keep the boat afloat with her complement of passengers and stores.

A boat thus constructed twenty-five feet long will carry twenty-two passengers and water and provisions for thirty days, and room to spare.

If it should be thought desirable to have the boat perfectly tight and impervious to water, a cover of oiled cotton cloth should be provided on board the vessel, to be ready at hand in case of emergency. This would make the boat as dry as the best constructed boat could be. These boats will not easily be injured by coming in contact with timber or rocks; or by the force of the waves; and requiring no additional expense or room for the materials out of which they are constructed than what are necessary for other objects in all ocean vessels carrying passengers, will afford to the passengers a sense of security and means of escape in cases of foundering of the vessel, not heretofore attainable.

Having thus described my invention and manner of constructing the same, and putting the same into use—what I claim in the foregoing, and for which I desire Letters Patent, is:

1. The constructing the mattresses with the strong canvas or duck attached to them with the eyelet holes so that they can be united at their edges by lashings, for the purposes of making a boat or life raft as above described.

2. I claim the manner of constructing the berth bottoms or supports into frames in the shape of or similar to right angled triangles in combination with the mattresses constructed as above described.

3. The combination of the mattresses canvas and eyelets, with the lashings diaphragm frames and spar arranged into the form of a boat or life raft as described.

J. M. WOODWARD.

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