

H. Stanton,
Floating Dock.

No. 5234.

Patented Aug. 14. 1847.

Fig. 1.

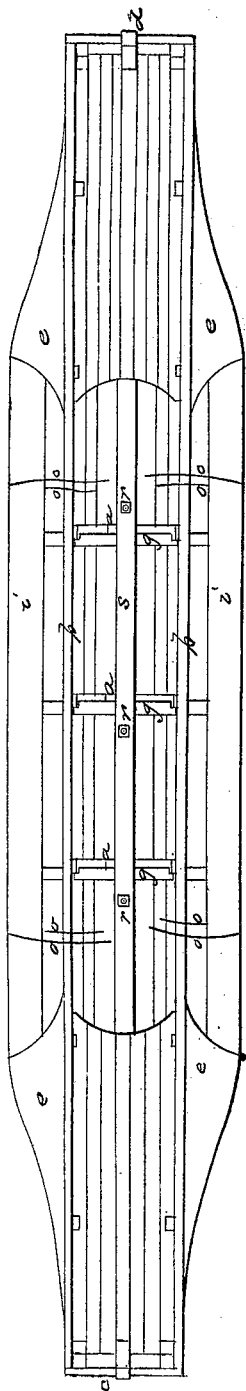


Fig. 2.

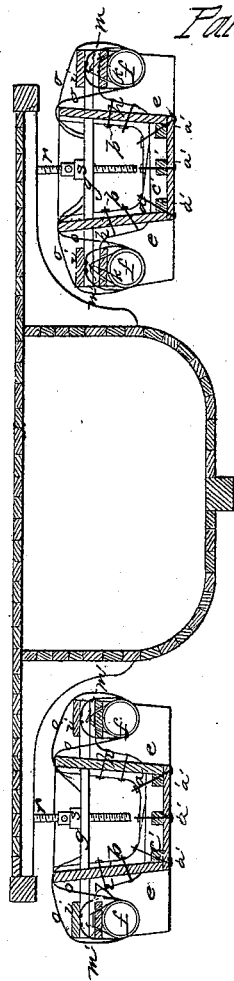
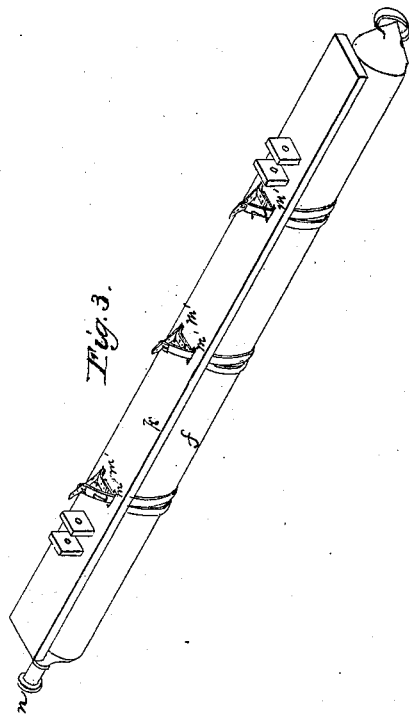


Fig. 3.



UNITED STATES PATENT OFFICE.

HENRY STANTON, OF WASHINGTON, DISTRICT OF COLUMBIA.

LIGHTER FOR VESSELS.

Specification of Letters Patent No. 5,234, dated August 14, 1847.

To all whom it may concern:

Be it known that I, HENRY STANTON, of the city of Washington, in the District of Columbia, have invented new and useful improvements in that class of boats called lighters used for passing and lighting other boats or vessels over bars or shallows, which is applicable to life-boats, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings,

making part of this specification, in which—
Figure 1 is a plan of the lighter; Fig. 2, a longitudinal elevation, and Fig. 3, a separate view of one of the safety spars attached to a board.

The same letters indicate like parts in all the figures.

The nature of my invention consists in constructing the sides of the boat straight from bow to stern for the purpose of giving the required strength, when this is combined with projections on each side toward the bow and stern for the purpose of making recesses at each side to receive air tight bags called "safety spars," made of india rubber cloth or other appropriate substance, the bags being protected from the injurious effects of snags, floating wood, &c., by these projections. And also in making the boat with beams passing entirely through the boat and projecting sufficiently beyond each side to receive and guard the safety spars which are attached to them, so that the whole strain in lighting or floating a steam boat or other vessel shall be mainly borne by these beams instead of the body of the boat.

In the accompanying drawings (*a, a, a*) represent the timbers or knees forming the frame of the boat, lapping onto each other in the middle of the boat and extending up the sides to the top to give the required strength—to these are properly secured the sides (*b, b,*) that are made of two truss frames that extend from end to end in straight lines. The bow (*c*) and stern (*d*) are made at right angles to the sides and properly curved from the top downward to enable the boat to pass through the water with facility. The bottom of the boat is flat with middle and side keelsons (*a', a', a'*) and onto these are fitted cross timbers (*e'*)

that extend down to the bottom, so that the bottom planks are secured to the under face of the keelsons and cross timbers (*e'*). The knees (*a*) are then laid onto the cross timbers (*e'*) lapped over each other and secured by bolts that pass through the knees, the keelsons, and the floor timbers by which great strength is given to the narrow part of the boat which has to sustain the principal part of the strain. On each side there are two projections (*e, e*) which should gradually swell out from the bow and stern and extend to the required distance so as to form recesses along the sides of the boat from the bottom to above the water line, to receive the air vessels or "safety spars" (*f, f*). These projections are formed outside of the truss frames or sides (*b b*), by extending the bottom timbers entirely across. The safety spars are properly secured to beams (*g*) that pass through the sides of the boat and which are let in and properly secured to the timbers or knees (*a*) of the frame of the boat for the purpose of giving the required strength to sustain the weight when a vessel is to be lighted over a bar or when used for any other purpose, the force of buoyancy being sustained by these beams as they rest on the safety spars, additional strength being given to the beams (*g*) by braces or knees (*h*) placed under them and attached to the sides of the boat and to the timbers or inside knees (*a*) by bolts passing through the whole. The safety spars are also protected from above by beams and sheathing (*i, i,*) that extend from the bow to the stern projections (*e, e*) on each side.

The safety spars are secured to the beams by means of a board (*k*) one for each spar. Three straps (*l, l, l*) one at each end and one in the middle are secured to the upper surface of the board and the two ends pass through mortises (*m, m*) thence around the safety spar and buckled over the board, which is provided with cleats that pass on each side of the beams (*g*) and secured there by means of a bolt (*n*). The boards can in this way be attached to two, three, or more of the beams, and can be attached or detached with facility. To facilitate putting on and removing the safety spars a strap (or straps) (*o*) is attached to the guard and passes around the spar so that when the board is disconnected by pulling this strap the spar will be rolled out of its place onto or under the guard. When the boat is float-

ing in water of sufficient depth the safety spars may be removed, and can be readily attached again when desired, as described above.

- 5 As the projections or guards (*e, e*) extend from the bottom of the boat to some distance above the water line and project from the sides of the boat as far or farther than the diameter of the safety spars, these (the
- 10 spars) are effectually protected from the injurious action of drift wood, snags, &c., so that the difficulty heretofore experienced in the use of such buoyant bodies, (the liability of being pierced by striking against
- 15 snags, drift wood, &c.) is entirely avoided, at the same time that greater strength is given to the boat than could be attained by making the sides in curved lines as heretofore universally practiced.
- 20 When boats of this kind are to be used for the purpose of lighting a steam boat or other vessels over bars, one (or more) of them is placed in each side of the boat, and under the guards thereof as represented in
- 25 Fig. 4 which is a cross vertical section taken through the steam boat and two lighters, one on each side, and then screws (*r, r*) that pass through nuts in the beams (*s, s*) of the lighters are forced up against the
- 30 underside of the guards of the steam boat and in that way it is raised. Or, when used for lighting other vessel beams may be attached to the vessel and extending over the lighters in the same manner as the guards
- 35 of the steam boat. Any of the mechanical powers may be substituted for the screws. It will be obvious that the bow and stern can be made in any other form, if desired, the one described and represented being
- 40 deemed by me the best adapted to the purposes contemplated. The sides of the boat can be truss framed in any manner best adapted to give the requisite strength and stiffness. The safety spars are long cylindrical
- 45 bags of india rubber made perfectly air tight and provided with a screw valve (*m*) at one or both ends through which they can be inflated by a pump, bellows, or any other known means. And they are also

made with straps (*m'*) by means of which 50 they are lashed to the beams of the boat.

What I claim as my invention and desire to secure by Letters Patent, is—

1. Constructing the boat with the sides of straight truss frames connected with the 55 bottom by means of the knee timbers that lap onto each other in the middle of the boat and secured to the keelsons and bottom by the interposition of cross timbers, substantially as herein described (whereby 60 great strength and stiffness is given to that part of the boat which has to sustain the strain; as described), when this is combined with the safety spars or floats for giving additional buoyancy, as described. 65

2. I claim constructing the boat so as to be more buoyant toward the bow and stern than along the middle sections by carrying out the sides, toward the bow and sides, beyond the truss frames that constitute the 70 sides of the narrow part, in combination with the above described mode of constructing the frame of the boat and with the auxiliary floats or safety spars which give the required buoyancy to the narrow part, substantially as described, the projections toward the bow and stern answering the double purpose of giving the required buoyancy at the ends and protecting the auxiliary floats or safety spars, as described. 80

And finally, I claim in combination with the safety spars making the guards to which the safety spars are to be secured by passing the beams through the side frames and below their upper edge in combination with 85 the mode of giving the required strength to the connection of these with the boat by bolting the beams to the top of the outside knees and to the sides of the inside knees, the inside and outside knees being connected 90 together, substantially as described, whereby the required strength is given to the guards to resist the upward force of the safety spars.

HENRY STANTON.

Witnesses:

R. F. SOPER,
A. P. BROWNE.