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F. DUNN.

Life-Boat.

No. 207,166. Patented Aug. 20, 1878.

Fig. 1

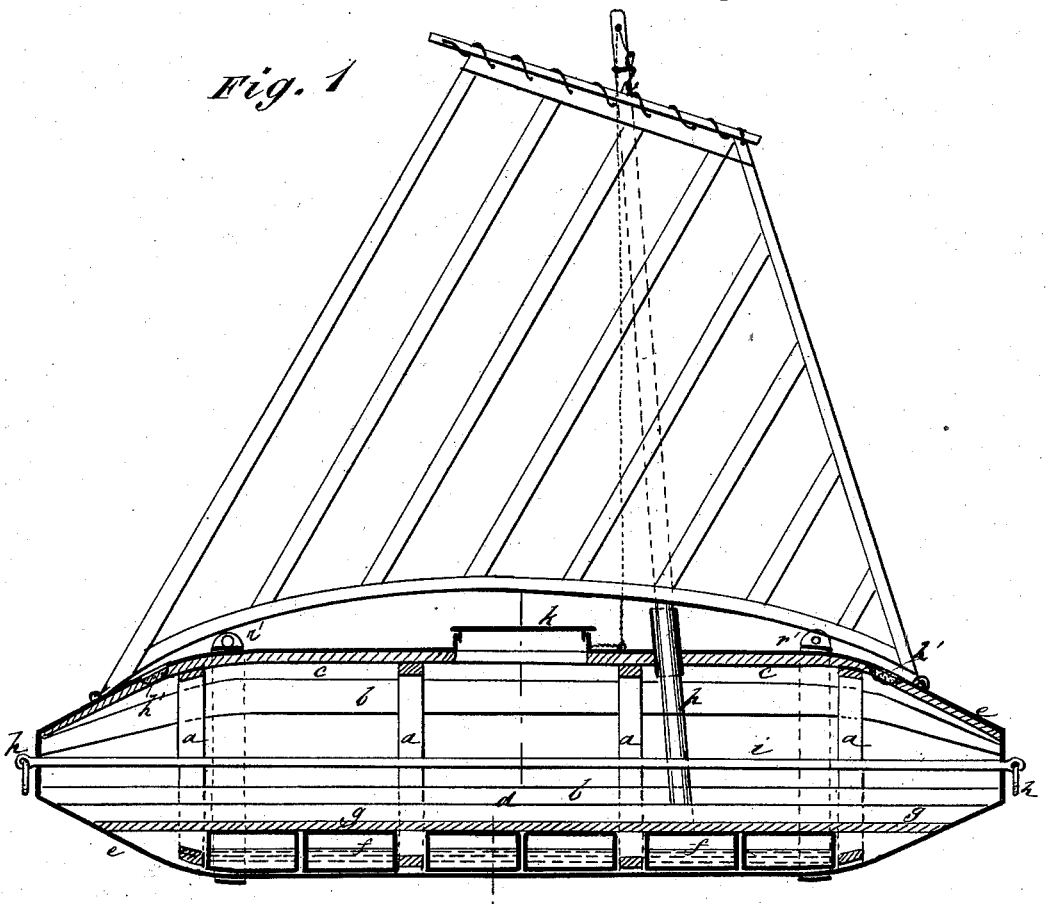
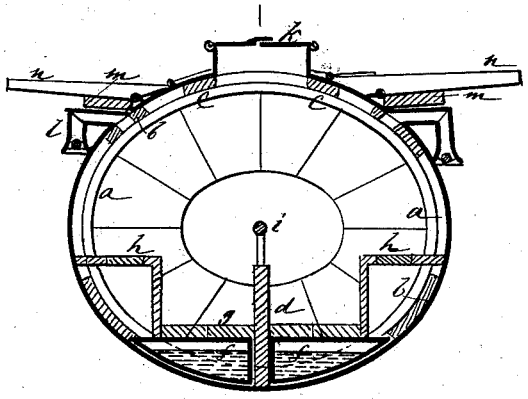


Fig. 2



WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR:

F. Dunn

BY Munn & Co

ATTORNEYS.

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F. DUNN.

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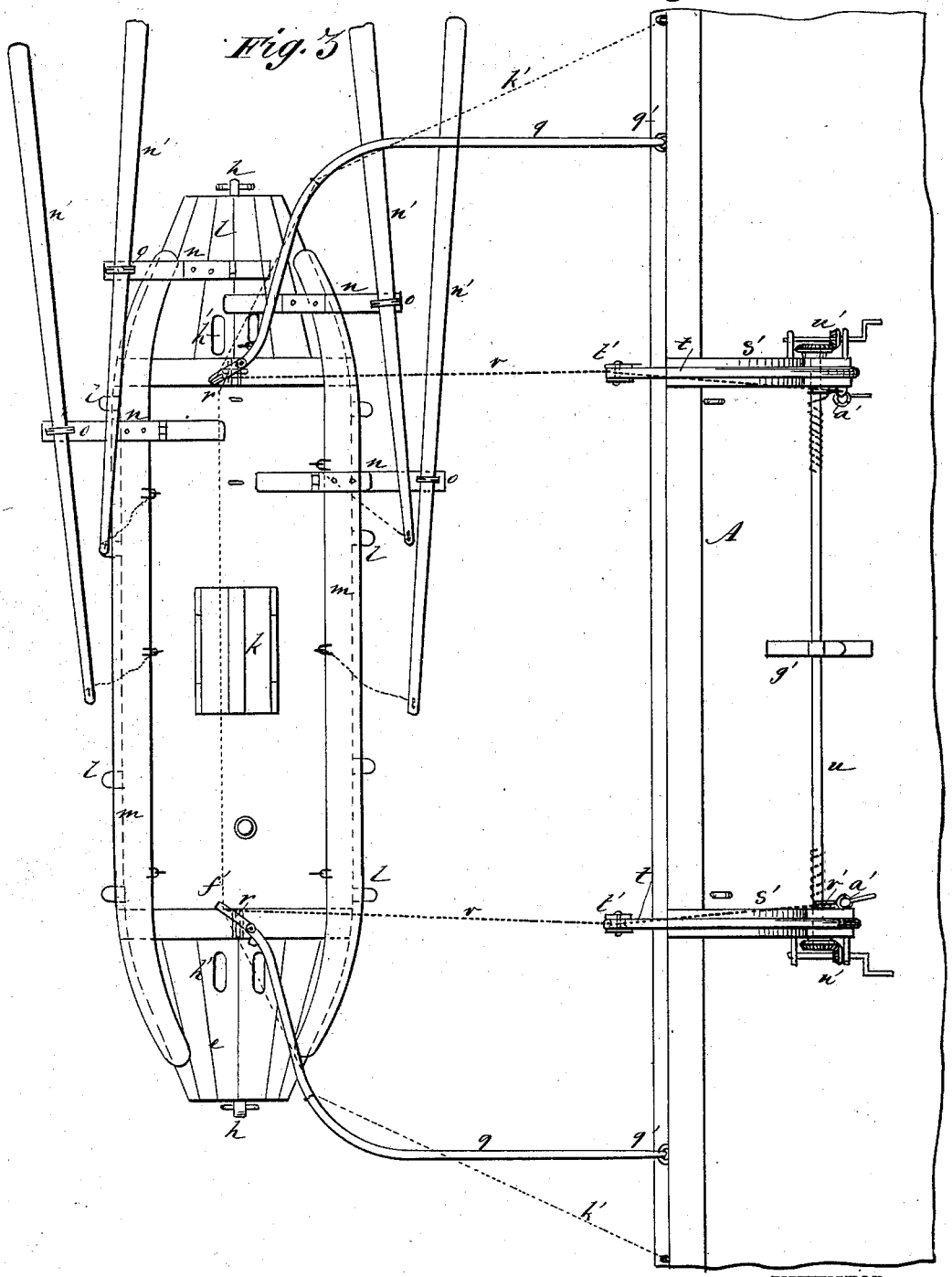
Fig. 3



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C. Neveux

C. Sedgwick

INVENTOR:

F. Dunn

BY Munn & Co

ATTORNEYS.

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F. DUNN.

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Fig. 4

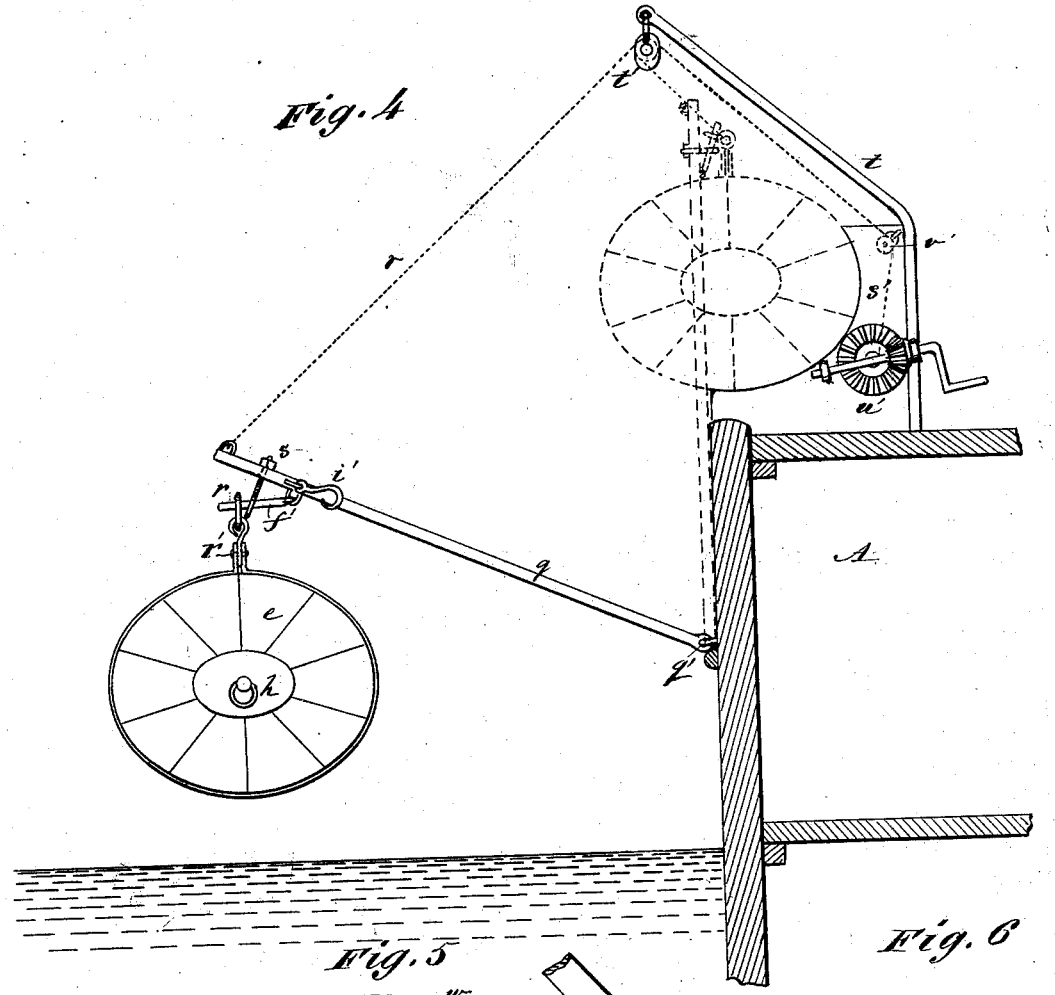


Fig. 5

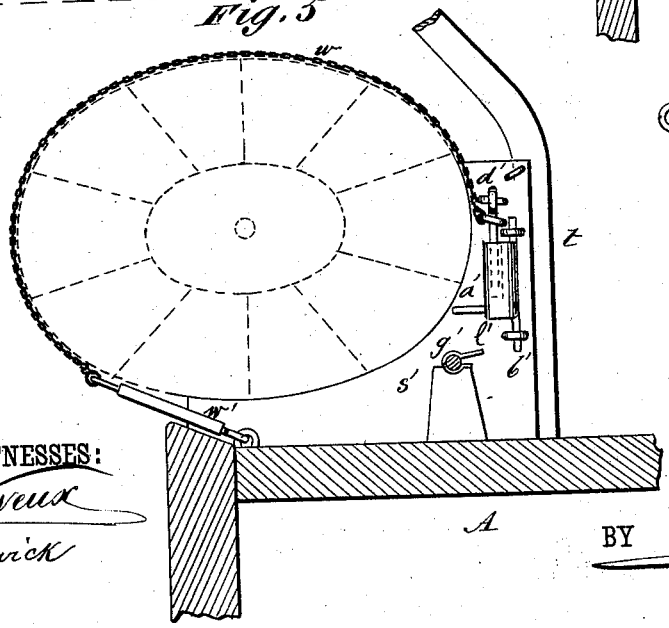
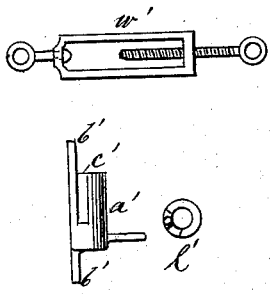


Fig. 6



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BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK DUNN, OF GLOUCESTER, MASSACHUSETTS.

IMPROVEMENT IN LIFE-BOATS.

Specification forming part of Letters Patent No. **207,166,** dated August 20, 1878; application filed July 2, 1878.

To all whom it may concern:

Be it known that I, FRANK DUNN, of Gloucester, in the county of Essex and State of Massachusetts, have invented a new and Improved Life-Boat with Lowering Apparatus, of which the following is a specification:

My invention has for its object, first, to provide a life-boat for sea-going vessels which will be light, strong, capacious, and safe, and which may be propelled by oars or a sail; and, second, to provide means for safely and expeditiously detaching such boat from the ship, which detaching apparatus will permit the boat to be compactly stowed on the vessel in such a position that the passengers may enter the boat without danger of getting overboard.

The second part of my invention is a necessary complement to the first, for the reason that, however safe the boat may be when afloat, unless it can be successfully launched with a load of passengers during the excitement and rough weather usually occurring when such boats are needed, the safety of the boats, after launching, is of no practical advantage.

My invention consists in a boat formed of a wooden frame, covered by thin sheets of metal, the shape of the boat being elliptic in cross-section and the ends tapering. The bottom of the boat is fitted with permanent tanks, to be filled with water. There is a guard-plank upon the outside of the boat, near the top, and outriggers are provided for the attachment of oars, and a hatchway with swinging doors permits access to the inside of the boat.

The boat is hung on davits, which swing vertically on eyebolts on the side of the vessel, to keep the boat clear of the ship, and the boat and davits are raised or lowered by wire ropes passing over sheaves on a second pair of davits on the deck of the vessel. The ropes are wound up by a windlass to raise the boat until it can be swung in and rest on chocks, where it is held by griping-ropes.

The connection of the boat to the swinging davits is made by a half-hook on the end of the davits, passing into an eye on the slings of the boat, so that the eye will slip off the hook when the davits are lowered to the proper place, and the boat will then drop into the water.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved life-boat with sails set. Fig. 2 is a cross-section amidship. Fig. 3 is a plan, showing the boat swung out from a vessel previous to lowering. Fig. 4 is an elevation, showing a boat lowered about to the point where it would drop from the slings. The dotted lines in this figure represent the boat raised to its position on the vessel. Fig. 5 is an end view of the boat secured in place on the deck, and Fig. 6 shows the connections of the griping-ropes for securing the boat.

Similar letters of reference indicate corresponding parts.

Referring to Figs. 1 and 2, *a a* represent wooden frames, bent to an elliptic shape, and placed at equal distances apart, to support the longitudinal framing *b b* and deck-plank *c* of the vessel. *d* is the keel-board, extending longitudinally of the vessel, and secured to the frames *a*. This frame-work is to be covered with plain or corrugated sheet metal, preferbly galvanized iron, and the joints made water-tight, so as to form a hollow elliptic cylinder, with the ends tapering, as shown at *e e*. *f f* are metal tanks, fixed permanently inside of the boat, at the bottom, at each side of the keel-board *d*. These tanks are to be kept filled with fresh water at all times, and when the boat is in use the water will form ballast for the vessel, besides being available for passenger use. *g* is a flooring over the tanks *f f*, which aids in keeping the tanks in place, and *h h* are seats along the sides of the boat. The space beneath the seats serves as a locker for provisions. *i* is an iron rod extending from end to end of the vessel, and projecting at each end, where there is a ring-bolt, *h*, on the rod.

K is a hatchway in the deck of the boat, provided with swinging doors, which lap at their edges, and are to be provided with a rubber packing to make them water tight. *e e* are ventilators, four on each side, formed by pipes extending at the sides of the boat. These pipes are bent downward, with flaring mouths, and are provided with balls to prevent ingress of water.

m m are guard-planks, hinged to the upper

side or deck of the vessel, and resting, when turned down for use, upon the ventilators *e*. These planks *m* will be turned up when the boat is not in use, and they serve, when the boat is afloat, for standing upon in rowing. *n n* are hinged outriggers for carrying the oars *n'*, (see Figs. 3 and 5,) which oars are attached to the outriggers *n* by the rowlocks *o*, passing into holes at the outer ends of the outriggers. *p* is a mast, passing through the deck of the vessel, and stepped at the forward part of the boat. This mast *p* is to carry a sail, as seen in Fig. 1. *h'* are dead-lights in the tapering ends of the boat, to admit light.

The boat, constructed as described, will be very light and safe, and will withstand heavy seas. The elliptic form combines the strength of the cylinder with great stability. The boat provides a shelter for its passengers, where they may be protected from the exposure incident to open boats, which exposure is generally the worst thing that shipwrecked persons have to contend with. The guard-plank *m* will yield to the upward pressure of the waves in lowering the boat and after she is afloat, and the danger of capsizing is thereby avoided.

Fig. 5 illustrates the boat stowed on the neck of the vessel, and Fig. 4 illustrates it hung from davits.

q q are davits, attached by eyebolts *q'* to the side of the vessel. (Represented by A.) At the outer end of each of the davits *q* there is an adjustable pin, *f'*, or a half-hook, at such an angle that it retains the ring *r* of the boat-slings *r'* so long as the davits *q* stand above a horizontal position, but permits the ring *r* to slide off when the davits are lowered below a horizontal position.

I have shown this connection as adjustable by a bolt and nut, *s*, so that it may be set to any angle. *t t* are the hoisting-davits, of usual construction, upon the deck of the vessel. They are supported by the chocks *s'*, and carry at their outer ends the sheaves *t'*. *u* is a windlass, supported in the chocks *s'* and revolved by the bevel-gearing *u'*. *v v* are wire ropes, wound upon the windlass *u* and passing through the blocks *v' t'* to the ends of the davits *q*, where the end of the rope is secured. *k'* is a guy-rope for the davits *q*.

When the boat is stowed on the vessel the davits *q* are vertical, and the boat rests upon the chocks *s'* at the place usually occupied by ship's boats. It is held upon the chocks by griping chains or ropes *w*, which are attached at one end to a turn-buckle, *w'*, connected to the deck of the vessel, and the chain *w* passes around the boat to the chocks, *s'*, where it is secured by a fastening which will be secure, but can be quickly detached.

I have shown a fastening consisting of a short tube, *a'*, (see Fig. 6,) turning on pivots *b'*, and with a slot, *c'*, in the side to admit a pin, *d'*, which is hung on the chock *s'*, and passes through an eye on the chain *w*. The pin *d'* may be turned into the tube *a'* through the slot *c'* when the tube is turned by its handle *l'* in one direction, and is held fast when the tube is turned the other way. Three is no possibility of a mistake in unloosening this connection, as the tube can only be turned one way to disconnect the pin *d'*, and the chock *s'* prevents it turning too far. After the chain *w* is fastened it may be tightened by the turn-buckle *w'*, and the boat is then secure.

To lower the boat after the chains *w* are released, the windlass is reversed to unwind the ropes *v*, which permits the boat and davits *q* to swing out from the vessel. The davits *q* are long enough to keep the boat clear of the vessel, however much the vessel may roll, and as soon as the davits are lowered to a horizontal position the ring *r* slips from the pin or hook *f'*, and the boat drops into the water. There is nothing to be done by the persons in the boat to disconnect the boat, and there are no ropes to get tangled or caught.

I provide a friction-strap, *g'*, on the windlass *u*, which may be operated by the foot, to regulate the descent of the boat. This is intended, however, for use in ordinary occasions, and is not essential for the working of the apparatus. I also provide a hook, *i*, at the end of the davits *q*, which is to be hooked to the ring *r* after it is placed on the pin *f'* when the boat is to be hoisted out of water. This hook is to be disconnected as soon as the davits *q* reach a vertical position.

The above-described manner of stowing the boat on deck is very convenient, as the apparatus takes up no more room than the ordinary boat and davits, and the boat is in such a position that the passengers may enter the hatchway without danger of falling overboard.

The detaching mechanism is simple and reliable, and cannot fail to operate under any circumstances. The operation is not affected by the vessel rolling, as the boat cannot drop until it is at the proper distance from the water. The difficulty experienced with apparatus heretofore used in connection with swinging davits has been that, while they worked well in smooth water, when the vessel rolled the boat was either submerged or dropped when high out of the water.

My boat and apparatus are especially designed to suit the circumstances which arise when the life-boat is needed.

I do not limit myself to the details set forth, as they may be varied without departing from my invention.

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

1. The life-boat herein described, consisting, essentially, of the elliptical frames *a*, the longitudinal wooden ribs *b*, the deck-plank *c*, and the metallic sheathing or covering, as and for the purpose set forth.

2. The hinged guard-planks *m* and outrig-

gers *n*, in combination with the cylindrical life-boat, substantially as and for the purpose set forth.

3. The combination of the swinging davits *q*, having pins or hooks *f'*, and the boat having the rings *r*, as and for the purpose set forth.

4. The device for securing the griping-chains *w*, consisting of the pivoted tube *a'*, with a slot, *b'*, and the pin *d'*, combined and arranged substantially as set forth.

FRANK DUNN.

Witnesses:
GEO. S. RICE,
H. W. DENNISON.