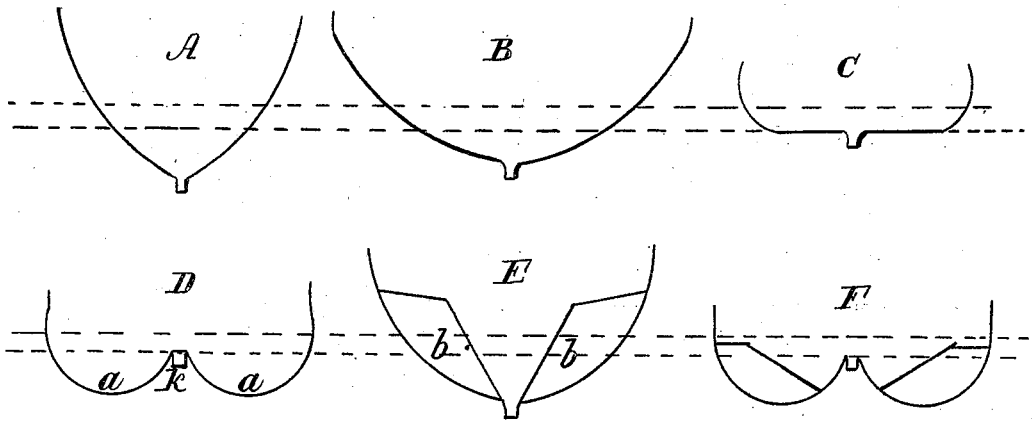
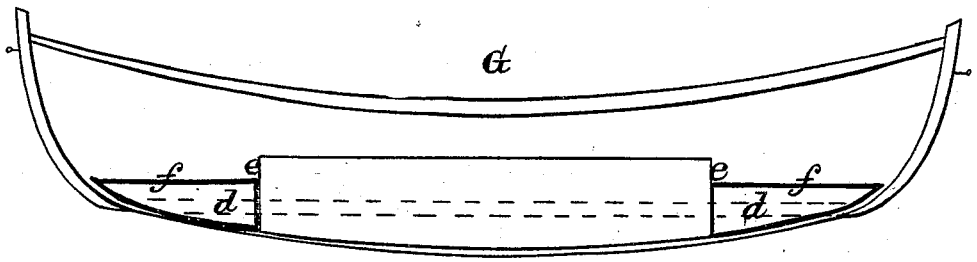
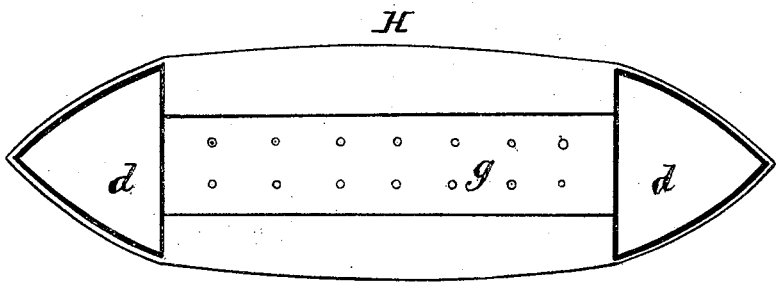
J. Francis.

Life Boat.

No. 2,018. Patented Mar. 26, 1841.







UNITED STATES PATENT OFFICE.

JOSEPH FRANCIS, OF NEW YORK, N. Y.

LIFE AND OTHER BOATS.

Specification of Letters Patent No. 2,018, dated March 26, 1841.

To all whom it may concern:

Be it known that I, JOSEPH FRANCIS, of the city of New York, in the State of New York, have invented a new and useful improvement in the form and model of boats and vessels and in the application of buoyant power thereto, which I call the "great American life boat," whereof the following is an exact description.

The boat or vessel being constructed of any required size or material, either of wood or any metal, upon the plan herein particularly shown, copper or other metallic tubes cylinders, or chambers of any form adapted to the shape of the boat are placed therein lengthwise or transversely and firmly secured to the knees, ribs or timbers by ligatures of metal so as to render them immovable. The said tubes or chambers are to be made air tight and charged with any gas or atmospheric air at any required density according to the strength of the material of which they are made, the object being to sustain them against the inward pressure of the water and prevent a collapse when they are submerged. The tubes or chambers are divided that if one or more be broken, those unbroken will sustain the vessel, and in time of war a shot passing through will not destroy the whole power. They are tightly sealed or floored over to secure them more effectually and this sealing forms the inner floor or bottom of the boat. Several holes of a proper size are made in and through the bottom of the boat, which being opened when the boat is filled with water by shipping a sea or otherwise, the buoyant power raising her above the level of the water outside the water within will escape freely without bailing and none remain above the flooring within the boat. In all cases the capacity of the tubes are to be governed by the weight required to be sustained but no buoyant power should be applied immediately under the thwarts or around the upper works. The tubes or chambers are the only ballast required, and if by any accident (like that of being run over by any larger vessel) the weight of said metallic tubes are calculated to bring her up again to her proper position and the water escapes by the holes in the bottom. If the boat be broken partially the water will escape from her the more freely, which renders her peculiarly efficient in carrying out anchors in a gale with perfect safety to the men without the usual risk of human life.

I find by a long series of laborious and expensive experiments that the model and application of the buoyant power which I now claim to have patented is the best and safest for life boats and all other boats and vessels. That by horizontal metallic bars over said tubes or chambers, or under them, or if requisite forming the whole vessel of iron or other metal any degree of strength may be attained. That the model gives the greatest speed and enables the boat or vessel to sit upright when left by a retiring surge upon a rock bar or beach, where other modeled boats would upset, and that it is different from and an improvement on all former invention by me or any other person as is shown by the following diagrams. In the main body or frame of boats or vessels heretofore used the midship floor timbers rise from the keel or lie parallel thereto as is shown at Figures A B and C. In the model for which I claim a patent the midship floor timbers fall from the keel below the horizontal line forming two bilges one on each side of and below the keel as is shown at *a a*, Fig. D.

In the life and anchor boats heretofore patented by me the application of the buoyant power though in the bottom was mostly above the water line as at *b b* Fig. 1, but in this the said power is mostly below the same line as at *c*, *c* Fig. F. I also apply an air chamber which I call a sheet cylinder at each end of the boat, shown at *d*, *d*, Figs. G and H in what is commonly called the run and entrance, fitting closely to the same and rising to one half the height of the side or bilge chambers at *e*, *e*, Fig. G. Then a level flooring *f*, *f*, Fig. C is formed over the sheet cylinders on a line with the center flooring *g*, Fig. H between the well or bilge chambers at half their depth. The sheet cylinders if requisite for any specific duty, may be increased in height to reach the top of the stem—or even be carried up above it to be used as a safe or for other purposes.

To construct a boat 24 feet long, I lay down a keel 23 feet in length and erect stem and stern posts thereon sloping at an angle of 84 degrees. I draw a line from center of stem to center of stern post and make the whole length of said line plumb with center of keel. To form the bilge timbers I

take a piece of wood bent to the shape required as represented at *a*, *a* Fig. D and place the same across the keel K. The timbers forward and aft of this center are less bent, diminishing gradually until within 1 foot of the end of the keel where the downward bend ceases,—hence to finish up I proceed as with the ordinary boats. The outside planking being put on I take a mold of the shape of the bottom, inside, and have air chambers or cylinders made by cutting pieces of metal to the shape of the mold, and soldering them together leaving a tube and opening for the introduction of the nozzle of a bellows, air pump or other instrument with which to inflate the cylinders after the same are completed when made of very thin metal. I make all the chambers fit closely to the bottom of the boat on the lower and outer side as F, perfectly flat on the upper side and sloping at an angle of about 35 or 40 degrees on the middle or inner side. These cylinders I secure to the timbers by metallic bands and ligatures soldered to the chambers and secured to the frame of the boat. To secure them still further I board them over, which serves as a platform and inner bottom of the boat.

What I claim as my invention and wish to have secured by Letters Patent of the United States is—

The application of air or gas chambers or other agent as a buoyant power below the line of the keel of boats and vessels, and also in the run and entrance (or ends of the boat) below the keel called sheet cylinders in combination with the improvement in the model forming a double bottom or low bilges on each side of the keel which I claim also separately for all boats and vessels with or without buoyant power, a true and correct description of which is herein substantially set forth.

JOSEPH FRANCIS.

Witnesses:
GARD SPRING, Jr.
ROBT. D. HOLMES.