J. Francis. Sheet 1, 2 Sheets.

Ship's Implement.

No. 3,974. Patented Mar. 26, 1845.

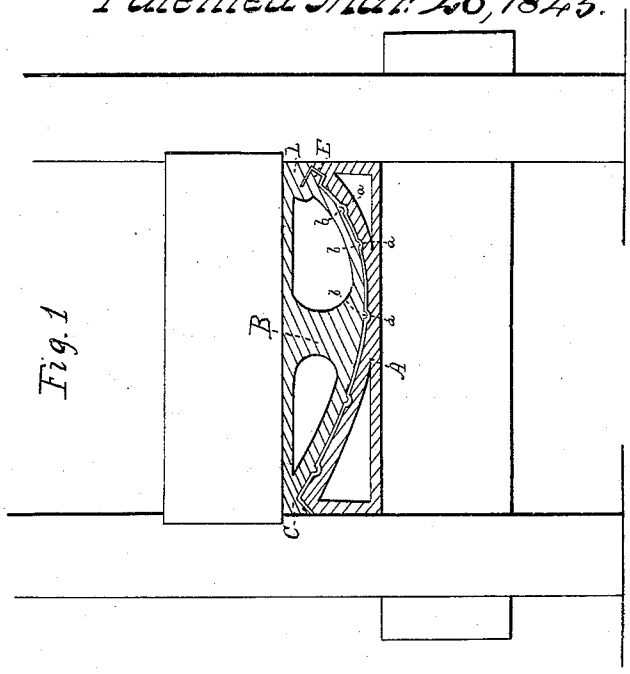

Fig. 1

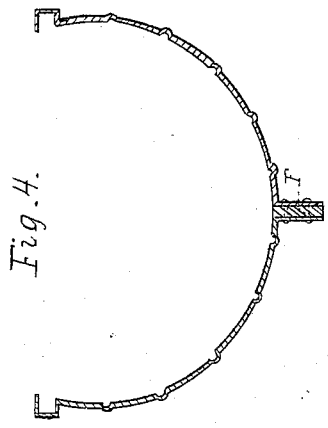

Fig. 4.

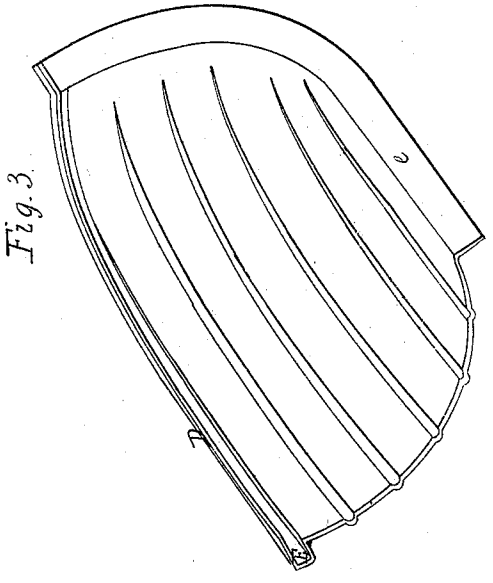

Fig. 3

J. Francis. Sheet, 2 Sheets

Ship's Implement.

No. 3,974. Patented Mar. 26, 1845.

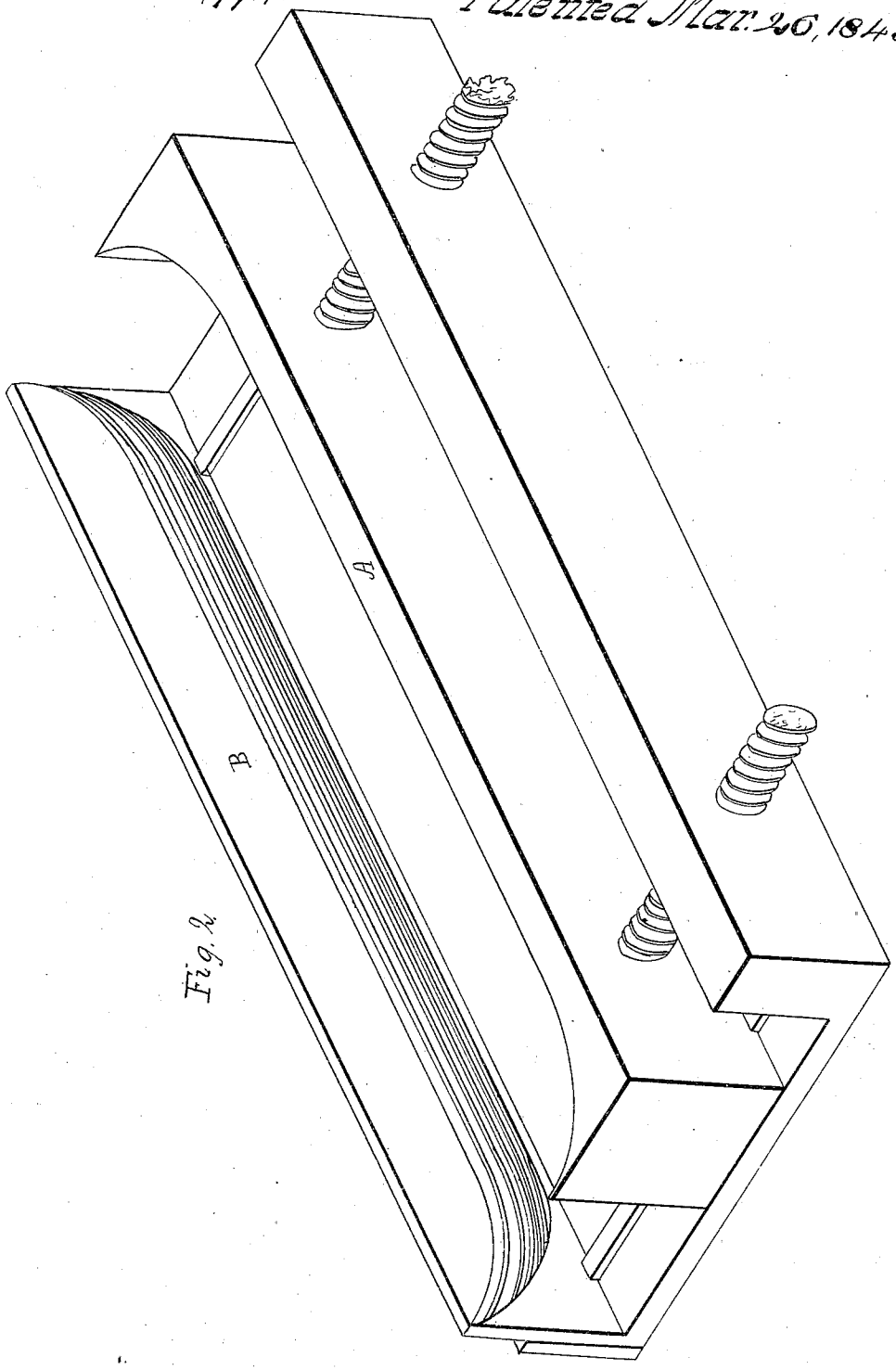

Fig. 2.

UNITED STATES PATENT OFFICE.

JOSEPH FRANCIS, OF NEW YORK, N. Y.

MAKING BOATS AND OTHER VESSELS OF SHEET-IRON OR OTHER METAL.

Specification of Letters Patent No. 3,974, dated March 26, 1845.

To all whom it may concern:

Be it known that I, JOSEPH FRANCIS, of the city, county, and State of New York, have invented certain new and useful Improvements in Manufacturing Boats and other Vessels of Sheet Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

My invention consists in forming the sheets of metal with moldings or beads, in suitable places to take up the surplus metal, when said plates are pressed into form, by means of projections on the die, and corresponding depressions on the matrix or concave mold, which gather up the metal and prevent wrinkles, around, between the upper and lower parts of the boat, so as to present a smooth surface, and also in forming a recess or bed for the gunwale which holds it in place and prevents its getting knocked down. I also add a flange around the stem and stern posts and along the line of the keel which takes up the surplus metal there, and forms the keel and stem and stern post.

In forming small boats the die and matrix may be each in one piece as shown in Fig. 2, for a complete side of a boat; but in forming large boats, I prefer to make the die or convex mold in separate lifts or sections so as to form the bottom of the boat up to the water line molding or near it, this part having the keel flange on it, and also the stem and stern flanges; I then form by another die the metal up to the next molding, with the end flanges and so on to the top; and if difficulty be apprehended from wrinkles in a sheet of great width, the lower or bottom part, and the upper part may be formed separately and then riveted or joined afterwards which can easily be done at the moldings and all danger of wrinkles will be thereby entirely removed.

Figure 1, represents a section across the die and matrix about the center of the length of the boat; A is the concave mold or matrix; B, is the convex mold or die; (*a*) shows the grooves in the matrix, (*b*) the projections in the die corresponding therewith.

Fig. 2, is an isometrical view of the dies, and mold.

Fig. 3, represents a sheet of metal pressed into the shape of one side of a boat, showing the flange in the keel, the moldings, and the gunwale recess and molding.

Fig. 4, represents a transverse section of the boat showing the method of joining at the keel flange so as to form a keel. C, shows the keel flange, D the gunwale flange, E the bed molding for the gunwale, F the keel forward of two flanges riveted together. To give additional strength to the keel and stem or stern, I put a wooden or metal keel between the two flanges before riveting them and the whole are then secured together water tight.

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

1. Constructing boats of sheet metal, pressed into form in molds, with beads, flanges and moldings, as herein described, for the purpose of taking up the surplus metal in forming the boat, to prevent wrinkles in the sides thereof, and for stiffening it, as above set forth.

2. I further claim the recess molding and flange, to receive the gunwale, which takes up the surplus metal along the upper edge of the boat, and gives sufficient strength and stiffness, without frames or timbers inside; constructed substantially in the manner and for the purposes above specified.

JOSEPH FRANCIS.

Witnesses:

J. J. GREENOUGH,

T. C. DONN.