

Construction of Ships.

Patented Sept. 9, 1862.

N^o 36,402.

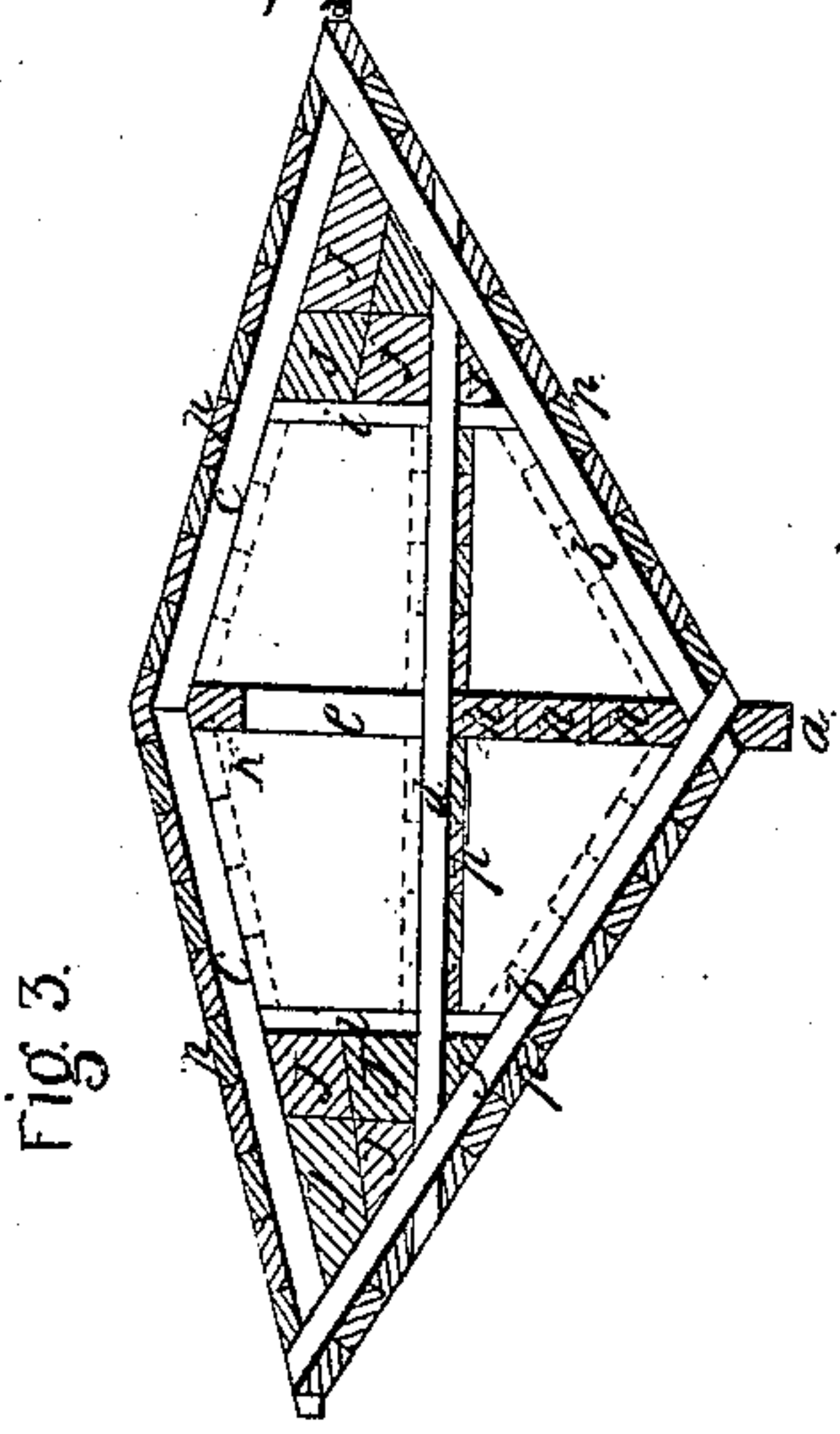


Fig. 3.

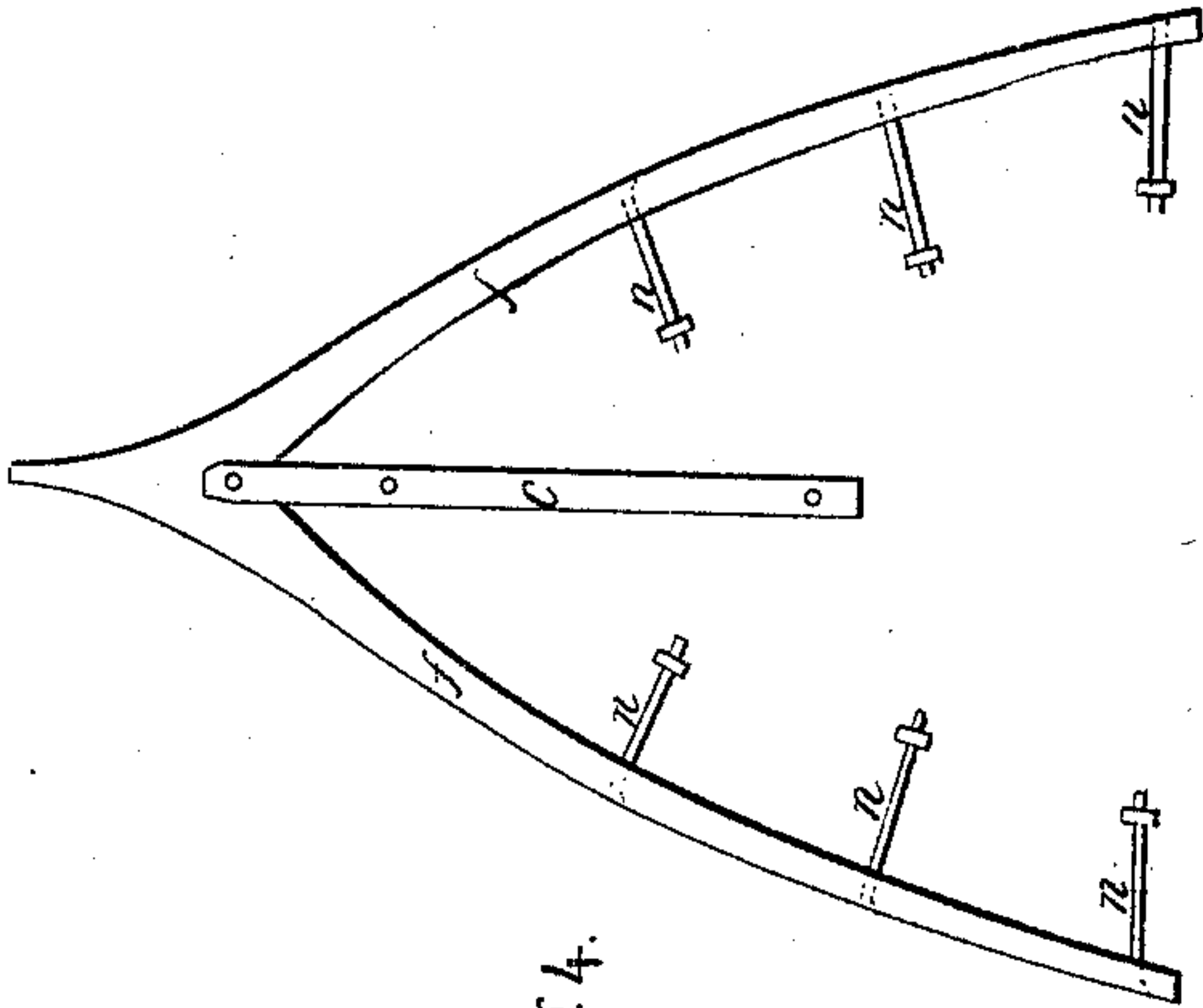


Fig. 4.

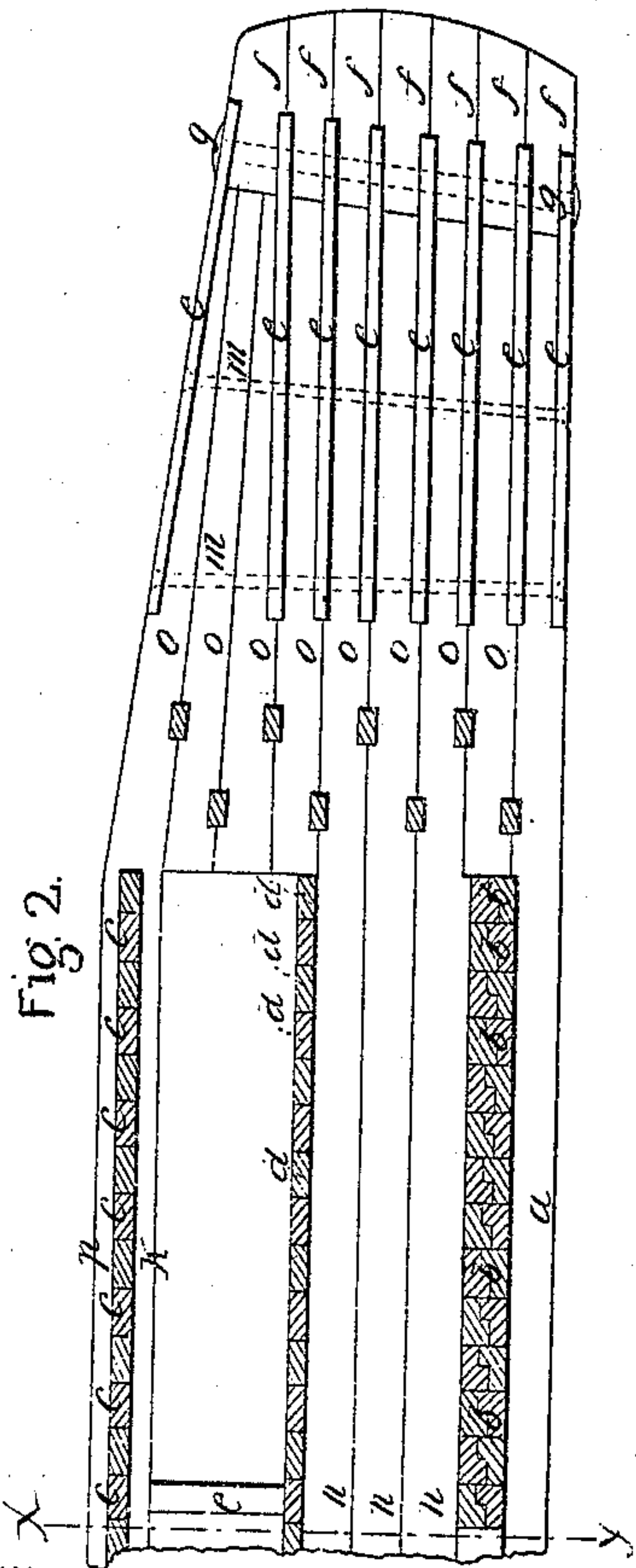


Fig. 2.

Witnesses:

Chas. F. Mayhew
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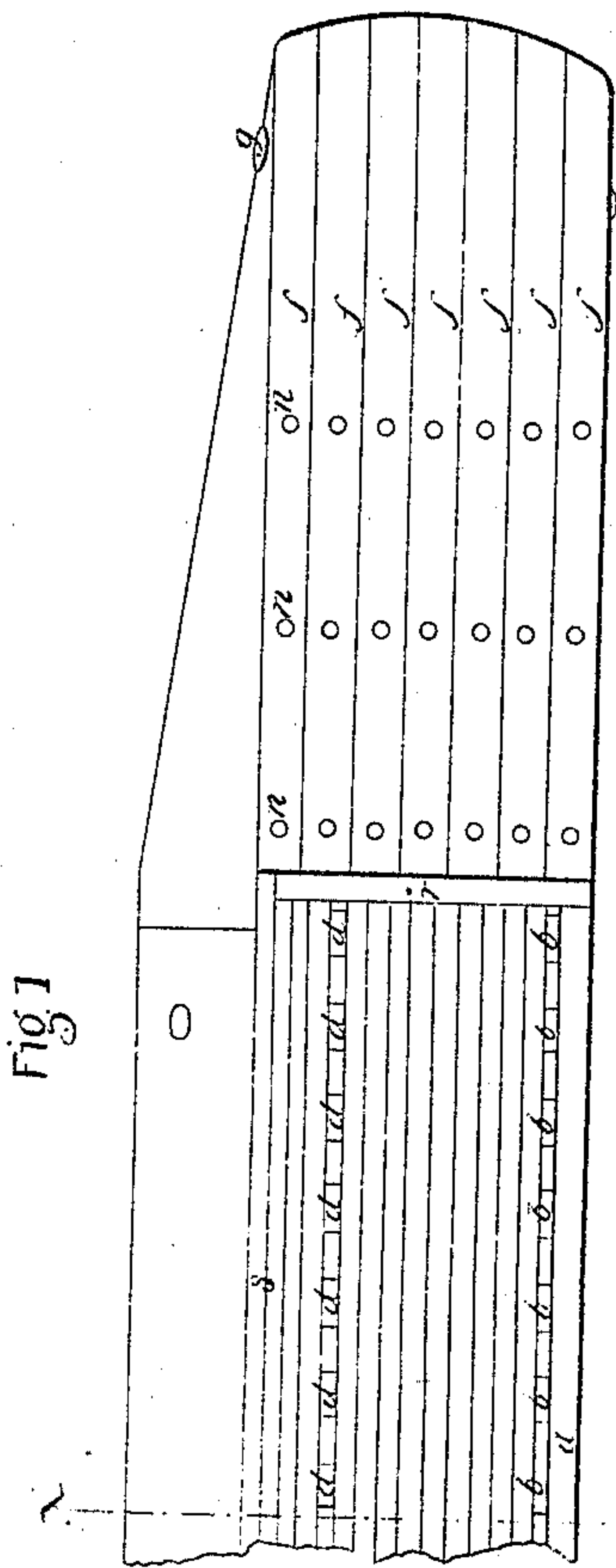


Fig 1

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Richard J. Gatting

UNITED STATES PATENT OFFICE.

RICHARD J. GATLING, OF INDIANAPOLIS, INDIANA.

IMPROVED STEAM MARINE RAM.

Specification forming part of Letters Patent No. **36,402**, dated September 9, 1862; antedated June 16, 1862.

To all whom it may concern:

Be it known that I, RICHARD J. GATLING, of Indianapolis, county of Marion, in the State of Indiana, have invented new and useful Improvements in Steam War-Vessels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the bow or forward portion of the ship. Fig. 2 is a vertical longitudinal section of same. Fig. 3 is a transverse section on line X Y, Figs. 1 and 2. Fig. 4 is a top view of one of the metal shields that incases and protects the bow or forward portion of the vessel as well as forming the prow or ram, and also one of the iron ties and the lateral bolts that are used to secure the shields to the bow of the ship.

The nature of my invention consists in so arranging the frame-timbers and constructing the hull of a steam war-vessel as that it will be of great strength and capable of resisting concussion, and in providing invulnerable metal shields as a covering for its bow, which shields also from the cut-water or prow into a ram of such immense strength that it may be driven into other vessels without injury, and being of such form that it will not be liable to become entangled with an antagonist.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

I construct the hull of my ship by laying the keel *a* in the ordinary way; but instead of placing the rib-timbers *b b* as usual I place them side by side, touching each other from bow to stern, and dowel-pinning them together, as also the upper and lower deck transverse frame-timbers *c* and *d* and vertical timbers *i i*, halving them into each other at all points where they cross, thus binding the entire frame-work all firmly together. The lower ends of the rib-timbers *b b* cross each other, being halved together, and rest on and form a crotch over the keel *a*, as shown in Fig. 3.

The rib-timbers *b b* may be crooked or made straight, as shown in the drawings. A ship can be constructed of straight rib-timbers, as described, so as to form a good model for speed; and a ship thus formed and modeled will be

in every respect seaworthy. When, however, straight timbers are used for the ribs, the ship should be of greater breadth of beam than when built with curved ribs on the ordinary plan.

The keelson is formed of heavy timbers *h h*, laid the entire length of the ship, firmly bolted together and to the keel, and extends up to near the water-line, supporting the transverse frame-timbers *d*, and lower deck, the object of this construction of the keelson being to give great strength to the ship, especially longitudinally.

The timbers *j j*, &c., which fill in the angles formed by the intersection of the ribs *b b* and upper and lower deck transverse frame-timbers *c* and *d*, extend the entire length of the ship, and are designed to give to it additional strength, as well as to prevent its sides from being crushed in by concussion by other vessels and to make it impenetrable by shot.

The longitudinal timber *k*, Figs. 2 and 3, extends the entire length of the ship and supports the upper-deck timbers *c c*, and is supported by upright posts, as shown at *l*, Figs. 2 and 3. The ribs *b b* and transverse frame-timbers *c* and *d* are covered with longitudinal planking *p p p p*, &c., above and below, which is spiked or bolted firmly together, as shown in the drawings.

The bow or head of the ship is composed of a solid mass of timbers, *o o o*, &c., Fig. 2, scarfed, keyed, and bolted firmly together. The iron ties *e e*, &c., that secure the bow-shields *f f f*, &c., are inserted among the timbers, as shown in Fig. 2, and serve to give greater strength and solidity to the prow. A heavy iron bolt, *g*, passes through the forward ends of the ties *e* and shields *f*, holding all firmly together. The ties *e e*, &c., are secured among the timbers *o o*, &c., of the bow by bolts *m m*, Fig. 2.

The bow-shields *f f f f*, &c., Figs. 1 and 2, a top view of one of which is represented in Fig. 4, are cast of gun-metal or forged of wrought-iron. These shields cover the entire bow of the ship, as shown at *f f f f*, &c., Fig. 1, and are secured thereto by the bolt *g*, which passes through them and the forward ends of ties *e e*, &c., and also by lateral bolts *n n n n n n*, as shown in the drawings. These bow-shields,

when combined and secured together as shown and described, form a prow or ram of immense strength, and when made of wrought-iron should have their protruding portion which forms the prow or ram laid with steel. The entire external surface of the ship not otherwise protected by the metal covering or shields is to be covered with armor-plates of any desired thickness and secured to the planking by bolts, so as to give additional protection against shot. The gunwales are to be protected by strong iron plates *s s*, extending longitudinally throughout the entire length of the ship. The armor-plates *r* (one only of which is shown) may be placed transversely, as shown in Fig. 1.

A ship constructed and protected as described and propelled by steam will, I confidently believe, be able to crush in the hull of any war-vessel now in existence.

The forward portion of the head of the ship is sloped downward, as shown in the drawings, which will enable the ship to be easily extricated or disentangled from an antagonist in the event of running her prow into another vessel, as the downward slope of her prow admits of easily backing her out.

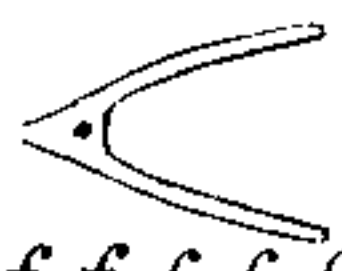
A ship constructed as herein described is not designed to carry guns, or at least not more than one or two, but is designed to be operated wholly as a ram propelled by steam, the object being to crush in the sides of other ships by the crushing force of her weight and momentum.

As there should be no smoke-stacks extending much above the upper deck, the supply of air to the furnaces and the ventilation of the ship should be kept up by means of fans or air-pumps operated, especially in time of action, by independent engines or by hand-power.

It would be well, also, to divide the hull of the ship into water-tight compartments, so that in the event that one or more of them be penetrated by shot or otherwise sprung a leak the ship will still have sufficient buoyancy to float.

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

1. Arranging and combining the ribs *b b* and transverse frame-timbers *c* and *d* and vertical frame-timbers *l* side by side, so as to form continuous bearings against each other anteriorly and posteriorly, the same being halved or dovetailed together at their crossings, which arrangement allows the lower parts of the rib-timbers to rest on and form a crotchet over the keel, as shown in Fig. 3.

2. The  or crotchet shaped metal bow-shields *f f f f f f*, constructed, arranged, and combined substantially as described, for the uses and purposes set forth.

RICHARD J. GATLING.

Witnesses:

O. F. MAYHEW,
JAMES L. MITCHELL.