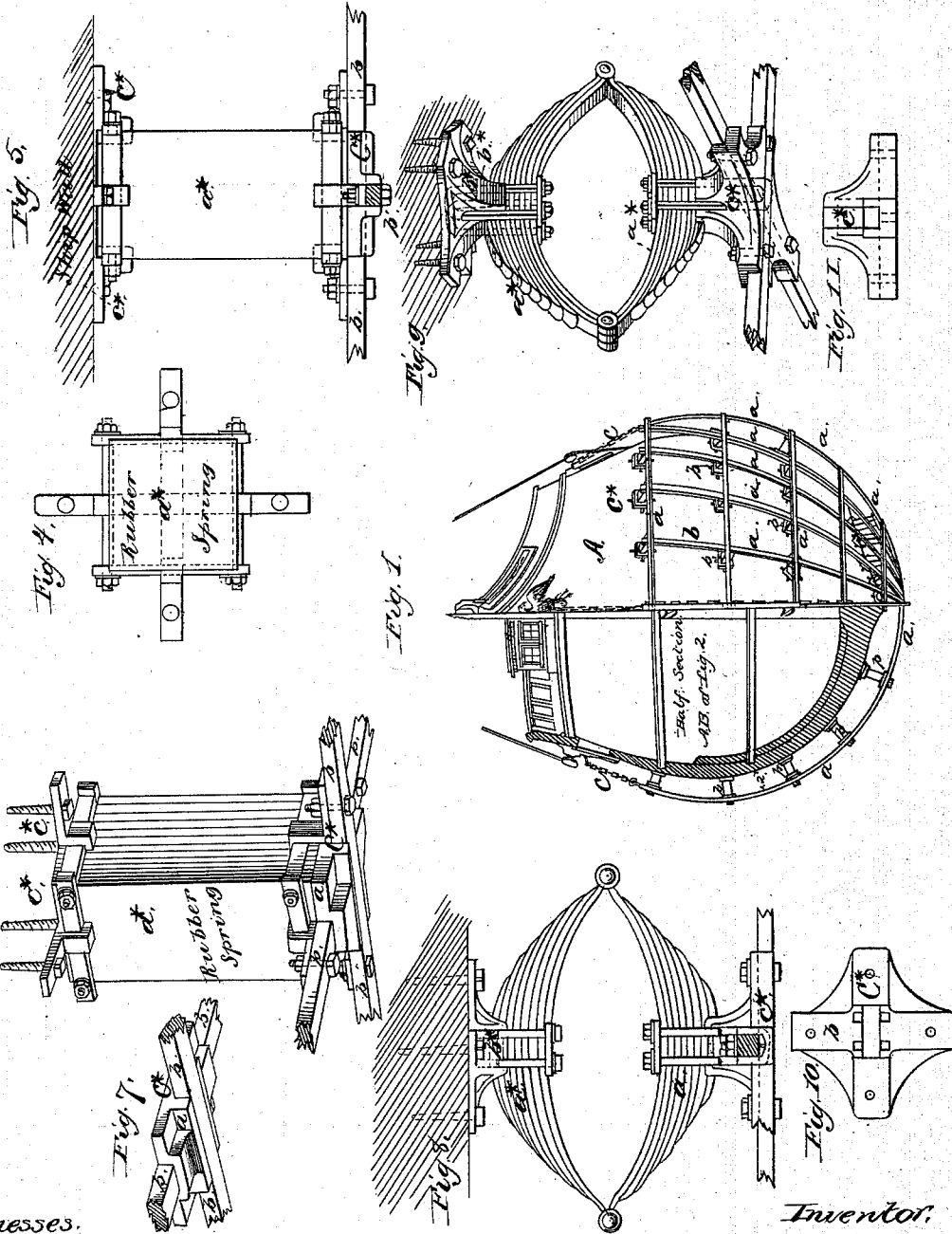


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No. 146,494.

Patented Jan. 13, 1874.



Witnesses.

John Klein.
Geo Scho.

Inventor.

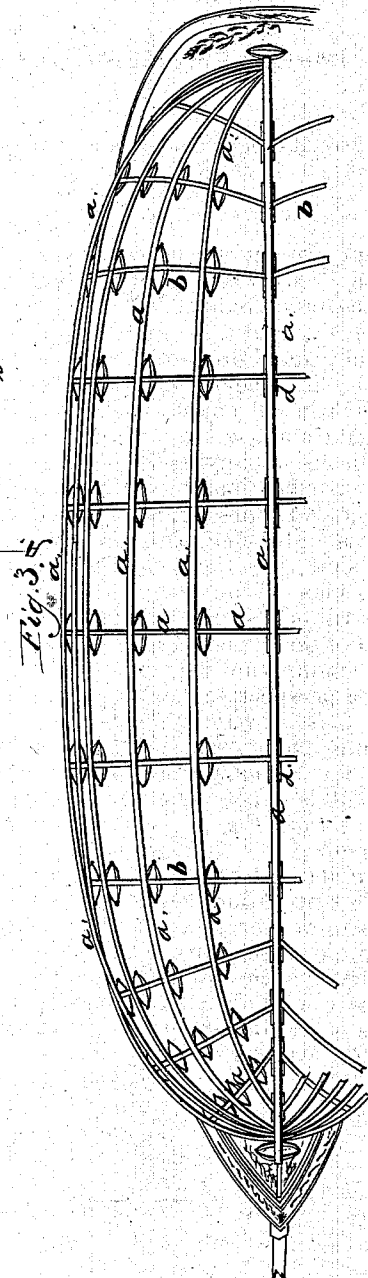
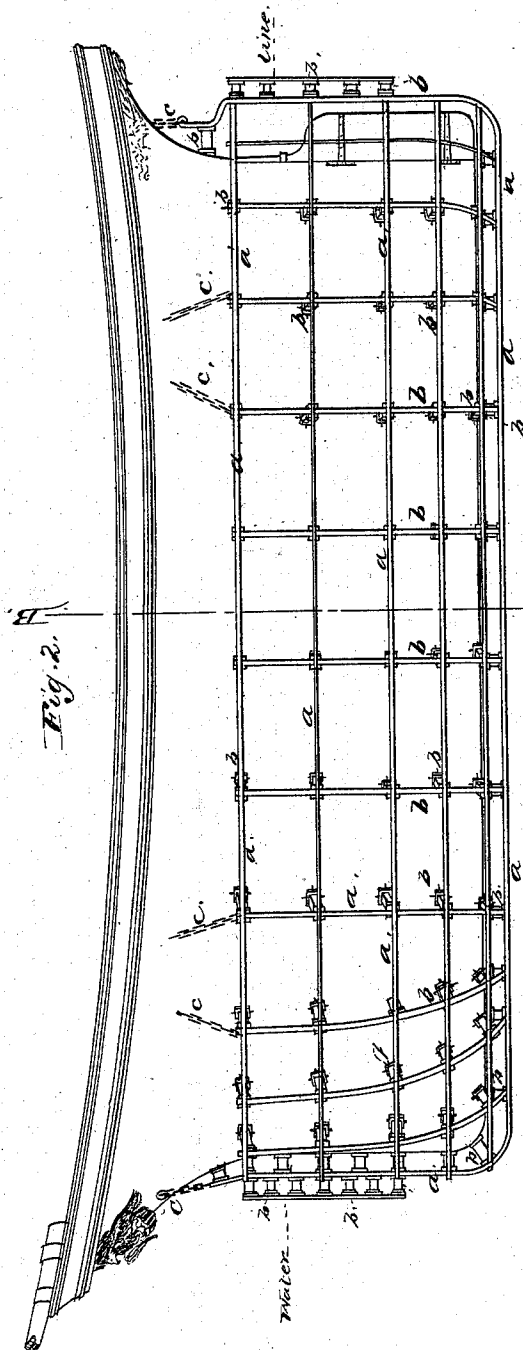
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UNITED STATES PATENT OFFICE.

CHARLES WACKER, OF NEW YORK, N. Y.

IMPROVEMENT IN FENDERS AND PROTECTORS FOR VESSELS.

Specification forming part of Letters Patent No. 146,494, dated January 13, 1874; application filed June 2, 1873.

To all whom it may concern:

Be it known that I, CHARLES WACKER, of the city, county, and State of New York, have invented a new and Improved Ship-Protector; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a sectional front view of a vessel provided with my invention. Fig. 2 is a side view thereof. Fig. 3 is an inverted plan view of the same. Fig. 4 is a face view of a rubber spring detached. Fig. 5 is a plan view of the same as applied to a vessel. Fig. 6 is a similar view thereof, in perspective. Fig. 7 is a perspective view of a cross-tie detached. Fig. 8 is a sectional plan view of a metallic spring and cross-tie as applied to a vessel. Fig. 9 is a similar view thereof, in perspective. Fig. 10 is a face view of a cross-tie in a modified form. Fig. 11 is a sectional side view thereof.

* Similar letters indicate corresponding parts.

This invention consists in the arrangement of a railing or guard which incloses a boat, ship, or vessel, for the purpose of preventing injury to such vessel in case of a collision, and also to provide a ready means of escape in case of fire or shipwreck. It consists further in the combination, with said railing and a vessel, of springs or cushions, which are arranged beneath the railing, and serve to reduce the shock of resistance upon the vessel.

In the drawing, the letter A designates a boat, ship, or vessel, which is surrounded by rails *a b*, that intersect each other, and are held in tie-plates C* on elastic cushions *a**,

which cushions are secured on the outer wall of the vessel by means of brackets C *b**, or in any other convenient manner. Said cushions *a** form an elastic bearing for the railing, and may be composed of metallic springs, as in Figs. 8 and 9, or of blocks of india-rubber, as in Figs. 4, 5, and 6, with a like result. The railing is supported on the vessel by means of stays or chains *c*, (see Fig. 1,) which securely uphold and at the same time allow of a free and easy movement of said railing. The cross-rails *a b* of the railing are placed at suitable distances apart, according to the size and nature of the vessel, and are also of corresponding strength. The several parts of the railing, as well as of the springs, are painted and tarred over to increase the durability.

My railing will guard a ship or vessel from coming directly in contact with rocks or another vessel, and by the intervening elastic cushions the force of such contact will be materially lessened; furthermore, said railing enables the passengers and crew to escape to the boats in case of danger to the vessel.

If desired, my railing may be secured to the vessel by means of rigid supports; but I prefer to interpose cushions or springs, as above described.

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

The combination, with the railing *a b*, of elastic springs or cushions *a**, which are arranged between said railing and the body of a ship or vessel, substantially as and for the purpose described.

CHAS. WACKER.

Witnesses:

JOHN KEIM,
GEO. SCHO.