C. HÜLSTER.

Spring-Guard or Fender for Vessels.

No. 212,143. Patented Feb. 11, 1879.

Fig. I.

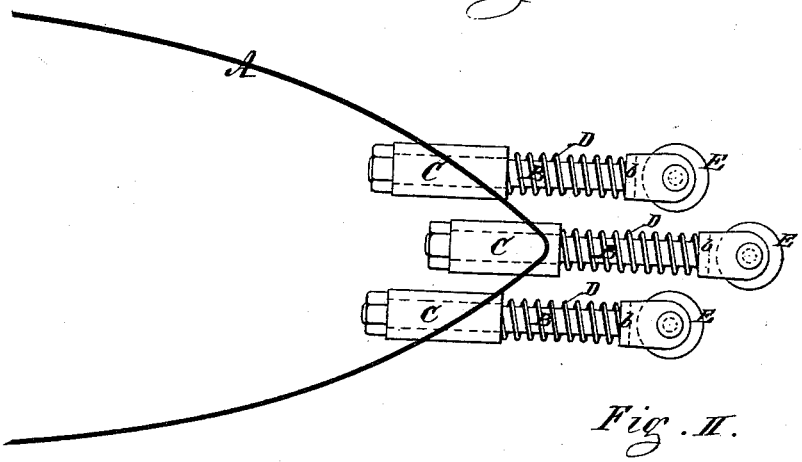


Fig. II.

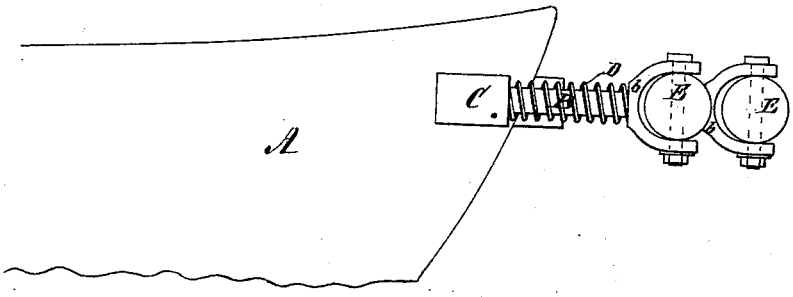
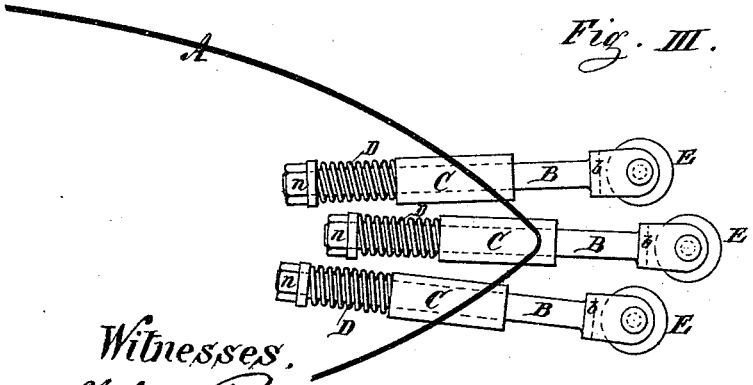


Fig. III.



Witnesses.

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CARL HÜLSTER, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING GUARDS OR FENDERS FOR VESSELS.

Specification forming part of Letters Patent No. **212,143**, dated February 11, 1879; application filed December 14, 1878.

To all whom it may concern:

Be it known that I, CARL HÜLSTER, of New York, in the State of New York, have invented a new and useful Improvement in Ships, of which the following is a specification:

The nature of my invention consists in the arrangement of a number of projecting bars or rods at the fore part or prow of a ship, provided at their outer ends with a buffer-disk, or ball, or roller, and connected with strong springs, which may be placed on said rods, either outside of the ship or at the ends of the rods in the inside of the vessel; or the same may be connected to said rods in any other desired manner.

The object of my invention is, in case of a concussion or impingement of one ship against another ship, to form, by means of these projecting spring-rods, an elastic device or fender for deadening the shock, and partially preventing the danger resulting from such concussion.

In the accompanying drawings, Figure I represents a top view, and Fig. II a side elevation, of my improved ship-fender. Fig. III represents my improvements, showing a different arrangement.

Similar letters represent similar parts.

A represents the fore part or prow of a ship; B, the projecting rods or bars. C are guides attached to the ship, in which the rods B can slide. D are springs to lessen the jar resulting from the contact of the rods or bars with any other object. The outer ends of these rods are provided with rollers or balls E, working in suitable jaws *b*, formed at the ends of said rods.

In Figs. I and II the springs D are arranged between the ends of the jaws *b*, and the outer ends of the guides C wound around the rods B, and are compressed when the balls E come in contact with any other object. In Fig. III these springs D are arranged on the ends of the rods B in the inside of the vessel, (one end of said spring being securely attached to the end of the guiding-piece C, and the other end is attached to the collar or nut *n* on the end of the rod B,) and expand when the outer ends of the rods B or the ball E come in contact with any object.

It will readily be understood that the arrangement of the springs for the rods may be modified in various ways, and that elliptic or any other description of springs may be arranged for that purpose.

As represented in the drawings, the central rod is shown passing through the stem of the vessel, having another rod on each side; but two rods may be arranged, one at each side of the stem, projecting at equal distance from the vessel, and having one or more similar projecting spring-rods on their sides.

It will likewise be perceived that in Fig. I these spring-rods are shown parallel to each other, while in Fig. III these outer or side rods are arranged diagonal to the central rod; and it will readily be understood that these spring-rods may be arranged in various ways, and I therefore do not confine myself to any particular arrangement or construction.

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

In combination with the fore part or prow of a ship, one or more projecting sliding rods, B, with rollers or balls E at their outer ends, in combination with suitable springs, forming fenders, for the purpose and in the manner substantially as herein described and set forth.

CARL HÜLSTER.

Witnesses:
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