

(No Model.)

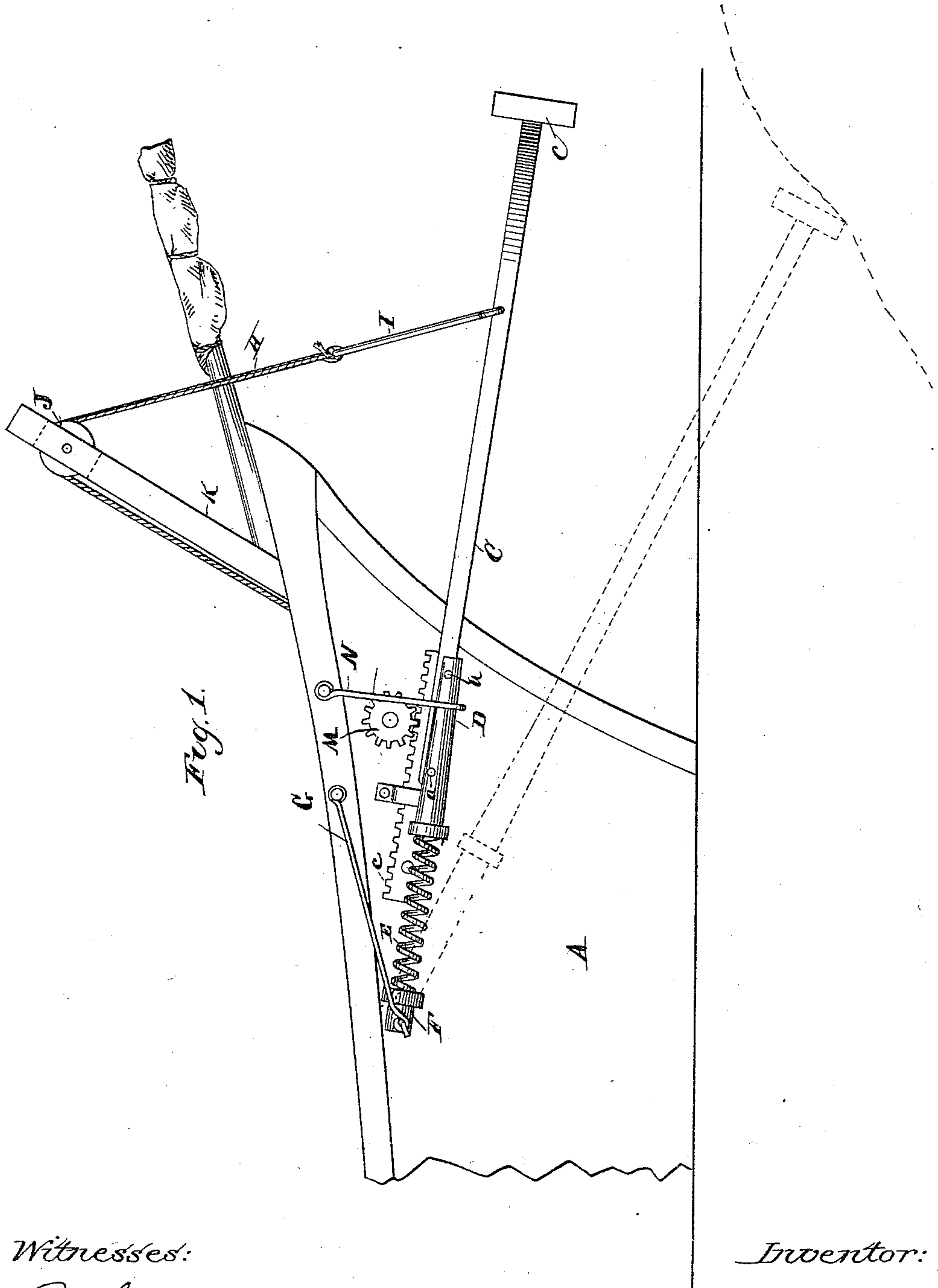
2 Sheets—Sheet 1.

J. BONE.

FENDER FOR VESSELS.

No. 259,466.

Patented June 13, 1882.



Witnesses:

*O. J. Chapman*

Inventor:

*John Bone*

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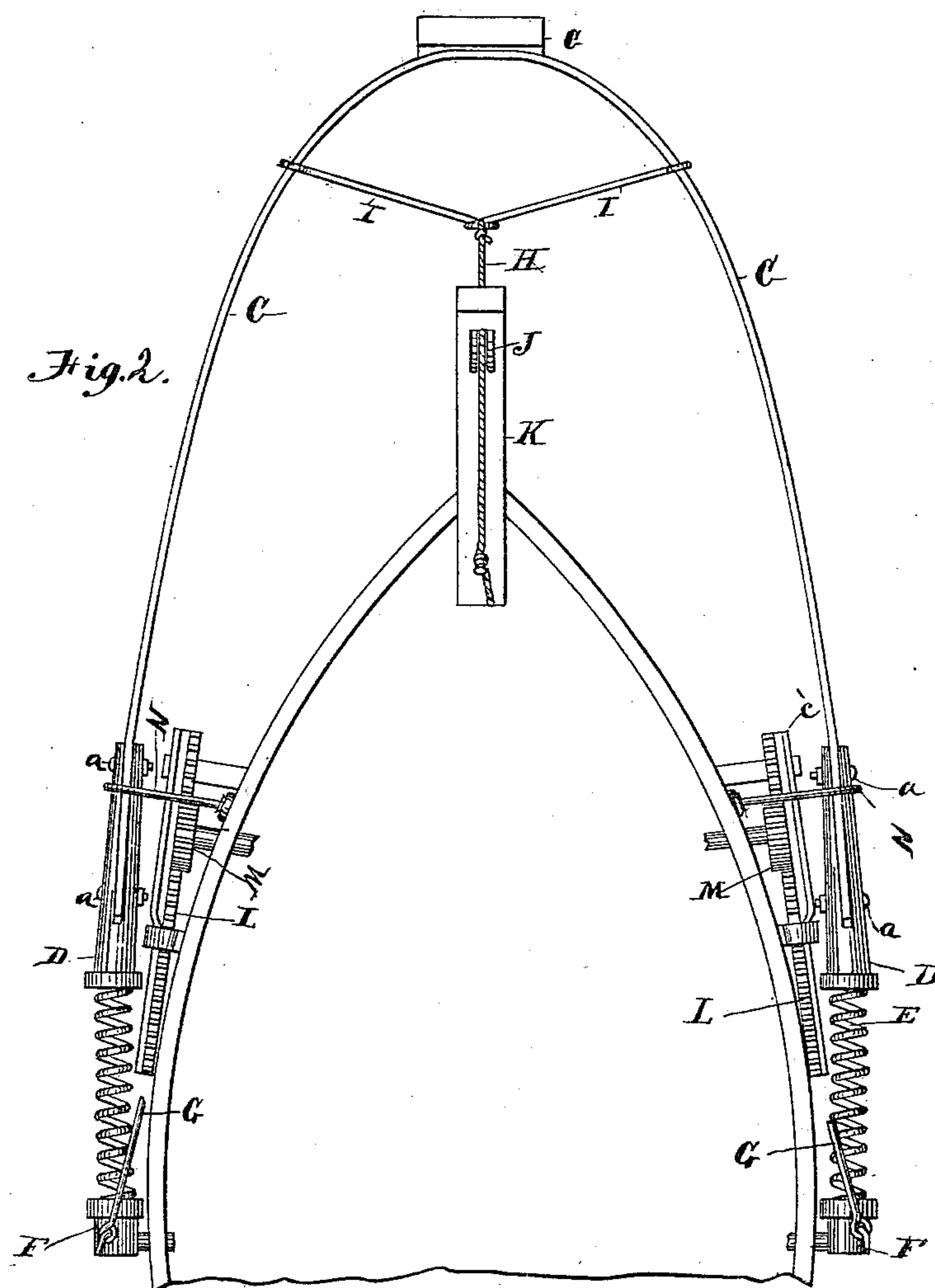
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# UNITED STATES PATENT OFFICE.

JOHN BONE, OF BRECKENRIDGE, MISSOURI.

## FENDER FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 259,466, dated June 13, 1882.

Application filed August 8, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BONE, a citizen of the United States, residing at Breckenridge, in the county of Caldwell and State of Missouri, have invented certain new and useful Improvements in Shields for Vessels, to protect the vessel in case of collision or running on sand bars or aground, and to aid in getting the vessel off the bar; and it consists in the construction and combination of parts hereinafter particularly described, and then sought to be specifically defined by the claims.

In the accompanying drawings, Figure 1 is a side elevation of a vessel with my shield attached thereto, part of the vessel being broken away; and Fig. 2 is a plan view of the same parts.

In the drawings, the letter A indicates the bow of a vessel, to which is hinged or pivoted the shield. This shield is composed of the two bars C, of metal or other suitable material, connected together at their forward ends, and there provided with a cap, c. The rear ends of the bars are held by bolts and nuts a in shafts D, which are recessed longitudinally on their top faces, so that the bars may rest in the recesses. These shafts are connected at their rear ends to metallic or other suitable springs or elastic cushions, E, the forward ends of these springs being preferably secured within the ends of the shafts, while the rear ends are connected to shafts F, journaled in the sides of the vessel, so as to be held thereto and permit the shield to be raised and lowered. In order to further insure the firm connection of the shield at this end to the vessel, rods G are connected, as illustrated in Fig. 1, to the vessel and the shield. A rope or chain, H, is fastened at one end to a rod, I, joined to the forward end of the shield, and is passed upward and over a pulley, J, housed in a post, K, and is used to raise and lower the shield. The shield is usually carried in a horizontal plane, but may be lowered, so as to serve as a "feeler" to keep the vessel from running upon

hidden rocks or bars. In the event of a collision the shield receives the blow and the cushions relieve the vessel from the shock.

To both sides of the vessel, at its bow, racks L are firmly secured by any suitable means. These racks are formed on their outer sides, next to the bars C, with a groove or way, c', to receive and hold the bars C when they are disconnected from the shafts D. These racks, while held firmly against lateral movement, are free to move longitudinally, and are so moved by pinions M, the shafts of which pass through the sides of the vessel, and will be connected in any way that the skill of a workman may suggest to a capstan or drum-wheel, so as to be turned and move the racks back and forth. The bars C will be secured to the ways of the racks by any suitable means. If the vessel runs aground or on a bar, the ends of the shield-bars are shifted from the recessed shafts D to the rack-bar, and then when power is applied to move the racks forward the vessel will be pushed backward and from off the sand bar.

Pendent rods N connect the shield and vessel together at the points indicated in the drawings and prevent the vessel from rising over the shield when the tide rises and raises the vessel from off the bar.

Having described my invention and set forth its merits, what I claim is—

1. The combination, with vessel A, of the shield, composed of bars C, held in shafts D, elastic cushions E, secured to shafts D, and shafts F, connected to cushions E and journaled as described, for the purpose specified.

2. The combination of vessel A, a protecting-shield therefor projecting in front thereof, and sliding rack-bars L, secured to the vessel and provided with ways for the shield, the several parts being adapted to operate as set forth.

JOHN BONE.

Witnesses:

B. R. PARKS,  
ALLEN A. RIAL.