(No Model.)

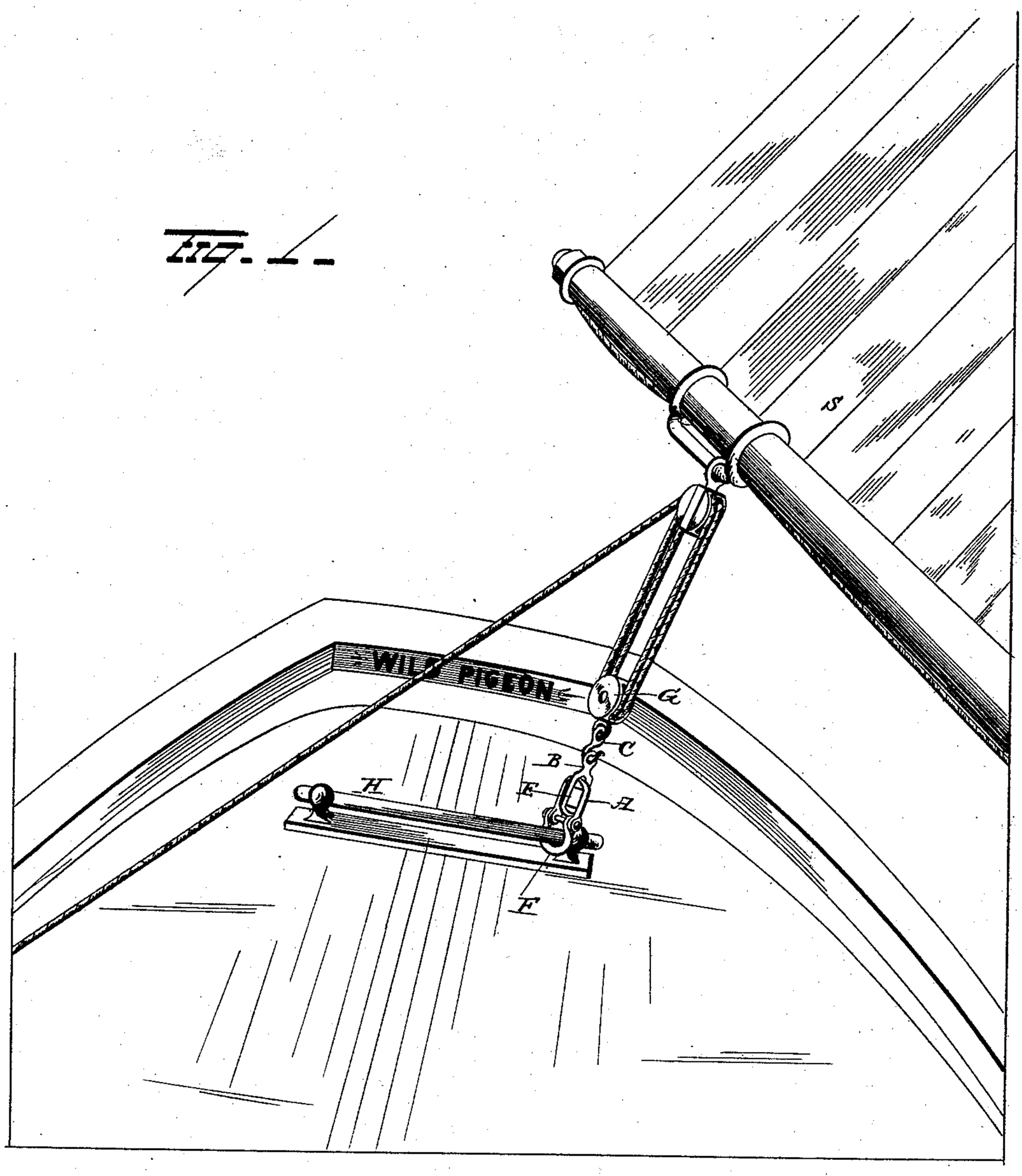
2 Sheets—Sheet 1.

F. WHEELER.

SHOCK ARRESTER FOR THE RIGGING OF VESSELS.

No. 384,008. Patented June 5, 1888.

Fig. 1.



Witnesses,
G. F. Downing.
V. E. Hodges.

Inventor,
Frank Wheeler.
By his Attorney
H. A. Seymour.

(No Model.) 2 Sheets—Sheet 2.

F. WHEELER.

SHOCK ARRESTER FOR THE RIGGING OF VESSELS.

No. 384,008. Patented June 5, 1888.

Fig. 2.

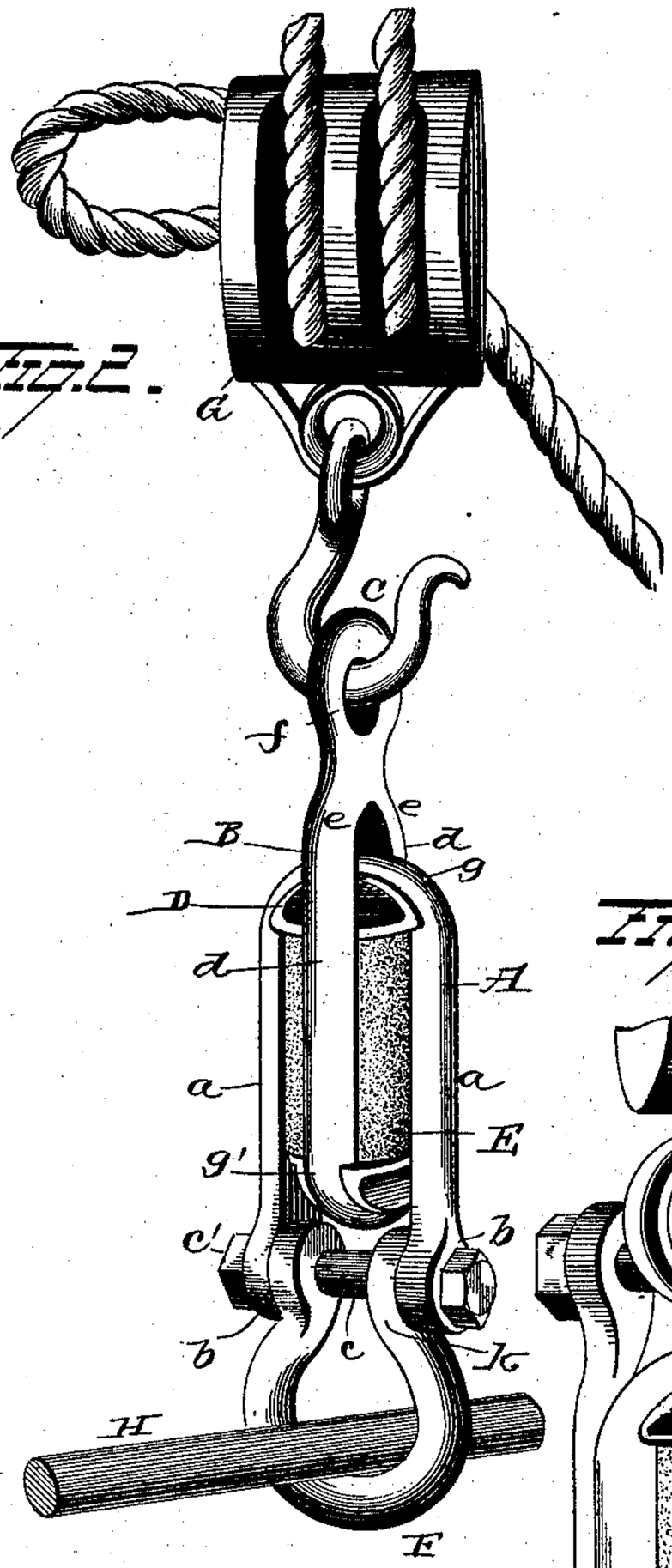


Fig. 4.

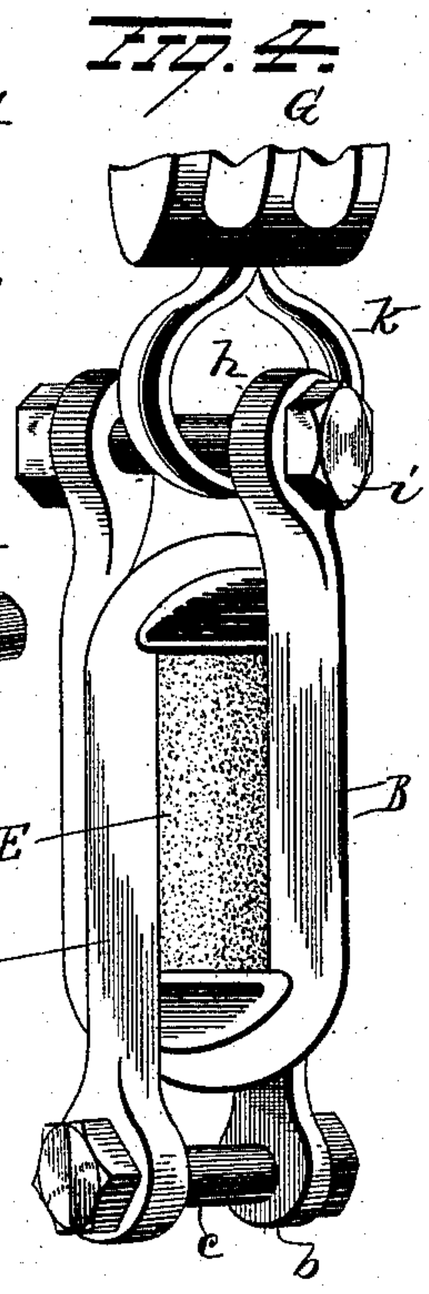
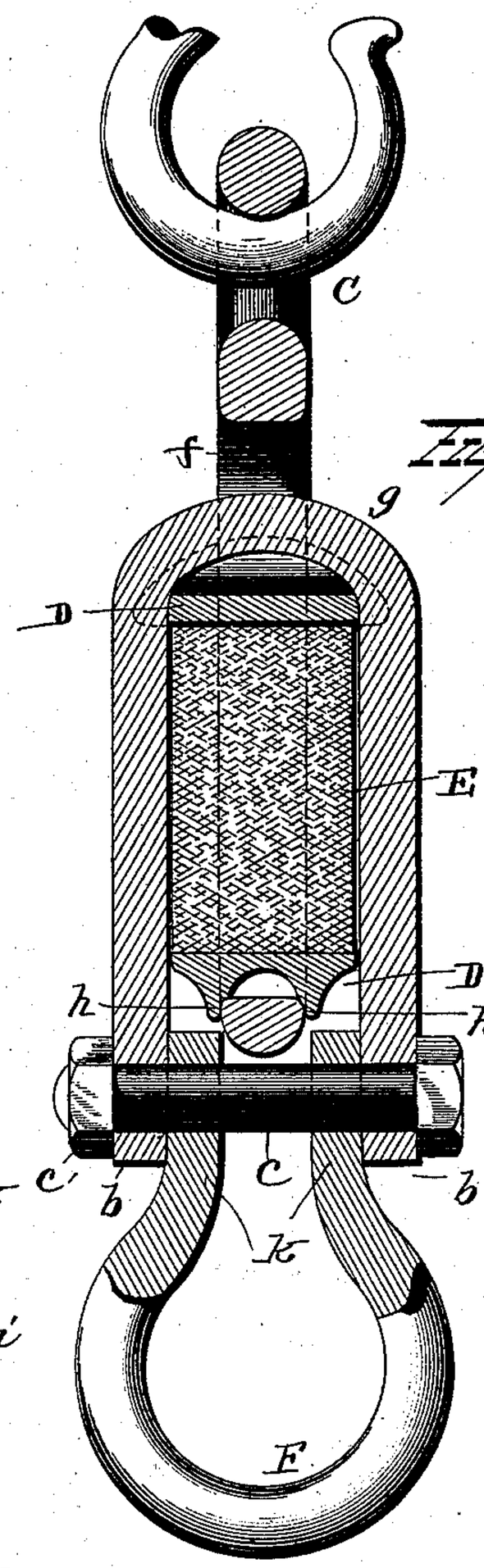


Fig. 3.



Witnesses
G. F. Downing
V. E. Hodges.

Inventor
Frank Wheeler
By his Attorney
H. A. Seymour

UNITED STATES PATENT OFFICE.

FRANK WHEELER, OF MERIDEN, CONNECTICUT.

SHOCK-ARRESTER FOR THE RIGGING OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 384,008, dated June 5, 1888.

Application filed February 25, 1888. Serial No. 265,242. (No model.)

To all whom it may concern:

Be it known that I, FRANK WHEELER, of Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Shock-Arresters for the Rigging of Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved shock-arrester for the rigging of vessels, and more particularly to a device that is adapted to neutralize an abrupt shock or strain on the main-sheet of a sailing-vessel, which is caused by shifting the mainsail from side to side of the vessel in "tacking" or changing the position of the sail to suit the intended course of the boat.

The object of my invention is to provide a simple and effective shock-arresting device, which may be applied to any vessel that is provided with a swinging boom to shift its mainsail, and which from its form of construction will be adapted to slide freely on the transverse rail or sheet-traveler, that is fixed at the stern of the vessel to retain the lower block of the sheet on either tack and permit the sail to be shifted as may be desired.

With this object in view, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 represents the rear end of a yacht in elevation, with the mainsail, boom, sheet, lower block, and shock-arrester shown, the latter being connected to the guide-iron or traveler fixed at the vessel's stern. Fig. 2 is a perspective view of one of the improved shock-arresters detached and enlarged. Fig. 3 is a vertical section of the device taken through the center of the shackle-bolt and open link. Fig. 4 represents a modified form of the device that is adapted to attach the shock-arresting device to the eye of a sheet-block more securely than with the hook-and-eye connection shown in the other figures.

A represents an open link, made by bending a metal bar near its center of length to afford two parallel limbs, *a ă*. The material of the link A is preferably made half-round in cross-section, thus affording a rounded exterior surface and two flat inner sides, as shown in Fig. 2. The free extremities of the link A are enlarged to produce rounded bosses *b b*, which are flattened on their exterior, thus providing parallel sides to each. The rounded bosses *b* are axially perforated, the holes in them being of proper diameter to receive a shackle-bolt, *c*, the head and nut of which bear upon their outer faces. The length of the bolt *c* is such that the threaded end will not project beyond the fastening-nut *c'* when the bolt and nut are in position, so as to afford a neat finish to the parts.

A closed link, B, is formed from a piece of wrought-iron or steel, or may be made of suitable cast metal. This link has two parallel sides, *d d*, and is rounded at one end. The material of which the link is made has a rounded exterior and flattened interior surface, so that the inner faces of the sides *d d* are parallel to each other. From the points *e e* the sides *d d* of the link B are inclined toward each other and unite at *f*, where they are formed into a ring, C.

The open link A and closed link B each are furnished with a metal seat-block, D. These blocks being of similar construction, a description of one will suffice for both of them. Each block consists of a circular piece of metal that is flat on one side and has the edges cut away oppositely to reduce weight, and across the center of the remaining portion a channel is cut to receive the bent portions *g g'* of the links A B. (See Fig. 3.)

In forming the grooves or channels just mentioned two flanges, *h h*, are produced on each seat-block, and when the half-round bodies of the links A B are inserted between pairs of these mating flanges the projecting corners *i i* are hammered down to cause them to bear upon the rounded surface of the link-bodies and thus secure the seat-blocks and links together.

A cylindrical gum cushion or spring, E, is placed between the seat-blocks D D, when the links A B are interlocked, as shown, and from the construction of these links and seat-blocks the cushion E will be held as in a four-barred case, the elasticity it possesses affording a yield-

ing action that is limited by the density of the gum material and its consequent resistance to undue compression.

Upon the shackle-bolt *c* an open shackle-ring, F, is secured, said bolt passing through the perforated ears *k* of the ring. These ears, being located between the bosses *b* of the link A, provide a swinging connection of shackle-ring F with the other parts of the shock-arrester.

To adapt the device for use, the ring or eye C is placed over a hook on the lower end of the sheet-block G; or a split ring may be used to connect the ring C with an eye on the block, in case the latter is so made. The shackle-ring F is removed from connection with the other parts of the shock-arrester and sprung over the guard-iron or traveler H, which is affixed to extend across the stern of the vessel, and by its position afford a hitching-bar for the sheet of the mainsail. After the shackle-ring F is made to encircle the traveler H its ears *k* and the bosses *b* of the open link A are hinged together by the shackle-bolt *c*.

In Fig. 4 the link B, which is shown closed in Figs. 2 and 3, is given the form of an open link, similar to the link A, these two links being adapted to receive and retain between them the cushion or spring E in the same manner as has been previously described.

The rounded bosses *h* of the upper open link, B, are perforated for the reception of the shackle-bolt *i*, which is introduced through these ears, and also through the eye *k*, which is affixed to the lower end of the block G, and is embraced between the inner faces of the bosses *h*. When thus connected, the shock-arrester is prevented from accidental displacement that might occur to the hook-and-eye connection shown in Figs. 2 and 3, and for portions of the rigging where there are sudden changes from a slack to a taut condition this method of attachment has advantages that are obvious.

It will be apparent that when the mainsail is hoisted the sheet S will be spring-connected to the traveler-iron H, and when a tack is made the sudden shock that usually results from contact of the ring of the sheet-block I with the shoulder of the traveler will be absorbed by the elastic cushion E of the shock-arrester, which is interposed between the block I and the traveler H.

I do not restrict myself to the use of a gum cushion, as it is evident that a spiral spring of proper strength may be utilized for the purpose. Neither do I limit the use of this device to its combination with the sheet of a mainsail, as it is obvious that it may be otherwise employed where it is desirable to neutralize the shock or strain on other parts of the rigging of a vessel, as it is equally applicable to the boom-traveler and other portions of the rigging where sudden strain is thrown upon the ropes or their connections to masts or yards of a sailing-vessel.

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

1. In a shock arrester for vessels, the combination, with two interlocking links, each having approximately parallel integral sides and curved at one end, and the grooved seat-blocks resting on the curved ends of the links, of a spring interposed between the blocks, and a shackle-ring mounted on a bolt removably secured to the open end of one of said links, substantially as set forth.

2. In a shock-arrester for vessels, the combination, with the links, each made in a single piece and curved at one end, one of said links being open at one end and closed at the other, and the other link closed at both ends and provided at its outer end with an eye, and seat-blocks secured to the links, of a spring interposed between the blocks, and a shackle-ring mounted on a bolt removably secured to the open link, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK WHEELER.

Witnesses:
LUCAS C. CLARK,
C. S. PERKINS.