M. MORÁUSZKY.

FENDER FOR VESSELS.

APPLICATION FILED FEB. 8, 1911.

991,224. **Patented May 2, 1911.**

Fig. 1

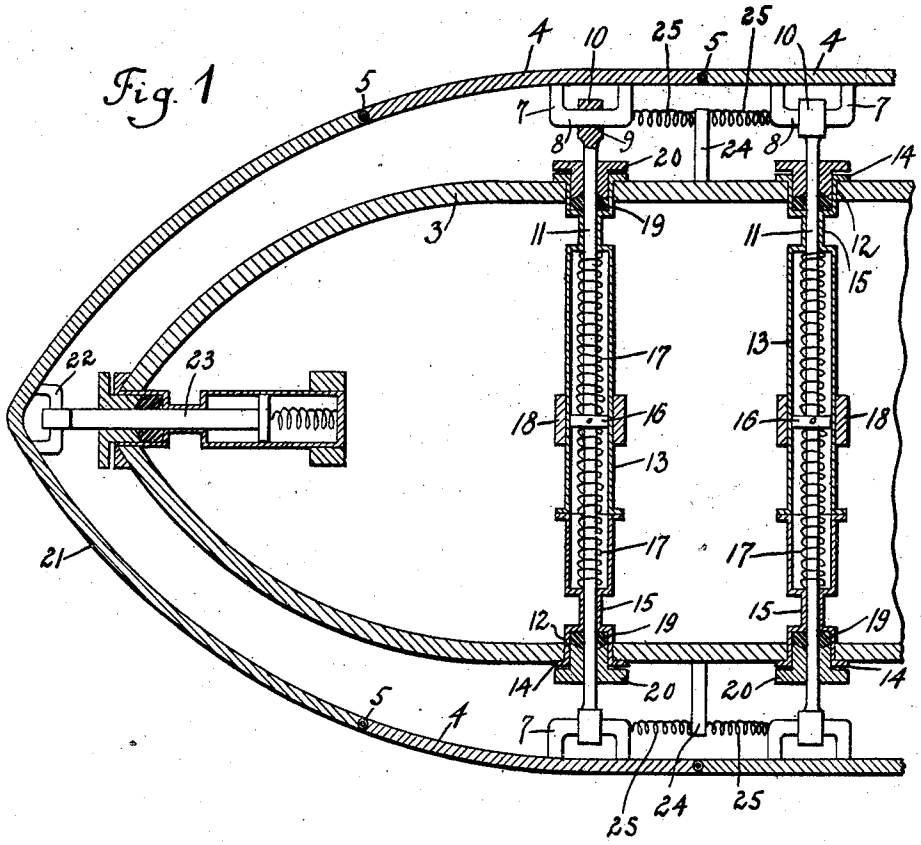
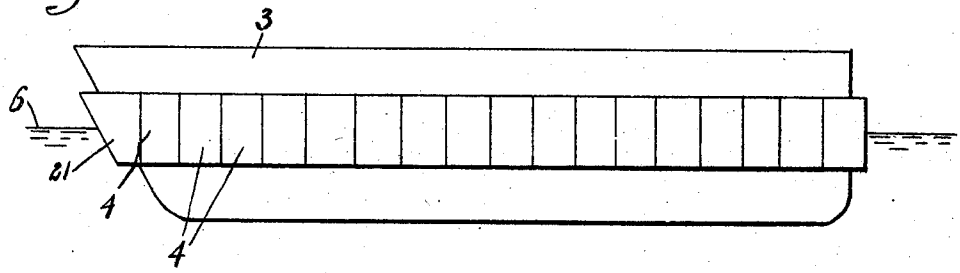


Fig. 2



WITNESSES

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MÀTYÁS MORÁÚSZKY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO MARTON MELEG, OF NEW YORK, N. Y.

FENDER FOR VESSELS.

991,224. Specification of Letters Patent. Patented May 2, 1911.

Application filed February 8, 1911. Serial No. 607,340.

To all whom it may concern:

Be it known that I, MÀTYÁS MORÁÚSZKY, a subject of the King of Hungary, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fenders for Vessels, of which the following is a specification.

The present invention relates to fenders for vessels of the type described in U. S. Letters Patent No. 979,539, granted to me December 27, 1910.

One of the objects of the invention is to provide a simple and effective device for preventing injury to ships' hulls, their bows and sides from collision, grounding or waves.

Another object is to generally improve the construction of the fender described and shown in the above named Letters Patent.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a horizontal section taken through a ship's hull provided with the invention, and Fig. 2 is a diagrammatic view of a ship's hull or body with the fender constructed in accordance with the present invention thereon.

In the drawings, the numeral 3 indicates the hull or body of the vessel, built in any suitable manner and being of any desired dimensions. The fender of the vessel comprises a plurality of planks or plates 4, made of any suitable material, and joined at 5 by means of hinges or other flexible connections, which allow of a relative movement of said plates to each other. These plates are located at a suitable distance from the outer surface of the hull, and parallel to the sides and bow of the vessel. The height and width of the plates 4 vary, of course, according to the requirements, for instance, in the case shown in Fig. 2 of the drawings, the same cover a substantial part of the vessel below the water-line 6 and above the same, and it will be easily seen that more than one row of planks or plates 4 may be arranged above each other without departing from the invention.

To each plate 4 is attached a U-shaped member 7, the base portion 8 of which is slidably arranged in the bore 9 of one of the heads 10 of a supporting bar 11. Each bar projects out through holes 12, 12 in the opposite sides of the vessel body, and is arranged within a substantially tubular member 13, which is provided with flanges 14, 14 upon its ends, where it is attached to the outer faces of the sides of the vessel. Near to their ends the tubular members are reduced in diameter, as shown at 15, 15. These reduced portions serve as supporting means for the bars 11, which latter carry upon their middle portions disks 16, fixedly attached thereto. Against these disks and the reduced portions 15 of the tubular members 13 bear springs 17, 17 to hold the plate members 4, 4 in their outermost, normal positions. The middle portions of the tubular members 13 may be supported by standards 18, 18, which are carried by the hull of the vessel. The outer ends of the tubular members 13 are formed as stuffing boxes, into which is placed around the bars 11 packing material 19, held therein by glands 20, 20 in the usual manner. The plate member 21 at the bow part of the vessel is also provided with a U-shaped member 22, in engagement with a supporting bar 23, similar in construction and arrangement to the bars 11, 11.

In order to keep the U-shaped members 7, and thus the plate members 4, in their central positions relative to the axes of the supporting bars 11, lugs 24 are fastened to the sides of the vessel, against which bear springs 25, in engagement with the U-shaped members.

The operation of this device is as follows: In case of a collison, and if the blow is directed in a direction parallel to the axes of the supporting bars 11, those plate members which are stricken violently will be forced inwardly toward the side of the vessel, while the plate members on the opposite side of the vessel will move outward. The shock will be taken up by those springs which are ar-

ranged on the side of the vessel opposite to that on which the blow was received. Should the blow be received at an angle to the axes of the supporting bars 11, the latter will be forced inward and at the same time the fender plates caused to move in the direction of the longitudinal axis of the vessel, the sliding arrangement between the plates and the supporting bars allowing of such movement; or in other words the plates 4 will move in the direction of the blow. It is obvious that the springs 17 and 25 will tend to bring the fender back to its normal, operative position.

The device herein described is simpler in construction than that disclosed in the Letters Patent above referred to in that it contains less moving parts, that is half the number of supporting bars, which latter together with the springs are inclosed in water tight tubular members, which serve at the same time as bearings for said supporting bars. The force of the blow is, on the other hand, divided over a greater area, since the springs act on the side of the hull and not against a block, as in the device described in the above named Letters Patent.

What I claim is:

1. The combination with the hull of a vessel, of a plurality of fender plates surrounding the same, supporting bars slidably arranged in said hull and projecting through the sides and bows thereof toward said fender plates, tubular members each of which is attached to the opposite sides of said hull and provided near its points of attachment with reduced portions to form bearings for said supporting bars, means engaging said fender plates and supporting bars and allowing of a relative movement of the same in the direction of the longitudinal axis of the vessel and of a movement in the direction of the longitudinal axes of said bars, and springs arranged within said tubular members engaging said supporting bars and the reduced portions of said tubular members.

2. The combination with the hull of a vessel, of a plurality of fender plates surrounding the same, supporting bars slidably arranged in said hull and projecting through the sides and bows thereof toward said fender plates, tubular members each of which is attached to the opposite sides of said hull and provided near its points of attachment with reduced portions to form bearings for said supporting bars, U-shaped members fastened to said fender plates and engaging slidably said supporting bars and allowing of a relative movement of the same in the direction of the longitudinal axis of the vessel and of a movement in the direction of the longitudinal axes of said bars, and springs arranged within said tubular members engaging said supporting bars and the reduced portions of said tubular members.

Signed at New York, in the county of New York and State of New York this 2nd day of February, A. D. 1911.

MÀTYÁS MORÁÚSZKY.

Witnesses:
STEPHEN SKIBA,
SIGMUND HERZOG.