UNITED STATES PATENT OFFICE.

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YIELDABLE REINFORCEMENT FOR VESSELS.

1,110,798. 


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To all whom it may concern:

Be it known that I, JOSEPH KRALIK, a subject of the King of Hungary, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Yieldable Reinforcements for Vessels, of which the following is a specification.

This invention relates to a yieldable reinforcement for vessels, and the objects of my invention are, first, to furnish the sides of a vessel with novel means for preventing the sides of the vessel from expanding, buckling, bulging or becoming otherwise distorted to that extent, in a collision, that would produce vents or fissures admitting water to the hull of the vessel and causing the same to sink before a port could be reached. Second, to provide yieldable longitudinal and transversely arranged braces that add rigidity to the hull of a vessel without materially increasing the displacement of the same. Third, to accomplish the above results by a simple, durable and inexpensive construction that is applicable to various types of vessels, as barges, river and ocean going crafts.

The invention will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:

Figure 1 is a side elevation of a vessel provided with the reinforcements. Fig. 2 is a plan of a portion of the same. Fig. 3 is an enlarged side elevation of a portion of one of the reinforcements. Fig. 4 is a plan of the same.

My invention resides in providing the sides of a vessel 1 with a plurality of longitudinal and transversely arranged yieldable reinforcements, the number of these reinforcing units depending upon the size and displacement of the vessel. The units are identical in construction and each comprises spaced apart channel shaped members 2 that are riveted or otherwise secured to the sides of the vessel. The members 2 have the ends or flanges 3 thereof provided with an opening 4 and movably mounted in said openings are tie rods 5 having heads 6 provided with hooks 7 connected by chains 8 or other flexible connections.

The outer ends of the tie rods 5 are screw threaded, as a 9 to receive nuts 10 and are adapted to extend through the opening in the flange 3 and encircling said tie rods, between said nuts and the inner ends of the members 2 are coiled compression springs 11, the outer ends of which are bent so as to engage the inner faces of the nuts 10, so that they hold the chains 8 normally taut. These chains extend longitudinally of concave fenders 12 suitably secured to the vessel. The fenders 12 extend longitudinally of the sides of the vessel in some instances 45 and in other instances the fenders extend through the hull or decks of the vessel.

The transverse yieldable reinforcements cooperate with the longitudinal reinforcements in preventing the sides of the vessel from buckling, bracing the sides when head on collision occurs. The fenders 12 prevent the side plates of the vessel from becoming accidentally displaced and the yieldable connections between the members 2 compensate for any end thrust that the bow or stern of the vessel may receive.

What I claim is:

A yieldable reinforcement for vessels embodying longitudinal and transversely arranged yieldable braces comprising members adapted to be secured to the sides of a vessel, fenders disposed between the said members, members having mounted therein spring tie rods and flexible connections arranged longitudinally of the fenders and connecting said tie rods.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH KRALIK.

Witnesses:
FRANK GRENZER,
OSCAR WEIDEMANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."