C. DORNFELD.

GROUNDING PREVENTER FOR MARINE VESSELS.

APPLICATION Filed JULY 1, 1902.

INVENTOR
Charles Dornfeld

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WITNESSES:

INVENTOR

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GROUNDING-PREVENTER FOR MARINE VESSELS.


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To all whom it may concern:

Be it known that I, CHARLES DORNFELD, a subject of the Emperor of Austria-Hungary, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Grounding-Preventers for Marine Vessels, of which the following is a specification.

This invention relates to grounding-preventers for marine vessels, and has for its object to provide a device of the class described which will possess points of advantage in simplicity, convenience, effectiveness, and general efficiency.

Another object of the invention is to provide a device of the class described which immediately on the vessel coming in contact with a solid object will automatically reverse the engines and which will then yieldingly resist the vessel's farther advance until the effect of the reversed engines is felt by the vessel.

In the drawings, Figure 1 is a side elevation of a vessel embodying the invention, partly broken away. Fig. 2 is an enlarged transverse vertical section of the device.

Corresponding parts in both figures are denoted by the same reference characters.

Referring to the drawings, I designates a marine vessel of the ordinary type of construction propelled by steam and provided with the usual engines with suitable reversing means. Instead of a propeller, however, I mount one or more worms 2 in suitable bearings at the side of the vessel 1 and longitudinally thereof. In the form illustrated I have shown a pair of worms 2, mounted at each side of the vessel 1 and provided at their adjacent ends with bevel-gears 3, meshing with a like gear carried by a shaft 4, extending transversely of the vessel 1 and suitably connected with the engines. (Not shown.) As the worms 2 will revolve in opposite directions, the pitch of their screws will be opposite.

I provide a well 5, which extends through the lower portion of the false stem or ram 6 and is provided at its inner end with an enlarged chamber 5°. Extending across the inner end of the well 5 is the stem 7. Slidably mounted in the well 5 is a plunger 8, of suitable size. The plunger 8 is provided at its inner end with a base-plate 9, which fits snugly in the chamber 5° and serves as a stop to prevent the plunger 8 from descending beyond a predetermined distance. Tensional means are interposed between the base-plate 9 and the stem 7, which in the form here shown consist of powerful springs 10, but may be pneumatic or hydraulic. Suitable water-tight packing 11 is provided about the plunger 8. The plunger 8 has in its end a recess 12, from which an aperture 13 extends through the plunger 8 and base-plate 9. A rod 14, provided at its lower end with a head 15, which fits slidingly in the recess 12, extends through the aperture 13 and through an aperture in the stem 7, against the inner surface of which its head 14° rests. Tensional means are provided to normally cause the head 15 to project beyond the recess 12. In the form shown such tensional means consist of a spring 16, surrounding the portion of the rod 14 intermediate the base-plate 9 and the stem 7 and resting at one end against the stem 7 and at the other end against a stop upon the rod 14.

Mounted in juxtaposition to the head 14° of the rod 14 is a switch 17 for making and breaking an electric circuit, which includes any suitable electrically-operated device for reversing the engine.

The operation and advantages of the invention will be readily understood and appreciated. When the vessel 1 comes in contact with any solid object, the head 15 is forced back into the recess 12, raising the rod 14, the head 14° of which strikes the switch 17 and operates the device which is employed to reverse the engines. The plunger 8 now bears yieldingly against such object, giving the reverse action of the engines time to affect the vessel's motion before the stem strikes such object, and thus prevents injury to the vessel 1 or her grounding. As soon as she is backed off the springs 10 and 16 restore the plunger 8 and head 15 to their normal positions ready for like service upon the next occasion.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and
modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In combination with a steamship having a chambered projecting ram at its stem below the water-line, a plunger slidably mounted in such ram and projecting beyond same, tensional means behind said plunger to maintain it in its projected position, a second plunger having a head projecting beyond and its stem yieldingly mounted within the first plunger, such stem at its rear end projecting within the chambers of the ram, a switch device operated by said stem, and an electrical circuit controlled by said switch and operating a device whereby the engines of the steamship may be reversed, substantially as set forth.

2. The combination with a steamship having its stem provided with a well, as 5, of a projecting ram having a chamber, as 5', a plunger, as 8, slidably mounted in the ram and having a base-plate, as 9, and tensional means in connection therewith within said chamber, a second plunger having a head, as 15, projecting beyond the first plunger and provided with a stem rearwardly projecting through same and into the well 5, and having tensional means also within the chamber, and a switch as 17, within the well in electrical connection with a circuit whereby an engine reversing device may be operated, substantially as set forth.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

CHARLES DORNFELD.

Witnesses:
F. O. McCLEARY,
J. CLARK PYBAS.