

UNITED STATES PATENT OFFICE.

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MARINE BRAKE AND SHOCK-ABSORBER.

1,064,473.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST HAAS, a resident of Grapeville, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Marine Brakes and Shock-Absorbers, of which the following is a specification.

The primary object of the invention is to provide simple and efficient means for checking the speed of a ship when a collision is imminent or when, for any other cause, it is desired to quickly decrease the speed or stop the ship altogether.

A further purpose is to provide a device that will not only operate as a marine brake but which also will present a surface of considerable expanse to a ship or other object with which it may be in collision, thereby lessening the cutting and penetrating tendency of the colliding ship.

A further purpose is to embody the invention in sectional apparatus which when not in use folds compactly above the water line, though always in readiness to be moved into operative position.

The invention also includes improved means for lowering the combined brake and retarder from inactive position, and for restoring it to such position.

In the accompanying drawings, Figure 1 is a side elevation of the bow of a ship equipped with my improved apparatus, the latter being shown in inactive position in full lines, and dropped into active or operative position in dotted lines. Fig. 2 is a view in top plan. Fig. 3 is a longitudinal sectional elevation of the improved apparatus. Fig. 4 is a sectional plan of the improved retarder in lowered or operative position. Fig. 5 is a detail of the hinge connection between the retarder sections and the prow of the ship.

Referring to the drawings, 2 designates the bow quarter of the ship, and 3 are the door-like retarder sections which are hinged together on vertical rod 4, this rod being mounted on horizontal hinge bolt 5 supported by lugs 6 projecting from the prow of the ship. Normally, sections 3 are in upright position, as in full lines in Figs. 1 and 2, also Fig. 3, the sections leaning backward slightly with their smooth surfaces 3' bearing against the opposite sides of the prow, and with their lower extremities resting in supports 7. As the upturned sections lean backward slightly from a vertical line inter-

secting bolt 5, they may be held in inoperative position alone by the action of gravity.

The opposite faces of sections 3, the faces that are outermost when the sections are in upturned position, are provided with transverse ribs 8 and adjacent their hinge edges with vertical ribs 9, the latter being disposed at such an angle that when the retarder is turned downward into the dotted line position of Fig. 1, ribs 9 form stops for engaging the prow and holding the retarder sections 3 extended, as in Fig. 4. The transverse ribs 8 strengthen the retarder sections and reinforce the stop-forming ribs 9, as will be understood.

For raising the retarder from lowered position a boom 10 may be hinged at 11 to a support 12 secured to the deck of the ship, with a line 13 passing over a sheave 10' carried by the boom, the outer extremity of the line being connected at 14 to the extremity of hinge bolt 4, and its other extremity secured to the winding drum 15 mounted on the deck. With the retarder in lowered position boom 10 is turned downward as in dotted lines in Fig. 1. To raise the retarder, line 13 is wound on drum 15 until a stop 13' carried by line 13 engages the sheave-carrying extremity of boom 10 when the boom is raised to vertical position, as in full lines in Fig. 1 and the retarder raising movement is completed. Drum 15 may be locked by a suitable ratchet mechanism 16 for holding the retarder raised, or the leaning backward of the raised retarder against the ship prow may be depended upon for maintaining it in upright position. For lowering the retarder a power cylinder 17 may be suitably located on the ship, with rod 18 of its piston adapted to be projected against the upturned retarder thereby throwing it forward and downward. As the retarder turns downward, ears 19 projecting from the retarder sections at opposite sides of lugs 6, prevent both retarder sections from turning to one side or the other on rod 4.

If a collision is imminent the lowering of the retarder presents a relatively broad surface to the water, thereby assisting materially in checking the forward movement of the ship. And in the event of collision this broad surface so spreads the blow as to materially decrease the cutting and penetrating force of the colliding ship. The force of the collision is so spread that if another ship is struck near its bow or near

its stern the tendency will be to turn or deflect the latter rather than to penetrate it. When in upturned position the retarder folds compactly against the prow of the ship and is entirely out of the way.

I claim:—

1. The combination with a ship, of two retarder sections hinged together, a horizontal hinge supporting the retarder sections on the ship prow with the sections adapted to swing backwardly and with one face of each section disposed toward the ship when the sections are turned upwardly and the reverse side of each section disposed toward the ship when turned downwardly.

2. The combination with a ship, of two retarder sections, means for supporting the sections on the ship prow above the water line, and means for lowering and for reversing the sections, thereby turning outwardly the faces thereof that are innermost when the sections are raised and at the same time extending the sections into the water.

3. The combination with a ship, of two retarder sections united to turn about a vertical axis, a horizontal hinge adapted to support the sections in upturned position with faces thereof disposed toward the sides of the prow and said hinge adapted to support the sections in downturned position with the reverse sides thereof disposed toward the prow, and means for holding the sections laterally extended when in downturned position.

4. The combination with a ship, of two retarder sections united to turn about a vertical axis, a horizontal hinge adapted to support the sections in upturned position with faces thereof disposed toward the sides of the prow and said hinge adapted to support the sections in downturned position with the reverse sides thereof disposed toward the prow, and means carried by said reverse sides for engaging the prow and holding the sections extended laterally.

5. The combination with a ship, of two retarder sections connected by a vertical hinge, a horizontal hinge connecting the

hinge-connected sections to the ship prow with the sections when in upturned position adapted to engage opposite sides of the prow and with the reverse faces of the sections adapted to engage the prow when the sections are turned downward.

6. The combination with a ship, of two retarder sections connected by a vertical hinge, a horizontal hinge connecting the hinge-connected sections to the ship prow with faces of the sections when in upturned position disposed toward opposite sides of the prow and with the reverse faces of the sections disposed toward the prow when the sections are turned downward, and transverse ribs on said reverse sides adapted to engage the prow for holding the sections laterally extended.

7. The combination with a ship, of a retarder hinged to swing vertically thereon, the retarder being held in upturned position by gravity and when turned downward adapted to enter the water, means for turning the retarder downward from upright position, and means for moving the retarder in a reverse direction.

8. The combination with a ship, of a retarder hinged thereto to swing vertically, a boom mounted on the ship to swing vertically, a line movable over the boom and connected to the retarder, and means for manipulating the line for raising the retarder and for turning upwardly the boom.

9. The combination with a ship, of two retarder sections hinged together, hinge lugs projecting from the ship, a horizontal hinge bolt in said lugs on which the hinge-connected sections are mounted, projections on the retarder sections for engaging said lugs and guiding the sections as they turn on the hinge bolt, and means for turning the sections on said bolt.

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

AUGUST HAAS.

Witnesses:

J. M. NESBIT,
F. E. GAITHER.