J. C. OLLARD.

SHIP BRAKE.

APPLICATION FILED MAR. 25, 1915.

1,195,149.

Patented Aug. 15, 1916.

2 SHEETS—SHEET 1.

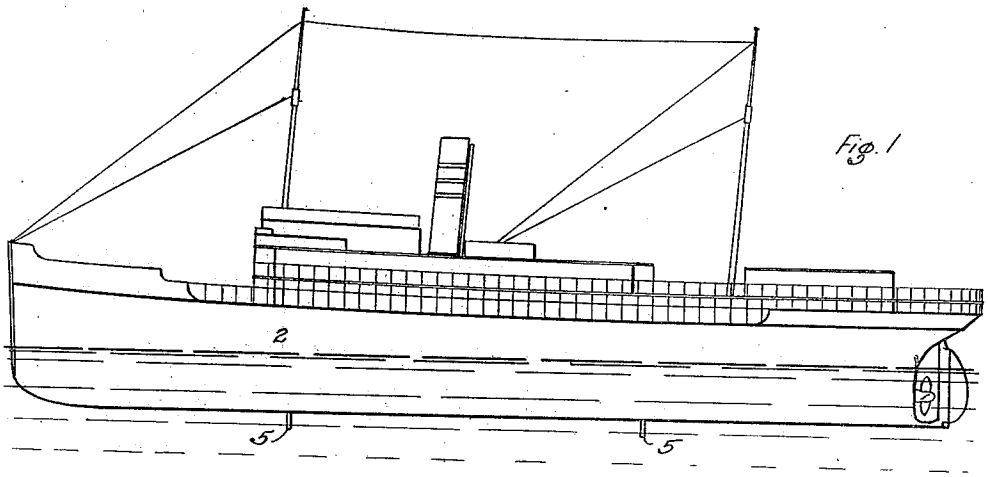


Fig. 1

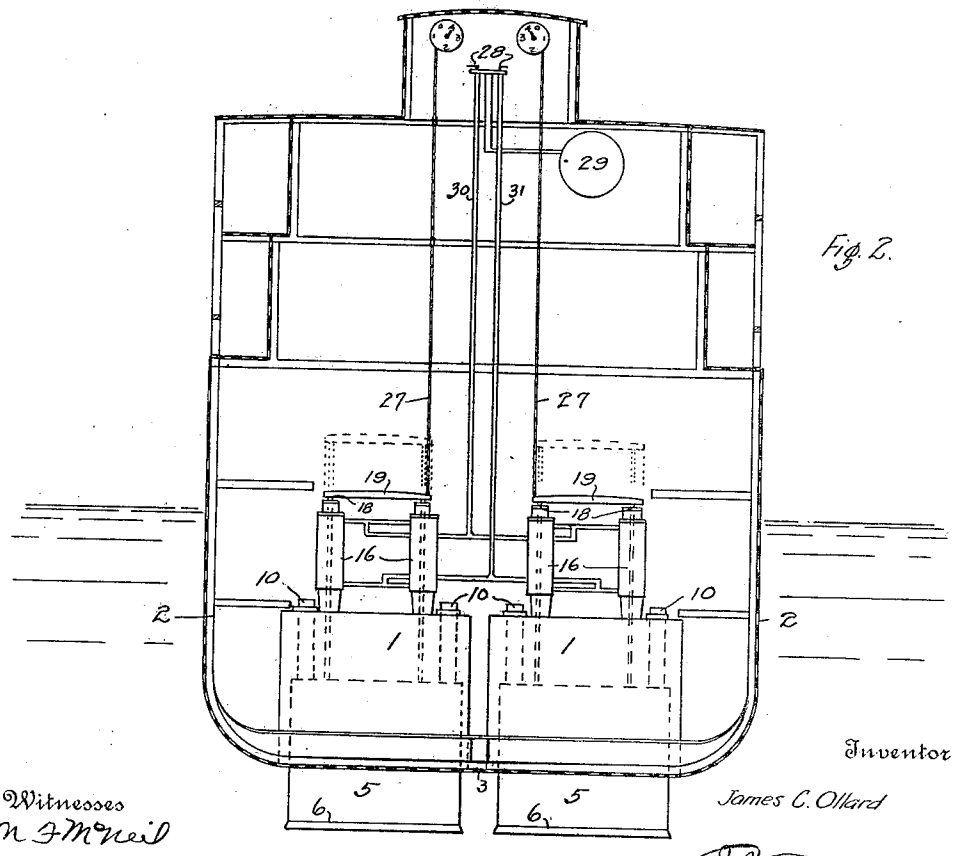


Fig. 2.

Witnesses

M. F. McNeil

S. Clarke

Inventor

James C. Ollard

By

J. L. Elliott

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

J. C. OLLARD.

SHIP BRAKE.

APPLICATION FILED MAR. 25, 1915.

1,195,149.

Patented Aug. 15, 1916.

2 SHEETS—SHEET 2.

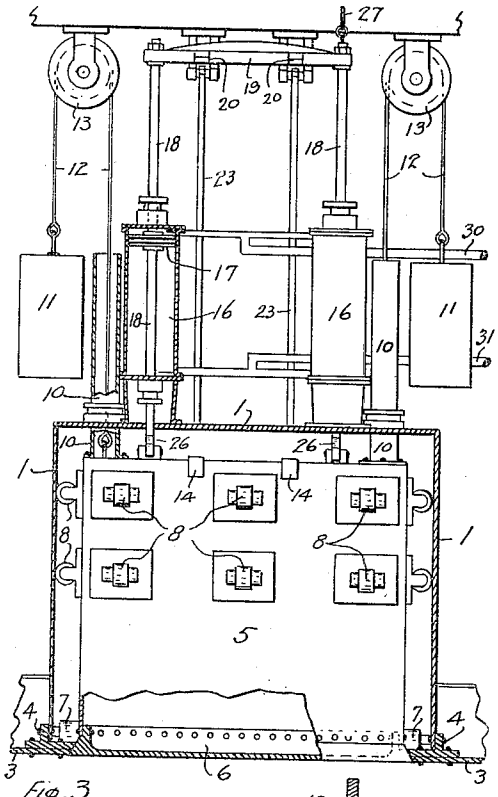


Fig. 3

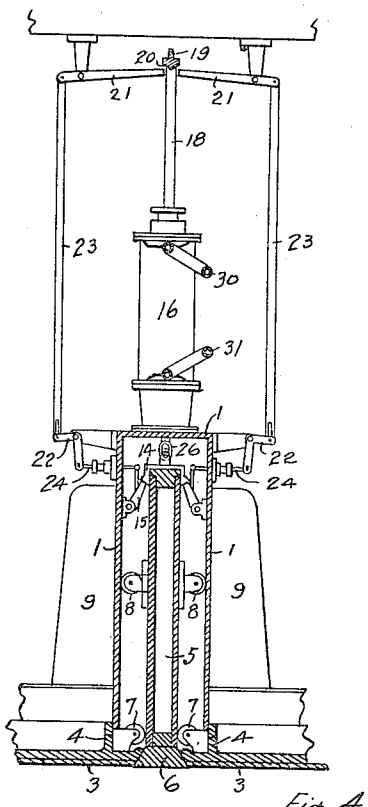
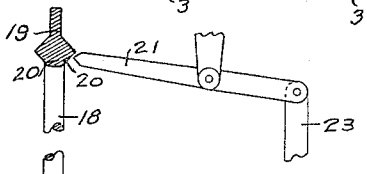


Fig. 4



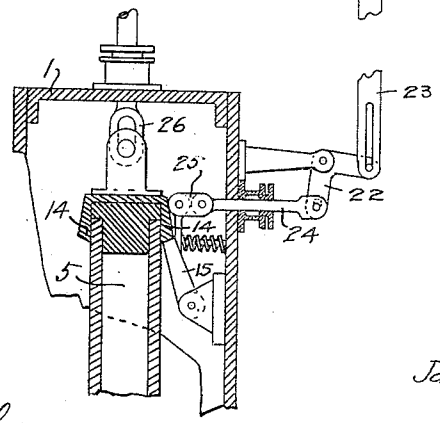


Fig. 5

Witnesses

M. J. McNeil

S. Clarke

Inventor

James C. Ollard

By P. K. Elliott

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES C. OLLARD, OF TACOMA, WASHINGTON.

SHIP-BRAKE.

1,195,149. Specification of Letters Patent. Patented Aug. 15, 1916.

Application filed March 25, 1915. Serial No. 16,825.

To all whom it may concern:

Be it known that I, JAMES C. OLLARD, a citizen of the United States, residing at Tacoma, in the county of Pierce, State of Washington, have invented certain new and useful Improvements in Ship-Brakes, of which the following is a specification.

This invention relates to devices for quickly stopping a ship when it is in danger, and has for its objects to provide an emergency resistance to the passage of the ship through the water, said resistance being removed from its surface and therefore acting with greater efficiency than it would near the surface of the water; whereby the resistance will act independent of the loading or rolling of the ship or of the waves; whereby the extent of said exposed surface may be controlled; and whereby, when the emergency resistance is withdrawn from action, the ship has no more resistance than it would have without my appliances mounted therein. Further objects, are to provide indicating means whereby the position of the resisting body in the water may be known in the pilot house; means for counterbalancing the weight of the resisting body; means for locking the resisting body in closed position; means for automatically unlocking said body as soon as the actuating means is set in motion; means for actuating said body in either direction; means for guiding said body in its motion and for keeping its friction factor at a low point; and means for preventing the ingress of water into the ship. I attain these and other objects by the devices, mechanisms, and arrangements illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a ship showing my ship brake applied thereto and in action; Fig. 2 is a cross-section thereof; Fig. 3 is a front elevation, partly in section, of one of the ship brakes and its actuating and guiding means; Fig. 4 is a cross-section thereof; and Fig. 5 is a partial view, similar to Fig. 4, on a larger scale, showing especially the brake lock and its releasing mechanism.

Similar numerals of reference refer to similar parts throughout the several views.

This invention is illustrated in the drawings as consisting of two pairs of brakes, one pair located in the forward section of the ship and the other pair nearer to the stern thereof. Each brake is entirely similar to the others and therefore only one such brake is described, it being understood that any number of brakes may be used and that each may be independently controlled if desired. I have shown, in Fig. 2, that the two brakes forming a pair have a single control in the pilot house, but it is to be understood that each may be independently controlled if it is so desired.

A container or box 1 is securely fastened within the ship 2 to its bottom 3, and is suitably braced to the frame of the ship as may be needed. The bottom 3 is reinforced around the opening in the skin under the said box, said reinforceing 4 and the skin 3 being beveled as shown. This box 1 is watertight and such mechanism which passes thereinto from the vessel passes through suitable stuffing boxes. Arrangements may also be made by pumps or otherwise to remove any water which may enter the box at any time, such devices not being shown in the drawings as they are of the usual and ordinary design.

The ship brake consists of a plate or body formed of plates secured together to form a hollow body 5, the lower end 6 of said body having an outwardly beveled edge, as shown and adapted to fit tightly within the similar construction of the reinforcing 4 as described. The body 5 travels up and down within the box 1, bearing against a set of antifriction rollers 7 secured in the lower end of the box 1, and also having sets of rollers 8 secured to its upper portion, said rollers bearing on the sides and ends of the box 1, which may be suitably reinforced by braces 9 to receive the strains therefrom. The body 5 is also guided by means of two hollow tubes 10 extending upward therefrom and passing through stuffing boxes in the top of the box 1. It is counter-balanced by weights 11 hung on cables 12 passing over suitable pulleys 13 and being secured to the top of the brake body 5.

The brake body 5 is locked in its closed position by sets of dogs 15 mounted on the box 1 and engaging under lugs 14 secured to the body 5, thus preventing its downward motion in the box until said dogs 15 are removed from under said lugs 14.

A series of cylinders 16 are mounted on top of the box 1, each having a piston 17 therein and a rod 18 passing entirely through them, said rods being joined at their upper ends by a cross-head 19. The

cross-head 19 is formed with a double beveled portion 20 directly over each of the locking dogs 15. A lever 21 is pivoted adjacent the uppermost position of the cross-head 19 in such position that its end will engage said beveled portion 20 as soon as the cross-head moves downward. The other end of the lever 21 is connected to a bell-crank lever 22 by a rod 23, said rod being slotted at its connection with the bell-crank lever 22. The lever 22 is connected to the dog 15 by means of a rod 24 passing through a stuffing box in the side of the box 1 and by a link 25. Thus as soon as the cross-head moves downward it engages the levers and removes the dogs 15 from under the lugs 14.

The lower ends of the piston rods 18 are connected to the upper end of the brake body 5 by a slotted connection 26, which allows the said piston 17 and cross-head 19 to move downward sufficiently to remove the said dogs before the piston rods 18 begin to press the brake body 5 down. As the piston rods 18 continue their downward motion they press the brake body down into the water, thus causing it to engage the relatively moving water with its broadest surface.

The position of the pistons is controlled by the steam or other fluid in the cylinders and is indicated by means of cables 27 secured to the cross-head 19 and which pass upward therefrom into the pilot house, and which has suitable indicating means secured thereto whereby the said positions will be shown to the pilot at all times. The motion of the pistons may be controlled by valves indicated at 28 in the pilot house, which are so arranged as to connect the pressure tank 29, or other source of power, with either of the pipes 30 or 31 leading respectively to the two ends of the cylinders 16.

Having described my invention, what I claim is:

1. In a ship brake, the combination with a ship having an opening below the water level thereof; a box within the ship and surrounding said opening; a brake body within the box and normally closing said opening; means for locking said brake body in said closing position; means for forcing said brake body to extend out of said opening and into the water; and means operated by said forcing means and engaging said locking means whereby said locking means is removed before said forcing means engages said brake body.

2. In a ship brake, the combination with a ship having an opening below the water level thereof; a box within the ship and surrounding said opening; a brake body within the box and substantially smaller than the box and adapted to extend partially therefrom or to be withdrawn thereinto; a foot forming the lower edge of said brake body and larger than the brake body and fitting the opening when said brake body is withdrawn into the box; means for controlling the position of said brake body; and antifriction means between the box and the brake body for guiding the brake body therein.

JAMES C. OLLARD.

Witnesses:
M. F. McNeil,
S. Clarke.

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