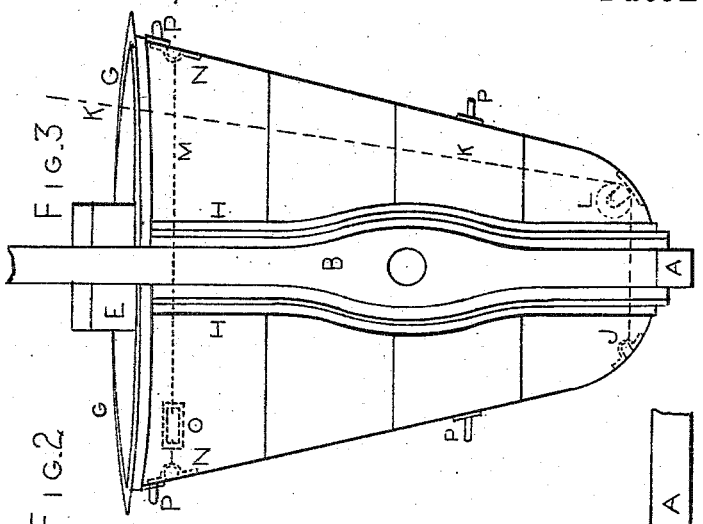
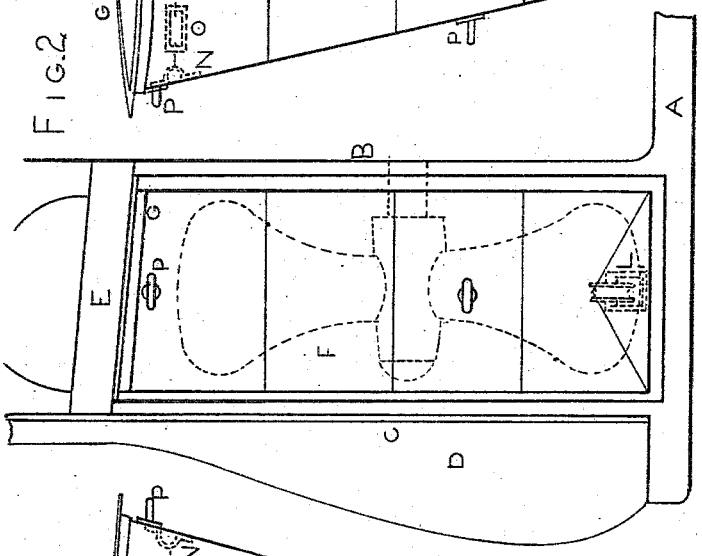
(No Model.)

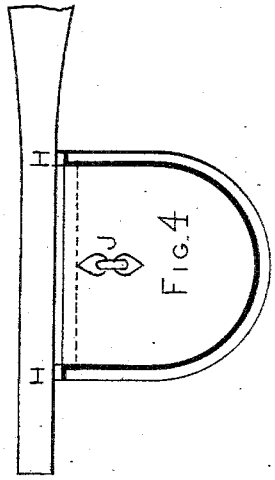
C. GOODALL.

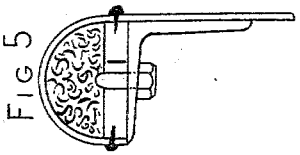
COFFER DAM FOR SCREW PROPELLER SHIPS.

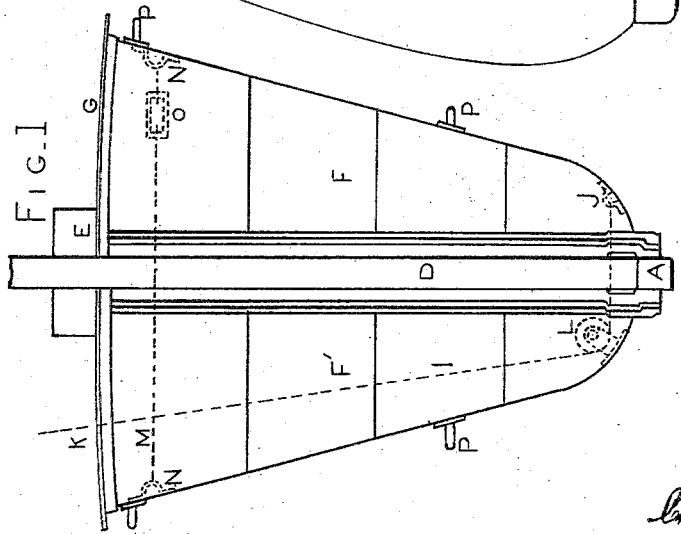
No. 303,000. Patented Aug. 5, 1884.











WITNESSES

A. B. Bowers.

Samuel A. Owen

INVENTOR

Charles Goodall

by George Pardy

Atty

UNITED STATES PATENT OFFICE.

CHARLES GOODALL, OF SAN FRANCISCO, CALIFORNIA.

COFFER-DAM FOR SCREW-PROPELLER SHIPS.

SPECIFICATION forming part of Letters Patent No. 303,000, dated August 5, 1884.

Application filed April 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GOODALL, a citizen of the United States, and a resident of San Francisco, California, have invented an improved coffer-dam for use on screw-propeller ships in examining, repairing, and replacing their propellers, of which the following is a specification.

The invention relates to all screw-propeller ships which sail long distances from convenient repairing-stations; but it is more particularly intended for use on steamships sent on whaling voyages into the Arctic Ocean, where, from the presence of ice, the ship's propeller is in almost constant danger of having its blades broken, and the repairing and replacing must be done on the spot.

The invention consists in the combination of parts forming the coffer-dam and the means employed to adjust and hold these parts firmly in position, by which expeditious and effective operations may be performed in the matter of completely enveloping the propeller with a water-tight inclosure in which the work connected with repairing or replacing may be done.

In the accompanying drawings, forming part of this specification, Figure 1 is a view of my coffer-dam fastened in place, looking from in front of the rudder toward the bow of the ship. Fig. 2 is a side view. Fig. 3 is a view looking aft. Fig. 4 is a top view of one-half of the coffer-dam; and Fig. 5 is a sectional view upon a larger scale than the other figures, showing how the joint may be made.

In all the figures like letters of reference represent like parts.

In the drawings I show only just so much of the stern of a ship as is necessary to illustrate my device.

A is the continuation of the ship's keel. B is the stern-post; C, the rudder-post; D, the rudder; and E is a stout timber, supplied in the present illustration, to prevent the ice from getting into the propeller-well. Within the rectangular space inclosed by the timbers A, B, C, and E the propeller finds room to revolve, which in the present instance is a two-bladed one, as shown in dotted lines, Fig. 2.

F F′ are half-shells made of stiff wrought-iron plates, having a shape, when joined together, something like a gigantic thimble with flanged edges and sides pressed together so as to be oval, instead of round. The upper rim or flange, G, incloses a space large enough to allow a propeller to be taken in or out on either side of the beam E, (see Fig. 4;) and the sides of the shell (see Figs. 1 and 3) may converge toward a meeting point below, but are suddenly brought together by a simple curve at the bottom. The facing-edges H of these shells are flanged and padded with any suitable padding—as india-rubber or canvas filled with oakum—as in Fig. 5. In fact, any substance that is capable of making a good impervious joint will do. When the canvas and oakum is used, there should be a wooden strip, I, bolted to the angle-iron flanges of the half-shells, so as to provide a substance to nail the canvas to. The vertical joints will be formed to accommodate any contour the rudder-post or stern-post may have, the horizontal joint at the bottom being ordinarily flat and even.

On the bottom of the interior of the half-shell F there is a staple or eyebolt, J, to which is fastened a chain or rope, K, and on the interior bottom of the other half, F′, is secured a grooved face roller, L, under which the chain or rope passes to lead upward to the ship's deck, there to be connected with a block and tackle or a windlass.

At the upper part of the two halves of the coffer-dam is a stout chain, M, anchored to staples N at each side, and upon which chain is a suitable turn-buckle, O, which, when turned around, will tighten or slacken the joint. A couple of eyebolts, P, may be riveted to the outsides of the half-shells to secure ropes to in hauling the parts on deck or lowering them to their places.

The operation is as follows: The two parts are conveniently stowed on the vessel, and form part of her outfit. When a propeller becomes broken and useless, whether in port or at sea, the blades are first set in a vertical line, (for the coffer-dam is not intended to accommodate them when set horizontally, though in cases where the propeller has three or more blades it might be so made,) then with ropes, chains, or tackle of any suitable kind the first half, F, is lowered over the stern until the staple J is below the beam E, when the

chain K is secured to this staple and the whole is lowered to its proper position, the chain being passed behind the propeller. Afterward the second half, F′, is lowered, the end of the chain being first rove through the pulley L. When the two parts are adjusted to about their proper position, the chain M is hooked into the staples P, and the turn-buckle screwed around to draw the parts as tightly against the ship's timbers as possible. At the same time the chain K is hauled tight, and the joint is thus made water-tight. The water in the coffer-dam is then pumped out, and operations on the propeller immediately proceeded with.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

In a coffer-dam for application to screw-propeller vessels to inclose the propeller in a water-tight compartment, the combination of the plate-iron half-shells F F′, having padded joints H, fitting against the stern-post, rudder-post, and keel, with upper and lower draw-chains, M and K, substantially as and for the purpose herein described.

CHAS. GOODALL.

Witnesses:
G. W. DECKER,
ALF. ULLO.