(No Model.)

H. BRICARD.

AUTOMATIC MEANS FOR CLOSING LEAKS IN MARINE VESSELS, &c.

No. 564,144. Patented July 14, 1896.

Fig. 1.

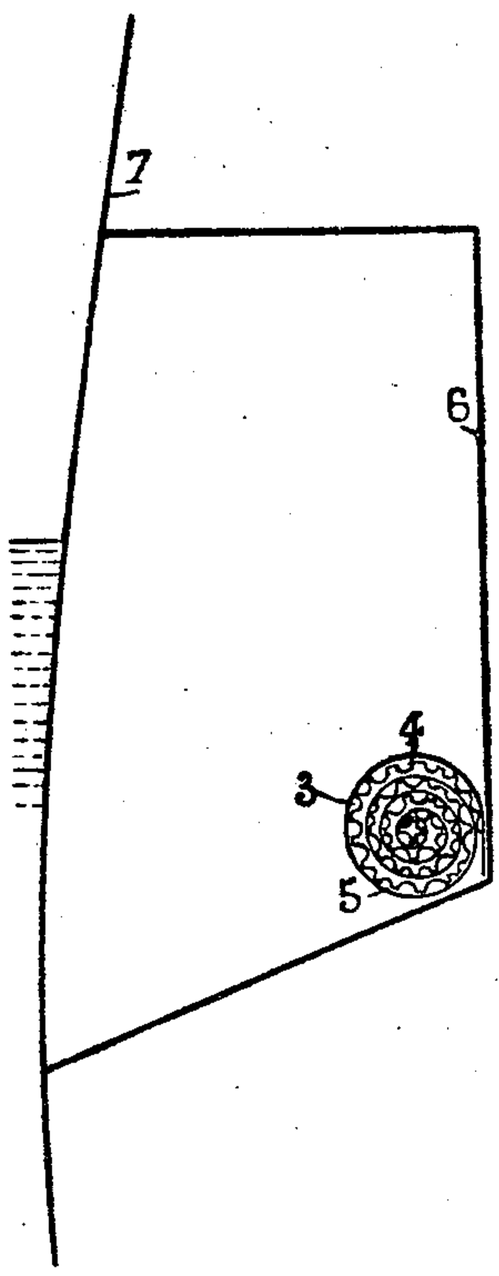


Fig. 2.

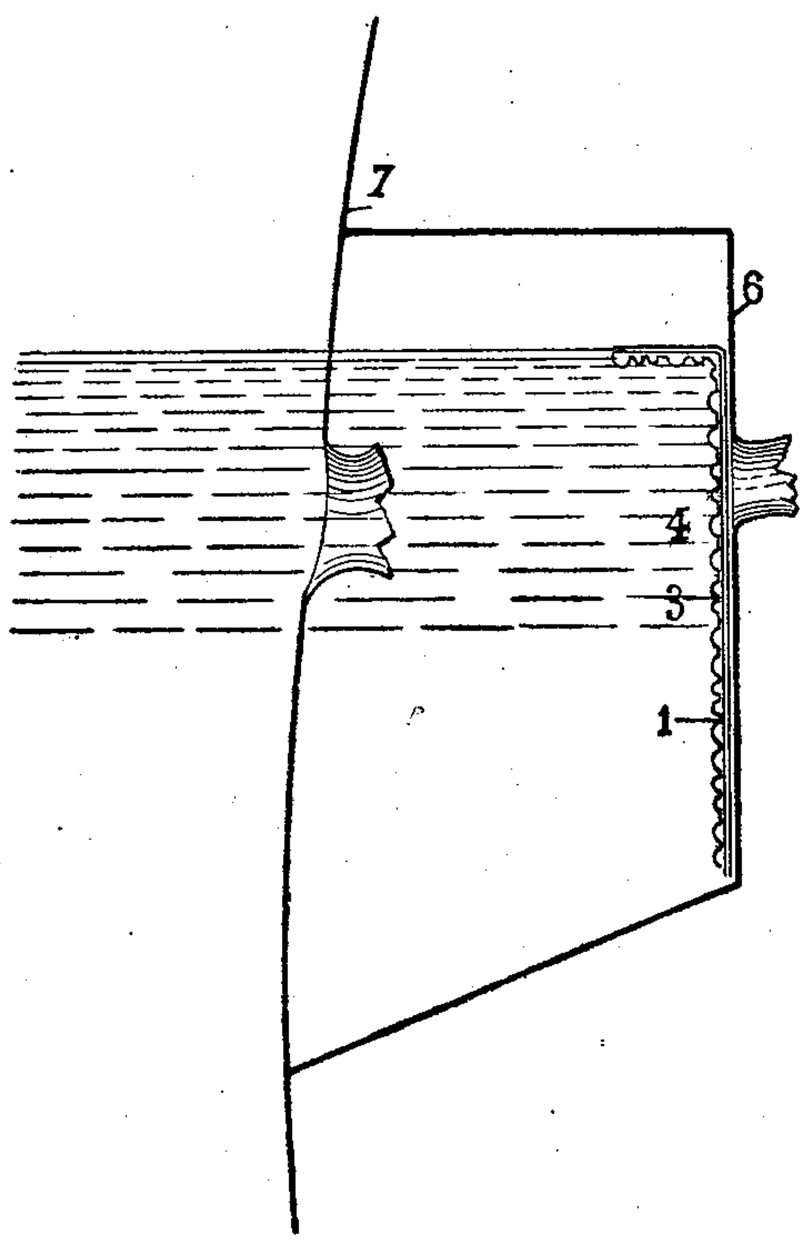
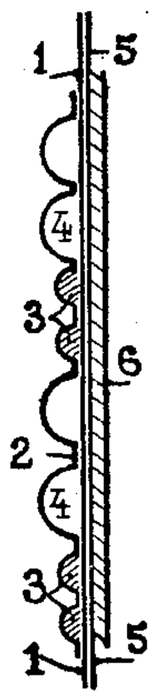


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC MEANS FOR CLOSING LEAKS IN MARINE VESSELS, &c.

SPECIFICATION forming part of Letters Patent No. 564,144, dated July 14, 1896.

Application filed April 25, 1896. Serial No. 589,068. (No model.)

To all whom it may concern:

Be it known that I, HENRI BRICARD, a citizen of France, and a resident of Le Havre, Seine-Inférieure, France, have invented a new and useful Improvement in Floating Mats for Coffer-Dams, of which the following is a specification.

The object of this invention is to provide automatic means for closing leaks in marine vessels, coffer-dams, and similar structures by which openings caused by shot, collision, or any other cause, whereby water is admitted to the inner compartments of a vessel, may be effectually closed against the penetration of the water to other parts of the ship by the rise of water in the penetrated compartment, this result being automatically accomplished.

The invention consists, to this end, in the novel features of construction and new combination of parts hereinafter fully described, and then particularly pointed out in the claims which conclude this specification.

To enable others to fully understand and to practice said invention, a detailed explanation of the same will here be given, for which purpose reference is had to the accompanying drawings, in which—

Figure 1 is a vertical transverse section showing part of the wall of a vessel above and below the line of flotation, together with an inner compartment which is equipped with this invention. Fig. 2 is a similar section illustrating the automatic operation of the invention upon the entrance of water to said compartments by a shot-hole in both inner and outer walls. Fig. 3 is a vertical section showing the invention upon a larger scale.

The reference-numeral 1 in said drawings indicates a plain sheet of a fabric of any suitable character, such as a sheet of rubber, oiled cloth, or any material coated or impregnated with a material by which it is rendered impermeable by water and allowed to remain flexible. Attached to one surface of said sheet is a second sheet 2 of the same or an equivalent material, which is corrugated or swelled outward at suitable intervals to form converse portions 4, which alternate with corrugations of less dimensions, in which are inserted strips 3 of wood or other suitable material, whereby a proper degree of stiffness is imparted to the whole. The corrugations 4 are filled with cork or any other material suitable for forming floats capable of sustaining the weight of the two fabrics in water. The corrugations and stiffening-strips are arranged to lie horizontally, or substantially so, when the invention is in use. The two sheets thus formed and united in any suitable manner, and of any required dimensions, form a mat which is readily flexible along its horizontal lines between the corrugations and which possesses a high degree of buoyancy. The mat formed of these two sheets is applied to a sheet of felt 5 or other flexible material capable by its strength and impermeability of stopping a leak, and the lower edge of the structure is secured to the inner face of the interior wall 6 of a water-tight compartment, being at or near the foot of said wall. The mat is then formed into a roll, as seen in Fig. 1, beginning at its free edge and rolling it toward the attached edge. In this form and position it is but little exposed to a shot or any injury likely to be caused by penetration of the walls of the compartment. Should such a penetration take place, as shown in Fig. 2, the water entering the compartment through the perforation in the outer wall or side 7 of the ship, and rising in the compartment between the walls 6 and 7, buoys the mat up and, unrolling it as the water-line rises, draws it over the opening in the inner wall 6, against which it is closely pressed by the weight of the water, thereby closing the opening and preventing the water from penetrating into other parts of the ship.

The operation is wholly automatic, and as it depends upon the buoyancy of the mat the operation can be rendered certain and entirely effective by providing it with proper floats.

The invention is also applicable to coffer-dams and similar structures to close leaks or ruptures admitting water, from whatever cause produced.

What I claim is—

1. The combination with an inner compartment of a vessel of a flexible, buoyant mat attached by one edge to the inner face of the interior wall of said compartment, and adapted to be unrolled and floated by water

entering said compartment into position to close an opening in said interior wall, substantially as described.

2. The combination with an inner compartment of a vessel of a mat formed of flexible material and provided with floats and stiffening-supports, said mat being secured by an edge to the lower part of the inner face of the interior wall of said compartment, with the stiffening parallel with the line of attachment, and the mat being rolled from its free edge, whereby water entering said compartment will unroll and buoy the mat up against the inner wall and over any opening, or openings therein, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HENRI BRICARD.

Witnesses:
PHILIP S. CHANCELLOR,
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