

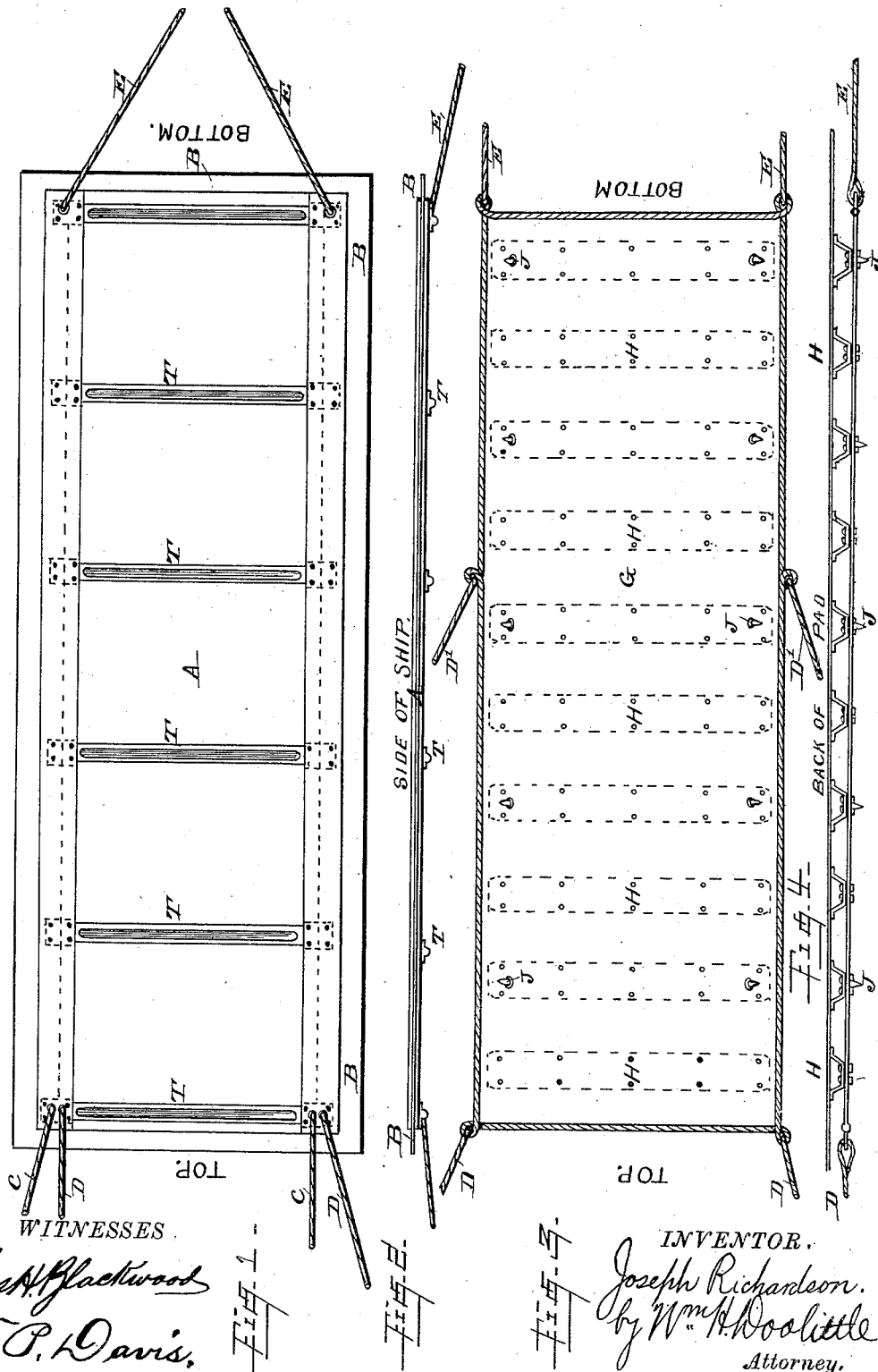
(No Model.)

2 Sheets—Sheet 1.

J. RICHARDSON.
LEAK STOPPER FOR SHIPS, &c.

No. 385,572.

Patented July 3, 1888.



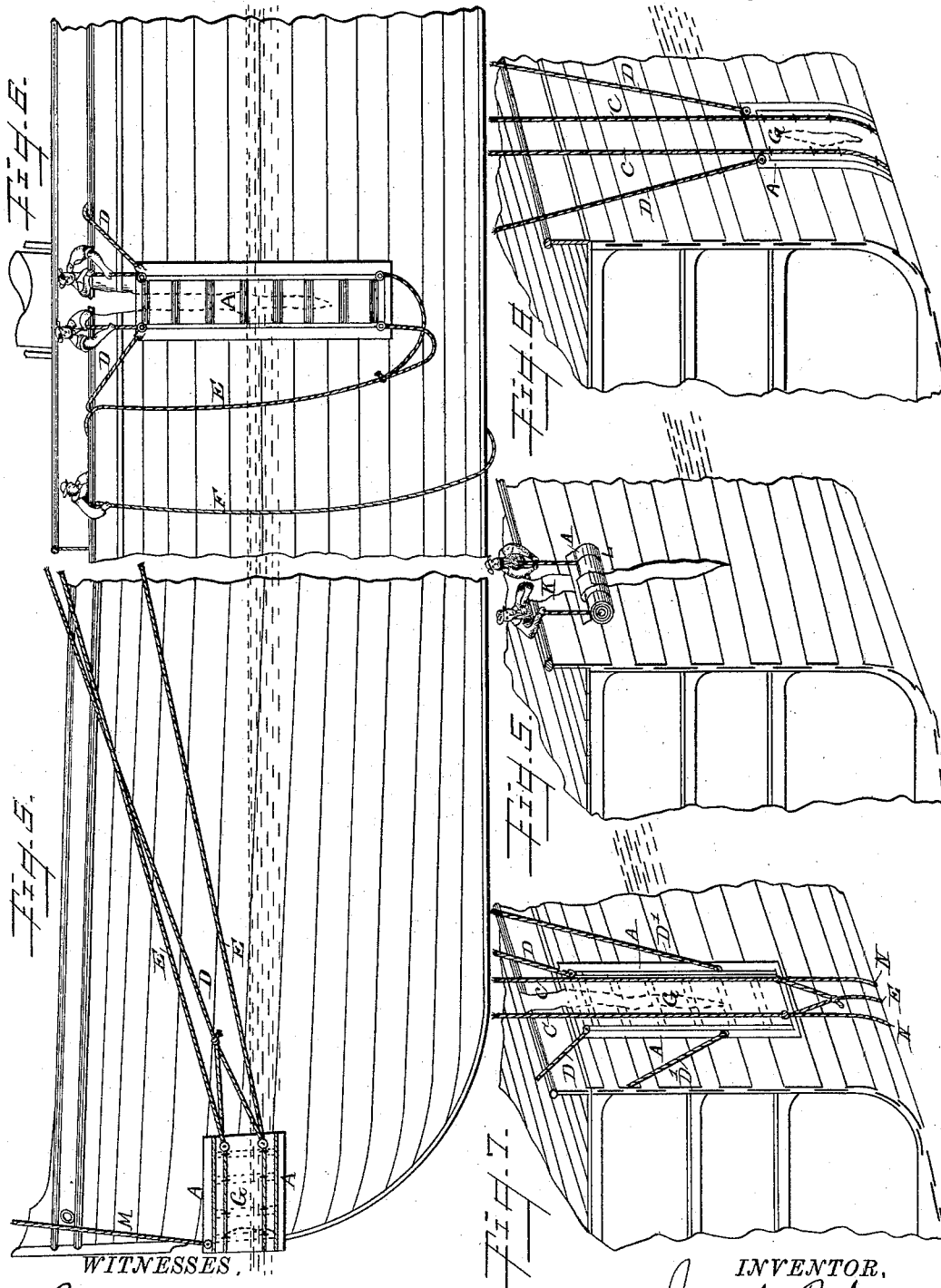
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WITNESSES,

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F. P. Davis,

INVENTOR,

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UNITED STATES PATENT OFFICE.

JOSEPH RICHARDSON, OF NORTH SHIELDS, COUNTY OF NORTHUMBER-
LAND, ENGLAND.

LEAK-STOPPER FOR SHIPS, &c.

SPECIFICATION forming part of Letters Patent No. 385,572, dated July 3, 1888.

Application filed October 10, 1887. Serial No. 251,964. (No model.) Patented in England September 24, 1882, No. 4,549.

To all whom it may concern:

Be it known that I, JOSEPH RICHARDSON, a subject of the Queen of Great Britain and Ireland, residing at North Shields, in the
5 county of Northumberland, Kingdom of Great Britain and Ireland, have invented new and useful Appliances for Stopping Holes made by Collision or other Causes in Ships or Similar
10 Vessels, (for which I have obtained a patent in the Kingdom of Great Britain and Ireland, No. 4,549, dated September 24, 1883,) of which the following is a specification.

My invention relates to the construction and mode of application of a flexible "pad" or
15 sheet alone or with a "protecting-shield" for the purpose of stopping leaks in ships or vessels, and the following description, reference being had to the accompanying drawings, will explain the construction of the pad and of the
20 protecting-shield and the mode of applying them.

Figure 1 is a plan of the back of the pad or sheet unrolled, and Fig. 2 is a side view of same. Fig. 3 is a plan of the back of the
25 protecting-shield unrolled, and Fig. 4 is a side sectional view of same. Figs. 5, 6, 7, 8, and 9 show the mode of application of the pad and shield to various portions of a ship to cover holes made by collision or other
30 causes.

The same letters refer to similar parts on all the figures.

In the drawings, Figs. 1 and 2 show the pad A unrolled, as it appears when in contact
35 with side of ship, looking on back, on which the half-tubes T are riveted, the projecting border B preferably of moleskin cloth, which adapts itself to any inequalities of skin of ship round the hole. At the top the guiding
40 and securing guy-ropes C and D are shown, and at bottom the "tail-rope" E, to be carried by a "messenger," F, under the keel and secured at opposite side of ship.

Figs. 3 and 4 show the shield G unrolled, as it appears when applied over the pad A,
45 looking on back, with guy-ropes D at top and tail-ropes E at bottom, the former being made fast to bulwarks and the latter taken round the ship by a messenger and made fast at op-
50 posite side. These ropes are attached to eye-

lets formed at corners by the rope which binds the canvas of the shield, and additional guy or stay ropes D' are attached at intermediate points to further secure the shield. Through
55 each of the transverse channel-bars H, at each end, a hooked stud, J, projects for the purpose of receiving and keeping in position the binding-ropes, which are passed over the shield and round the ship for further securing the shield
60 permanently.

Fig. 5 shows a perspective sectional view of a ship's side cut into by collision from the bulwarks downward, with the pad A handled
by two sailors ready for unrolling, which is effected by a slip-line, K, (which fastens the
65 strap L,) being pulled, when the weight of the pad at once unrolls it, the slip-line being held by one of the hands, as shown.

Fig. 6 shows the pad A completely unrolled, and the top guy-ropes, C and D, being made
70 fast to bulwark. The hole is now covered by the pad, the flexibility of which causes it to be pressed against the ship round the hole, and any very serious inrush of water is stopped. While this has been in progress a messenger-
75 line, F, has been passed over bow of ship and worked aft, and is now ready to be attached to the tail-rope E and to carry it round ship to be secured. The shield G is now applied
80 by passing the top corner-ropes, D, of the pad through each of the eyelet-loops of the shield before it is unrolled, by which means it un-rolls so that the cross channel-bars H come in
85 between the transverse half-tubes T on back of pad.

Fig. 7 shows both pad and shield in position over hole, and both completely secured by
guy-ropes to bulwarks, tail-ropes from pad, and shield round ship, when, if required, binding-ropes N from bulwark over shield
90 (guided by hook-studs) may be taken round the ship to opposite side and there secured.

Fig. 8 shows the pad and shield fixed over a hole made in or near the bilge of ship by a reef or other hidden danger.
95

Fig. 9 shows the pad and shield applied to stop a hole made in "stern" of ship by col-
lision. In this case the pad and shield are both kept in position vertically by a rope, M,
100 over stern of ship, the top and bottom ropes

being taken away well aft and made fast to bulwarks at each side.

In cases of vessels stranded or sunk, and to be floated, the pad can be easily applied
5 over the fractured part and secured in position when the water can be pumped out.

I am aware that prior to my invention leaks have been stopped by drawing over them and securing tarpaulins, sails, or matting, and I
10 make no claim for such applications; but

What I claim, and desire to secure by Letters Patent, is—

1. In appliances for stopping leaks in ships or similar vessels, a sheet-pad of one or more
15 plies of canvas or other strong and flexible material, with a border-piece of "moleskin"

cloth or similar soft and durable material, with strengthening transverse bars, and furnished with ropes to guide the pad into position and secure it, substantially as set forth.

2. In combination with a sheet-pad, as above described, a protecting-shield of one or more plies of canvas or other woven material bound round sides and ends with rope, strengthened by transverse bars, and furnished with ropes
25 to guide the shield over the back of pad and secure it, substantially as set forth.

JOSEPH RICHARDSON.

Witnesses:

GEO. S. H. SWAN,
JASPER RICHARDSON.