(No Model.)

2 Sheets—Sheet 1.

J. E. GOWEN.

LEAK STOPPER FOR SHIPS.

No. 503,079. Patented Aug. 8, 1893.

Fig. 1

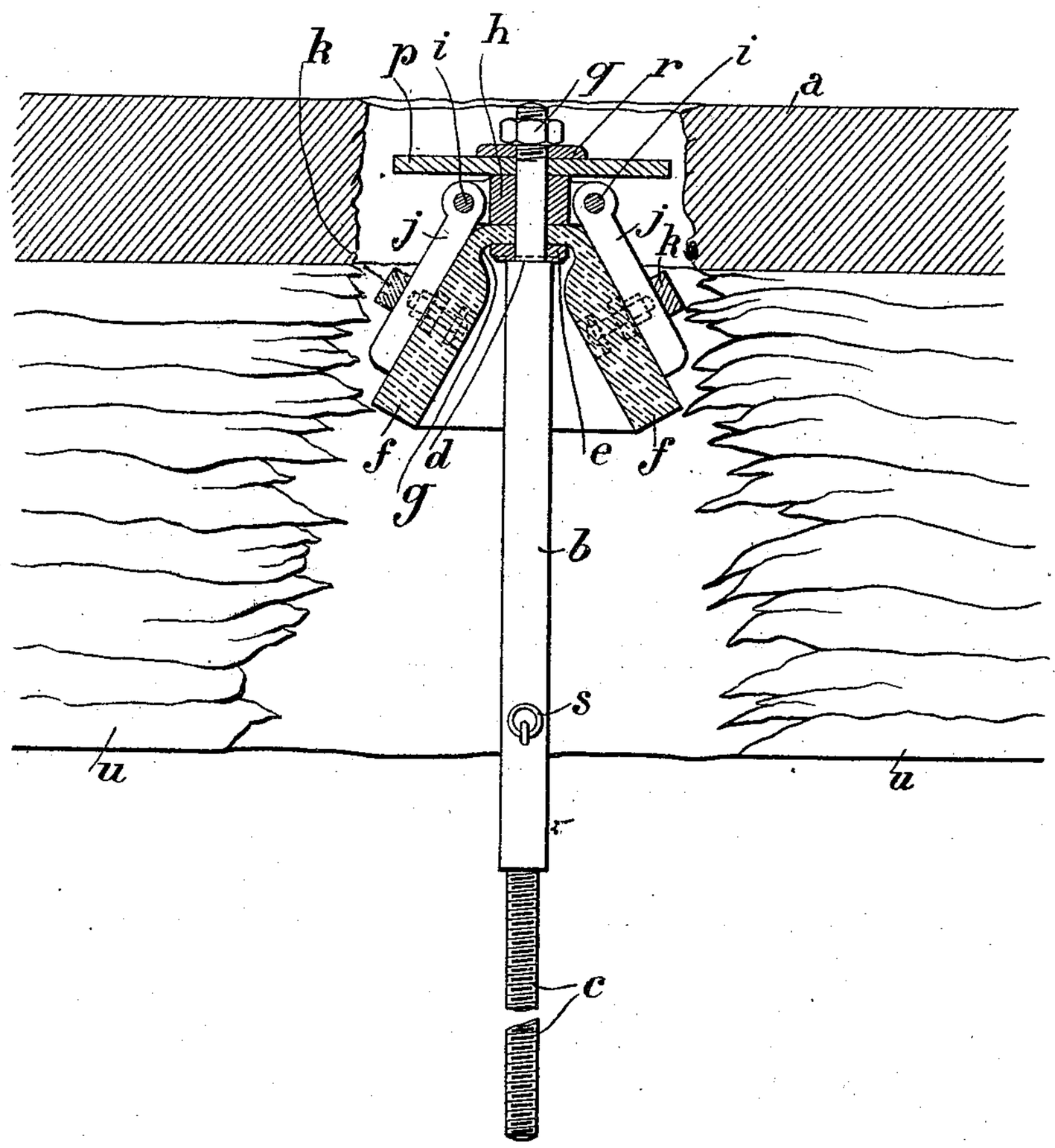
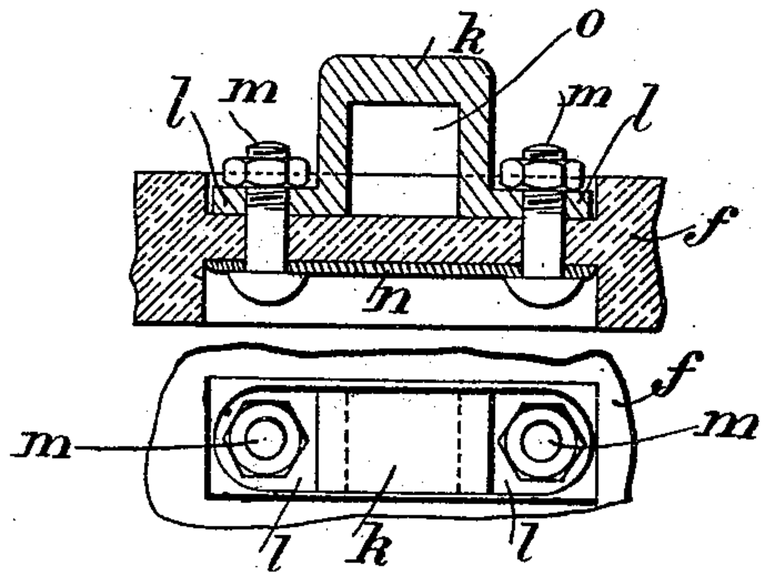


Fig. 4



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Inventor:
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(No Model.)

2 Sheets—Sheet 2.

J. E. GOWEN.

LEAK STOPPER FOR SHIPS.

No. 503,079. Patented Aug. 8, 1893.

Fig. 2

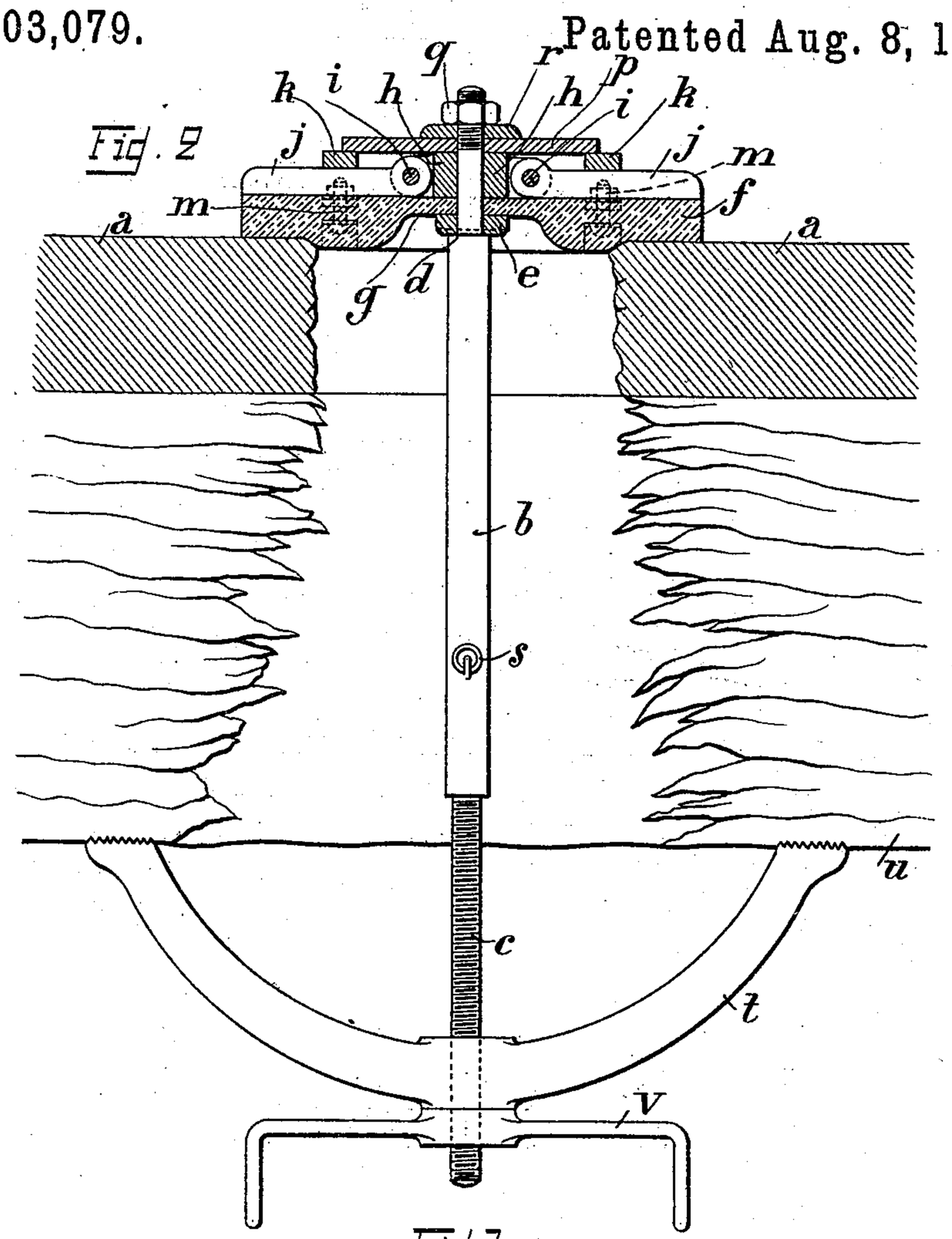
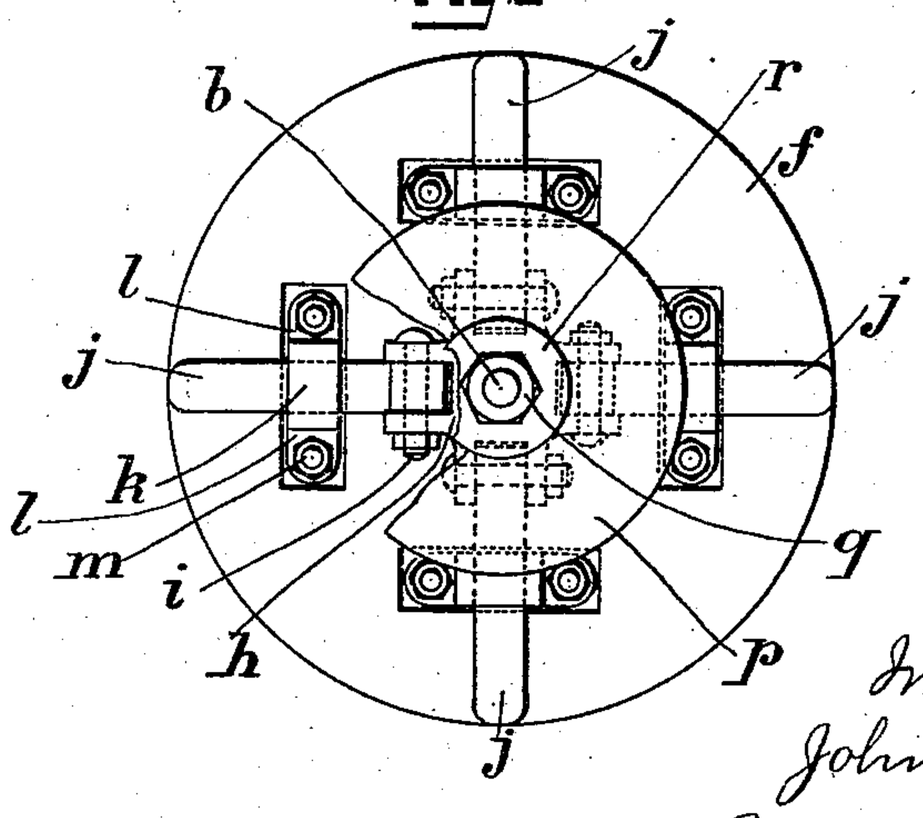


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN EMERY GOWEN, OF PARIS, FRANCE.

LEAK-STOPPER FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 503,079, dated August 8, 1893.

Application filed January 25, 1893. Serial No. 459,688. (No model.) Patented in France June 28, 1892, No. 222,640, and in England June 29, 1892, No. 12,113.

To all whom it may concern:

Be it known that I, JOHN EMERY GOWEN, gentleman, residing at 84 Rue Lauriston, Paris, France, have invented a certain new and useful Improvement in Leak-Stoppers for Ships; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention (for which I have obtained Letters Patent in France, No. 222,640, dated June 28, 1892, and in Great Britain, No. 12,113, dated June 29, 1892) has for its object to provide means for enabling shot-holes in iron clads or other vessels to be rapidly plugged with ease and cheapness during a naval conflict or at other times. The purpose of the plug is to arrest the inflow of water into the man-of-war or other vessel.

My improvements relate to that class of leak-stoppers which are first collapsed and then introduced through the shot-hole, after which they are unfolded and the obturating medium laid out flat against the outer wall of the iron-clad or other vessel.

My improved leak-stopper is shown in the annexed drawings on which Figure 1 is a section showing the stopper collapsed in the act of being introduced through the shot-hole. Fig. 2 is a similar section showing the stopper after the same has been introduced through the shot-hole, and applied. Fig. 3 is a plan of Fig. 2. Fig. 4 is a detail on a larger scale.

a is a portion of an armor-plating through which a shot-hole is supposed to have been made and which it is desired to plug. The shot, in this particular case, is supposed to have made a relatively clean hole through the armor without in any way distorting the latter, so that the outer edge of the hole in the armor remaining level with the face of the armor, a stopper formed of a disk of soft india-rubber can be used as a means of plugging the shot-hole. The stopper is mainly composed of a rod *b* one end of which is reduced in diameter on a certain portion of its length while the opposite end is screw-threaded at *c*. Against the shoulder *d* of the rod *b* is loosely laid a metal disk *e* and over the disk *e* rests a disk of soft india-rubber *f*, which is somewhat recessed at *g* at or about the center, as shown in Fig. 2. Over the rubber disk *f* is placed a sleeve *h* having lugs in which are fitted pins *i*. On each pin *i* is pivoted an arm *j*. Four similar arms *j* are shown in Fig. 3, but this number may vary. Each arm *j* is loosely connected to the rubber disk *f* by means of a clip *k* (see enlarged scale Fig. 4) the two lugs *l*, *l* of which are sunk into the rubber disk *f*, and fastened by means of bolts *m* to a narrow strip of plate of metal *n*, likewise sunk into the disk *f*, but on the opposite side thereof. The opening *o* of the clip *k* is engaged loosely by the arm *j*, so that the latter can dispose of a certain amount of play in the said opening *o*, as the stopper is being folded or unfolded. The sleeve is held in place by a metal or other disk *p* which is secured on the rod *b* by means of a nut *q* and a washer *r*. The rod *b* is provided with one or more rings *s* by means of which the stopper can be suspended while being introduced. Over the screw-threaded end of the rod *b* is passed a bearing bracket *t* the ends of which are serrated and bear against the inside wall *u* of the vessel. An operating handle *v* is screwed onto the end of the rod.

The operation is as follows: The rod *b* being provided with the rubber disk *f* and parts appertaining thereto, is introduced from the inside of the vessel through the shot-hole to be plugged, during which introduction the rubber disk *f* will yield according to the size of the hole, as illustrated in Fig. 1. After the stopper has entirely passed through the hole the rubber disk *f* assumes its original flat position again and is applied against the armor *a*, as shown in Fig. 2. The bracket *t* and the operating handle *v* are thereupon placed upon the rod *b*, the serrated ends of the bracket bearing against the inner wall *u* of the vessel. On screwing the handle *v*, the rubber disk *f* will be firmly pressed against the armor *a* and obturate the shot-hole.

I claim—

In a leak-stopper, a rod *b*, a bracket *t* and an operating handle *v*, in combination with a collapsible rubber disk *f* secured to pivoted arms *j* by means of clips *k* bolts *m* and strips *n*, substantially as described and shown.

In witness whereof I have hereunto set my hand this 30th day of December, 1892.

JOHN EMERY GOWEN.

Witnesses:

R. H. BRANDON,

E. A. BRANDON.