

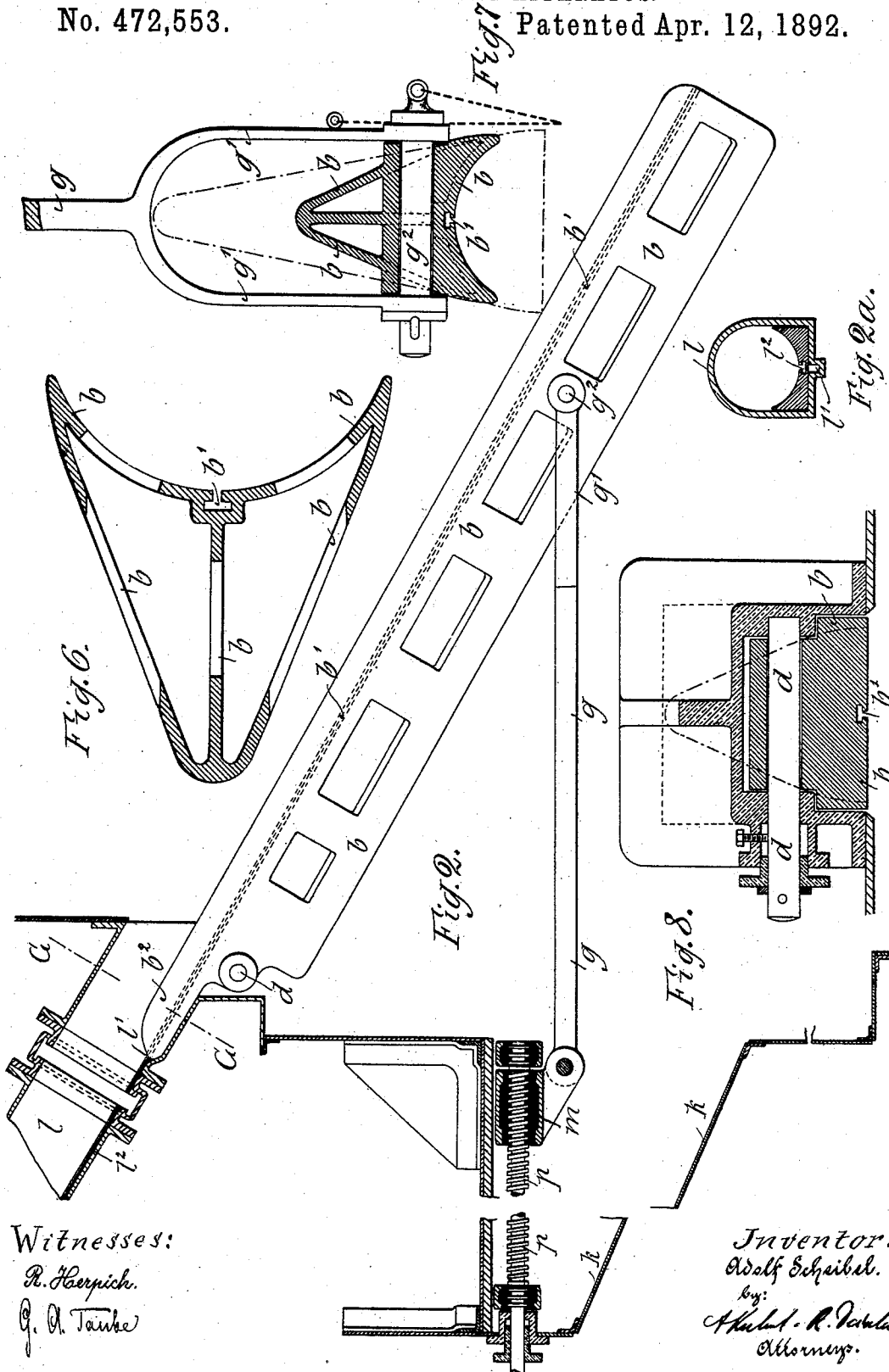
(No Model.)

2 Sheets—Sheet 2.

A. SCHEIBEL.
TORPEDO LAUNCHING APPARATUS.

No. 472,553.

Patented Apr. 12, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADOLF SCHEIBEL, OF BERLIN, GERMANY, ASSIGNOR TO THE BERLINER MASCHINENBAU ACTIEN-GESELLSCHAFT, VORMALS L. SCHWARTZKOPFF, OF SAME PLACE.

TORPEDO-LAUNCHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 472,553, dated April 12, 1892.

Application filed December 10, 1890. Serial No. 374,203. (No model.) Patented in Germany October 16, 1890, No. 56,673; in Italy November 6, 1890, No. 28,531, and in England November 20, 1890, No. 18,793.

To all whom it may concern:

Be it known that I, ADOLF SCHEIBEL, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Torpedo-Launching Apparatus, (for which my assignees have obtained patents in Germany, No. 56,673, dated October 16, 1890; in Italy, No. 28,531, dated November 6, 1890, and in Great Britain, No. 18,793, dated November 20, 1890, of which the following is a full and exact specification.

The object of this invention is an out-board revolvable guide-beam for subaquatic broadside tubes, which allows the launching-tubes hitherto employed for subaquatic bow armatures to be also used for broadside torpedoes. Owing to the improved construction of guide-beam, "ordinary plain tubes," partial or plain box pieces may be used, corresponding to the space at disposal within the vessel, with the application of the sluice-slides heretofore employed or of any other convenient closing agent. Moreover, this construction of the guide-beam is conducive to effecting the greatest possible economy in space for the appurtenant launching-tube, with avoidance of all complicate mechanism, which must necessarily be in connection with the launching-tube proper for the outward movement of guide-beams adapted to be shifted out. A further material moment of the present improvement is constituted by the great facility of loosening the encumbering guide-beam in the case of average.

In order to make my invention more clear, I refer to the accompanying sheets of drawings, in which similar letters denote similar parts throughout the several views, and in which—

Figure 1 illustrates the guide-beam in its inoperative position. Fig. 1^a is a cross-section through the launching-tube. Fig. 2 shows the guide-beam in the fighting position, it being turned outward by means of draw-rod *g*, while the extension *b*² lodges itself in a cut *l'* of the launching-tube, so as to completely release the latter. Fig. 2^a shows a

cross-section through the launching-tube, 50 taken on the line G G of Fig. 2. Fig. 3 represents a cross-section through the guide-beam with wood block or bearing, taken on the line P P of Fig. 1 and drawn in an enlarged scale. Fig. 4 illustrates the operating-nut by means 55 of which the beam is brought from the inoperative position into the fighting position, taken on the line N N of Fig. 1. Fig. 5 is a front view of a portion of the guide-beam. Fig. 6 is a cross-section of the beam drawn to an enlarged scale. Fig. 7 illustrates the fork serving for connecting the pushing-bar with the 60 guide-beam, taken on the line L L of Fig. 1 and drawn to an enlarged scale. Fig. 8 represents the turning-hinge of the guide-beam 65 with packed turning-pivot *d* adapted to be drawn out, taken on the line D D of Fig. 1 and drawn to an enlarged scale.

Guide-beam *b* is generally of a trilateral prismatic shape and laid into the broadside of 70 the vessel, where it is lodged in a wood block *h*, as shown in cross-section in Fig. 3. The beam is provided with a T-shaped guide-slot *b'*. In the latter the torpedo is guided by means of a correspondingly-shaped guide pin or projection. The beam itself is broken through in order to afford the torpedo a uniform down-drift when released, and it is furthermore revolvable about the pivot *d* and has in the rear an elongation *b*², which serves as a closing for the launching-tube *l*. The beam may be brought from its position of rest, Fig. 1, into the fighting position, Fig. 2, by being turned outward by means of the spindle *p* and draw-rod *g*, while the extension *b*² lodges itself in a cut *l'* of the launching-tube, so as to completely release the latter. 85 On the latter moves forward the nut *m*, having its guiding in the box K. The rod *g*, revolvable about pivot *g*² and secured with its other extremity to the guide-beam, turns the 90 beam outwardly, and the rearward elongation *b*² lodges itself in the cut *l'* of the launching-tube, so that the T-shaped groove *b'*, provided in the guide-beam, forms a continuation of the T-shaped groove *l'* fitted in the launching-tube. In this manner the torpedo receives outward guiding when being launched, and is held in its position by the guide-beam 95

when leaving the broadside of the vessel, until the tail end of the torpedo is free of the broadside. At the same time the torpedo is released from the guide-beam.

- 5 It must be pointed out as particularly important that the turning-pivot d , as shown by Fig. 8, is so lodged as to be extractable and packed by a stuffing-box, thus forming a device by means of which it is made possible to
10 easily disconnect the guide-beam from within the vessel from the launching-tube by drawing out the pivot in case the guide-beam gets out of order and cannot be returned into its inoperative position. In such a contingency
15 merely the fastening-bolt of the fork g' , after the pivot d has been drawn out, need be removed by a diver, said bolt being for this purpose provided with an appropriate fastening means—in this case a wedge.
- 20 The improved arrangement affords a material advantage over the heretofore usual constructions with a bearing-beam adapted to be shifted out, with which constructions it is impossible to withdraw such beam in case
25 of average. Under these circumstances it is, furthermore, matter of great difficulties to remove the beam from the launching-tube. A vessel thus in average would not be able to pass through the sluice-gates of a lock.
- 30 It is evident that the draw-rod g takes up the whole pressure exerted by the passing water on the beam. The latter receives by the support near its outer end a far greater resistant capacity than the hitherto used
35 guide-beam disposed to be shifted out, for which any support outside the vessel is absent.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

1. The combination of launching-tube l , arranged inside the ship, with guide-beam b , arranged outside the ship at or within the broadside, said guide-beam having its one end connected with tube l by removable pivot d and its other end secured to movable connecting-rod g by removable pivot g^2 , said rod g being adapted to turn guide-beam b outward, for the purpose as described.

2. The combination of launching-tube l , arranged inside the ship and having recess l' , with guide-beam b , arranged outside the ship at or within the broadside and having elongation b^2 , adapted to close opening of tube l , as well as to enter recess l' , said guide-beam having its one end connected with tube l by removable pivot d and its other end secured to movable connecting-rod g by removable pivot g^2 , said rod g being adapted to turn guide-beam b outward, for the purpose as described.

3. The combination of launching-tube l , arranged inside the ship and having groove l^2 , with guide-beam b , arranged outside the ship at or within the broadside and having groove b' , adapted to guide torpedoes from tube l into the water, said guide-beam having its one end connected with tube l by removable pivot d and its other end secured to movable connecting-rod g by removable pivot g^2 , said rod g being adapted to turn guide-beam b outward, for the purpose as described.

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

ADOLF SCHEIBEL.

Witnesses:

BERNHARD STEIN,
ROBERT DESSLER.