(No Model.) 3 Sheets—Sheet 1.

P. BROTHERHOOD.

APPARATUS FOR LAUNCHING TORPEDOES.

No. 261,805. Patented July 25, 1882.

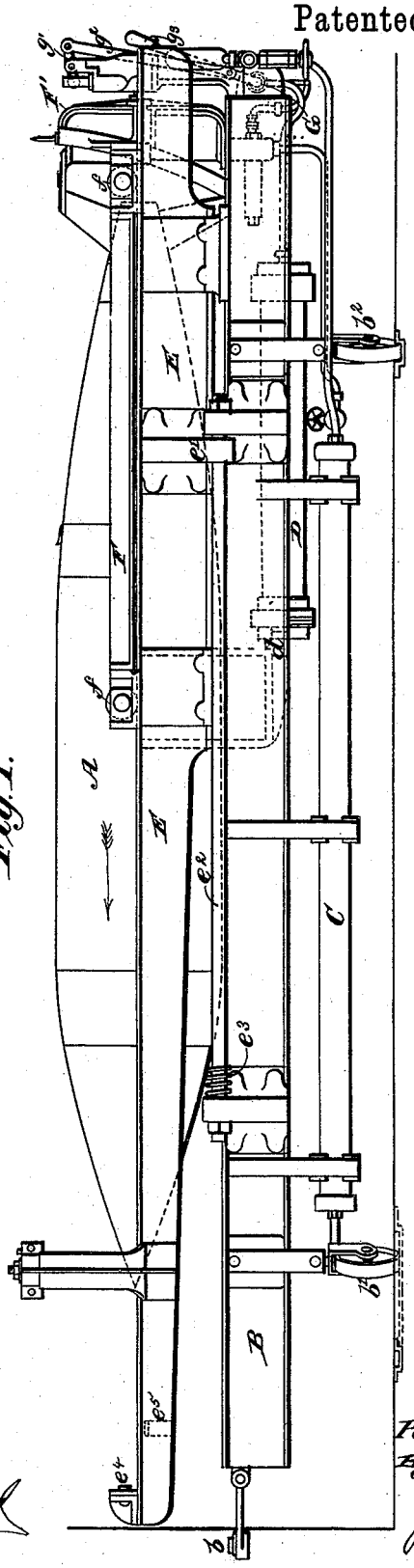

Fig. 1.

Witnesses.
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Inventor:
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(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

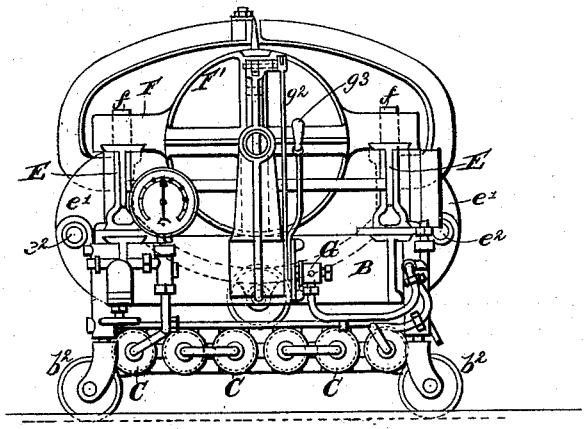


Fig. 6.

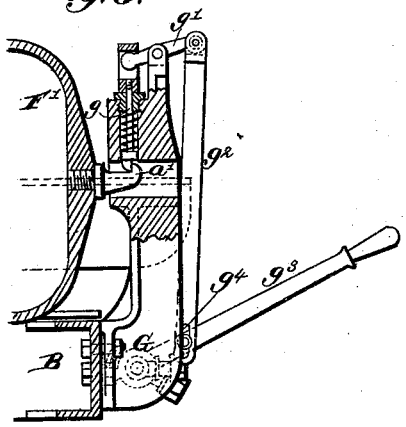


Fig. 4.

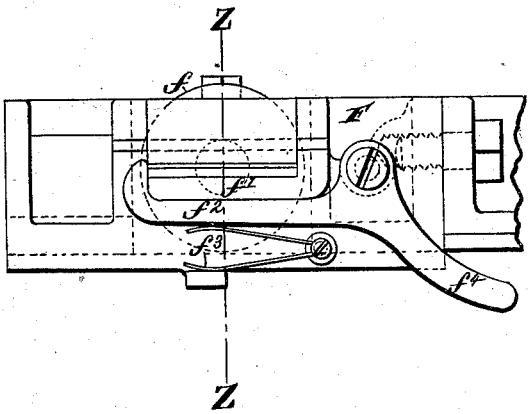
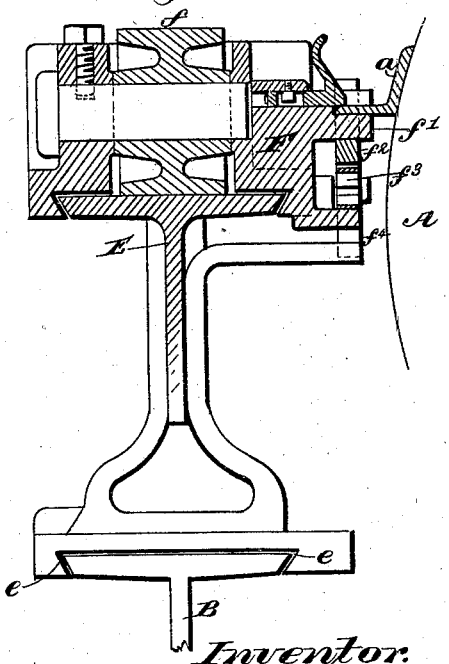


Fig. 5.



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(No Model.) 3 Sheets—Sheet 3.

P. BROTHERHOOD.

APPARATUS FOR LAUNCHING TORPEDOES.

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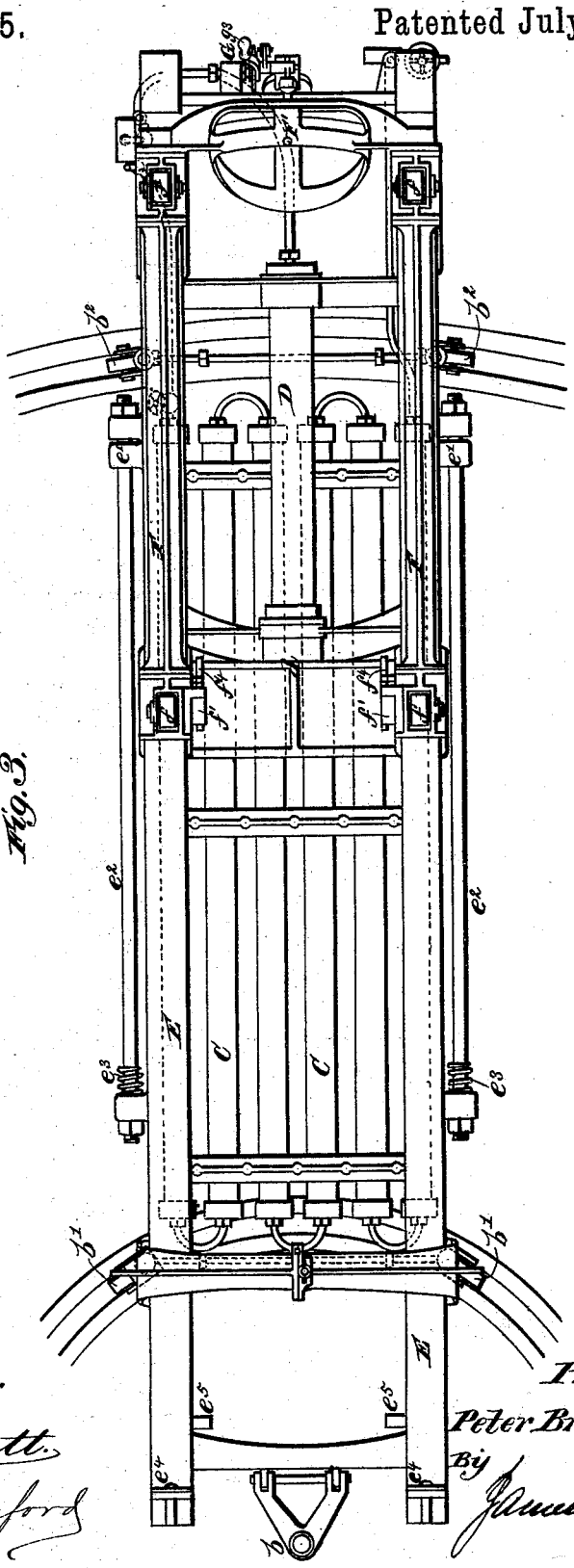

Fig. 3.

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UNITED STATES PATENT OFFICE.

PETER BROTHERHOOD, OF LAMBETH, COUNTY OF SURREY, ENGLAND.

APPARATUS FOR LAUNCHING TORPEDOES.

SPECIFICATION forming part of Letters Patent No. 261,805, dated July 25, 1882.

Application filed May 10, 1882. (No model.) Patented in England September 21, 1880, No. 3,826; in France October 2, 1880, No. 138,958; in Austria October 2, 1880, No. 35,279; in Germany October 5, 1880, No. 13,382; in Belgium October 7, 1880, No. 52,733, and in Italy October 17, 1880, No. 12,359.

To all whom it may concern:

Be it known that I, PETER BROTHERHOOD, a citizen of England, residing at Belvidere Road, Lambeth, in the county of Surrey, England, have invented a new or Improved Apparatus for Launching Torpedoes, (for which I have obtained patents in Great Britain, dated 21st September, 1880, No. 3,826; France, dated 2d October, 1880, No. 138,958; Belgium, dated 7th October, 1880, No. 52,733; Austria, dated 2d October, 1880, No. 35,279; Germany, dated 5th October, 1880, No. 13,382; and Italy, dated 17th October, 1880, No. 12,359,) of which the following is a specification.

My invention relates to apparatus for launching torpedoes, more particularly those known as "fish-torpedoes," and has mainly for its object to facilitate the placing of the torpedo on the launching apparatus, and to effect the launching with rapid propulsion of the torpedo through a ship's port, thus avoiding exposure of the torpedo outside the vessel until the moment of launching.

I will describe the apparatus which I employ for this purpose, referring to the accompanying drawings, of which—

Figure 1 is a side view. Fig. 2 is an end view, and Fig. 3 is a plan. Figs. 4, 5, and 6 show to an enlarged scale certain details of the apparatus—that is to say, Fig. 4 is a view from the inside, and Fig. 5 is a transverse section on Z Z, Fig. 4 showing part of the upper frame with the detent or catch device for the middle wings of the torpedo, and Fig. 6 is a vertical section of the end of the upper frame with its catch for the tail of the torpedo-frame.

B is a lower frame or carriage, which is pivoted at b and supported on a pair of front wheels or rollers, b', and a pair of hinder wheels or rollers, b^2, these running respectively on circular ways, so that the carriage can be trained like a gun to various angles of direction. In the carriage B there are fixed a number of receivers C in the form of strong tubes, communicating with each other by pipes. These are charged with highly-compressed air, which is employed for effecting the propulsion of successive torpedoes in the following manner:

In the carriage B is fixed a cylinder, D, fitted with a telescopic piston, the rod of which is attached at d to a bracket projecting down from E, the lower of two sliding frames. This frame E has dovetail guides e e, fitting the upper flanges of the lower frame or carriage, B, and it has two projecting ears, e' e', embracing rods e^2 e^2, which are fixed to ears projecting from the carriage B. At the front ends of the rods e^2 e^2 are helical buffer-springs e^3 e^3.

On the upper face of the lower sliding frame, E, is fitted with somewhat free dovetail guides the upper sliding frame, F, the weight of which is taken by anti-friction rollers ff, which are mounted in it, near each end, and run on the upper face of the frame E.

The torpedo A has near the middle of its length a wing, a, projecting at each side and resting on a flange, f', which projects inward from the frame F. The wing a is held in position on the flange f' by a pivoted catch, f^2, which is pressed upward by a spring, f^3, and has an inclined tail, f^4, for its release, as will hereinafter be explained.

At the hinder end of the upper sliding frame, F, which terminates in a cage, F', inclosing the end of the torpedo, there is fixed a hook, a', engaged by a spring-bolt, g, which is fitted to slide vertically in a bracket projecting up from the hinder end of the carriage B. The spring-bolt g is connected by a lever, g', and rod g^2 to the handle g^3 of a three-way cock, G, which in one position, when the handle g^3 is pushed down, opens communication from the receivers C to the cylinder D, and in another position, when the handle g^3 is raised, opens communication from the cylinder D to a discharge-outlet. The connection of the rod g^2 to the handle g^3 is made by a pin working in a slotted hole of g^4, so that it is only during the last portion of the downstroke of the handle g^3 that the spring-bolt g is raised to disengage the hook a'.

The apparatus operates as follows: The cock G being open for discharge, the frames E and F are drawn back, the hook a' being engaged by the bolt g, and a torpedo, A, is placed upon the upper frame, F, its wings a resting on the

flanges f', where they are held by the spring-catches f^2. The carriage B is trained about its pivot b so as to direct the torpedo in the required line of flight. When it is to be launched the handle g^3 is pushed down, moving the cock G so as to close the discharge and to admit compressed air from the receivers C to the cylinders D, and as the handle g^3 completes its downstroke it raises the bolt g, releasing the hook a'. The air-pressure, acting on the piston in D, pushes it rapidly forward, propelling at the same time the lower sliding frame, E, the upper sliding frame, F, and the torpedo A. When the ears e' of the lower sliding frame, E, strike the buffer-springs e^3, which arrest the movement of E, the upper frame, F, and the torpedo A are still carried forward by the momentum that had been imparted to them. As the frame F approaches stops e^4 at the front end of the frame E the inclined tails f^4 of the spring-catches f^2, meeting tappets e^5, fixed on E, are pushed upward, so that the catches f^2 are withdrawn from the wings a of the torpedo, which, being thus released from F, in virtue of its momentum continues its flight.

Having described the nature of my invention and the best means I know of carrying it out in practice, I claim—

1. In an apparatus for launching torpedoes, the combination of a carriage to rest on the deck of a vessel, a lower frame arranged to move longitudinally on the carriage, mechanism, substantially as described, for moving said frame, an upper frame arrranged to move longitudinally on the said lower frame, and means for securing a torpedo to said upper frame and automatically releasing it at the proper moment, substantially as described.

2. In an apparatus for launching torpedoes, the combination of a carriage, a lower frame arranged to move longitudinally on the same, a compressed-air receiver, a cylinder connected therewith, a piston within the cylinder connected with the lower frame, and an upper frame arranged to slide longitudinally on the lower frame and provided with means to carry a torpedo, substantially as described.

3. In an apparatus for launching torpedoes, the combination of the carriage B, pivoted to the deck of a vessel, an air-receiver, C, and cylinder D, carried by said carriage, a piston within the cylinder, a frame, E, arranged to slide on the carriage and connected with the rod of the piston, and a frame, F, arranged to slide on the other sliding frame, and provided with devices for holding and automatically releasing a torpedo, substantially as described.

4. In an apparatus for launching torpedoes, the combination of a carriage, B, pivoted to the deck and having wheels arranged to travel on curved ways, a compressed-air receiver, C, and cylinder D, attached to the carriage, a piston fitted to the cylinder, a lower sliding frame, E, connected with the piston-rod, an upper sliding frame, F, arranged to slide on said lower sliding frame, and provided with flanges f' and hooks f^2 to retain the wings on a torpedo, a hook, a', bolt g, lever g', rod g^2, handle g^3, and air-cock G, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of April, A. D. 1882.

PETER BROTHERHOOD.

Witnesses:

JNO. P. M. MILLARD,

OLIVER IMRAY.