

No. 685,165.

Patented Oct. 22, 1901.

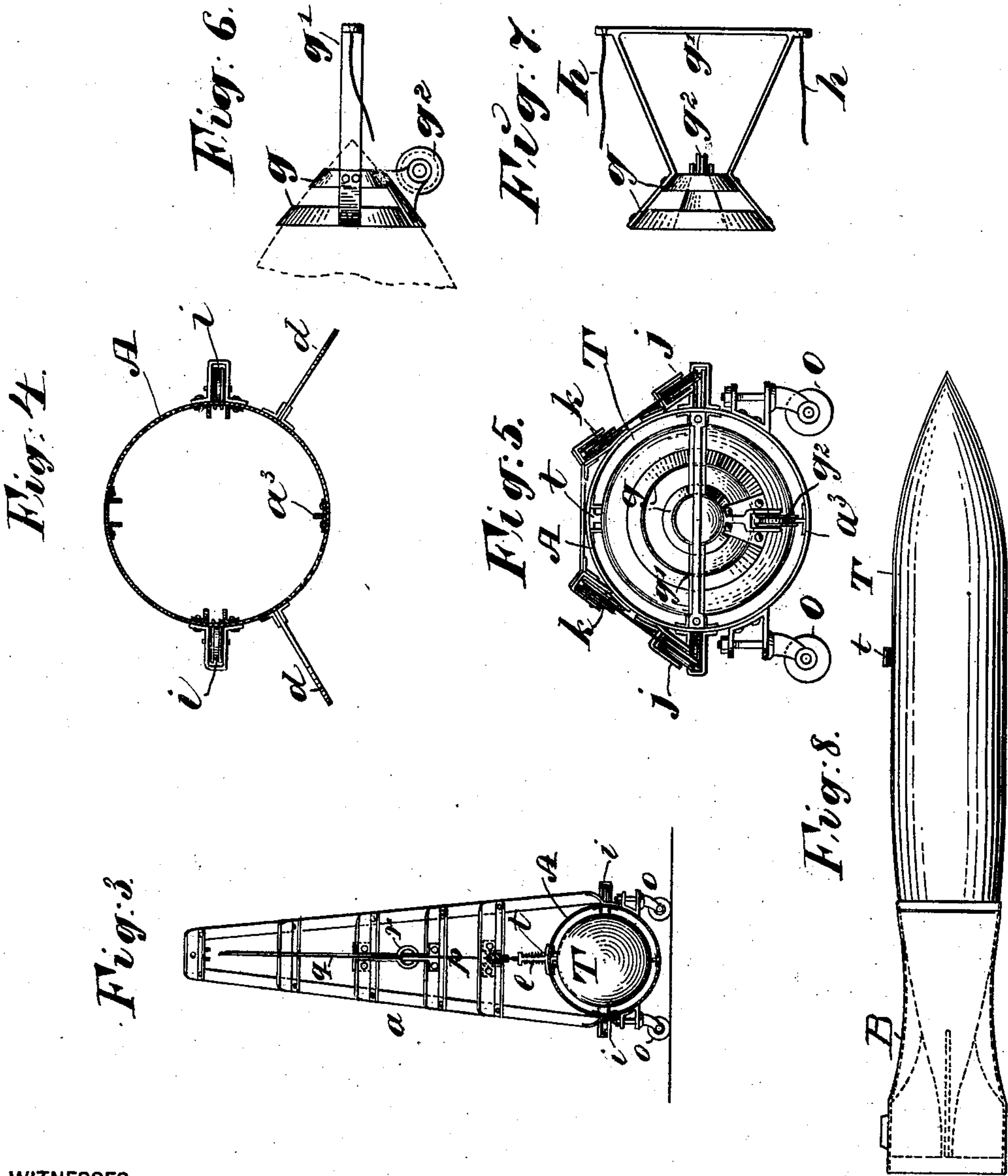
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APPARATUS FOR PUTTING TORPEDOES ON VESSELS.

(Application filed Nov. 24, 1899. Renewed Apr. 1, 1901.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES:

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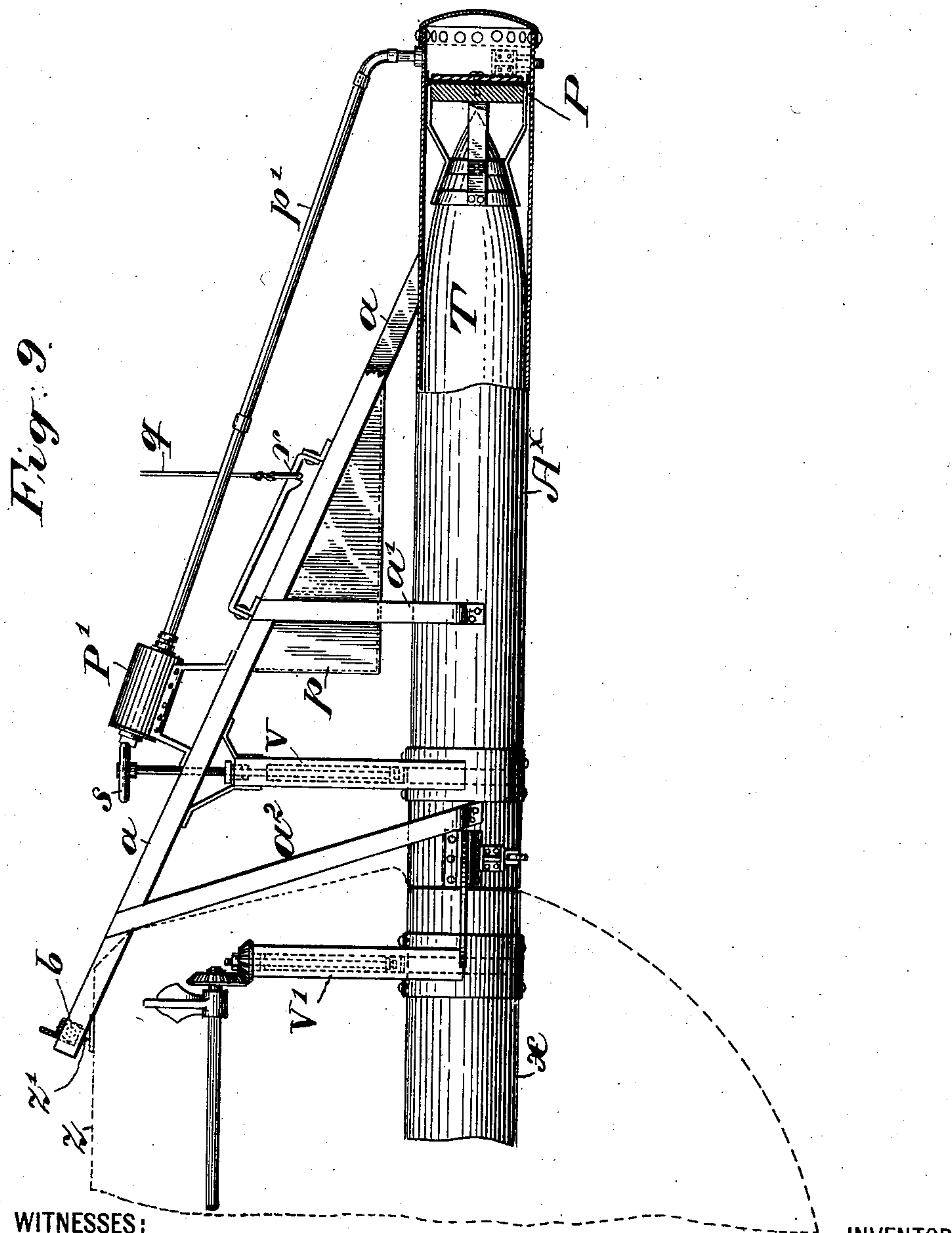
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UNITED STATES PATENT OFFICE.

CHARLES A. MORRIS, OF GLENRIDGE, NEW JERSEY.

APPARATUS FOR PUTTING TORPEDOES ON VESSELS.

SPECIFICATION forming part of Letters Patent No. 685,165, dated October 22, 1901.

Application filed November 24, 1899. Renewed April 1, 1901. Serial No. 53,956. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. MORRIS, a citizen of the United States, residing at Glenridge, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Apparatuses for Putting Torpedoes on Board Vessels, of which the following is a specification.

This invention relates to means or apparatuses for putting or loading torpedoes and the like on board a boat or vessel through the expulsion-tube thereof, and particularly through the latter when submerged.

The invention is especially applicable to the transfer of torpedoes of the Whitehead pattern from a tender to a war vessel while at sea.

As is well known, a Whitehead torpedo is of cigar shape and ordinarily from ten to twelve feet long, and in order to place this torpedo on board the vessel—as a submergible boat, for example, with its expulsion-tube submerged—the procedure, according to the present invention, is as follows:

The torpedo is on the tender or supply-ship, and it is first prepared by drawing over its machinery end or stern a water-tight bag or cover to protect the machinery from the water in effecting the transfer. The torpedo is then placed in a cradle forming part of the apparatus. This apparatus is primarily on board the tender, and the torpedo having been placed and secured therein the apparatus is lowered overboard, passed to the submergible boat or vessel, and secured firmly but temporarily thereto at the open end of the expulsion-tube thereof in such a manner that the apparatus forms for the time a part of the boat and may pitch and roll about with it, the tubular cradle containing the torpedo being axially alined with the expulsion-tube of the boat or vessel. By suitable mechanism the crew on the receiving boat or vessel now draws the torpedo into the expulsion-tube or lock. The apparatus is then detached, the outer door of the expulsion-tube closed, the water expelled therefrom, the inner end of the tube opened, and the torpedo hauled into the boat and stored.

The apparatus and mechanism employed will now be described with reference to the accompanying drawings, wherein—

Figure 1 is a side elevation of the apparatus or carrier represented as attached to a submergible boat, the latter being indicated in dotted lines. Fig. 1^a is a detail view, on a larger scale, of the hinging attachment of the apparatus to the boat. Fig. 2 is a plan of the apparatus; and Fig. 3 is a sectional end view of the apparatus, the plane of the section being at x^3 in Fig. 2. Fig. 4 is a transverse section, and Fig. 5 a rear end view, of the tubular cradle on a larger scale than the principal views. Fig. 6 is a side elevation, and Fig. 7 a plan, of the follower or pushing-carriage detached. Fig. 8 is a view of the torpedo with its protecting-covering in place thereon. Fig. 9 illustrates a modified construction of the apparatus, which will be hereinafter described.

In Fig. 1, X represents in dotted lines a part of a submergible boat; x , the expulsion-tube thereof; y , the outer cover of the tube, seen as raised or open, and z the deck of said boat above the water-line w . The expulsion-tube, it will be noted, is submerged.

The carrier or apparatus for the torpedo T (seen in full lines and fixed to the submergible boat in Figs. 1 and 2) will now be described.

A is a cradle to receive the torpedo. This cradle will be by preference in the form of a tube, and it will be fixed in a suitable framework, consisting of members a , a' , and a'' , connected by suitable transverse members. The precise character of this frame is not very important. It may be of metal, and it must be made to fit up to the boat X in such a manner that when in place and secured to the boat the cradle A will be in proper alignment with the expulsion-tube x . To this end the inclined frame member a embraces an eyepiece or lug z' on the boat and is secured thereto by a hinge-bolt b , as best seen in the detail view, Fig. 1^a. When the hinge-bolt b shall have been placed, the tackle c is hooked to an eye at z'' on the boat, and by means of the fall c' the apparatus is drawn up in place, as shown. There will be of course two tackles c , one at each side. On the cradle are two guide-lugs d , which fit up to the boat and aid in keeping the apparatus in place.

The apparatus having been secured firmly

to the boat X, so that it becomes for the time a part thereof, the torpedo will be released. The device for securing the torpedo in the cradle against endwise movement while being transferred consists of a spring-latch *e*, Fig. 1, on the cradle A, which has a recess in its head to engage the usual T-block *t* on the back of the torpedo. This latch is connected to an operating cord or wire *f* extending up to the deck of the boat, so that by drawing on it the latch will be retracted, so as to free the block *t*. The torpedo may then be pushed into the expulsion-tube by means that will now be described. In the outer end of the cradle A is mounted a follower or pushing-carriage. (Seen best in Figs. 6 and 7.) This follower consists of a conical frame *g* to embrace the conical end of the torpedo, a rear frame *g'*, to which the operating-ropes *h* are attached, and a wheel *g*², which runs on a track *a*³ in the bottom of the cradle. The wire ropes *h* extend from the frame *g'* forward through the cradle A to the front end thereof, where they pass outward over guide-sheaves *i*, thence back to and over guide-sheaves *j* and *k* on the outer end of the cradle, and thence by a bridle to a suitable tackle *m*, the fall *n* of which may be operated from the deck of the boat.

When the torpedo shall have been forced into the expulsion-tube, the apparatus will be detached from the boat and hoisted on board of the tender, the door of the expulsion-tube closed, the water forced out of the tube, and the torpedo drawn into the boat. This operation may be repeated as often as desired.

The carrier or apparatus may have casters or wheels *o* for convenience of moving it about on the deck of the tender, and as it will by preference be made of iron it may have an air-tank *p*, Fig. 1, of suitable size to impart some buoyancy when it is in the water.

The hoisting-rope *q* may be attached to a ring *r*, and when handling the apparatus this ring should be situated about at the center of gravity of the apparatus.

Obviously the apparatus is adapted for placing on board of a war vessel through its expulsion-tube other things than torpedoes, and also that the apparatus is adapted for putting in the torpedoes, &c., at any submerged aperture as well as at an expulsion-tube. As the expulsion-tube exists in war vessels using torpedoes, it would naturally be utilized for this purpose, and the name is here employed to signify any similar submerged opening in the vessel.

It may be stated that the object of inclosing the stem or machinery end of the torpedo in the water-tight covering B, as seen in Fig. 8, is to obviate the necessity of taking the torpedo mechanism apart and cleaning it after its submergence in the water.

In the construction shown in the principal views it is not important that the cradle A shall be in the nature of a laterally-closed

tube, as shown. It might be of open-work as well.

Fig. 9 shows a somewhat different construction of the apparatus. In this case the cradle or holder A^x is a tight tube provided with a gate-valve V at its mouth, closed at its other end, and provided with a piston P for pushing the torpedo out from the cradle into the vessel. Compressed air to force the piston P forward in the tubular cradle is supplied from a pump P' through a pipe *p'*. The gate-valve V is opened by the usual stem, having on it a hand-wheel *s*. The vessel may have the usual cover *y* (seen in Fig. 1) to close the end of the expulsion-tube *x*, or it may have a gate-valve V', as clearly shown. Where the expulsion-tube is closed by a gate-valve, the valve V in the cradle may, if desired, be situated close to the open inner end of the cradle. There may be a packing-ring or gasket about the mouth of the expulsion-tube or other opening in the vessel or on the end of the cradle, or both, to make the joint between them water-tight.

Being the first, as I believe, in this art—that is to say, in the employment of means for putting torpedoes and the like on board of a vessel through a submerged aperture—I do not limit myself to the specific features of the construction shown, as there are no doubt other specific means of effecting the end sought.

Having thus described my invention, I claim—

1. Apparatus for putting torpedoes on board a war vessel, comprising a cradle to receive a torpedo, a frame adapted to fit to the war vessel, means for securing said apparatus to the vessel with the cradle alined with the expulsion-tube thereof, and means for driving the torpedo from the cradle into said expulsion-tube.

2. Apparatus for putting torpedoes on board a war vessel, comprising a cradle to receive and hold a torpedo, a frame adapted to fit to the war vessel, means for securing said apparatus to the vessel with the cradle alined with the expulsion-tube thereof, a follower in said cradle for driving out the torpedo, and means for operating said follower from the vessel.

3. Apparatus for putting torpedoes on board a war vessel having a submerged expulsion-tube, comprising a frame and cradle heavier than the water, means for supporting said frame and cradle, means for securing said frame to the war vessel with the cradle alined with the expulsion-tube, and means for driving the torpedo from the cradle into the said tube.

4. Apparatus for putting torpedoes on board a war vessel, comprising a tubular cradle to receive the torpedo, means, operated from the said vessel, for holding and releasing the torpedo, means for securing the apparatus to the vessel with its cradle alined with the expulsion-tube of the vessel, means for driving the torpedo from the cradle into the expul-

sion-tube, and means for handling said apparatus.

5 5. In an apparatus for putting torpedoes on board a war vessel, the combination with the tubular cradle, of the frame connected therewith, the spring-latch *e*, to engage a projecting part of the torpedo, and means substantially as described for operating said latch to disengage it from the torpedo.

10 6. In an apparatus for putting torpedoes on board a war vessel, the combination with the tubular cradle, of the frame connected therewith, the follower in the cradle, and the sheave and rope mechanism for operating said fol-
15 lower.

20 7. In an apparatus for putting torpedoes on board a war vessel, the combination with the tubular cradle for the torpedo, of a frame connected therewith and extending above the same, means for hinging the elevated end of said frame to the vessel above the water-level, tackle for drawing the cradle into alinement with the expulsion-tube of the vessel, and means, operated from the vessel, for driving
25 the torpedo out from said cradle.

8. An apparatus for the purpose described having a cradle for the torpedo, to be put into

alinement with the expulsion-tube of the vessel, said cradle having lateral guide-lugs *d d*, and a frame elevated above said cradle and
30 having means for hinging it to the vessel above the water-level.

9. An apparatus for the purpose specified, having a cradle for the torpedo, a frame above and connected with said cradle, an air vessel
35 in said frame to secure buoyancy, means for securing said apparatus to the vessel with its cradle alined with the expulsion-tube of the vessel, and means for driving the torpedo from the cradle into said tube.
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10. An apparatus for the purpose described, comprising a cradle or holder for a torpedo, means for securing said holder to the vessel in alinement with a submerged aperture therein, a follower in the cradle for forcing the tor-
45 pedo therefrom, and means exterior to the cradle for operating said follower.

In witness whereof I have hereunto signed my name, this 16th day of November, 1899, in the presence of two subscribing witnesses.
50 CHARLES A. MORRIS.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.