

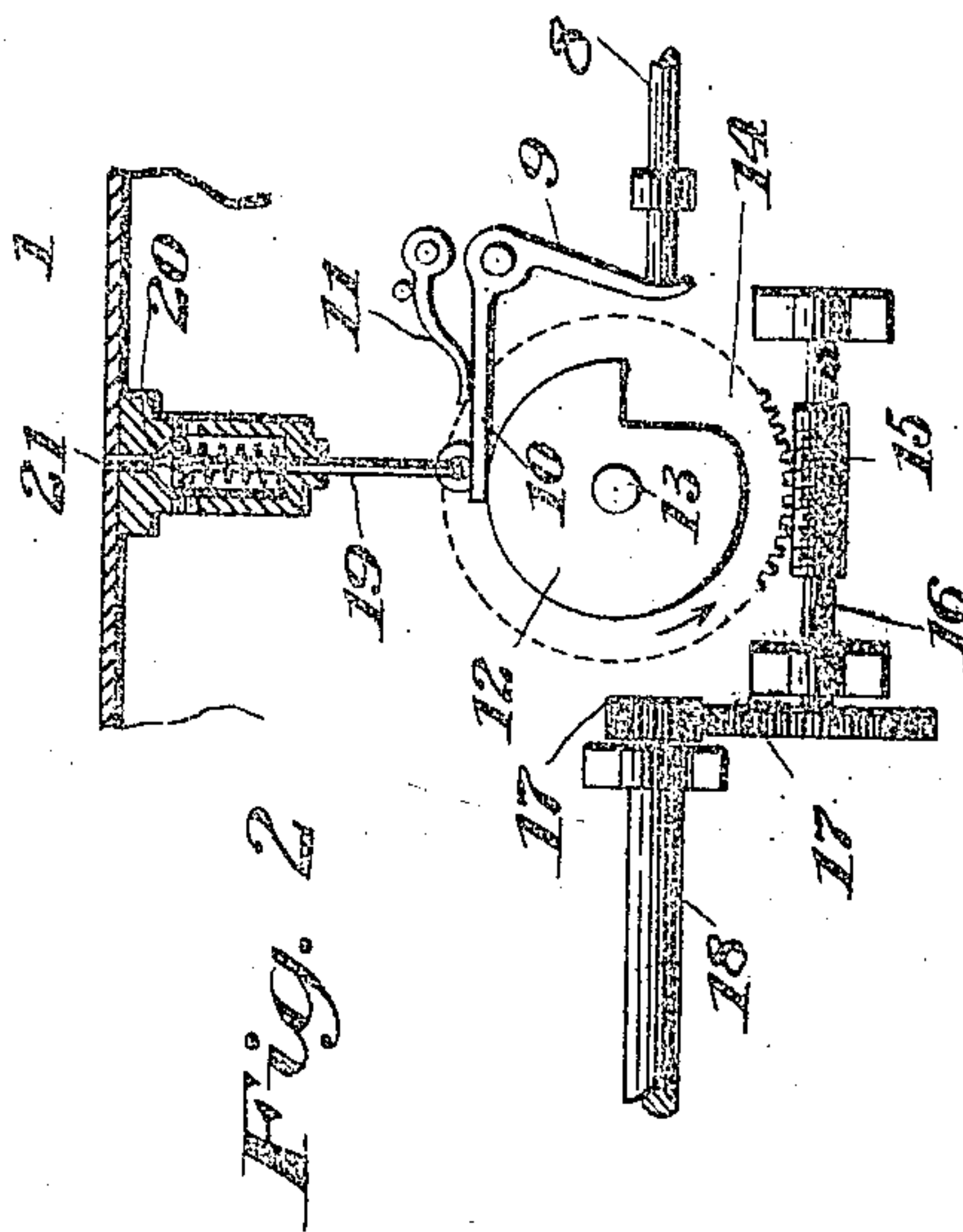
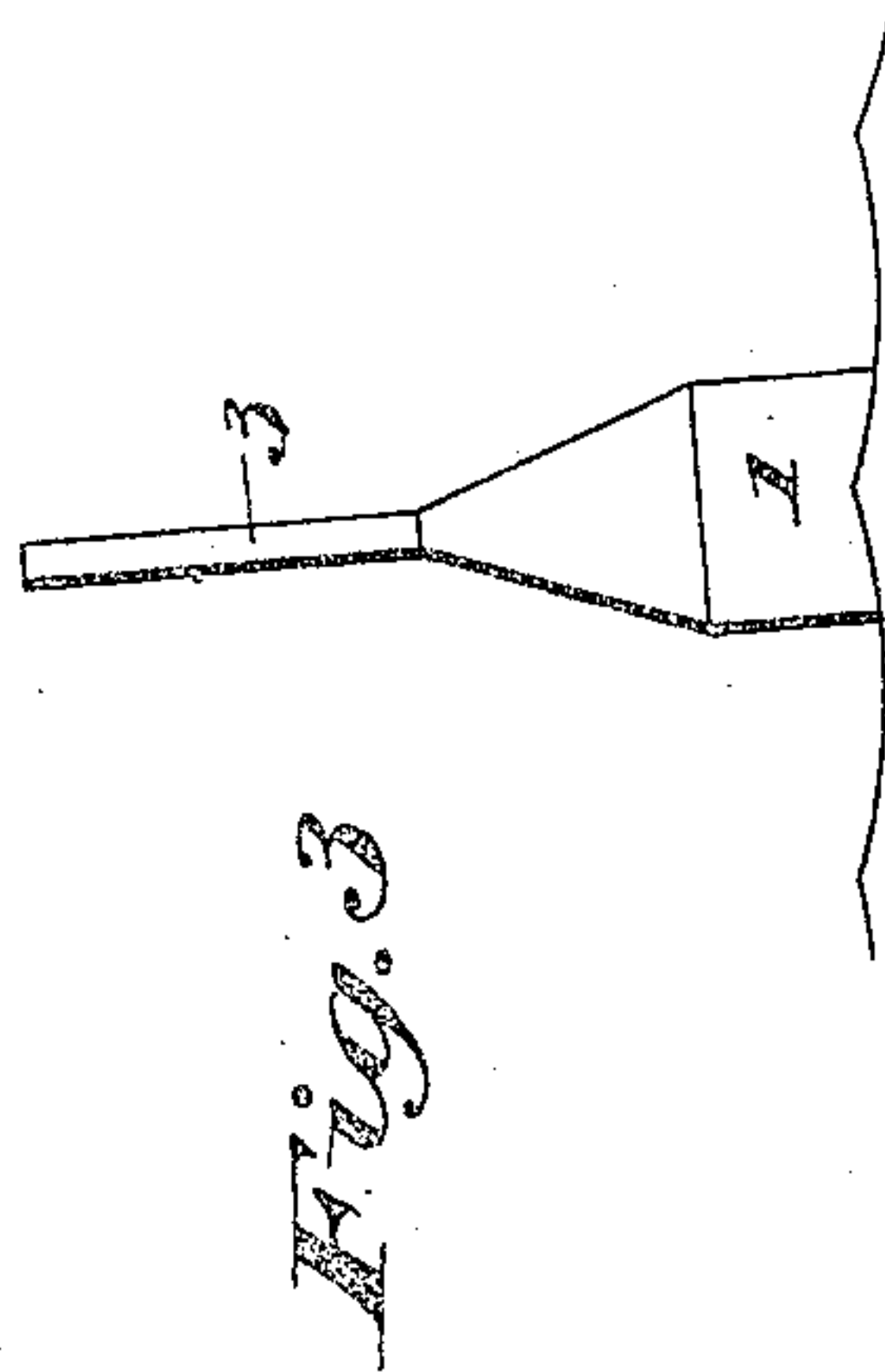
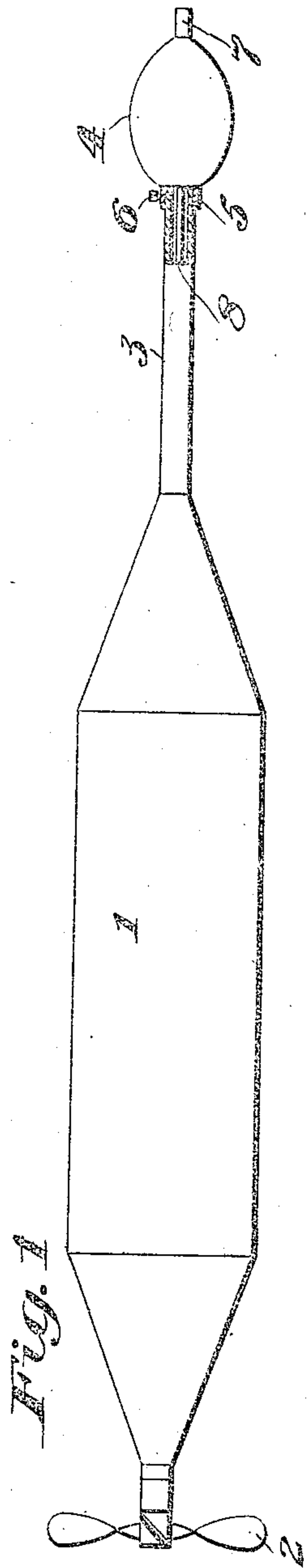
No. 627,312.

A. VAN BIBBER.
TORPEDO.

Patented June 20, 1899.

(Application filed May 21, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ANDREW VAN BIBBER, OF CINCINNATI, OHIO.

TORPEDO.

SPECIFICATION forming part of Letters Patent No. 627,312, dated June 20, 1899.

Application filed May 21, 1898. Serial No. 681,287. (No model.)

To all whom it may concern:

Be it known that I, ANDREW VAN BIBBER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Submarine Torpedoes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in torpedoes such as are employed by torpedo-boats and war-ships, and has for its object to provide a torpedo of a simple and inexpensive nature adapted for purposes of practice, so that the crews and officers may be trained in the use of the torpedo.

The invention consists in a torpedo having propelling means and provided with means for carrying a bomb or light explosive charge in position to be exploded against the vessel or other practice-target without material injury thereto or to the body of the torpedo.

The invention also contemplates certain novel features of the construction, combination, and arrangement of the several parts of the improved torpedo whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted for use, all as will be herein after fully set forth.

In order that my invention may be the better understood, I have illustrated in the accompanying drawings a torpedo constructed according to my invention, in which drawings—

Figure 1 is an elevation of a torpedo constructed according to my invention and having a bomb attached, the attaching devices therefor being shown in section. Fig. 2 is an enlarged fragmentary view showing certain details of the exploding devices for the bomb. Fig. 3 is a view showing the torpedo floating after the bomb has been exploded.

In the views, 1 indicates the shell or body of the torpedo, having at its rear end a propelling device 2, carried on a shaft extending axially in the body and driven from any con-

venient source—as, for example, from a charge of compressed gas or air held in the body. Any of the propelling means commonly employed for torpedoes may be employed, and as such means are well known I have not illustrated them in detail herein.

The forward end of the torpedo-shell 1 carries an axial tubular stem 3, the extremity of which carries the bomb 4, preferably formed of a leaden shell filled with a light charge of explosive material sufficient on explosion to be audible to those using the device without danger of damaging the vessel or target against which the torpedo is directed and also without danger of damaging the shell or body 1 and its propelling devices.

The bomb 4 may be attached to the stem 3 in any desired manner, being, as herein shown, provided with a socket 5, in which the extremity of the stem fits and is held by means of a set-screw 6. The forward end of the bomb 4 is fitted with a detonator 7, adapted on contact with the vessel or target to explode the bomb, so as to give notice of the accurate direction and contact of the torpedo.

The body or shell 1 of the torpedo is made buoyant at its forward end, so that when the bomb 4 is detached—as, for example, by explosion—said shell will float in a substantially erect or upright position in the water, as shown in Fig. 3 of the drawings, so that it may be readily seen and recovered, and the bomb 4 is made sufficiently heavy either by reason of its leaden case or by mixing leaden balls with its explosive charge to counteract the buoyancy of the forward end of the shell or body and cause the torpedo to float in a horizontal position in the water.

In connection with the bomb 4 I also prefer to employ a second firing or exploding device, so that in case the torpedo should miss the vessel or target at which it is directed the bomb will, nevertheless, be automatically exploded, so as to permit the shell 1 to float in an erect position and be readily recovered. This auxiliary firing device may be in the nature of a time-fuse, or it may be, as shown in the drawings, a mechanical device actuated from the propelling mechanism of the shell. As shown in the drawings, the device comprises a firing-pin 8, extending axially through the stem 3 into the shell or body 1

and having its end engaged by one arm 9 of an elbow-lever, the other arm 10 of which is engaged by a stout spring 11 in such a way that when the arm 10 is released to permit the lever to swing pivotally a quick endwise movement is imparted to the firing-pin 8 to discharge the bomb 4. The arm 10 of the elbow-lever engages a cam 12 on a shaft 13, having a worm-wheel 14 engaging a worm 15 on a shaft 16, driven by means of gearing 17 from the propeller-shaft 18 of the shell or from any other moving part of the propelling devices. In this way it will be seen that as the torpedo advances toward the target the movement of the propelling devices will be transmitted to the cam 12, so that after a certain interval the arm 10 of the elbow-lever will be released by said cam and the spring 11 will act to move the firing-pin 8 endwise and explode the bomb 4 independently of the detonator 7 carried thereby. It is also desirable to facilitate the recovery of the torpedo that the propelling devices of the shell should be thrown out of operation, and this I prefer to effect simultaneously with the endwise movement of the firing-pin 8. The means shown in Fig. 2 for accomplishing this result consists of a valve 20, controlling a port 21, leading from the compressed-gas reservoir in the shell 1 through the wall of said shell, said valve being connected by a link 19 with the arm 10 of the elbow-lever, by means of which the firing-pin is moved. By this means when the said pin 8 is moved the valve 20 is also moved to open the port 21 and permit the escape of the compressed gas from the shell, so that the propelling devices of the torpedo are thrown out of operation.

In using the device the bomb 4 is secured to the stem 3 and the torpedo directed against the vessel or target, the cam 12 being so set as to actuate the firing-pin 8 after the torpedo shall have reached or passed the target in case the detonator 7 is employed. Should the torpedo strike the target, the explosion of the bomb will give notice of the fact, and the weight on the stem 3 being removed the shell will float upright in the water, so as to be readily recovered. Should the torpedo miss the target the cam 12 will act after a certain interval to explode the bomb and stop the propelling devices, so that in this case also the torpedo will float in an erect position in the water and may be readily recovered.

From the above description of my improvements it will be seen that the improved torpedo constructed according to my invention is of an extremely simple and inexpensive na-

ture and is especially well adapted for purposes of practice or training, and it will also be obvious from the above description that the device is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the parts herein set forth.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A torpedo having a shell or body the rear end of which is weighted and the front end of which is made buoyant and provided with means for holding a bomb adapted to be exploded on contact with a target or vessel at which the torpedo is directed, substantially as set forth.

2. A torpedo comprising a shell having a weighted rear end and a buoyant front end provided with a stem and a bomb adapted for attachment to said stem in position to be exploded by contact with the vessel or target at which the torpedo is directed, said bomb being arranged to counteract the buoyancy of said end of the shell to hold the torpedo in a horizontal position in the water, substantially as set forth.

3. A torpedo comprising a shell having a propelling device and provided with means to hold a bomb in position to be exploded by contact with a vessel or target against which the torpedo is directed, means actuated from said propelling device for exploding the bomb, and means to throw the propelling devices out of operation, substantially as set forth.

4. A torpedo comprising a shell or body adapted to carry an explosive charge, a propelling device for the shell or body, and means, actuated from said propelling device, for exploding said charge, substantially as set forth.

5. A torpedo comprising a shell or body having a hollow stem projecting from its front end and adapted to carry a bomb to be exploded on contact with a vessel or target against which the torpedo is directed, and means for exploding said bomb, said means comprising a firing-pin actuated from mechanism within the shell or body and extending in said stem, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW VAN BIBBER.

Witnesses:

JOHN ELIAS JONES,
J. D. THORNE.