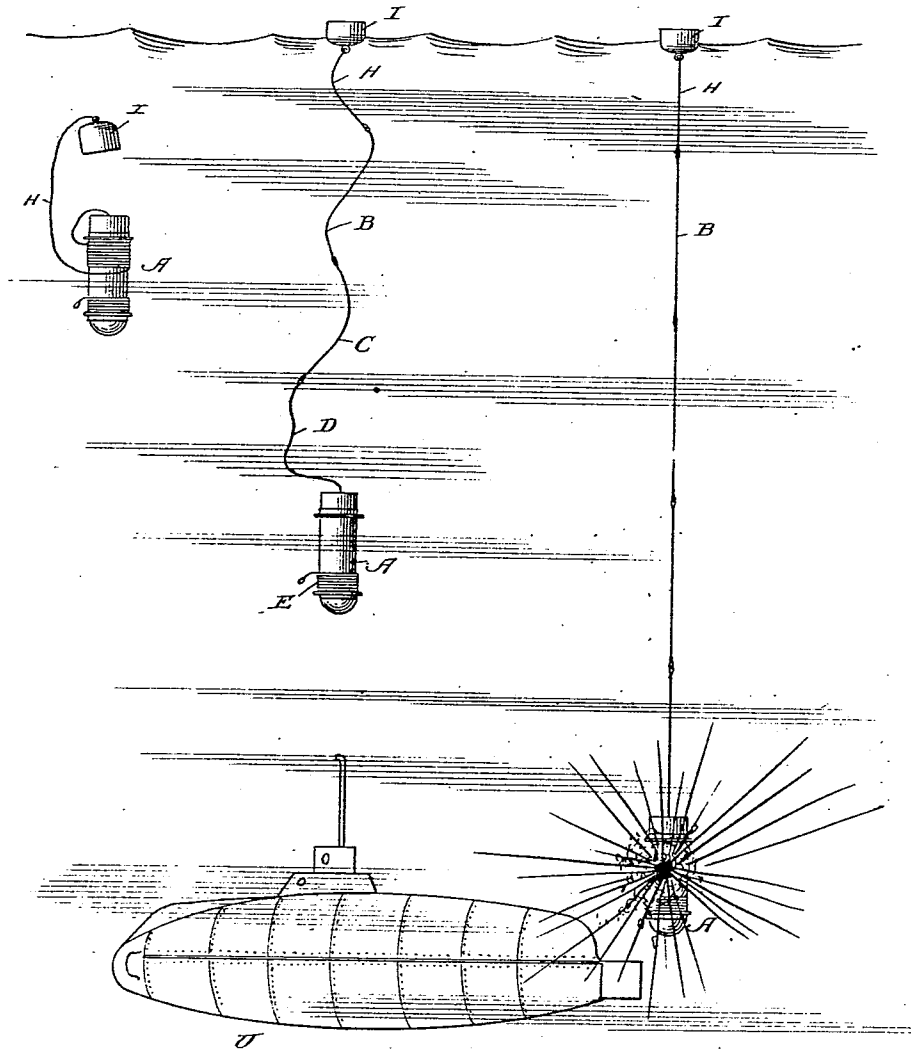


J. A. STEINMETZ.
SUBMARINE DESTROYING BOMB.
APPLICATION FILED APR. 13, 1917.

1,349,014.

Patented Aug. 10, 1920.
2 SHEETS—SHEET 1.

Fig. 1.



Witness

Edwin R. Bradford

Inventor

Joseph A. Steinmetz

By

Charles S. Brown

Attorneys

J. A. STEINMETZ.
SUBMARINE DESTROYING BOMB.
APPLICATION FILED APR. 13, 1917.

1,349,014.

Patented Aug. 10, 1920.
2 SHEETS—SHEET 2.

Fig. 2.

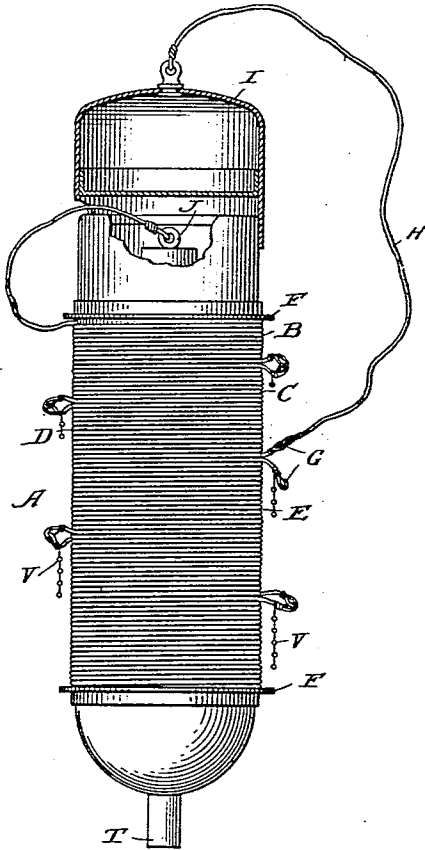


Fig. 3.

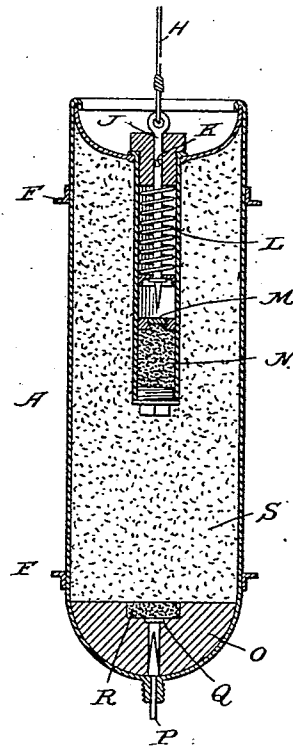
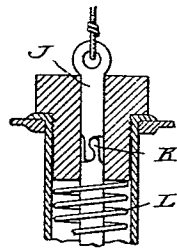


Fig. 4.



Witness

Edwin L. Bradford

Inventor

Joseph A. Steinmetz

By

Ames & Ames,

Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH A. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

SUBMARINE-DESTROYING BOMB.

1,349,014.

Specification of Letters Patent. Patented Aug. 10, 1920.

Application filed April 13, 1917. Serial No. 161,874.

To all whom it may concern:

Be it known that I, JOSEPH A. STEINMETZ, a citizen of the United States, and resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Submarine-Destroying Bombs, of which the following is a specification, reference being had therein to the accompanying drawing.

10 The object of this invention is to destroy submarines by falling bombs which explode on reaching a predetermined depth in the water or by contact with a submarine at a less depth.

15 The bombs may be thrown overboard from aerial or other craft after having been arranged to explode on reaching a certain depth, the explosion being caused in any suitable way, for example by a float connected to detonating devices connected to the bomb by a cable adjustable to any desired length.

In the accompanying drawings,

25 Figure 1 is a diagrammatic view showing a submarine and bombs at different depths in the water.

Fig. 2 is a side view of a bomb with parts broken away.

Fig. 3 shows a bomb in axial section.

30 Fig. 4 is an enlarged axial section of part of a detonating device shown also in Fig. 3.

In these figures, A represents the body of a cylindrical bomb, B, C, D, E cable segments, or sections, wound about the body of the bomb between shoulders or flanges F and provided with terminal devices G by which they may at will be connected or disconnected or may any of them be connected to a cable H attached at its upper end to a float I having an annular flange to slip over the upper end of the bomb whereby the float is normally held in place like a readily detached cap for the bomb. The bomb carries in its upper portion a detonating rod J to which the cable segment H is attached, the rod working in a bearing which holds it against lateral movement. One end of the upper cable segment is connected to the upper end of the rod H. The rod is divided, its parts being connected by a device K which is readily disconnected by a pull upon the rod H. Separation of the rod releases its lower portion, and when so released a spring L causes this portion to strike fulminate M and explode a small detonating charge N for the main body S of high ex-

plosive. Preferably the bomb has its lower end weighted at O and is provided below with an axial firing pin P which on impact with a solid is forced upward against fulminate Q for exploding a second detonating charge R for properly igniting the charge S. The firing pin is primarily covered and protected by a screw cap T.

Any air or water craft may be provided with such bombs, and when a submerged submarine is discovered such bombs may one after another be thrown overboard, the cap T being first removed and the float segment H being connected to the lower end of one of the other segments. The bomb which is heavier than water sinks therein and the buoyancy of the float detaches it from the bomb, as indicated at the left in Fig. 1. The cable is uncoiled as the bomb sinks and when all the segments which are connected to H have been fully extended, as indicated on the right in Fig. 1, the rod H is suddenly pulled compressing and then releasing the spring L and causing the explosion of the bomb. The operator before throwing over a bomb estimates the distance of the submarine below the surface and accordingly attaches the segment H to the upper or any lower segment B, C, &c., and connects together all the segments above the point at which H is attached. All the segments combined need have a length of no more than the moderate depth to which submarines may safely descend, and as each bomb contains a large quantity of very powerful explosive, explosion would probably disable a submarine at some distance from the point of explosion.

When the bomb is provided with the firing pin P it is obvious that explosion instantly follows contact of the pin with a submarine U, at any depth whatever.

The various cable segments are preferably provided, near one end of each, with devices V distinguishable to the eye and to the hand so that the depth to which the bomb will descend before exploding may be fixed by using any desired number of the segments wound upon the bomb, for connecting the float to the detonating device at J.

What I claim is:

1. The combination with a bomb adapted to sink in water, of a float loosely attached to the bomb and initially forming an extension of its body and a series of connectible cable segments coiled about the bomb, one above the other, each with readily discon-

nectible ends exposed, one of the segments being connected to the float and another to the detonating devices of the bomb, whereby the exposed ends permit as many as desired of the wound segments to be connected in series to the float.

5 2. A bomb normally carrying a float and provided with connectible cable segments wound about its exterior and having their

ends exposed and accessible for connecting and disconnecting them, a cable connecting the float to one of the segments, and a firing pin connected to one of the segments in series with a segment connected to the float.

In testimony whereof I hereunto affix my signature.

JOSEPH A. STEINMETZ.