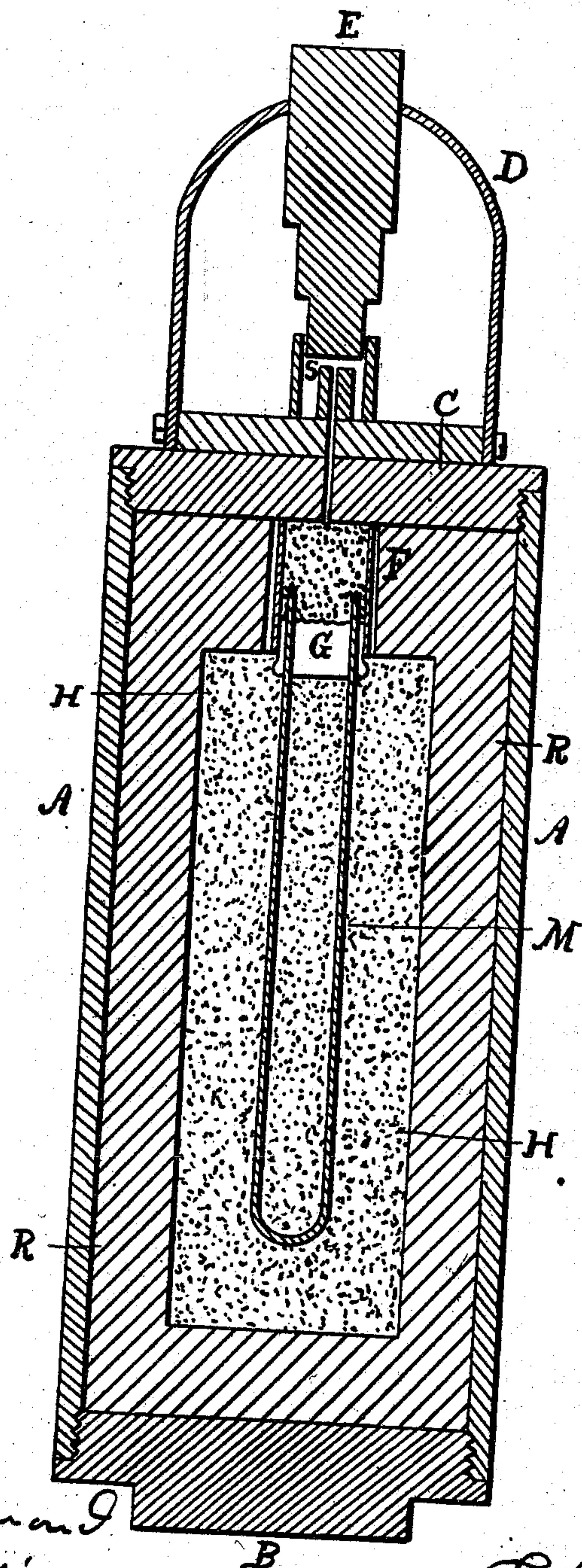


E. A. L. ROBERTS

Torpedo.

No. 62,890.

Patented Mar. 12, 1867.



Witnesses.

A. B. Richmond  
B. S. M. Allister

Inventor.

E. A. L. Roberts



# UNITED STATES PATENT OFFICE.

EDWARD A. L. ROBERTS, OF TITUSVILLE, PENNSYLVANIA.

## IMPROVED TORPEDO FOR OIL-WELLS.

Specification forming part of Letters Patent No. 62,890, dated March 12, 1867.

*To all whom it may concern:*

Whereas the explosion of torpedoes in oil-wells is confined to the space of from three to six inches in diameter, and, to get a large quantity of explosive material in the torpedo, it is necessary to construct them from four to thirty feet long, and it is also necessary to ignite or explode all the explosive material instantaneously, if possible; and the nearer the contrivance comes to that the more perfect the torpedo, and for the purpose of exploding nitro-glycerine it is essential to generate heat in or around the same at the moment of the concussion:

Now, be it known that I, EDWARD A. L. ROBERTS, of Titusville, in the county of Crawford, State of Pennsylvania, have invented an Improvement on my Method of Increasing the Capacity of Oil-Wells by the Torpedo, Patent No. 59,936; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and the letters of reference marked thereon.

Figure 1 is a sectional view of my improvement, divided longitudinally to better show its internal construction.

A A is a shell of iron or other metal of the desired length, with a screw-plug, B, to close the lower end, with a similar one, C, to close the top. D is a bail; E, a hammer to explode

the cap, which is placed on the tube S. So far the construction is similar to my former invention, described in Patent No. 59,936, as is also the priming-chamber F.

The nature of my improvement is as follows, to wit: M is a cylinder, of tin or other material, filled with powder. H H is a quick-match or fuse, bent in the form represented, or may be constructed in the form of net-work. The ends of this fuse pass through a cork, G, in the priming-chamber F, and are fired from the priming-chamber F. The space R R between the powder-cylinder M and the shell of the torpedo A A is filled with nitro-glycerine.

Now, it is evident that this construction will insure the instantaneous ignition of the powder in M and the nitro-glycerine in R R, thus making a torpedo of most fearful power.

What I claim as my invention, and desire to secure by Letters Patent, is as follows, to wit:

1. The combination of the quick-match F with the priming-chamber H H, for the purposes set forth.
2. The torpedo, with the priming-chamber, in combination with the quick-match, substantially as and for the purposes set forth.

E. A. L. ROBERTS.

Witnesses:

A. B. RICHMOND,  
B. S. MCALLISTER.