(No Model.)

H. F. CLARK.

RAILROAD SIGNAL TORPEDO.

No. 332,784. Patented Dec. 22, 1885.

Fig. 1.

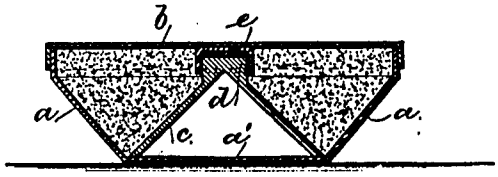
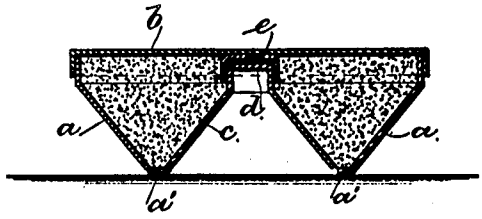


Fig. 2.



Witnesses-
Harold Serrell
Chas. H. Smith

Inventor
per Henry F. Clark
Lemuel W. Serrell
atty

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY F. CLARK, OF POUGHKEEPSIE, N. Y., ASSIGNOR TO THE PALMER TORPEDO RAILWAY SIGNAL COMPANY, OF PLAINFIELD, N. J.

RAILROAD-SIGNAL TORPEDO.

SPECIFICATION forming part of Letters Patent No. 332,784, dated December 22, 1885.

Application filed August 6, 1885. Serial No. 173,694. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. CLARK, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Torpedoes for Railroad-Signals; and the following is declared to be a description of the same.

Difficulties have heretofore been experienced with the torpedoes used for railroad-signals, especially when employed in automatic signal apparatus, these difficulties arising from the great force needed to explode the torpedo, and in the gravel used with the explosive compound getting into and clogging the working parts of the automatic signal after the firing of each torpedo.

Detonating-caps have been introduced in torpedoes; but the anvils or nipples for the same have been solid, and hence they do not break up by the explosion, and are liable to obstruct the automatic railway signaling mechanism with which they are employed.

I make use of a hollow support for the fulminating-cap, which support is sufficiently strong to insure the explosion of the cap; but it is frangible, and the small pieces are blown away by the explosion and do not obstruct the torpedo signal apparatus with which the torpedo is used.

In the drawings, Figure 1 is a vertical cross-section of the torpedo with this anvil made separate and placed within the shell, and Fig. 2 is a vertical cross-section of the torpedo with the anvil formed as a part of the torpedo-shell.

a is the conical saucer-shaped base, having a flat bottom, *a'*, and *b* is the lid to the same. The anvil *c* has at its upper end a head or nipple, *d*, and upon this the cap *e*, containing the fulminate, is placed. This head *d* is preferably square, in order that within the round cap there may be space for the flame from the fulminate to escape freely and fire the surrounding detonating material. The upper end of said cap *e* is close to the under side of the cover, and the cap and torpedo will be exploded by a blow or pressure upon the cover that is much less than that required with the ordinary torpedo.

The anvil may be a separate hollow cone of cast-iron, as shown in Fig. 1, within the torpedo-shell; or the anvil *c* and its head *d* may be stamped from the same sheet of metal as the conical saucer-shaped base *a*, as shown in Fig. 2, the position of the cap *e* and the operation of the torpedo being identical with that in Fig. 1. The hollow conical anvil may be attached at its lower edges to the shell.

This anvil and explosive cap enable me to use in the torpedo an explosive compound without the gravel generally employed; hence there is nothing that tends to clog up the automatic torpedo signal apparatus.

I claim as my invention—

1. The combination, with the torpedo-case and the explosive cap, of a hollow frangible support or anvil for the explosive cap, substantially as set forth.

2. The combination, with the saucer-shaped base *a* and lid *b*, of the separate anvil *c*, having a hollow conical base, and the firing-cap *e*, substantially as and for the purposes set forth.

Signed by me this 1st day of August, A. D. 1885.

HENRY F. CLARK.

Witnesses:
FRANK H. TREACY,
ROBERT J. CLARK.