

F. DUTCHER.
FIBER CASE RAILWAY SIGNAL TORPEDO.
APPLICATION FILED AUG 25, 1910.

1,059,933.

Patented Apr. 22, 1913.

Fig. 1.

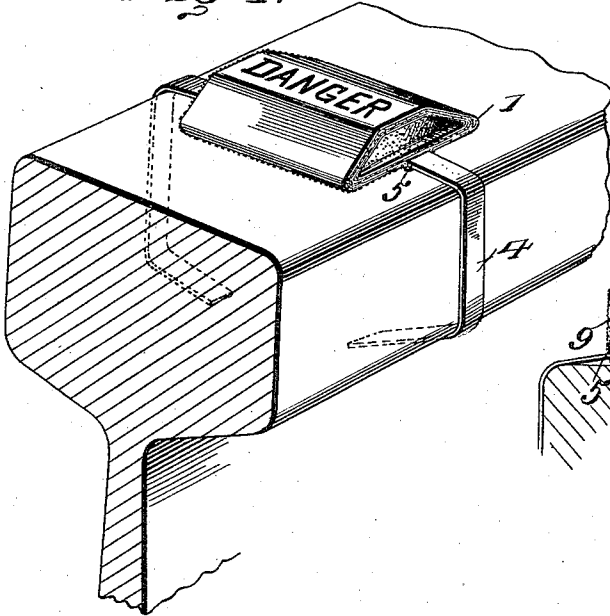


Fig. 2.

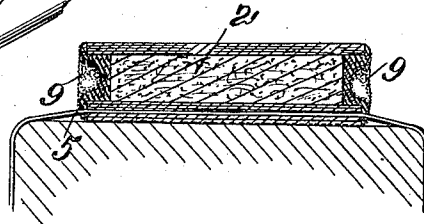


Fig. 3.

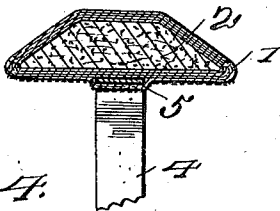


Fig. 4.

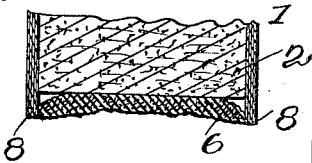
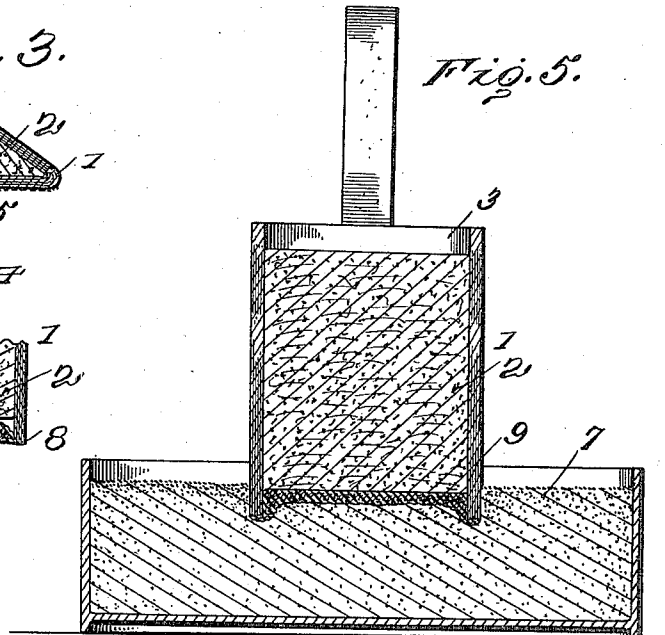


Fig. 5.



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FIBER-CASE RAILWAY SIGNAL-TORPEDO.

1,059,933.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed August 25, 1910. Serial No. 578,982.

To all whom it may concern:

Be it known that I, FRANK DUTCHER, a citizen of the United States, residing at Versailles, in the county of Allegheny and State

of Pennsylvania, have invented certain new and useful Improvements in Fiber-Case Railway Signal-Torpedoes, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in fiber case railway signal torpedoes, and relates to that form of fiber torpedo which is composed of an open ended tube.

My present improvement pertains to an improved form of water-proof closure for the open ends of the tube to protect the explosive compound therein from water or moisture.

The object of my present invention is to so apply the water-proof closure that the portion which protects the explosive is itself protected by the ends of the case and cannot be knocked therefrom by contact with other torpedoes when shipped in bulk or knocked therefrom by rough usage in the handling of the torpedo either in the factory or in the hands of the person using it.

In the accompanying drawings—Figure 1 is a perspective view of a torpedo embodying my present invention, showing it applied to the tread of a railroad rail. Fig. 2 is a central vertical sectional view taken longitudinally the rail-engaging strap. Fig. 3 is a section at right angles to Fig. 2. Fig. 4 is a section of one end of the torpedo showing one of the steps in applying thereto the inclosing water-proof compound. Fig. 5 is a sectional view showing the complete step of applying the inclosing water-proof compound.

It is well known to manufacturers and those having knowledge of the requirements of torpedoes that railroads require a torpedo which will stand several hours' soaking in water without affecting the explosive qualities of the explosive compound. It is also well known to manufacturers that in the practical use of fiber case torpedoes, especially those made of open ended tubes, that great difficulty has been experienced in effecting a water-tight closure for the open ends of the tube and at the same time to prevent this closure from being injured in the handling in the factory; shipping in

bulk and the handling of the person that uses it.

Referring now to the drawing, 1 is a fiber opened ended torpedo case, in which the explosive compound 2 is placed. This compound in the form here shown is of a hardened plastic tablet fitting within the tube, and made shorter than the tube to form a recess 3, at each end thereof. A rail-engaging strap 4 is applied to the case in any suitable manner, so far as the present improvement is concerned, but as here shown, it passes through an opening 5 made in the bottom of the case. This feature does not form any part of my present invention, as this is the subject-matter of the claims of a co-pending application.

In carrying out my present improvement, a tube closing compound made of beeswax, resin and plaster of Paris is used. This is applied to one end of the torpedo at a time while the sealing compound is in a melted fluid state. In the manufacture thereof the case is held with one end upward and the melted compound quickly placed therein by means of a brush and does not completely and uniformly fill the recesses in the end of the case, as shown in Fig. 4. The compound at once begins to harden, but while it is still in a soft plastic condition, the end of the torpedo is pushed downward into a batch of sand 7, as shown in Fig. 5, which pressure forces the sand into the soft plastic composition and forces the composition into all of the interstices of the recess and part overflows the ends 8 of the case and forms a recess 9, in the outer end of the closing compound. The contact of the compound with the sand chills it so that it quickly sets and the other end of the torpedo is then similarly treated. By reason of this pressure action a closure is formed which insures a complete filling of the end of the case, and that portion of the closure which directly covers or is opposite the explosive compound, is protected by the ends of the case and is not knocked off or displaced when shipped in bulk, or roughly handled in the factory or by the person using it. The combination of the sand with the compound in which it is embodied makes a homogeneous mass that becomes hard and makes a strengthened protecting closure for the open ends of the tube.

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

5 A fiber torpedo comprising an open-ended tube, an explosive compound therein and partially filling the tube, and a closure for the tube consisting of a plastic cement composition having sand pressed and embedded therein after the cement is in place and while

in a plastic state to set and harden and force 10 the closing cement tightly against the wall of the tube, substantially as described.

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

FRANK DUTCHER.

Witnesses:

GERTRUDE DAVIDSON,
SIMON F. LOEB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
