

F. DUTCHER.
RAILWAY SIGNAL TORPEDO.
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1,012,342.

Patented Dec. 19, 1911.

Fig. 1.

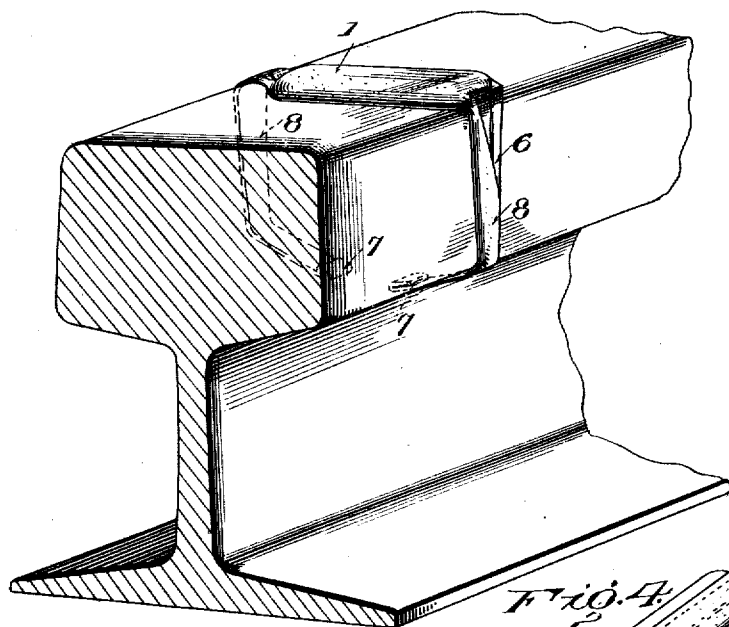


Fig. 2.

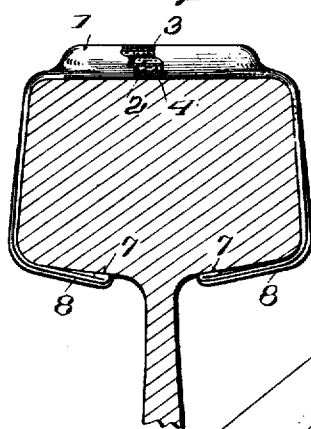


Fig. 4.

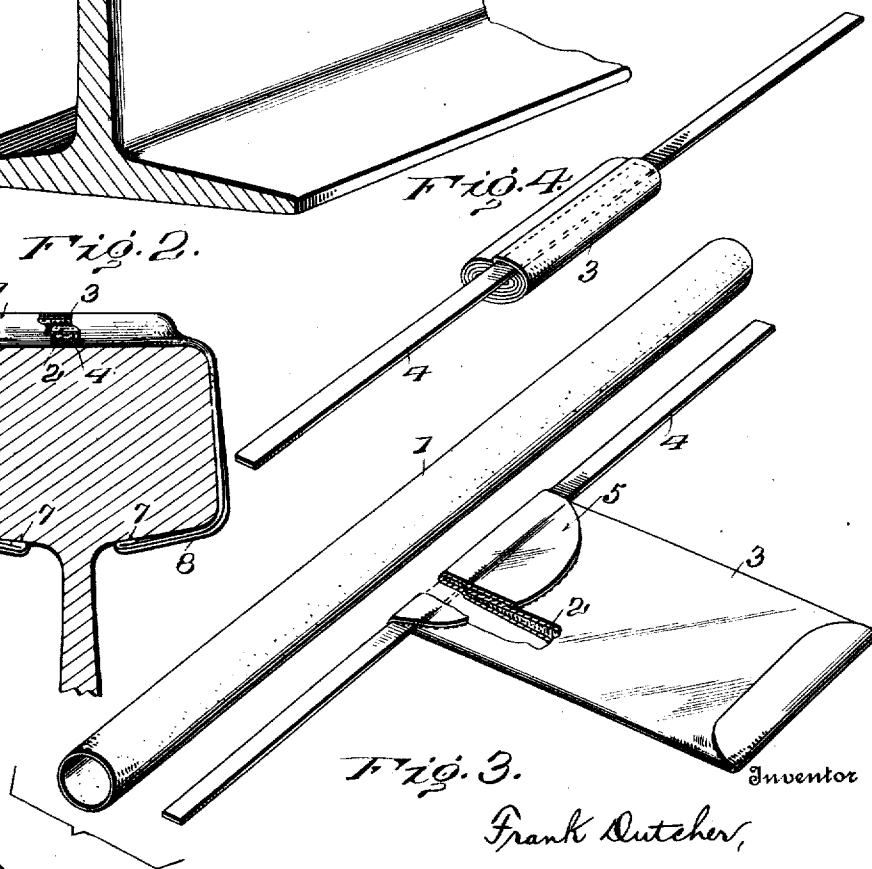


Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK DUTCHER, OF VERSAILLES, PENNSYLVANIA.

RAILWAY SIGNAL-TORPEDO.

1,012,342.

Specification of Letters Patent.

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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 Railway Signal-Torpedoes, of which the following is a specification, reference being had therein to the accompanying drawing.

10 My invention relates to improvements in railway signal torpedoes, and pertains particularly to that type of torpedo which has a combined explosive encircling and rail-engaging device, composed of a ductile material, such as tinfoil or other suitable similarly acting material, and the object of my present invention is to prevent the breaking away of the rail-engaging ends when being handled, or applied to the railroad rail, and 20 to also strengthen and increase the rigidity of the extended ends or rail-engaging members, all of which will be more fully set forth hereinafter.

In the accompanying drawings—Figure 25 1 is a perspective view of my improved torpedo, showing it applied to a railroad rail. Fig. 2 is a side elevation partly in section, showing it applied to a railroad rail. Fig. 3 is a perspective of the several parts of 30 my improved torpedo, shown in separated relation. Fig. 4 is a detached perspective view of one form of explosive carrier or explosive and the strengthening strip of my improved torpedo.

35 Railway torpedoes which have an inclosing case or encircling member, consisting of tinfoil or other similar ductile material, have been found in practice to readily break and tear away when being handled by railway employees, owing to the very thin wall 40 of the inclosing or encircling device. In the use of such device, the thin wall encircling member or inclosing case must be bent when applied to the railroad rail. In the handling of these thin wall elongated torpedoes 45 by railway employees, it is difficult to avoid the bending of the extended ends, or rail-engaging members and especially at the junction of these members with the central or body portion of the torpedo. Furthermore, it is common practice of railway employees in the handling of railway torpedoes to fasten the torpedo to the frame of their lanterns by wrapping one end of the rail- 50 engaging member around the wire frame of the lantern. This subjects the extended

ends to a bending action, and in the handling of the lantern and the swinging of it in the common practice of railway employees the rail-engaging member is being 60 constantly vibrated back and forth at the junction thereof with the body of the torpedo. By reason of this and other common rough usage of torpedoes in the hands of the railway employees, these thin wall tinfoil 65 torpedoes have been found to become cracked and weak at the junction of the rail-engaging extension with the body of the torpedo and by reason of this many torpedoes are destroyed for practical service, 70 causing a loss to the railroad and the railroad employee is liable to find himself without a practical torpedo when it is most needed. Furthermore, the breaking of this thin wall case is liable to occur in a train 75 box where it is common to keep them with tools, thus permitting the escape of the explosive within the box and cause a fire or an explosion by frictional contact with the contents of the box. 80

My improvement is designed to prevent such destruction of this type of torpedo and involves the use of a strengthening strip.

Referring now particularly to the drawings, 1 is the tinfoil encircling case, which is 85 here shown in the form of a tube, but so far as my present improvement is concerned, this encircling device may be formed in any other suitable way, such as from a sheet of the said material or otherwise. In this type 90 of torpedo a suitable explosive is placed within the inclosing or encircling device, intermediate its ends, and so far as my present improvement is generically concerned, this explosive may be in any desired form. In 95 the form here shown, the explosive compound 2, is placed within an envelop 3, and my strengthening strip 4 is suitably attached to this envelop. The manner here illustrated of attaching the strip is by placing it under 100 a flap 5 of the said envelop and the flap may be pasted to the body thereof in the usual manner. When this form of explosive carrier is used, the envelop is rolled up, as shown in Fig. 4, and it and the strengthening 105 strip 4 is placed within the encircling device or inclosing member 1. The strengthening strip is thus placed preferably between the explosive and the bottom side of the inclosing case, and the ends of the in- 110 closing case which extend beyond the explosive are doubled or folded longitudinally,

as shown at 6, tightly against the strengthening strip, thus uniting the strip to the inclosing case. Preferably this strengthening strip 4 is somewhat shorter than the inclosing case to permit the extremities of the inclosing case to be transversely doubled, as shown at 7, which performs the triple function of preventing the strengthening strip from having any longitudinal movement; lock the folds 6 and to close the ends of the extensions or rail-engaging members 8 of the encircling case. As shown, the extensions or rail-engaging members 8 are a continuation of the encircling member. Preferably this strengthening strip 4 consists of lead or other ductile material, thus giving not only strength to the torpedo and preventing the breaking thereof, as heretofore explained, but also adds some rigidity and additional ductile holding effect when the extensions are bent around the tread of the railway rail. However, I wish it understood that the broad invention would be involved in the use of other material for the strengthening strip, such as cloth, tough paper or the like.

While I have here shown the strengthening strip secured to the explosive carrier, and prefer to have it so, yet it is not essential to the generic improvement in that the explosive and the strip may be disconnected, and placed separately within the encircling member.

As shown, the strengthening strip is placed between the explosive and the bottom of the encircling case which locks it between the explosive and the rail when in use, thus preventing the flying of the strip when the explosion takes place, because the force of the explosion is upward.

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

1. An improved torpedo, comprising an explosive inclosing case having outwardly projecting ductile rail-engaging members, and a strengthening strip extending through the said extending ends.

2. An improved railway torpedo, comprising an explosive inclosing case having extended ductile rail-engaging members, of a strengthening strip passing through the said inclosing case and the extensions thereof for the purpose described.

3. An improved railway torpedo, comprising an inclosing case, consisting of ductile

material, said inclosing case having outwardly projecting rail-engaging members, an explosive within the case and a strengthening strip passing through the case between the explosive and the rail-engaging side of the case, said strip also extending through the said extensions for the purpose described.

4. An improved railway torpedo, comprising an explosive inclosing case having extended longitudinally folded rail-engaging members and a strengthening strip passing through and inclosed by the longitudinally folded extensions.

5. An improved railway torpedo, comprising an explosive inclosing case, having extended longitudinally folded engaging members, a strengthening strip passing through the folded extensions, the ends of the folded extensions projecting beyond the strip and doubled backward transversely for the purpose described.

6. An improved railway torpedo, comprising an inclosing case, consisting of ductile material and having extended rail-engaging members, and a strengthening strip composed of ductile material passing through the said extensions.

7. An improved railway signal torpedo, comprising a tubular case composed of ductile material, said tubular case extended and forming rail-engaging members, and a separate strengthening strip extending longitudinally the case and said extension for the purpose described.

8. An improved railway torpedo, comprising an inclosing case having continuously formed extended rail-engaging members, an explosive case within the first said case, a strengthening strip attached to the explosive case and extending through the inclosing case and the said extended ends.

9. An improved railway torpedo, comprising an explosive inclosing case having continuously formed projecting rail-engaging members, a rolled envelop, and the explosive within the envelop, a strengthening strip attached to the envelop, said envelop and strip placed within the inclosing case, the projecting ends of the strip extending longitudinally the said rail-engaging extensions.

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

FRANK DUTCHER.

Witnesses:

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