

E. P. S. ANDREWS.

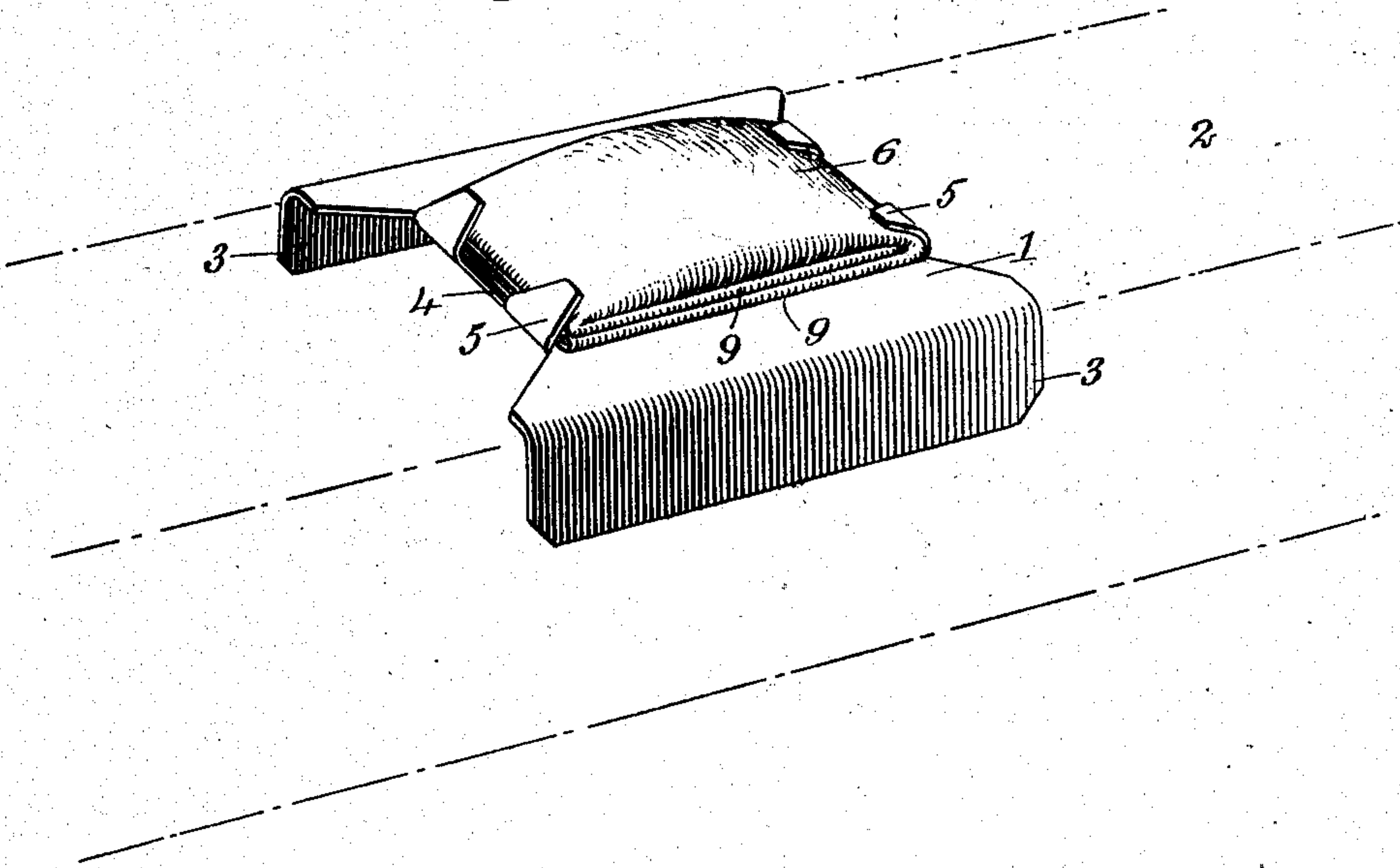
TORPEDO.

APPLICATION FILED DEC. 3, 1908.

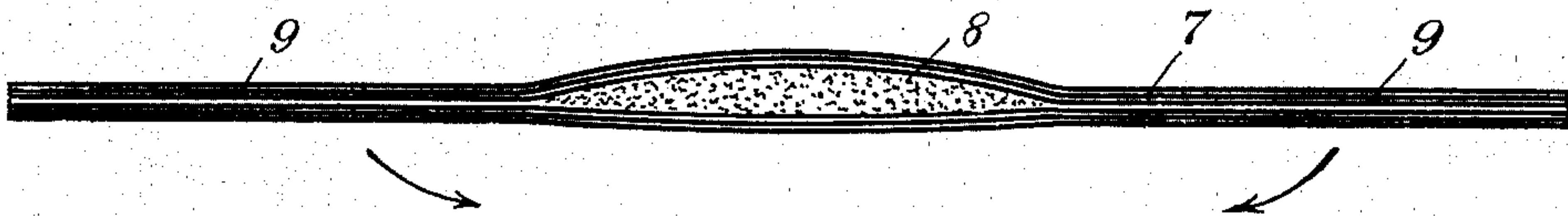
925,857.

Patented June 22, 1909.

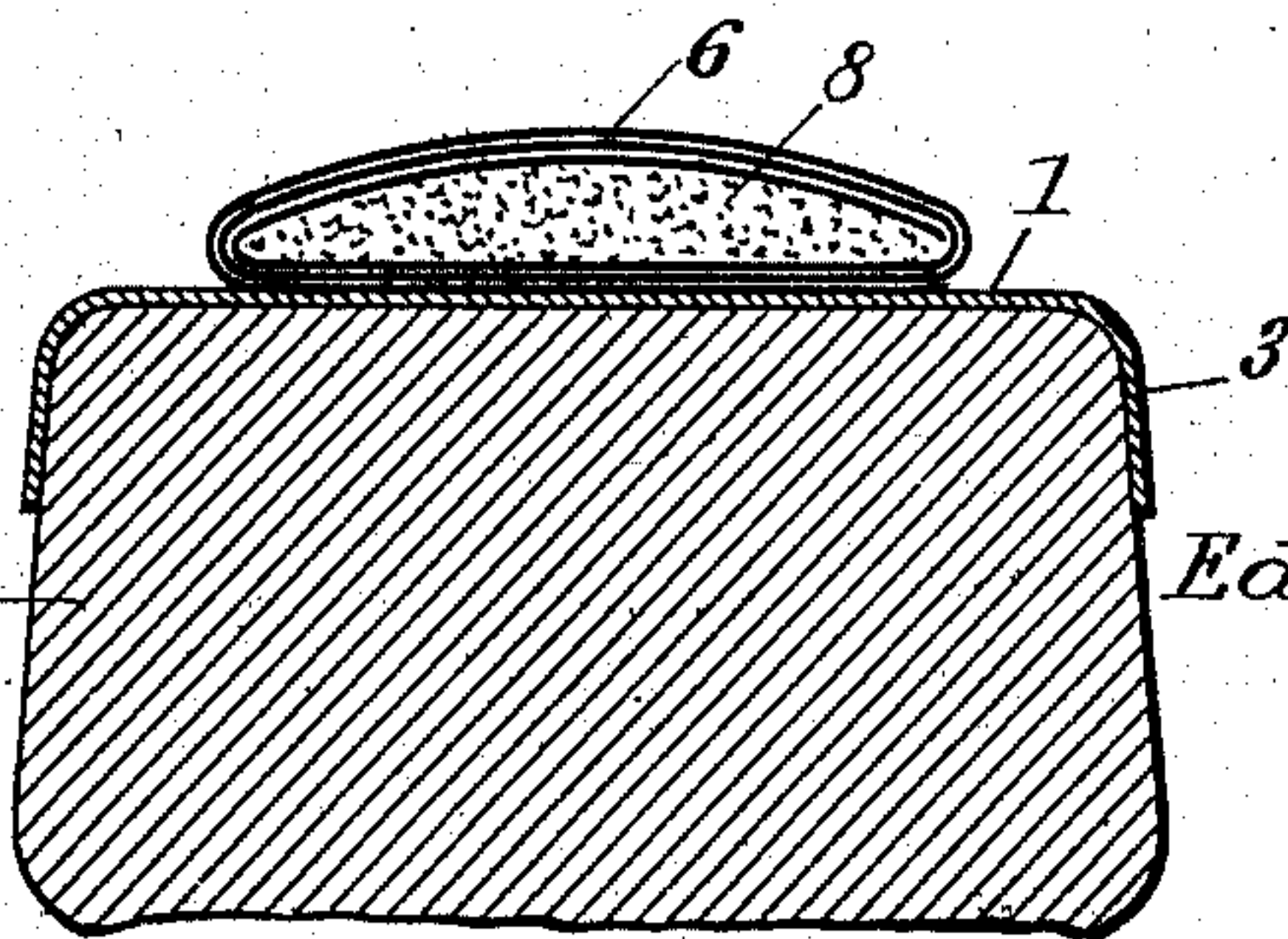
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

EDWARD PAUL SAWYER ANDREWS, OF WEST WINDHAM, NEW HAMPSHIRE.

## TORPEDO.

No. 925,857.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed December 3, 1908. Serial No. 465,797.

*To all whom it may concern:*

Be it known that I, EDWARD P. S. ANDREWS, a citizen of the United States, and a resident of West Windham, in the county of Rockingham and State of New Hampshire, have invented a new and Improved Torpedo, of which the following is a full, clear, and exact description.

This invention relates to torpedoes such as are used in the operation of railways, and which are set on the rails as a warning to a train which is running with too little head-way in the rear of another train.

In its general construction the invention comprises a plate which forms a saddle or seat upon the head of the rail, to which there is attached a receptacle for an explosive. This receptacle is in the form of a flattened tube, and the object of the invention is to arrange the tube in such a way that the pressure of the wheel which discharges the torpedo will hold the ends of the tube closed. In this way the bursting of the receptacle by the force of the explosion is insured, and also a loud report.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective of a torpedo constructed according to my invention, the head of the rail being indicated by dotted lines so as to illustrate the manner in which the torpedo is placed on the track; Fig. 2 is a longitudinal section through the flattened tube or receptacle for the explosive, representing the same in the extended position which it has before it is placed on the plate or holder; and Fig. 3 is a vertical cross section taken through the device in a plane transverse to the rail, and showing also a short portion of the head of the rail upon which the torpedo is placed.

Referring more particularly to the parts, 1 represents a plate adapted to be formed of sheet steel or similar material, the body of which is substantially flat so as to lie upon the upper face of the rail head 2. The edges of this plate are turned downwardly so as to form flanges 3 which lie against the sides of

the head when the device is applied, as indicated in Fig. 3. The width of the plate measured longitudinally of the rail is reduced near its middle so as to form a neck or shank 4, and the side edges of this shank are formed with integral tongues 5 which are bent upwardly in order to engage the edges of the cartridge 6, as indicated in Fig. 1. The cartridge 6 is formed of a flat tube 7 of paper or similar material. This tube is preferably formed of a plurality of layers, as shown. In constructing the cartridge, the explosive 8 is introduced into the tube so as to form a mass near the middle portion thereof, as shown in Fig. 2. The extent of this filled portion of the tube should be about one-third of the entire length of the tube. The flattened end portions 9 of the tube are then folded upon each other on the under side of the body or middle section of the tube. The cartridge 6 which is formed in this manner is then applied to the upper face of the plate or holder 1, and is secured to the plate by crimping the tongues 5 upon its ends or front and rear edges. The cartridge is applied so that the axis of the tube is disposed longitudinally with respect to the rail. From this arrangement it will be seen that when the wheel of an approaching train strikes the torpedo, the pressure at the edge of the cartridge when the wheel rolls upon it, will close the ends or mouths of the tube, and this will occur from whichever direction the train approaches. In this way the escape of the gases from the explosion is prevented except as may occur through the rupture of the wall of the tube. Thus I insure that the explosion will burst the wall of the receptacle and a loud report will be produced.

Attention is called to the advantage of bending the ends of the tube under the middle portion or body portion. The advantage in doing this lies in the fact that when the weight of the wheel comes upon the body of the cartridge, the pressure is distributed by the body on the ends of the tube lying beneath it, and in this way the ends of the tube are held more perfectly sealed than would otherwise occur.

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

1. A torpedo comprising a receptacle for an explosive, partially filled with an explosive and having its end portions folded under



the body thereof, the mouths of said end portions being disposed at the transverse edges engaged by the wheel.

2. A torpedo comprising a cartridge  
5 formed of a flattened tube, the middle portion whereof is provided with an explosive, the end portions of said tube being folded under the body thereof.

3. A torpedo comprising a cartridge  
10 formed of a flattened tube, the middle portion whereof is provided with an explosive, the end portions of said tube being folded under the body thereof, and means for attaching said cartridge on a rail with the axis  
15 of said tube extending longitudinally of the rail.

4. A torpedo consisting of a cartridge holder, in combination with a cartridge  
20 formed of a flattened tubular receptacle, the middle portion whereof is provided with an explosive, the end portions of said receptacle being folded under the body thereof, said cartridge being attached to said cartridge holder with the axis of said tubular receptacle  
25 extending longitudinally of the rail.

5. A torpedo consisting of a plate adapted

to seat on the upper face of a rail, having  
tongues on the transverse edges thereof, and  
a cartridge retained by said tongues and consisting of a flattened tube, the middle portion 30  
whereof is provided with an explosive, the end portions of said tube being folded under the body thereof at the end edges, said tube being engaged by said tongues.

6. A torpedo consisting of a cartridge 35  
holder, in combination with a cartridge formed of a flattened tubular receptacle, the middle portion whereof is provided with an explosive, the end portions of said receptacle being folded under the body thereof and having 40  
their mouths disposed adjacent the end edges of said middle portion, said cartridge holder having means for grasping the end edges of said body portion and the mouths of  
said end portions. 45

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD PAUL SAWYER ANDREWS.

Witnesses:

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FRANK A. CROWELL.