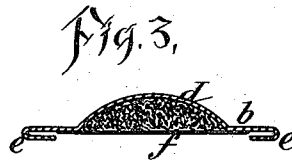
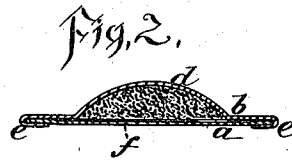
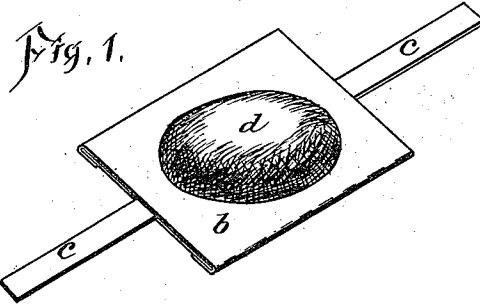


H. J. DETWILLER.
DETONATING RAILWAY-SIGNAL.

No. 170,067.

Patented Nov. 16, 1875.



Witnesses:
Wm. H. Wagner,
J. H. Rutherford.

Inventor:
Henry J. Detwiler,
184 Johnson & Johnson
his Attorneys.

UNITED STATES PATENT OFFICE.

HENRY J. DETWILLER, OF BETHLEHEM, ASSIGNOR TO HERMAN A. DOSTER
AND CHARLES W. ROEPER, OF SAME PLACE, AND WILLIAM J. TAYLOR,
OF CHESTER, PENNSYLVANIA.

IMPROVEMENT IN DETONATING RAILWAY-SIGNALS.

Specification forming part of Letters Patent No. 170,067, dated November 16, 1875; application filed
August 25, 1875.

To all whom it may concern:

Be it known that I, HENRY J. DETWILLER, of Bethlehem, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Detonating Railway-Signals; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The device is for use upon railway-rails for signaling trains under way by detonating explosion in cases of obstruction upon the track in advance; and also for giving notice to the engineer on heavy freight-trains, when stopping upon long curves, that the train is intact when moving off, a torpedo being placed in such case to be passed over only by the rear car-wheels. Various devices for this purpose have been used and held in position upon the rail by arms, so that the wheels of the engine or rear car will pass over it and effect, by concussion, the explosion of the detonating-torpedo. The detonating element has been hermetically sealed in a glass vessel, and protected by a metallic casing, making in effect two cases.

My object is to not only reduce the expense of the device to a minimum, but to increase its effectiveness.

In the accompanying drawings, Figure 1 represents a view in perspective of my improved railroad-torpedo; Fig. 2, a vertical cross-section of the same; and Fig. 3, a similar view of the cap, showing the cavity thereof, sealed by a thin bottom film.

A base and a cap-plate, *a b*, of sheet-iron are used, and the former has arms *c*, by which to secure the device in place by claspings over the top and within the side curves of the rail, while the cap *b* has a cavity, *d*, for receiving the detonating compound. When this cavity is filled the flat sides of the two plates *a b* are placed together, and secured

by bending the side edges *e* of the cap over and beneath the two opposite edges only of the base, thus making a simple fastening for the plates, and avoiding the use of rivets, either in making the torpedo or fastening the plates together. I have found this means of fastening to hold the plates close together, and to be free from danger of exploding the compound in closing the cap, and which danger would be materially increased in making the fastening with rivets, besides increasing the expense. Before, however, uniting the cap to the base, as described, I seal the filled cavity *d* by a film, *f*, of tin or lead foil and paper, or other suitable material laid over the bottom of the cap *b*, so as to completely seal the contents of the cavity. In this position the sealing-film *f* is flush with the joining surfaces of the cap and its base, the cavity being raised from one side only of the cap, and thereby becomes a lining or partition to separate the cavity from the base, and thereby obtain the simplest form or device for hermetically sealing the explosive compound. This sealing-film *f* is secured by cementing its edges upon the surface of the cap, and when so cemented it keeps the compound dry and free from contact with the base, so that in clasping the cap in place there is no friction upon the compound, as the film *f* forms a bearing bottom for the filled cavity.

This sealing-film constitutes an important and advantageous element in the torpedo, as by it the two metallic plates are separated by a thin glazed surface, and thereby prevents the grains of the compound when dry from working out between the plates, and in this respect insures greater safety in handling the torpedo.

Its expense as a sealing device is comparatively nothing. It is itself protected and sealed by its position between the cap and the base, and by such position is made secure.

Any suitable detonating compound may be employed.

I claim—

1. In a detonating-signal or torpedo the

combination, with the cavity *d* for the detonating compound, of a sealing-bottom film, *f*, therefor, substantially as herein set forth.

2. The combination, with the base and cap plates *a b* of a railroad-torpedo, of a lining or sealing partition, *f*, interposed between them, and protected in the manner and for the purpose herein set forth.

In testimony that I claim the foregoing I have affixed my signature in presence of two witnesses.

HENRY J. DETWILLER.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.