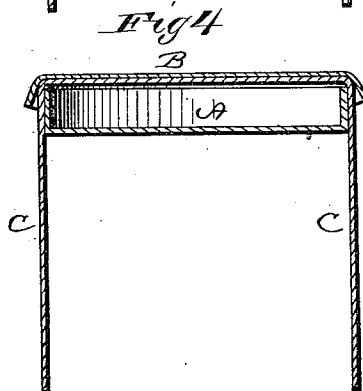
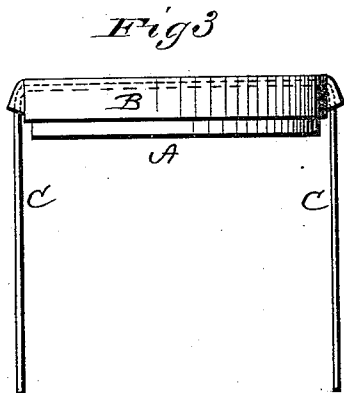
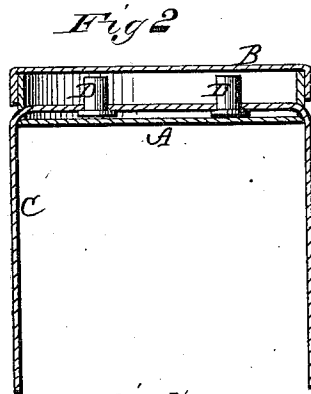
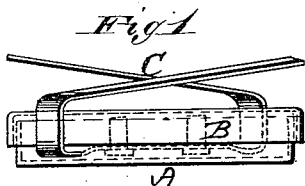


F. HICKMAN.
Detonating Railway-Signal.

No. 167,532.

Patented Sept. 7, 1875.



WITNESSES
J. L. Curand
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By

INVENTOR
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Alexander Mason
Attorney

UNITED STATES PATENT OFFICE.

FRANCIS HICKMAN, OF READING, PENNSYLVANIA.

IMPROVEMENT IN DETONATING RAILWAY-SIGNALS.

Specification forming part of Letters Patent No. **167,532**, dated September 7, 1875; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, FRANCIS HICKMAN, of Reading, in the county of Berks and in the State of Pennsylvania, have invented certain new and useful Improvements in Torpedo or Signal Cases; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to torpedoes for use on railroad-rails of the class composed of a pellet or case containing the explosive fulminate, covered with a cap and fastened by ductile metal strips; and it consists in the introduction of the ductile metal strips into or through the bottom or sides of the metallic case or cap. It also consists in perforating the metal strip where it passes through the case, and combining therewith metal rivets, or their equivalents, for the retention of percussion-caps, all as hereinafter more fully set forth.

In the annexed drawing, Figure 1 is a side view, and Fig. 2 a longitudinal section, of a torpedo embodying my invention, and showing the metallic rivets in place. Fig. 3 is a side view, and Fig. 4 a longitudinal section, showing another form of my invention without the rivets.

A represents the ordinary circular case or pellet, covered with a cap, B. C is the strip of ductile sheet metal with which the torpedo is held in place on top of the rail. This strip C is

passed through the case or pellet A by means of holes made in the sides thereof, as shown in Fig. 2, or through the cap by means of recesses formed in the sides thereof, where the ends of the strip pass downward.

By this means the manufacture of the torpedo is facilitated, as it dispenses with any soldering, and the cap, strap, and pellet may be put together at once.

When percussion-caps are used in the manufacture, that part of the strip C which is within the case is perforated, and metallic rivets D D are passed through the perforations to receive the percussion-caps on their ends.

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

1. In a torpedo for railroads, the ductile metal strip C, when passed into or through the bottom or sides of the metallic case or cap, substantially for the purposes herein set forth.

2. The combination, with the case or pellet A and cap B, of the ductile metal strap C, passed through the same, and perforated, as described, and the rivets D D, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of August, 1875.

FRANCIS HICKMAN.

Witnesses:

MATTHIAS MENGEL,
ALFRED W. GLASE.