(No Model.) 2 Sheets—Sheet 1.

J. DEUEL.

TORPEDO RAILWAY SIGNAL.

No. 343,304. Patented June 8, 1886.

Fig. 1.

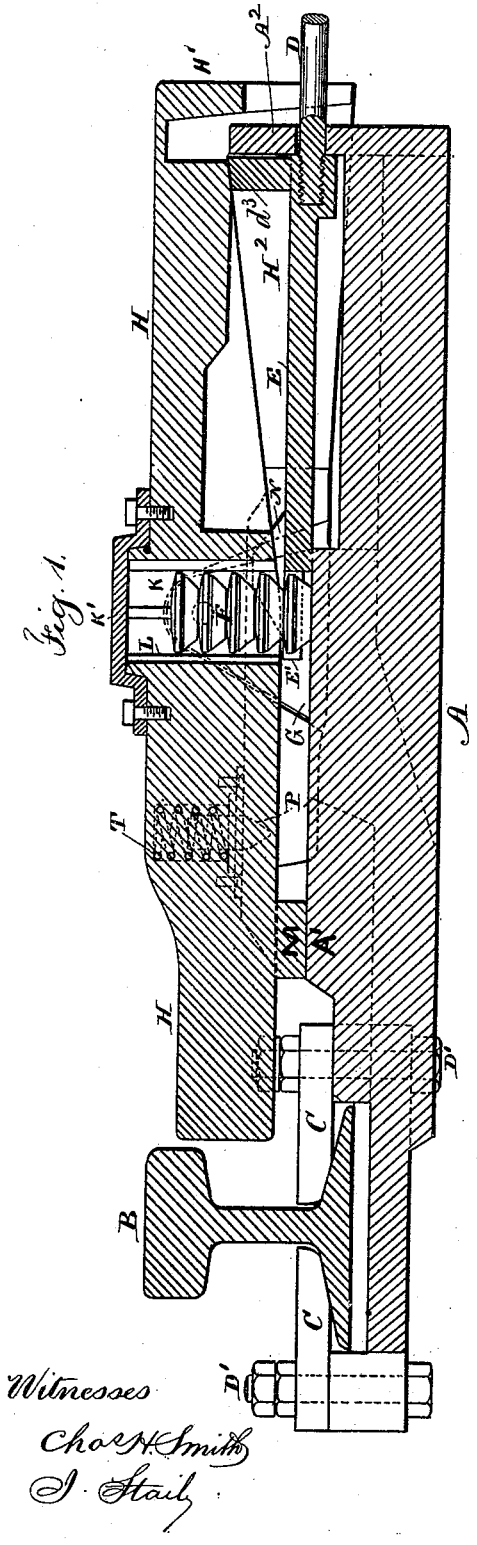
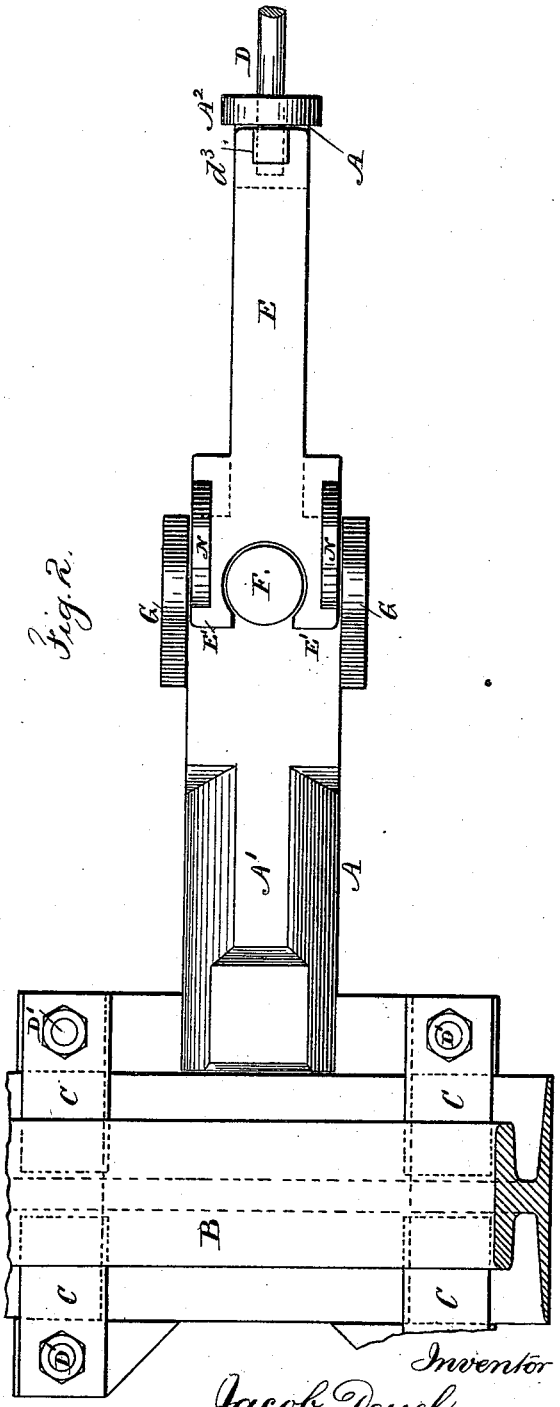


Fig. 2.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

J. DEUEL.

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Fig. 3

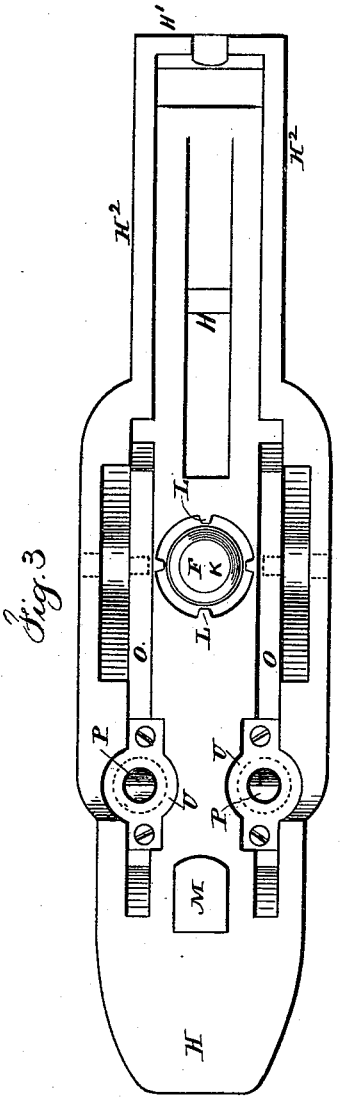


Fig. 4

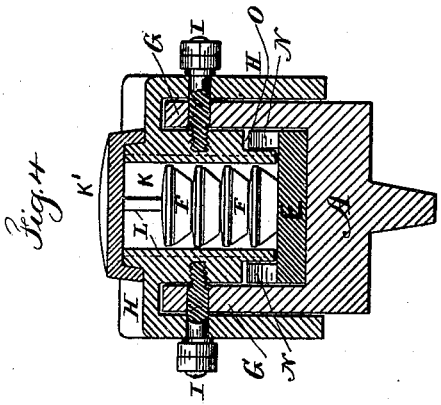
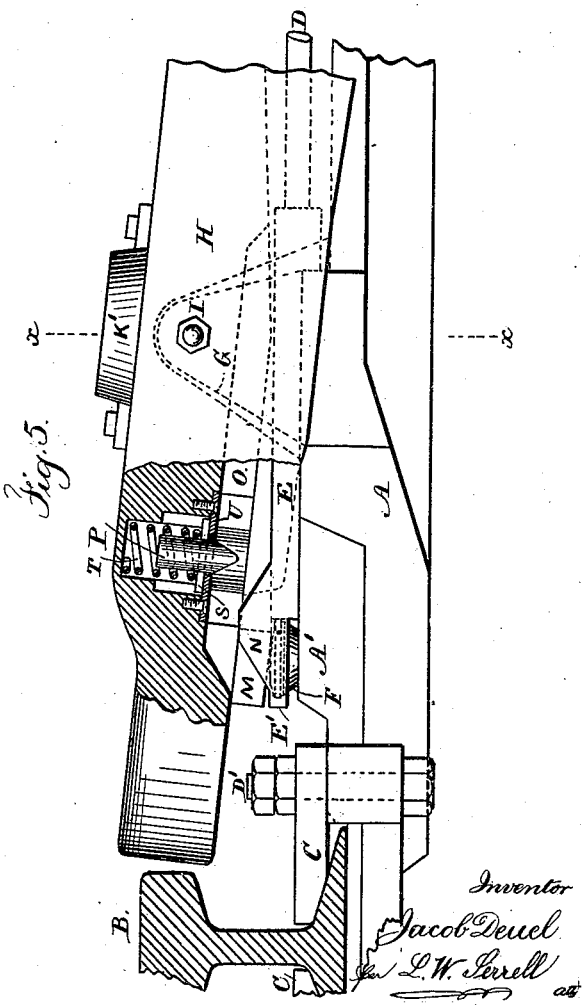


Fig. 5.



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atty

UNITED STATES PATENT OFFICE.

JACOB DEUEL, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE PALMER TORPEDO SIGNAL COMPANY, OF PLAINFIELD, NEW JERSEY.

TORPEDO RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 343,304, dated June 8, 1886.

Application filed October 8, 1885. Serial No. 179,292. (No model.)

To all whom it may concern:

Be it known that I, JACOB DEUEL, of Poughkeepsie, in the county of Dutchess and State of New York, have invented an Improvement in Torpedo Railway-Signals, of which the following is a specification.

This invention is a modification of and improvement upon the devices set forth in Letters Patent No. 310,717, granted January 13, 1885, to Timothy G. Palmer.

This improvement is made with reference to simplifying the construction of the parts, and for allowing the signal to be moved during the passage of a train.

In the drawings, Figure 1 is a vertical longitudinal section of the torpedo-signal apparatus and a cross-section of the rail. Fig. 2 is a plan view with the upper part or rocker removed. Fig. 3 is an inverted plan of the rocker. Fig. 4 is a cross-section at the line *x x*, Fig. 5; and Fig. 5 is a partial elevation at one side of the signal apparatus, with the parts broken open at the spring-plug that raises the end of the rocker.

The base-piece A of the torpedo-signal is firmly connected to the rail B, preferably by the clip-pieces C and bolts D′, and this base-piece A is made with the anvil A′, upon which the torpedo is to be exploded, and there is a guide, A^2, at the back end, through which the rod D passes to the torpedo-slide E, the end of which slide is made with an opening adapted to receive the torpedo F between the jaws E′, as in the aforesaid patent, the rod D extending to the signal apparatus, so that it is moved back and forth with the slide E and torpedo F when the "danger" or other signal upon the railway-track is actuated. Upon this base-piece A are the bearing-flanges G, that extend up into recesses within the swinging cap-piece or head H, and there are screws or bolts I passing into the cap-piece from each side and through the bearing-flanges G. These bolts form pivots upon which the cap-piece or head H is free to swing from the position shown in Fig. 5 to the position shown in Fig. 1. This cap-piece is nearly balanced; but the preponderance of weight should be at the end next to the rail B, so that the said cap-piece will occupy the position shown in Fig. 1 when the parts are at rest.

In the cap H is a magazine, K, having a cap, K′, that is removed for the insertion of torpedoes, as the same may be required from time to time. It is preferable to make vertical ribs upon the inner surface of the magazine, as seen at L, Figs. 1 and 3. These guide the torpedoes as they feed down by gravity, and are taken off in succession by the slide E, and there may be a weight upon the top of the torpedoes to steady the same. As the slide E is moved back and forth it carries with it the bottom torpedo, and the other torpedoes in the magazine rest upon the slide E, when the said slide is projected into the position shown in Fig. 5, to bring the torpedo F over the anvil A′. If the torpedo is not exploded, it is brought back to the position shown in Fig. 1, when the slide E and jaws E′ are drawn away from the rail; but if the torpedo is exploded the jaws E′ come back empty and receive another torpedo, as in the aforesaid patent.

Upon the under side of the cap H there is an exploder, M, immediately above the anvil A′, and in such a position that it will pass in between the jaws E′ and explode the cartridge, should there be a cartridge in position, as indicated in Fig. 5, when the wheels of a train pass along and press down the end of the cap-piece H next to the rail B.

The parts thus far described might be used without any addition thereto, provided there was no risk of the signal being moved when a train was passing; but to provide for this contingency I place upon the slide E one or two cams, N, which are received into longitudinal channels O in the under side of the cap H. These cams N serve to lift up the end of the cap H next to the rail as the torpedo is carried forward, so that the exploder M will be sufficiently elevated to allow the torpedo to pass in beneath it; and I provide one or two spring-plugs, P, within recesses made in the under side of the cap H, there being a cross-pin, S, through the plug, against which the spring T acts, and a plate, U, is screwed upon the under side of said cap H, to retain the cross-pin S, spring, and plug in place. If

there are two cams N, there will be two spring-plugs P; but one of said plugs will usually be sufficient. As the slide E and cams N are moved toward the rail said cams pass under the spring-plugs P and raise up this end of the cap-piece H; but should the wheels of a train come in contact with the end of the cap H at the time the cams N are under the spring-plugs P the cap-piece H will be depressed, and the spring-plugs will yield without any of the parts being injured.

Whenever the end of the cap-piece H next to the rail is depressed, and there is a torpedo under the exploder, a "danger" signal will be given by the explosion of the torpedo.

The tail or back end, H′, of the cap H is made to protect the slide E from the action of rain or snow by covering said slide and inclosing it within the side flanges, H^2. The guide-lug A^2, upon the base A, through which the rod D passes, is also covered and protected by the part H′ of the cap.

I provide a projection at d^3 upon the slide E, which projection acts against the under part of the cap-piece H, as seen in Fig. 1, when the slide E is drawn back, and it insures the movement of said cap-piece, and holds it so that the end next the rail is out of the way of the passing wheels.

I claim as my invention—

1. The combination, with the base A and anvil A′, of the swinging cap-piece H, and the pivots supporting the same, the magazine for the torpedoes, and the slide E, with the jaws E′, for presenting the torpedo upon the anvil, substantially as set forth.

2. The combination, with the base A and the anvil A′, of the swinging cap H, the pivots upon which the same is supported, the slide E, cam N, and exploder M, substantially as set forth.

3. The combination, with the base A, anvil A′, and slide E, of the cap-piece H, the pivots upon which the same swings, the exploder upon the under side of the cap, the cam N, and the spring-plug P, substantially as set forth.

4. The combination, with the base A and the anvil A′, of the swing-cap H, the pivots upon which the same is supported, the slide E, cam N, exploder, and the projection d^3, for acting upon the cap H, substantially as and for the purposes set forth.

Signed by me this 3d day of October, A. D. 1885.

JACOB DEUEL.

Witnesses:
WM. KAISS,
CHAS. F. COSSUM.