(No Model.)

H. F. CLARK.

DETONATOR FOR RAILWAY SIGNALING PURPOSES.

No. 522,650. Patented July 10, 1894.

FIG. 1.

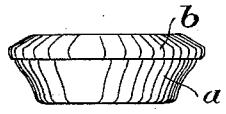


FIG. 2.

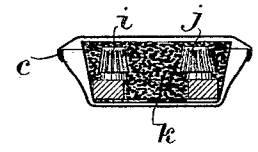


FIG. 5.

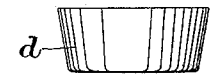


FIG. 3.

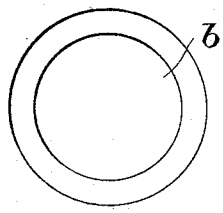


FIG. 6.

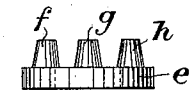


FIG. 4.

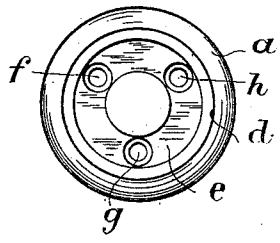
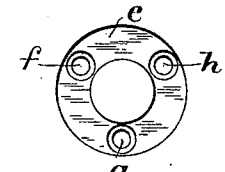


FIG. 7.



WITNESSES

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DETONATOR FOR RAILWAY SIGNALING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 522,650, dated July 10, 1894.

Application filed October 17, 1893. Serial No. 488,414. (No model.)

To all whom it may concern:

Be it known that I, HENRY FROST CLARK, a citizen of the United States, residing at Easton, in the State of Pennsylvania, have invented new and useful Improvements in Detonators for Railway Signaling Purposes, of which the following is a specification.

My invention consists in improvements in the construction of detonators designed more especially for use in fog signaling apparatus, but may be used in substitution for the ordinary detonators and exploded by the wheels of the engine or vehicle passing over them, as at present.

In some particular variety of fog signaling apparatus a magazine is generally provided filled with detonators which are carried or pushed as required, and are exploded under a hammer operated by the flange of the wheel.

My object is to make the detonator of such material and construction so that after the explosion there will be very little residue of the detonator left to clog or otherwise hamper the further proper working of the machine, and will also allow the machine to work to a greater degree of accuracy.

My detonator is formed of an inner case of tin, in which is placed an annular shaped piece of glass provided with a suitable number of supports for the purpose of affixing detonating caps, this inner case is then filled with fulminate and the whole is inclosed in a suitable thin casing of metal and made water-tight.

In the drawings annexed, Figure 1 is an elevation of my detonator, and Fig. 2 a section, Fig. 3 a plan on top and Fig. 4 a plan with the cover removed showing the glass anvil within the inner casing. Fig. 5 is an elevation of the inner casing free of the rest of the detonator, and Figs. 6 and 7 an elevation and plan respectively of the glass anvil.

The following letters refer to the various parts throughout the drawings.

a is the outer casing, *b* the lid or cover which laps over the edge of the casing *a* and is made water tight by filling the space at *c* with white lead or other suitable material.

d is the inner case of tin, in which is placed the glass anvil *e*, with supports *f*, *g*, *h*, cast on, for the caps *i*, *j*, the rest of the case being filled in with fulminate *k*.

The action is as follows:—The hammer striking on the detonator explodes the fulminate by means of the caps *i* and *j*, fixed on the supports *f* and *h*, and reduces the glass anvil to atoms, and the inner and outer casings being of such thin material very little resistance is offered to the hammer, and the whole is crushed into an exceedingly small space. In the event of the failure of the caps to explode, the breaking of the glass will be sufficient to ignite the fulminate. The inner casing *d* is made sufficiently strong to keep the detonator in shape.

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

1. In detonators for audible railway signaling purposes, a glass anvil with upright projections to receive caps, substantially as and for the purposes set forth and as illustrated in the drawings annexed.

2. The combination, with the glass anvil, and the detonating material; of an inclosing case holding the detonating material in proximity to the anvil, substantially as set forth.

3. The combination, with the glass anvil, the fulminate, and the inner case holding the fulminate in proximity to the anvil, of a light water-tight outer case formed in two parts secured together, substantially as set forth.

4. In detonators for audible railway signaling purposes, the combination of the anvil *e*, fulminate *k*, inner casing *d* and outer casing *a*—*b*, substantially as described for the purposes set forth and as illustrated in the drawings annexed.

HENRY FROST CLARK.

Witnesses:
CHAS. B. BRUNNER,
WILLIAM S. SIDDERS.