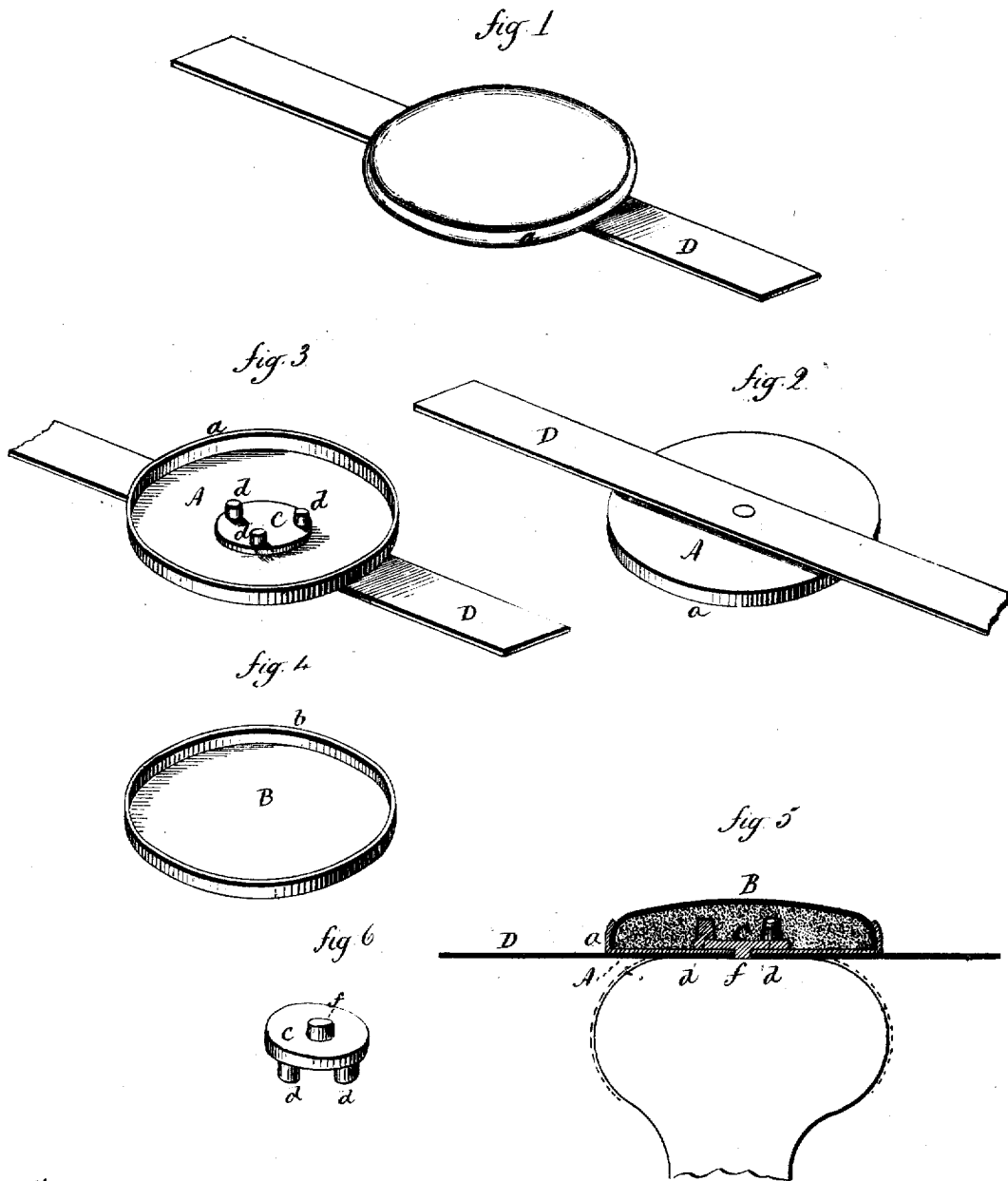


O. F. WINCHESTER.  
Detonating Railway-Signals.

No. 151,945.

Patented June 9, 1874.



Witnesses  
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A. J. Debbles

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# UNITED STATES PATENT OFFICE.

OLIVER F. WINCHESTER, OF NEW HAVEN, CONNECTICUT.

## IMPROVEMENT IN DETONATING RAILWAY-SIGNALS.

Specification forming part of Letters Patent No. **151,945**, dated June 9, 1874; application filed May 2, 1874.

*To all whom it may concern:*

Be it known that I, OLIVER F. WINCHESTER, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Detonating Fog-Signal; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view—upper side; Fig. 2, a perspective view—under side; Fig. 3, a perspective view of the cup with the cover removed; Fig. 4, a perspective view of the cover; Fig. 5, a transverse section illustrating the manner of applying to railroad-rails; and in Fig. 6, a perspective view of the primer-anvil—under side.

This invention relates to an improvement in the signal employed upon railways, and which are applied to the rails, that the locomotive in passing over may cause an explosion as a signal of danger to the engineer, or for other purpose, and which are commonly known as "fog-signals;" the object being to produce a signal which can be easily applied, and at the same time be so perfectly tight that the contents will in no way be affected by wet or atmospheric exposure; and the invention consists in constructing the anvil with a stud upon its under side, to extend through the bottom of the cup and securing-strap, and form the means of securing the three together.

The cup consists of a disk, A, with the edge *a* turned up to form the side, as seen in Fig. 3. The cap is made from a similar disk, B, with its edge *b* turned, and so as to set into the cup, as seen in Fig. 5, its outside surface

preferably convex in form. The space between the two when together, as in Fig. 5, is sufficient to contain the requisite amount of powder or other explosive material. The anvil consists of a disk, C, cast with studs *d*, more or less in number, on its upper surface, and with a stud, *f*, upon its under side. D is the securing-strap, made from soft iron or other material easily bent, and which will remain bent, and is non-elastic. The cup A, anvil C, and strap D are secured together by a rivet common to all, and which so closely binds them together that water cannot enter around the rivet. The percussion-caps or other primers are applied to the anvil, as seen in Fig. 5; then the powder is introduced, and the cup and cover set together, and by suitable dies or other device the edge of the cup is closed tightly over the cover, as seen in Figs. 1 and 5, and the whole dipped in coal-tar or other varnish, to close any openings which may have accidentally been left, and to protect the exterior. The signal, thus complete, is laid upon the rail, as seen in Fig. 5, and the strap bent down around the rail, as denoted in broken lines.

While I prefer to construct the anvil with the rivet *f* as a part of it, the anvil may be perforated to correspond to the perforation in the cup and strap, and a rivet inserted and headed down upon the three parts together.

I claim as my invention—

The anvil C, constructed with the priming-studs *d* upon one side, and the rivet or stud *f* upon the other side, substantially as specified.

OLIVER F. WINCHESTER.

Witnesses:

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