

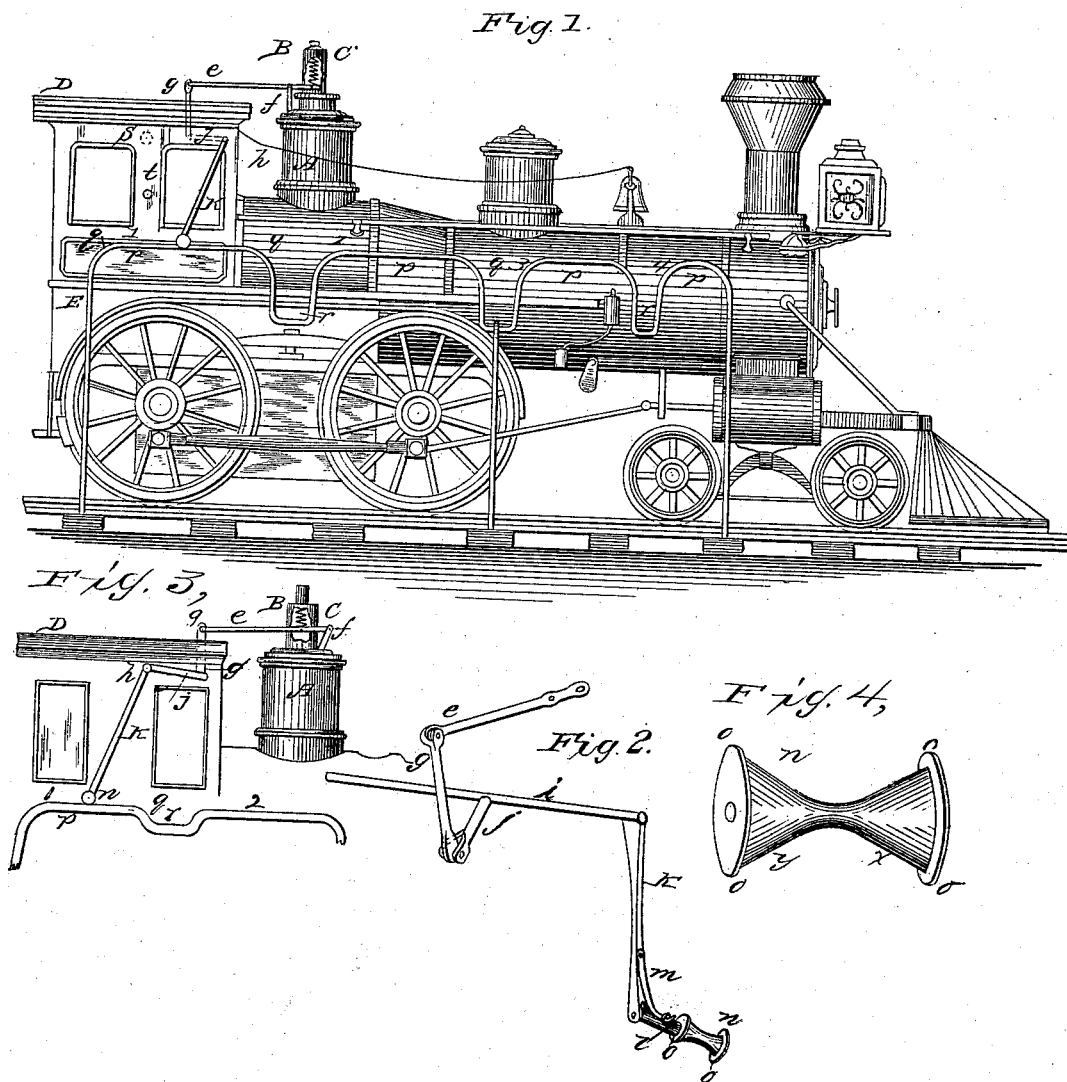
(No Model.)

L. H. SEEL & J. M. SMITH.

CAR SIGNAL.

No. 268,735.

Patented Dec. 5, 1882.



WITNESSES:

Med. L. Dieterich,
W. E. Bowen.

INVENTOR.

INVENTOR.
Louis A. Sel
 by *Jesse M. Smith*
John S. Duff ATTORNEYS.

UNITED STATES PATENT OFFICE.

LOUIS H. SEEL AND JESSE M. SMITH, OF ANDERSON COURT-HOUSE, S. C.

CAR-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 268,735, dated December 5, 1882.

Application filed May 31, 1882. (No model.)

To all whom it may concern:

Be it known that we, LOUIS H. SEEL and JESSE M. SMITH, citizens of the United States, residing at Anderson Court-House, in the county of Anderson and State of South Carolina, have invented certain new and useful Improvements in Railway-Signals, which we have called "The Morsine Railway-Signal;" and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 represents a side elevation of a locomotive-engine mounted on a railway-track provided with our improved automatic signal attachment, and is also a side elevation of our "Morsine signal-rail" erected on the side of the track. Figs. 2, 3, and 4 are detailed views of the same, similar letters of reference indicating corresponding parts.

This invention relates to a new attachment to locomotive-engines and to railway-tracks whereby different signals will be automatically given without the assistance of the engineer, brakeman, or conductor at the approach of a curve, a tunnel, a public highway, a bridge, or other place, as notice not only to the public, but to arouse the engineer, brakeman, or conductor, should any of them be off their guard or stupid from overwork or exposure.

Our invention consists in the combination, with the engine's whistling device, whistle-lever, and cab, of our attachments and our Morsine signal-rail erected on the side of the track, by means of which we cause to be automatically made any desired signal. Thus in approaching a curve one short whistle may be given, in approaching a tunnel two short whistles may be given, in approaching a public road one long whistle may be given, in approaching a bridge one long and one short whistle may be given, in approaching a covered bridge one long and two short whistles may be given, and in approaching any place of danger four short whistles may be given; or any signals may be adopted that can be most easily read.

The following is a description of our invention and the manner of its operation:

In the accompanying drawings, in Fig. 1, A represents the steam-drum; B, the whistling device; C, a coiled spring; D, the cab; *e*, the whistle-lever; *f*, the fulcrum of the whistle-lever. We do not change any of these parts, but pivot to whistle-lever *e* handle *g*. Then we put in the cab D, near its front end, and extending from one side of the cab to the other, and pivoted in proper bearings, *h*, secured to the sides of the cab, shaft *i*. Rigidly secured to and extending from this shaft backward, and immediately under and in a line with handle *g*, is an arm, J, which is pivoted at its far end to the lower end of handle *g*. On one end of this shaft *i*, and outside of the cab D, is rigidly and securely fastened the arm *k*, at right angles with the shaft and extending down the side of the cab to a little below the lower sills of the windows, with space enough between the cab and the arm to allow it to swing clear. On the lower end of this arm *k* is hinged a foot, *l*, extending outward far enough to reach about three inches over or beyond our Morsine signal-rail E, hereinafter described; and nearly at right angles with arm *k*, however pointing slightly downward, is a foot, *l*. This foot is held in position by means of spring *m*. On the end of this foot is a spool, *n*, shaped like an hour-glass, which is covered with rubber, and has a flange, *o*, on either end, as shown in Fig. 4.

On the side of the track is erected our Morsine signal-rail E, which may be made of heavy wire, plank, or other material, the upper edge of which is on a level with the grade of the track, and is divided into sections *p* by depressions *r*, made in its upper edge by cutting away the material or bending down the wire at certain points at such distances apart and of such lengths as may be required to make such particular signals as are desired. Extra signal-rails may be so constructed and kept on hand that they may be put up temporarily by the section-hands to announce any land-slide or other unusual danger ahead. The ends of each section *p* of this signal-rail E are rounded down, forming an inclined plane, *q*, into depressions *r*, so that the spool *n* will run up them onto the plane of the sections *p*.

All things being in readiness, as above described, the engine is put in motion, and as it approaches any point whose signals are to be given the spool *n* strikes the inclined plane *q* of signal-rail *E* and rolls up onto the first section of said rail. This throws the arms *J* and *e* up, opens the whistle-valve, and the whistle blows until the spool rolls off into the first depression *r*. Then the whistle-lever drops down, closes the valve, and the whistle stops. When the spool strikes section two of said rail the same operation takes place, and so on. Hence it will be seen that any signal and different signals at different points are regulated by the number of depressions in the rail, their lengths, and the distances between them. When the fulcrum *f* is in front of the whistle, as shown in Fig. 3, instead of being in the rear, as shown in Fig. 1, we move the shaft *i* back to dotted lines *s* in cab *D* and extend arm *J* forward instead of backward, making the same connection with handle *g* as before, and when the spool *n* rides upon plane *p* the lever *e* is pulled down, instead of being pushed up, and makes the whistle blow.

In the rear of arm *k*, secured to the outside of the cab, is a bumper, *t*, or a short rod covered with rubber, so that said arm *k* cannot be thrown up more than forty-five degrees, and should it be thus thrown up it will strike this bumper and be immediately returned to its place on the signal-rail; or we may use a spring for that purpose.

The arm *k* is made of spring-steel, and thinner in the middle than at either end, so that should the track be uneven and the engine should wobble from side to side the arm *k* will accommodate itself to the distances thus produced and permit the spool *n* to keep its grasp on the signal-rail.

The spool *n* is shaped like an hour-glass, so that should the locomotive lean to the left side the spool will ride the rail upon its outer in-

clined plane, *x*; or should the engine lean to the right the spool will ride the rail with its inner inclined plane, *y*, thus constantly presenting an even surface to the upper edge of the signal-rail; and should there be any unusual sink from heavy rains or other cause the foot *l*, by reason of being hinged, will give, so that the arm *k* will not be broken, and the flanges *o o* will prevent the spool from slipping off from the signal-rail *E*. Should the wash or sink be on the opposite side from the signal-rail, so that the engine will rise on this side, then spring *m* will keep the foot *l* and spool *n* down on the signal-rail.

On railway-tracks where the bed of the road is well ballasted, even, and firm this hinge may not be necessary, and we claim the right to make the arm *k* and foot *l* all of one piece, and to dispense with spring *m* when found to be expedient.

Having thus described our invention, what we claim as new and useful, and desire to secure by Letters Patent, is—

1. A signal device consisting of a signal-operating rail, spool having inclines and flanges, as shown, to engage with said rail, spring-arm *k*, bearing said spool, and connecting mechanism, substantially such as described, to operate the signal, as set forth.

2. The signal-rail located near the railway-track and provided with bearing-surfaces of unequal lengths, adapted to engage with mechanism on a passing train to produce a signal on the principle of the Morse alphabet, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

LOUIS H. SEEL.
JESSE M. SMITH.

Witnesses:

A. M. DUFFIE,
W. D. SIMPSON.