

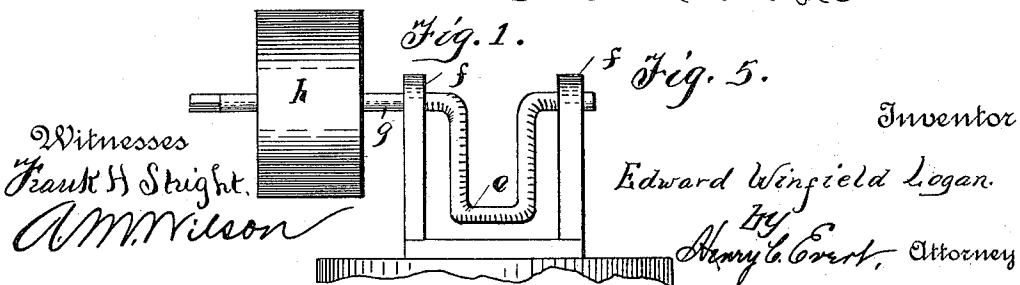
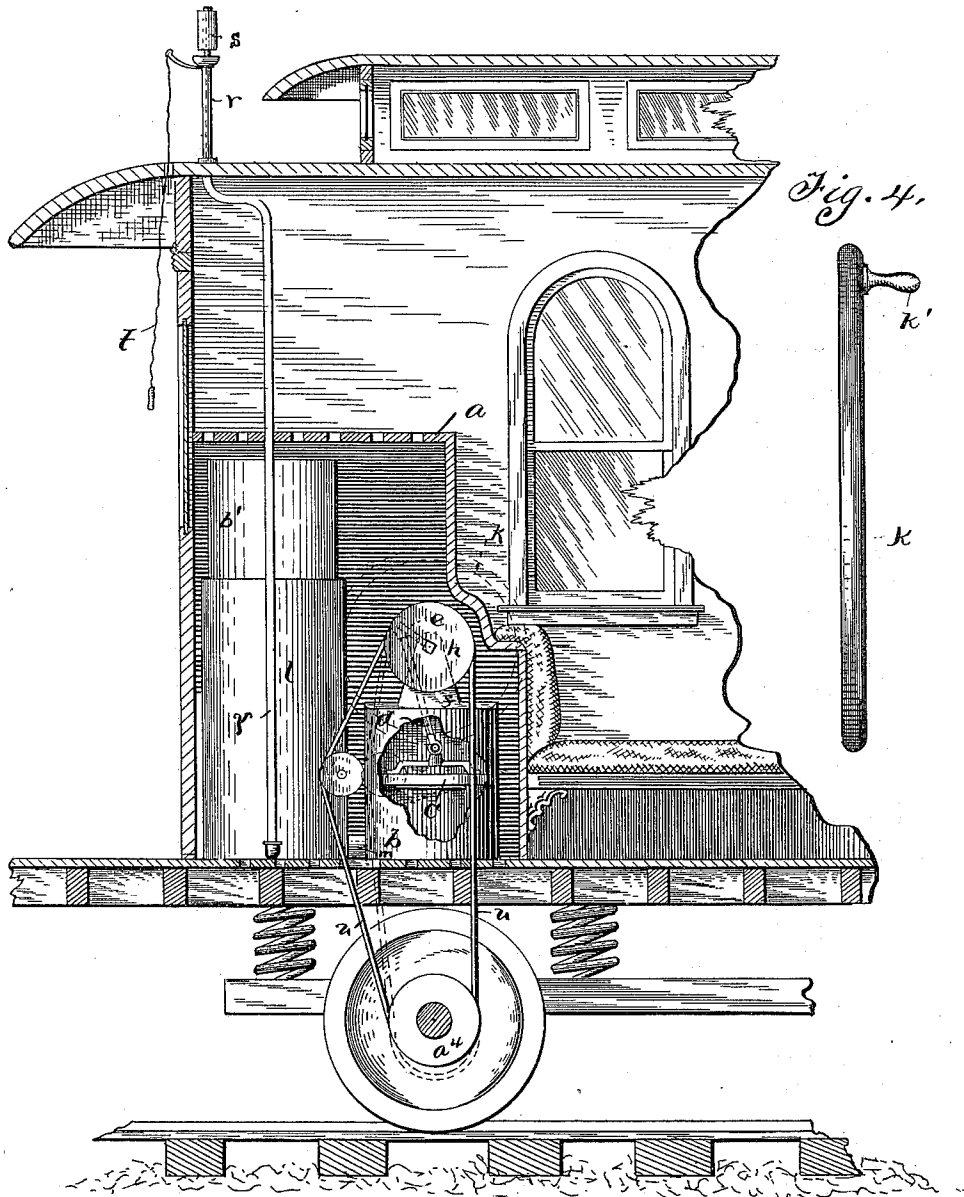
(No Model.)

2 Sheets—Sheet 1.

E. W. LOGAN.
CAR SIGNAL.

No. 598,308.

Patented Feb. 1, 1898.



(No Model.)

2 Sheets—Sheet 2.

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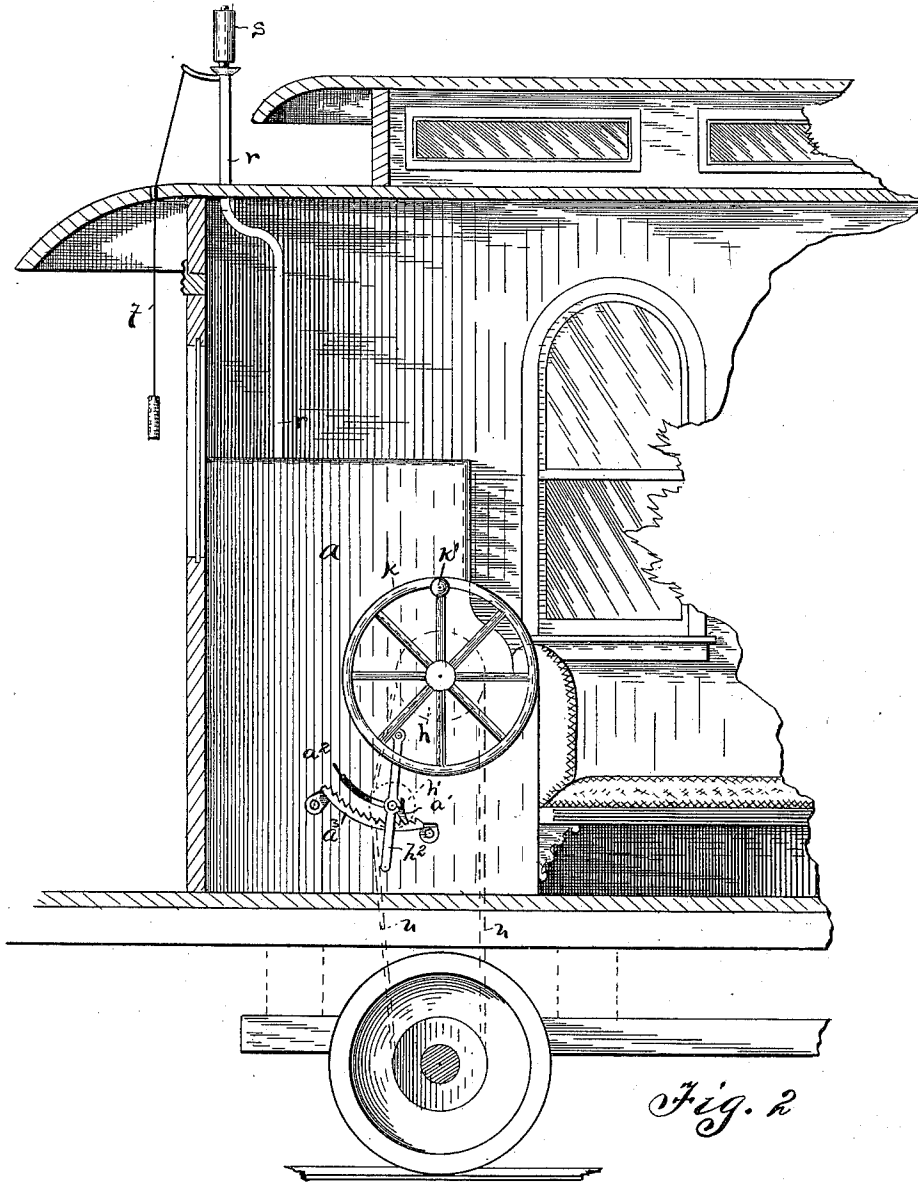
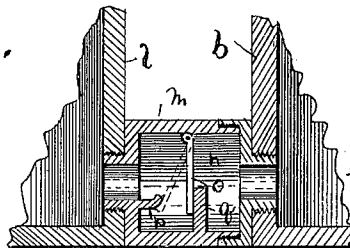


Fig. 2

Fig. 3.



Witnesses
Frank H. Staight.
A. M. Wilson

Inventor
Edward Wingfield Logan.
By *N. C. Grant.* Attorney

UNITED STATES PATENT OFFICE.

EDWARD WINFIELD LOGAN, OF WEST MONTEREY, PENNSYLVANIA.

CAR-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 598,308, dated February 1, 1898.

Application filed August 6, 1897. Serial No. 647,291. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WINFIELD LOGAN, a citizen of the United States of America, residing at West Monterey, in the county of Clarion and State of Pennsylvania, have invented certain new and useful Improvements in Hand-Power Air-Signal Whistles for Railroad-Caboose, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in railway-train signals, and has for its object to construct a whistle which may be operated from the caboose of a train, and the conductor or brakemen thereby be enabled to signal to the engineer in case of the train parting while in motion.

The invention aims to accomplish this by means of compressed air, by which the signal-whistle is sounded, the air being stored in a cylinder provided in the caboose therefor; and to this end the invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a longitudinal sectional view of a portion of a caboose, showing the device in position with the air cylinder or pump partly broken away. Fig. 2 is a similar view of the caboose, showing the hand-wheel for operating the air-pump and the rack mechanism by which the belt is thrown into and out of engagement for operating the pump. Fig. 3 is a sectional view of a portion of the air cylinder and reservoir, showing air-passage between the two and flap-valve therein. Fig. 4 is a side view of the hand-wheel for operating the air-pump. Fig. 5 is a side view of the bell-crank to which the piston is attached, showing its supports and the belt-pulley carried by said crank.

To put my invention into practice, I arrange in any suitable point within the caboose, and preferably inclose the same within a casing *a*, the air cylinder or pump *b*, having a piston-head *c* operating therein, to which is con-

nected the piston-rod *d*, the upper end of which is connected to a bell-crank *e*, supported by and journaled in standards *f f* from the top of the cylinder *b*, said bell-crank having an extending end *g*, upon which is mounted a belt-wheel *h*, and if it is desirable to operate the pump by hand the said end of the bell-crank has secured thereon a hand-wheel *k*, having a handle *k'*. Located within the casing *a* is an air-reservoir *l*, which communicates with the cylinder *b* through a pipe or casing *m*, arranged between the two and provided with ports *n n*. Within this pipe or casing is suspended a flap-valve *o*, which is prevented from closing the outlet part of the air-cylinder by means of a projection or wall *p*, arranged in the pipe or casing, and its movement toward the opening from the air-reservoir is also controlled by a projection *q*, formed in the pipe or casing in close proximity to the opening into said reservoir. The outlet-port for the air-reservoir is located at or near the bottom of the same and has communicating therewith a pipe *r*, which extends upwardly through the roof of the caboose and has arranged upon its upper end a signal-whistle *s*, which may be of the ordinary construction and operated by a cord *t*, passing downward into the caboose in the ordinary manner.

Where it is desired to store the air by means of the revolving axle of the caboose instead of by hand-power, as heretofore described, a belt *u* is provided, which passes over the pulley *h* and over a movable pulley *h'*, carried upon an arm *h²*, pivotally suspended from the wall of the caboose or from the casing *a* and carrying a pawl *a'*, the axle for said pulley moving in a slot *a²* provided therefor, and said pawl operating upon and engaging a rack *a³*, which is secured to the same wall that supports the arm carrying the pulley. This belt then passes around a pulley *a⁴*, secured upon the axle, so that motion is communicated to the upper pulley *h* to operate the piston. The air is compressed within the reservoir in either construction by means of a weight *b'* placed therein and adapted to be raised and lowered by the action of the air. Thus it will be observed that when either the belt mechanism or the hand-wheel is employed to impart motion to the piston the air will be forced from the cylinder through the passage-way

into the reservoir, where it is compressed ready for use when the cord of the whistle is operated, and it will also be observed that various changes may be made throughout in the details of construction without departing from the general spirit of my invention.

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

- 10 A railway-train signal consisting of a casing, an air-cylinder, an air-reservoir having a weight for compressing the air therein, standards secured to said air-cylinder and having a bell-crank journaled therein, valve
15 connections between said air-cylinder and air-reservoir, a pulley mounted on said bell-crank,

a pulley secured to the car-axle, a belt engaging the pulley mounted on the bell-crank and car-axle, a piston operating in the air-cylinder and connected by means of a piston-rod to the bell-crank, a lever secured to said casing and carrying a loose pulley whereby said belt is tightened to operate the piston in said air-cylinder and connections between the air-reservoir and the whistle, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD WINFIELD LOGAN.

Witnesses:

R. L. LOGAN,
W. T. BARTLEY.