

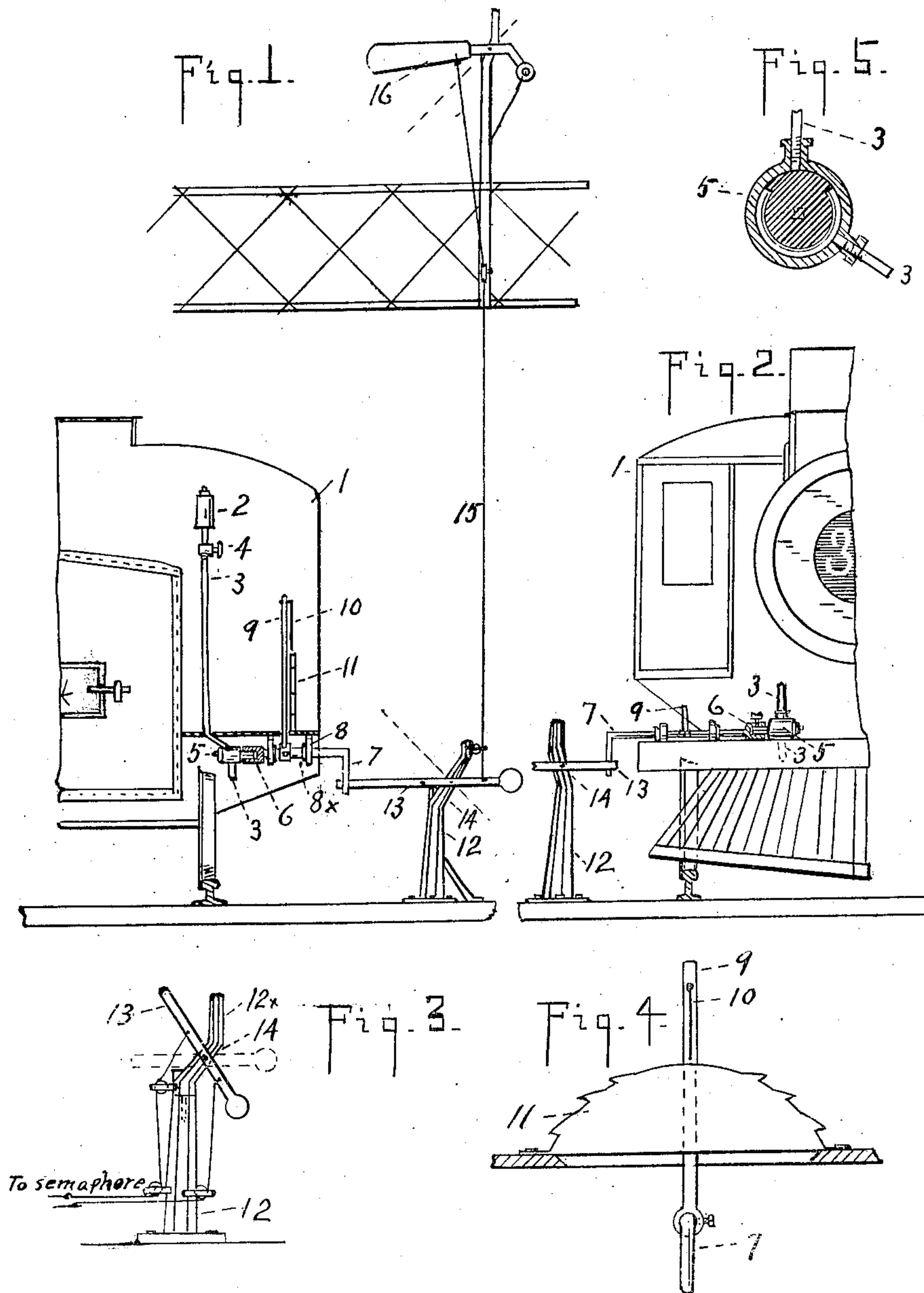
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C. G. RITCHEY.

FOG SIGNAL FOR STEAM RAILROAD AND ELECTRIC RAILWAY PURPOSES.

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FOG-SIGNAL FOR STEAM-RAILROAD AND ELECTRIC-RAILWAY PURPOSES.

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To all whom it may concern:

Be it known that I, CHARLES G. RITCHEY, a resident of Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Fog-Signals for Steam-Railroad and Electric-Railway Purposes; and I do hereby 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 pertains to make and use the same.

This invention relates to fog-signals for railways—that is, to signals which positively call the engineer's attention to the condition of a semaphore or other signal device when the same is hid from sight.

The object of the invention is to provide an efficient economical device of the character mentioned certain in operation and not liable to be interfered with in its operation by getting out of repair or by being covered by ice, snow, or the like.

The invention consists in the construction hereinafter described and pointed out.

In the drawings, which illustrate the invention and form a part of the specification, Figure 1 is a side view of the device. Fig. 2 is a partial view showing the operating device differently mounted. Fig. 3 is a side view of the post, signal-bar, and connections. Fig. 4 is an end view of the valve-operating rod on the engine and its holding device. Fig. 5 is a cross-section of a double-acting valve.

Numeral 1 denotes an engine or the cab of an engine on a track and carrying a signal-whistle 2 in any suitable position relative to the engineer. From said whistle extends a pipe 3 to any suitable source of pressure for sounding the whistle. In this pipe is a valve 4, which may be operated by hand in any usual or suitable manner when required. Also in the whistle-pipe is a double-acting valve 5—that is, a valve operable to open the whistle-pipe when moved either forward or backward. This valve has an angular stem adapted to be engaged and turned by a cooperating socket 6 or the like, which is mounted rigidly on the end of an L-shaped valve-operating lever 7, adapted to turn about ninety degrees in either direction in bearings 8, which are preferably alongside collars 8^x to prevent accidental longitudinal movement of the lever; but this is not essential. The shorter arm of lever 7 normally hangs down when set

for operation. In Fig. 1 said lever is shown mounted well up on the engine-cab, the lower end of the shorter arm being several feet above ordinary snow-lines and just beyond the side of the cab. Fixed to lever 7 to move therewith is an arm 9, carrying at its free end a spring or other pawl 10, fixed at its upper end to arm 9 and its lower end extending near the edge of a curved ratchet 11, fixed on the cab-floor, the opposite sides having oppositely-pointing teeth for the purpose hereinafter described. Instead of mounting lever 7 on the cab it may be on the engine-bumper, well up from the track, as in Fig. 2, the construction being otherwise as above described.

Alongside the track at regular intervals or at desired points where signals are specially needed, as at or near bridges, crossings, or the like, where are semaphores or similar danger-signals which are or may be of themselves sufficient in the day-time or in fair weather, I place strong posts 12, of wood or iron and of height corresponding to the elevation of lever 7. If the post is of wood, its top 12^x is of metal to form a suitable pivot-bearing for the heavy arm 13. The post adjacent the pivot-point of said arm has a deflected section or part 14, the object of which is to carry the pivot (centrally placed in the post) to one side, so that the arm can move through a considerable angle without the weight striking the post. From arm 13 extends a wire 15 to a semaphore 16 by a direct connection, as in Fig. 1, or by a wire along the ground to a distance, as indicated in Fig. 4.

Operation: The upper whistle-valve being open and the lower one closed, the L-lever is in position to be hit by the weighted arm 13 on any post passed by the engine going forward or backward when the arm has been moved to danger position by like movement of the semaphore. As the L-lever is thus turned the curved ratchet engages the pawl and holds the whistle-valve open and the lever deflected until purposely reset. Thus if the engineer cannot or does not see the semaphore on account of darkness or inattention the whistle sounds continuously until he disengages the pawl and resets the lever. If at any time, as on a bright day, it is desired to fix the device so that it will not operate on passing a post the arm of which is at "danger," the upper whistle-valve is

closed and the pawl-arm is thrown to one side and the pawl left engaged with the ratchet. The L-lever is then out of the path of the post-lever and unnecessary sounding of the
5 whistle is avoided. The posts may be on either or both sides of the track and the L-arms may be on either or both sides of the engine or cab.

Having described the invention, what I
10 claim is—

1. In a fog or like signal, the combination of a whistle, a pressure-pipe thereto, a valve in said pipe, an L-shaped pivoted valve-operating lever having means to turn the valve
15 comprising a socket adapted to engage and turn the valve-stem, the lever extending to one side of the engine, and a cooperating device supported at a like distance from the ground to strike and turn said lever and
20 valve in either direction.

2. In a signal such as described, the combination of a whistle, a pressure-pipe thereto, a valve therein, a valve-operating lever on the engine, and a cooperating device supported on a post and comprising a pivoted
25 weighted arm to turn said lever and valve.

3. In a signal such as described, the combination of a signal on an engine, an operating-lever also thereon, a post alongside a
30 track, the post having a deflected portion 14, and a weighted lever adapted to cooperate

with the first-named lever and pivoted in the deflected part of the post.

4. In a signal such as described, the combination of a post having a deflected part 14, 35 an arm pivoted on said deflected part and movable to different positions according to the signal indication.

5. In a signal such as described, the combination of a whistle, a whistle-valve, an operating-lever therefor, a post, a cooperating
40 post-supported lever thereon, a second post, a semaphore thereon, and an operating connection between them.

6. In a signal such as described, the combination of an engine-whistle, a whistle-valve operable in either direction, the L-shaped
45 operating-lever, means for holding the L-shaped lever in its moved position to continue sounding the whistle until reset, a post, 50 a cooperating post-supported lever thereon, a post separate from the first, a semaphore on said separate post, and an operating connection between the semaphore and the lever.

In testimony whereof I have signed this
specification in the presence of two subscribing witnesses.

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