A. STADLER.

RAILROAD SIGNALING DEVICE.

APPLICATION FILED NOV. 20, 1912.

1,075,169.

Patented Oct. 7, 1913.

Fig. 1.

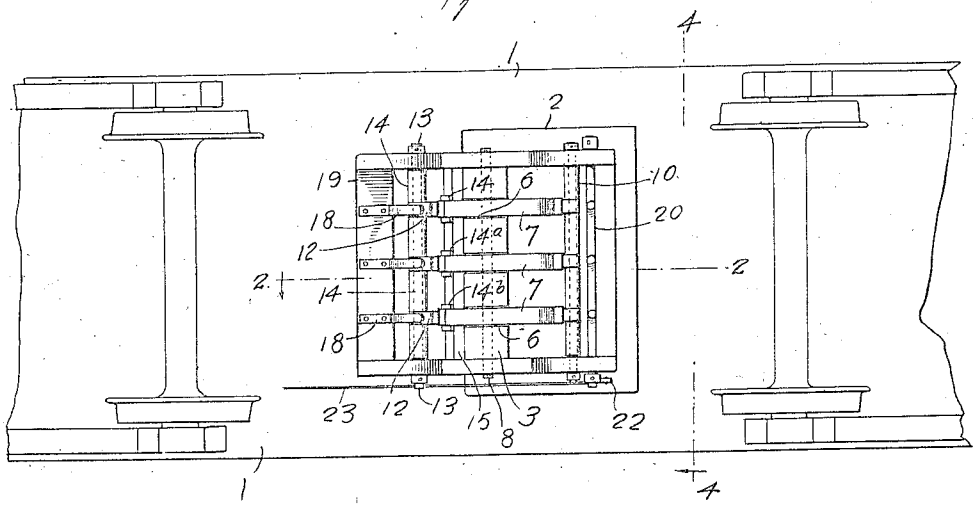


Fig. 2.

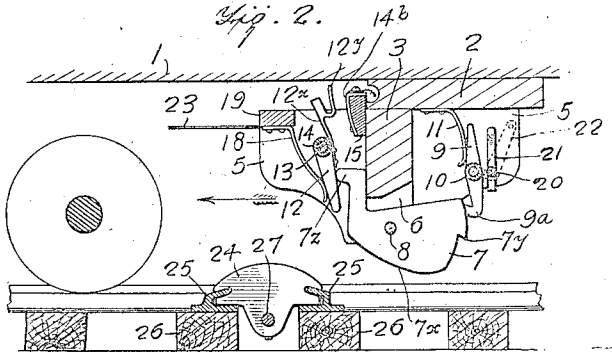


Fig. 4.

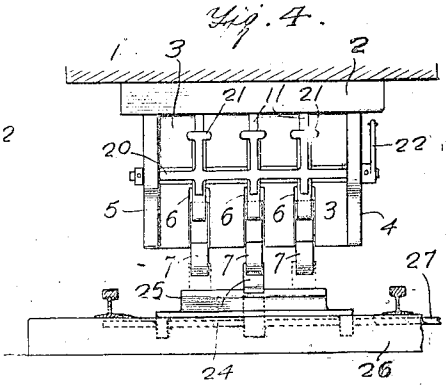


Fig. 3.

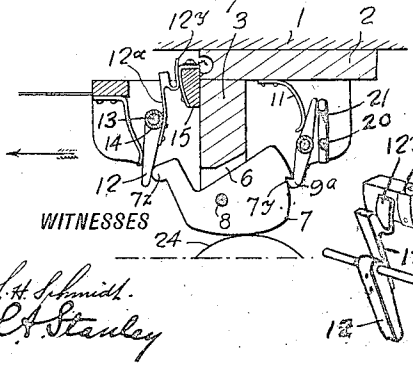
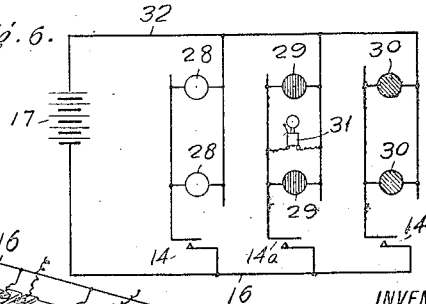


Fig. 6.



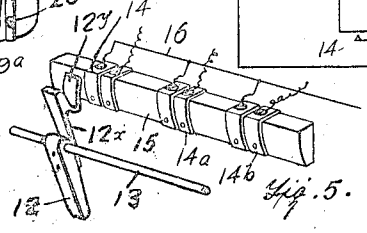


Fig. 5.

WITNESSES

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RAILROAD SIGNALING DEVICE.

1,075,169. Specification of Letters Patent. Patented Oct. 7, 1913.

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To all whom it may concern:

Be it known that I, ANDREW STADLER, a citizen of the United States, and a resident of Altoona, in the county of Blair and State of Pennsylvania, have made certain new and useful Improvements in Railroad Signaling Devices, of which the following is a specification.

My invention relates to improvements in railroad signaling devices, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of this invention is to provide a set of signals which may be placed on the cab or any suitable place in full view of the engine men, these signals to correspond with the track signals, so that if the latter should be overlooked on account of high speed or heavy fog, the signals within the cab itself will indicate the condition of the track.

A further object of my invention is to provide novel means actuated by a trip on the track for setting the signals in the cab.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming part of this application in which similar reference characters indicate like parts in the several views, and in which—

Figure 1 is a bottom view of a locomotive or car equipped with my improved signaling apparatus, Fig. 2 is a section along the line 2—2, looking in the direction of the arrow, Fig. 3 is a section similar to that shown in Fig. 2, showing the apparatus in a shifted position, Fig. 4 is a section along the line 4—4 of Fig. 1, Fig. 5 is a perspective view of a portion of the switch mechanism, and Fig. 6 is a diagrammatic view showing the circuit for operating the signals.

In carrying out my invention the locomotive or car body 1 is provided with electrical switching devices secured to the bottom thereof. These electrical switching devices are preferably three in number, and a description of one will suffice since they are all precisely alike.

Referring now to Fig. 2 I have shown therein an insulating block or plate 2, which is secured to the bottom of the car or locomotive 1, and which bears a downwardly projecting central support 3. At the ends of the support 3 are side pieces 4 and 5 respectively which are also secured to the plate 2. The plate 2, support 3, and the side pieces 4 and 5 are preferably of wood, although they may be made of other insulating material. The support 3 is provided with vertical slots 6 extending upwardly over the bottom, and in each slot is disposed a lever like that shown at 7 in Figs. 2 and 3. These levers have a common pivotal rod 8. Each lever is provided with a lower curved surface 7^x, a locking detent 7^y on one side of the pivot, and a laterally extending cam portion 7^z on the other side. Arranged to engage the detent 7^y is a locking dog 9, which is pivoted at 10, and which is provided with a tooth 9^a arranged to engage the detent 7^y. The opposite end of the dog is pressed upon by a spring 11. The cam portion 7^z of each lever is arranged to engage an arm 12, which is loosely mounted on a rod 13 whose ends are supported in the side members 4 and 5. These arms 12 are spaced apart by sleeves 14 carried by the rod 13, as shown in Fig. 1. Each rod 12 is provided with a spring contact member, such as that shown at 12^x, having a curved portion 12^y arranged to engage a pair of contact members 14, carried by a bar 15 which is secured to the support 3. In Fig. 5 I have shown three pairs of these contacts, which I have designated 14, 14^a and 14^b respectively. One of each pair is connected to a wire 16, leading to a battery 17 (see Fig. 6). The other contact of each pair has a wire leading to its individual signal light, as will be explained later. A spring 18, which is secured to a cross bar 19 is provided for each arm 12, so as to keep the arm always in contact with the cam portion 7^z of the lever 7. In Figs. 2, 3 and 4. I have shown a rock shaft 20 which is journaled in the side members 4 and 5, and which bears arms 21 arranged to engage the spring pressed ends of the locking dogs 9. This rock arm is provided with a handle 22 at one end thereof having a pull rod or cord 23 for operating the handle.

Arranged to coöperate with the mechanism thus far described is a trip member 24. The latter is slidably mounted on guides 25, which are secured to the cross ties 26. An

operating rod 27 extends between the cross ties to the outside of the track (see Fig. 4). This rod may be manipulated by mechanism from a signal tower (not shown) or manually, or in any other suitable way. The trip 24 may be moved so as to engage any one of the levers 7. The upper surface of the trip is curved so as to give a gradual sliding contact in order to prevent injury to the trip itself or to the lever which it is designed to engage.

In Fig. 6 I have shown the signal lights. These lights are preferably of three colors to correspond with the track signals. I preferably connect two lamps in parallel, since if one is burned out the other will operate. At 28 is shown the white lights, at 29 the red or danger lights, and at 30 the green or caution lights. In the danger signal or red light circuit, I have interposed a bell 31, this being an additional means of warning the engineer of danger, if he should neglect to observe the lighting of the red lamp.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

If the track is not clear and there is danger of collision the track mechanism may be set in the position indicated in Fig. 4. With the train proceeding in the direction indicated in Fig. 2, the trip will strike the lever 7 and will throw it into the position shown in Fig. 3, where it will be locked by the dog 9. This will rotate the arm 12, so as to bring its contact 12^y against the two contacts shown at 14^a, thereby closing the circuit from battery 17 (see Fig. 6) through the wire 16, 14^a, danger lamps 29, bell 31, and conductor 32 to battery. The current from the battery will cause the lighting up of the lamps 29 and the ringing of the bell 31. The engineer will thus have a double check. In case it is desired to display the white light or a green light, the trip may be moved to either of the dotted lined positions shown in Fig. 4. The lights will continue to burn until the pull rod or cord 23 is operated, when the rock arm 20 will be turned so as to bring the arms 21 against the spring pressed end of the dog 9, when the latter will be forced out of the detent 7^y. The spring 18 will then force the arm 12 back into the position shown in Fig. 2, thereby bringing the lever 7 into its original position and breaking the circuit of the signal at 14^a. This action will occur no matter what lever is locked.

It will be apparent that the trip 24 may be set to correspond with the track signals, and if this is done the engineer always has in his cab a reproduction of the signals on the track.

I claim:

1. In an electric switch, a support, a lever pivotally mounted on said support, one end of said lever being provided with a notch, the opposite end of said lever constituting a cam member, a spring actuated locking dog arranged to enter said notch, a rock arm arranged to be engaged by said cam portion, a pair of fixed contacts, a spring contact carried by said rock arm and arranged to engage both of said fixed contacts, and a spring for holding said rock arm against the cam portion of said lever.

2. In an electric switch, a support, a plurality of levers pivotally mounted on said support, one end of each of said levers being provided with a notch, the opposite end of each of said levers constituting a cam member, a spring-actuated locking dog for each lever arranged to enter the notch in its lever, a rock arm arranged to be engaged by the cam portion of each of said levers, a spring contact carried by each rock arm, a pair of fixed contacts for each spring contact arranged to be engaged by the latter, springs for holding said rock arms against the cam portions of their individual levers, and means for simultaneously engaging all of said locking dogs that are in locking position for unlocking said levers.

3. In an electric switch, a support, a plurality of levers pivotally mounted on said support, one end of each of said levers being provided with a notch, the opposite end of each of said levers constituting a cam member, a spring-actuated locking dog for each lever arranged to enter the notch in its lever, a rock arm arranged to be engaged by the cam portion of each of said levers, a spring contact carried by each rock arm, a pair of fixed contacts for each spring contact arranged to be engaged by the latter, springs for holding said rock arms against the cam portions of their individual levers, means for simultaneously engaging all of said locking dogs that are in locking position for unlocking said levers, said last named means comprising a rock shaft extending transversely of said locking dogs, an individual rock arm for each dog carried by said rock shaft and arranged to engage the dog, and means for rotating the rock shaft.

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Witnesses:
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