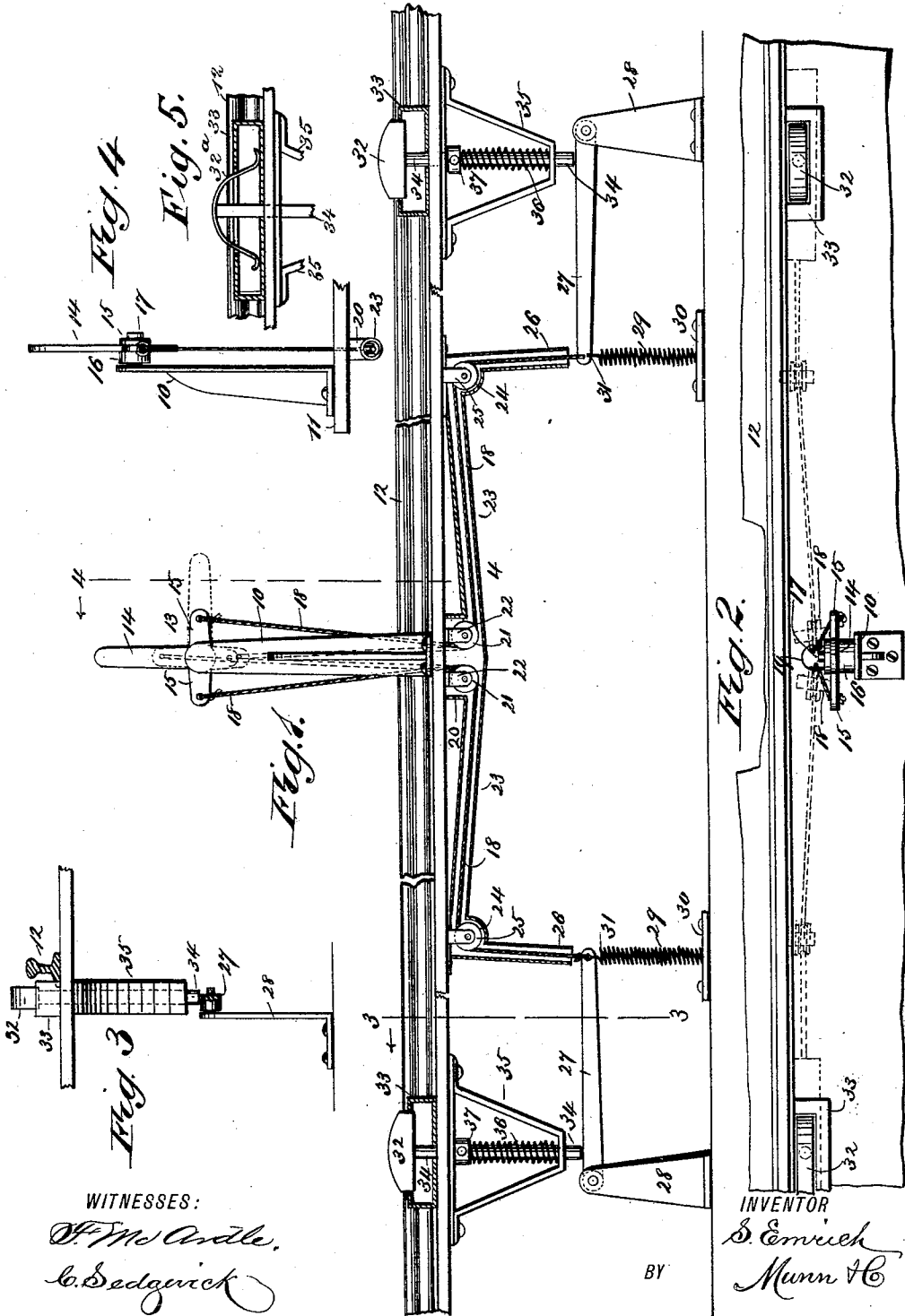


(No Model.)

S. EMRICH.
RAILWAY SIGNAL.

No. 479,258.

Patented July 19, 1892.



WITNESSES:

S. McAnale,
C. Sedgwick

BY

INVENTOR
S. Emrich
Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL EMRICH, OF RENO, NEVADA.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 479,258, dated July 19, 1892.

Application filed September 19, 1891. Serial No. 406,203. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL EMRICH, of Reno, in the county of Washoe and State of Nevada, have invented a new and Improved Railway-Signal, of which the following is a full, clear, and exact description.

My invention relates to improvements in railway-signals; and the object of my invention is to produce a simple form of signal adapted to be arranged alongside of a railway-track, so as to indicate either "danger" or "safety," and to provide an automatic means for operating the signal by the passage of a train.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken detail side elevation, partly in longitudinal section, showing the general arrangement of the entire apparatus. Fig. 2 is a broken plan of the same. Fig. 3 is a vertical cross-section on the line 3 3 in Fig. 1. Fig. 4 is a vertical cross-section on the line 4 4 in Fig. 1, and Fig. 5 a broken detail view of a modified form of contact-block.

The signal-post 10, which may be of any approved construction, is mounted on a base 11, adjacent to the track 12, and the signal-post has mounted at its upper end a three-armed signal 13, the longer arm 14 of which serves the purpose of a signal-arm, and the oppositely-extending arms 15 at the base of the arm 14 serve as operating-arms. The arms are provided with a hub 16, which is mounted on the pivot 17, which projects from the top portion of the post, and secured to each arm 15 near the outer end is a cable 18, the cables extending downward through an aperture 19 into a casing 20 beneath the track, and here the cables pass over guide-pulleys 21, which are mounted in suitable hangers 22 and extend in opposite directions through a pipe or casing 23 and thence over guide-pulleys 24, which are held in brackets 25, and downward through the depending ends 26 of the casing 23. These cables 18

may extend above or below ground; but in either case a casing is necessary to protect them. The lower end of each cable is secured to the free end of the lever 27, which is arranged parallel with and below the track-rail 12, and this lever is pivoted at its base in a suitable support 28 and is normally pressed upward by a spring 29, the base of which rests upon a base-plate 30 and the upper end of which has arms 31 to embrace the lever and prevent the lever from jumping off the spring. The pressure of the springs 29 serves to hold up the levers, as described, and this slackens the cables 18, so that the arm 14 may, when necessary, remain in a horizontal position, as indicated by dotted lines in Fig. 1.

Mounted at one side of the rail 12 and in vertical alignment with each lever 27 is a contact-block 32, which has a rounded upper surface projecting slightly above the tread of the rail, and the block is held to move vertically in a casing 33, the casing serving to prevent obstructions of any kind from getting beneath the block. The block has on the under side a depending shank 34, which extends downward through a suitable hanger 35, in which it slides freely, and the shank and block are normally pressed upward by a spiral spring 36, which is coiled around the shank between the lower end of the hanger 35 and a collar 37 on the shank. The shank 34 is arranged so that when depressed it will strike the upper edge of the lever 27. These contact-blocks and the respective levers are arranged in sections along the track, preferably at a distance of about three miles apart, and, if desired, several signal-posts and signals may be arranged between the blocks and may be connected with the operating-cables, so that they may be worked by the movement of the blocks.

We will suppose that the horizontal position of the arm 14 indicates "safety" and the upright position "danger." When a train approaches the signal-post, the flange of a wheel of the locomotive will strike one of the contact-blocks 32, thus pushing the same downward and depressing a lever 27, which will pull on one of the cables 18, and the latter, connecting with the outer end of an arm 15, will swing the signal-arm 14 into a vertical

position, so as to indicate "danger." As the train goes on and passes the signal-block 32 in advance of the post 10 a wheel will strike the second contact-block and depress it, and this, operating on its respective lever 27 and the connected cable 18, will pull on the opposite arm of the signal and depress the signal-arm, so as to indicate "safety." It will thus be seen that there is no need of a signal-man, as the train automatically sets the signal from "safety" to "danger" and from "danger" to "safety." If but one wheel of the locomotive or of a car is to strike the signal-block, this particular wheel may be made with a wide flange, so as to insure its contacting with the blocks.

In Fig. 5 I have shown a modification of the block 32, which consists of a spring-steel band 32^a, which is secured at the middle to the top of the shank 34 and has its ends bent downward, so as to hold it in a raised position; but when the wheel of the car strikes the band it will be depressed, thus operating the shank and connected mechanism in the manner already described.

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

1. A railway-signal comprising a pivoted signal-arm, pivoted and spring-pressed levers, cables connected to opposite sides of the signal-arm and to the free ends of the said levers, and vertically-movable and spring-pressed contact-blocks adjacent to the rails and having depending shanks adapted to en-

gage the pivoted levers, substantially as described.

2. A railway-signal comprising a signal-post, a swinging signal-arm mounted thereon, a casing arranged adjacent to and parallel with the track, swinging spring-pressed levers mounted beneath the open ends of the casing, cables having an operative connection with the signal-arm and extending over guide-pulleys in the casing to connect with the free ends of the levers, and spring-pressed contact-blocks arranged adjacent to the track, said blocks having depending shanks adapted to contact with the levers, substantially as described.

3. A railway-signal comprising a post arranged adjacent to the track, a signal-arm pivoted on the post and provided with oppositely-extending arms at its base, a casing arranged parallel with the track and extending beneath the foot of the post, vertically-swinging spring-pressed levers mounted beneath the open ends of the casing, cables secured to the free ends of the levers and to the outer ends of the base-arms of the signal-arm, said cables extending over suitable guide-pulleys in the casing, and spring-pressed contact-blocks arranged adjacent to the track-rail, said blocks having depending shanks adapted to strike the upper sides of the swinging levers, substantially as described.

SAMUEL EMRICH.

Witnesses:

FRANCIS J. WYATT,

H. R. CAMPBELL.