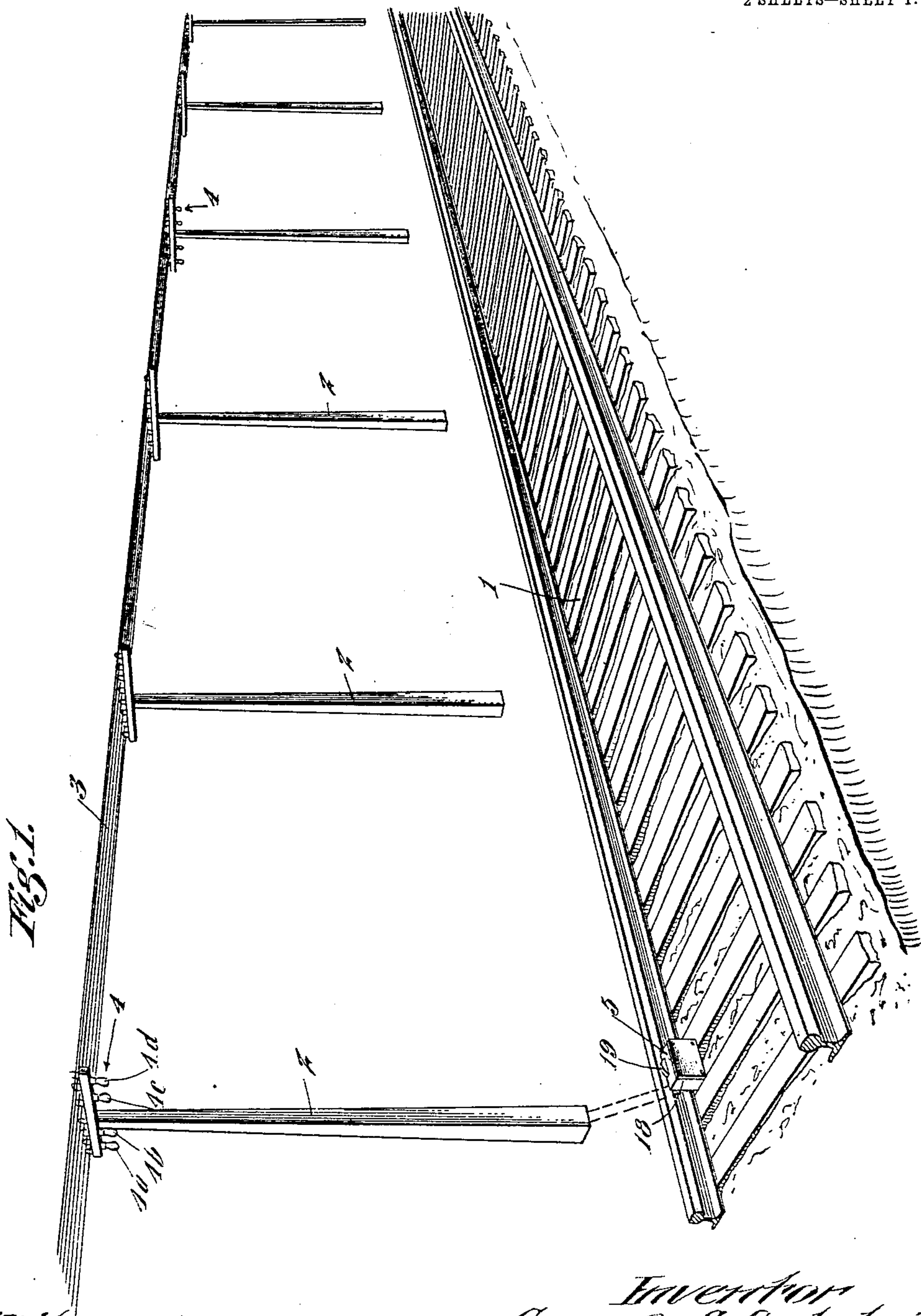


No. 870,232.

PATENTED NOV. 5, 1907.

G. S. GETCHELL.
SIGNALING DEVICE FOR RAILWAYS.
APPLICATION FILED JAN 24, 1907.

2 SHEETS—SHEET 1.



Witnesses
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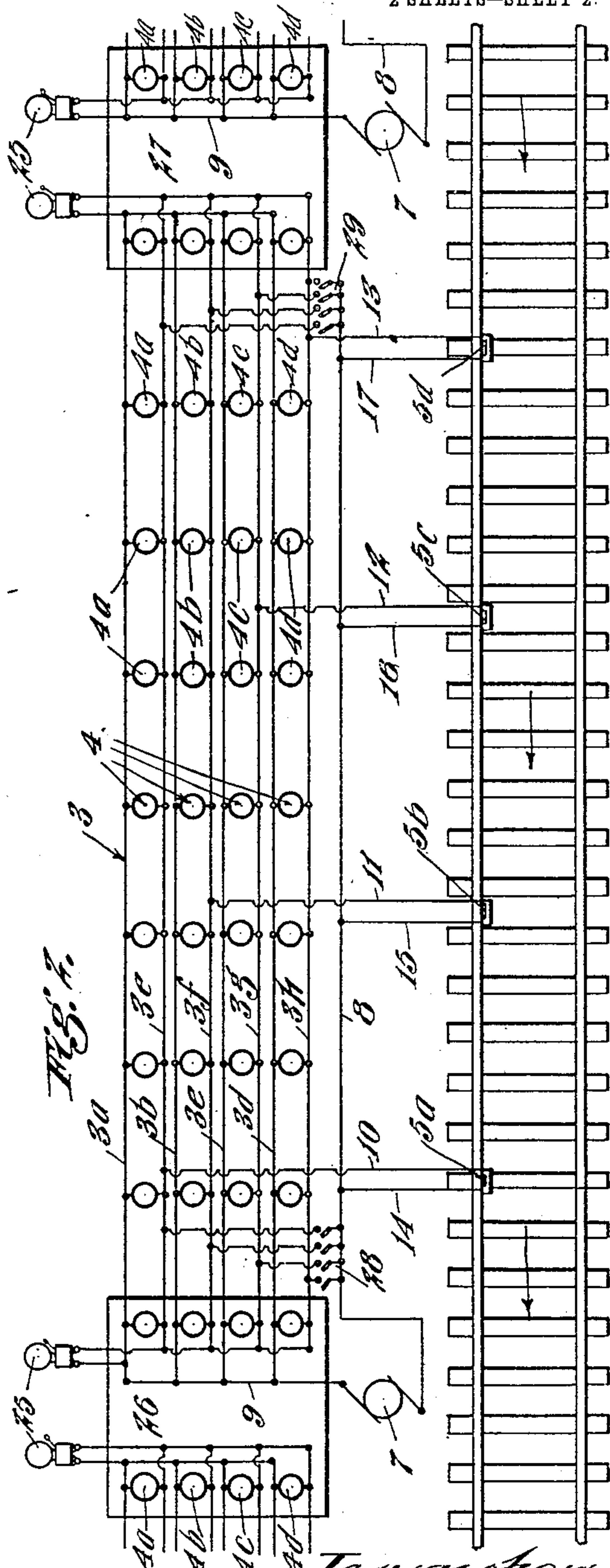
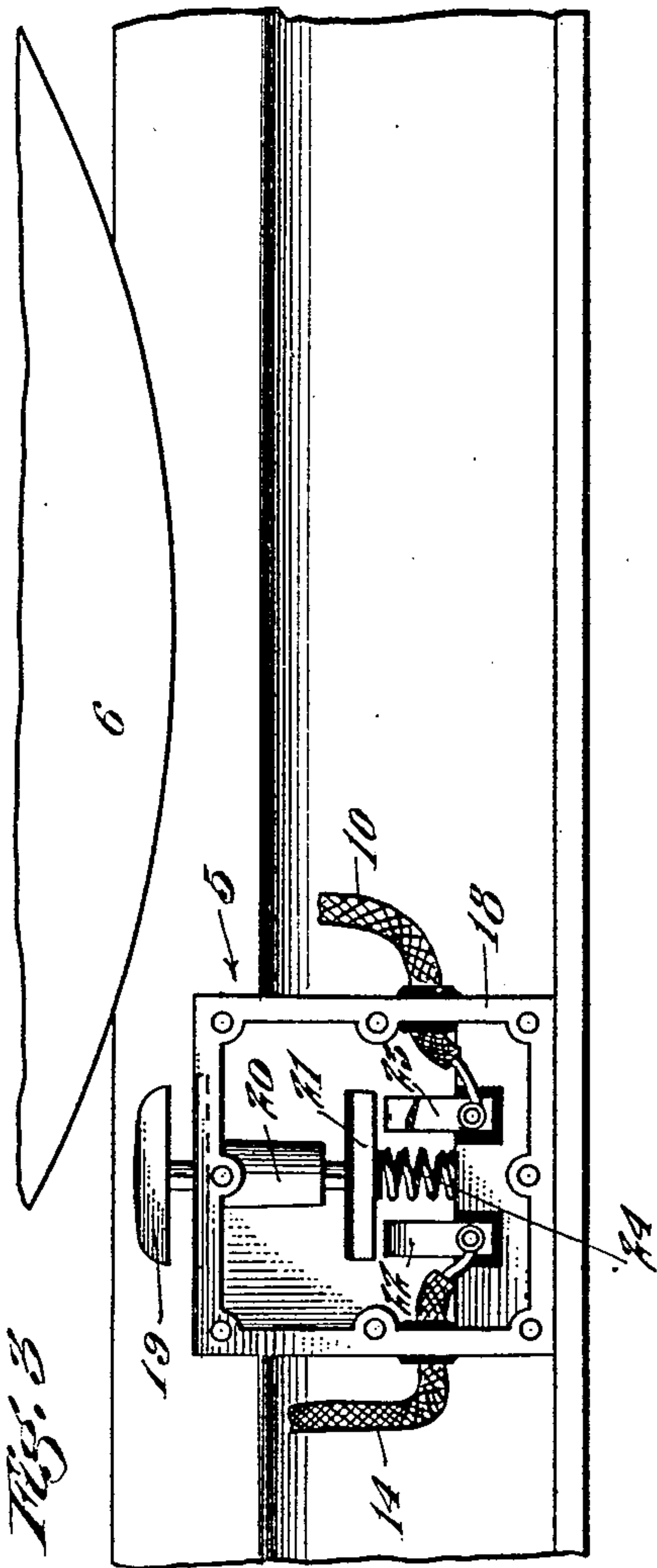
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE S. GETCHELL, OF LOS ANGELES, CALIFORNIA.

SIGNALING DEVICE FOR RAILWAYS.

No. 870,232.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed January 24, 1907. Serial No. 353,838.

To all whom it may concern:

Be it known that I, GEORGE S. GETCHELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have
5 invented new and useful Improvements in Signaling Devices for Railways, of which the following is a specification.

My invention relates to that class of railway signals which operate for a considerable distance along the
10 track, thus notifying any person of the approach of a train; and it is an object of my invention to produce a device which may be extended by duplication over an entire system.

A further object is to provide means whereby the position of any train may be accurately known.

A further object is to provide signaling means between stations, whereby the conductor of a train may communicate with the stations on either or both sides of him, and the station agents may signal the conductor.
20

I accomplish these objects by means of the device described in the following specification and shown in the accompanying drawings, in which:—

Figure 1—is a perspective view of a section of railroad track with my improved signal installed thereon. Fig.
25 2—is a diagrammatic view of a block of my improved signal. Fig. 3—is a detail elevation of the track contact mounted on the rail.

1 represents a railway track along the side of which poles 2 are placed for the purpose of supporting the signal wires 3 and the signal lights 4. On the inner side of one of the rails is secured the plunger switch contacts 5 which are adapted to be operated by flanges 6 of the locomotive or car wheels as they pass over the
35 contact (Fig. 2). In Fig. 3 is shown diagrammatically the connection between signal wires 3, signal lamps 4 and track contacts 5. 7 represents a generator which is connected on one side to feed wire 8 and on the other side to feed wire 9. Feed wire 9 is connected to signal
40 wires 3^a, 3^b, 3^c and 3^d which form one side of the circuit for lamps 4^a, 4^b, 4^c and 4^d respectively. The other sides of the lamp circuits are formed by wires 3^e, 3^f, 3^g and 3^h to which are connected cross wires 10, 11, 12 and 13 respectively, connected at their other ends to track
45 contacts 5^a, 5^b, 5^c and 5^d respectively. The track contacts are connected to feed wire 8 by cross wires 14, 15, 16 and 17.

Track contacts 5 as may be more clearly seen in Fig. 2 are constructed with a square box casing 18 on which
50 is mounted a plunger cap 19 in a vertical bearing 20 so that the button may be pressed downwardly by a passing car wheel. Connected to cap 19 and movable therewith is an insulated contact bar 21 which is adapted to move between the members of knife switches 22
55 and 23, thereby forming a contact between them. Knife switches 22 and 23 are connected to their corre-

sponding cross wires so that when cap 19 of any track contact is depressed connection is formed between the two cross wires leading to that track contact. A spring 24 is provided under contact bar 21 for the purpose of
60 returning the contact bar and cap 19 to its normal position after the car wheels have passed. Bells 25 are provided at the stations 26 and 27 at each end of the signal block in multiple circuit with all the lights between those two stations so that when any of the lights are
65 operated the proper bell at the stations will also operate. One lamp of each set is situated in the station at each end of the block for the purpose of notifying the station agent, but should he be out of sight of the light the bell will call his attention.
70

In the operation of my device I provide that the signal lamps 4^a, 4^b, 4^c and 4^d shall be of different colors and that these differently colored lights shall be connected to the different track contacts in a block. A train passing along the track in the direction indicated
75 by the arrow in Fig. 2 will first press the button on the track contact 5^d, thereby establishing connection between cross wires 17 and 13. A circuit will then be completed as follows;—from generator 7 along feed wire 8, cross wire 17, track contact 5^d, cross wire 13, signal
80 wire 3^h, signal lamps 4^d, signal wire 3^d, feed wire 9, back to generator 7. All the lamps 4^d will then be operated as the train passes over contact 5^d. As the train passes on it will pass over track contacts 5^c, 5^b and 5^a in succession, lighting signal lamps 4^c, 4^b and 4^a in succession.
85 As the different sets of signal lamps are of different colors, it will be understood that by the lighting of any particular color of lamp, the station agents will know with sufficient accuracy the position of any train in the blocks on either side of them. Any train will be
90 warned of the approach of any other train within the block on which the first train is running, and also be warned of the position of that train.

In case of a wreck occurring between stations communication can be opened with either or both of the station agents on that particular block by manually operating track contact 5 to convey a predetermined set of signals. I have shown hand switches 28 and 29 at both ends of the signal block for the purpose of connecting
95 any one of the signal wires 3^e, 3^f, 3^g, 3^h with feed wire 8, thereby establishing a circuit through any particular set of lights desired. By means of these switches the station agents can communicate with the train between the stations in case of wreck or other accident.

The distances between the track contacts will be regulated by the conditions of locality and traffic on
105 the railroad at any particular point and the number of track contacts between stations will depend on those distances and the distances between stations. The lights are arranged in such a manner with reference to
110 the track contacts that a train passing in a given direction, say east, will always light the lamps in the same

color order between any two stations. Thus from the color of the signal on the poles and in the stations the position of any train may be quickly ascertained by any other train or station agent on that particular block.

5 Having described my invention what I claim is:—

1. In a railway signal, a series of track contacts adapted to be operated by passing trains, a plurality of signals electrically connected to each of said contacts, the signals connected to each of said contacts being different from the signals connected to the remainder of said contacts, said signals arranged at intervals along the track, and a source of electrical energy in circuit with said contacts and signals.

10 2. In a railway signal, a series of track contacts adapted to be operated by passing trains, a plurality of groups of signals arranged along the track, each one of said contacts being connected to one signal in all of said groups, the sig-

nals connected to each of said contacts being distinguishable from the signals connected to the other contacts, and a source of electrical energy in circuit with said contacts and signals.

3. In a railway signal, a plurality of contacts spaced along the track and adapted to be operated by passing trains, a plurality of groups of signals spaced along the track, each of said contacts being operatively connected to one signal in each and every one of said groups, the signals connected to each of said contacts being distinguishable from the signals connected to the other contacts, and manual means to operate said signals.

I witness that I claim the foregoing I have hereunto subscribed my name this 15th day of January, 1907.

GEORGE S. GETCHELL.

Witnesses:

IRVIN H. BARKELEW,
EDMUND A. STRAUSE.