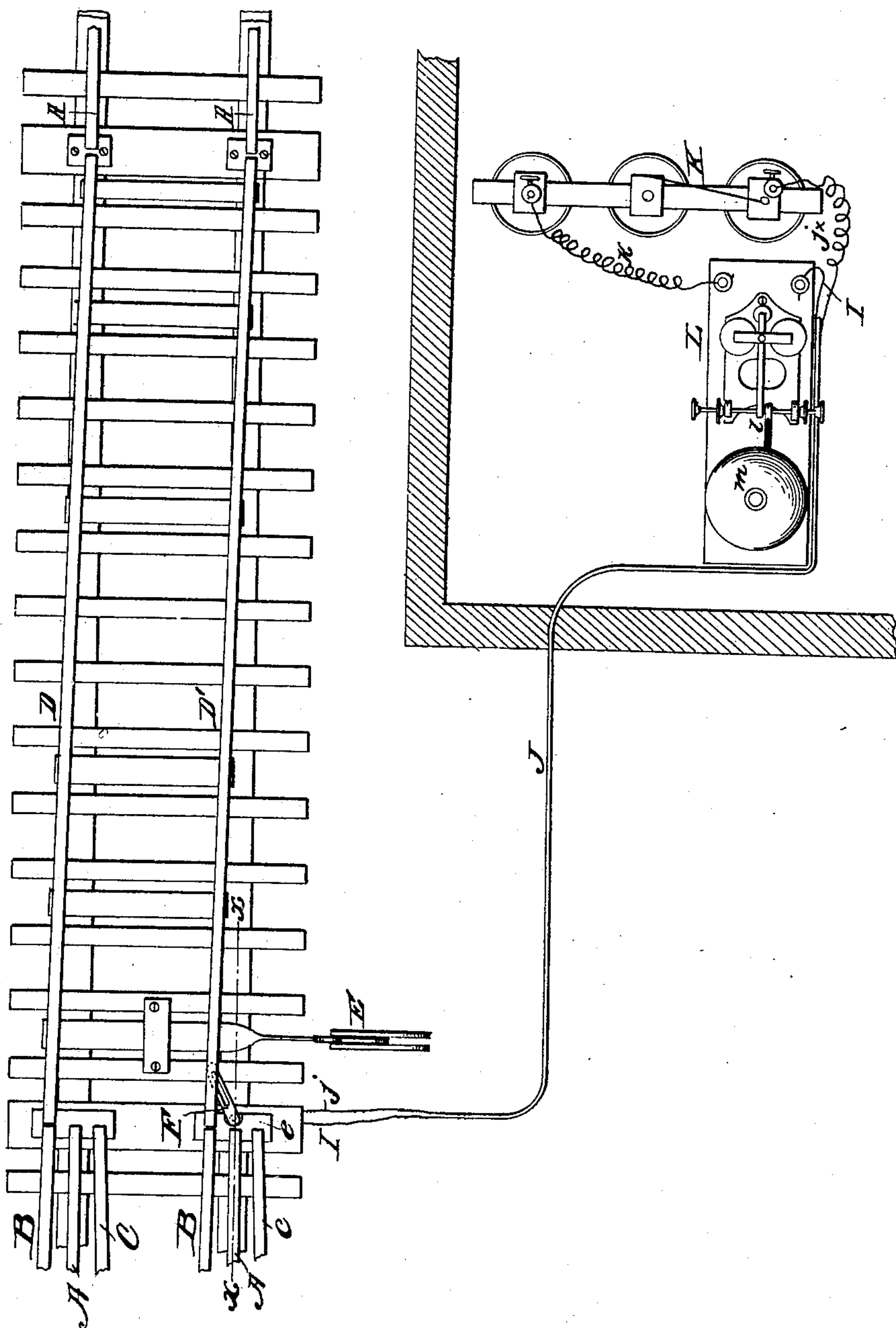


T. S. HALL.
RAILROAD SWITCH ALARM.

No. 62,414.

Patented Feb. 26, 1867.

Fig. 1.



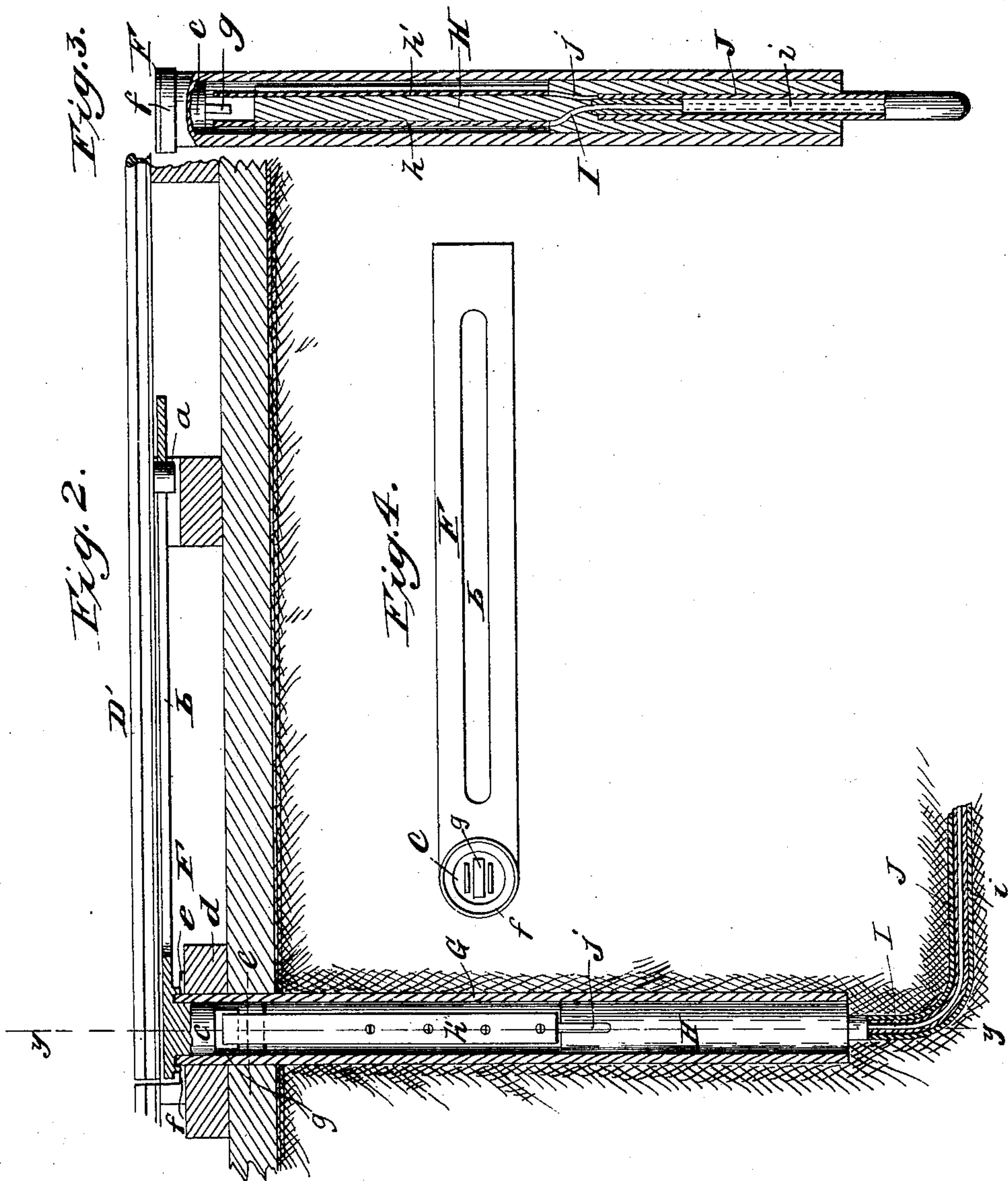
Witnesses
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Inventor
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THOMAS S. HALL, OF STAMFORD, CONNECTICUT.

Letters Patent No. 62,414, dated February 26, 1867.

IMPROVEMENT IN RAILROAD-SWITCH ALARM.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I THOMAS S. HALL, of Stamford, in the county of Fairfield, and State of Connecticut, have invented a new and improved Alarm or Indicating Attachment for Railroad Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved alarm or indicating attachment for railroad switches, whereby a station-master, or any employee at a station-house, will be at all times cognizant of the position of a switch, so that in case a switch-tender should fail in his duty, and not properly adjust a switch, the station-master, or other employee, will be made aware of the fact and have the switch adjusted in proper position before any accident can occur.

The invention consists in having an electro-magnet applied to the switch in such a manner that when the switch is not in line with the main track a continuous alarm will be sounded in the station-house; and hence, if a switch-tender, after adjusting the switch in line with a branch track to accommodate a train, should fail, after the passing of such train, to readjust the switch in line with the main track, the continuous alarm would arrest the attention of the station-master or other employee, who would have the switch properly adjusted at once. In the accompanying drawings—

Figure 1, sheet No. 1, is a plan or top view of my invention.

Figure 2, sheet No. 2, an enlarged vertical section of a portion of the same taken in the line *x x*, fig. 1.

Figure 3, a vertical section of fig. 2, taken in the line *y y*.

Figure 4, a detached inverted plan of a part pertaining to the invention.

Similar letters of reference indicate like parts.

A A represent the rails of the main track of a railroad; B B C C the rails of two branch tracks, and D D' the rails of a switch, so arranged as to be capable of being adjusted in line with the main or either of the branch tracks. These parts, being arranged in the usual way and common to all railroads, do not require a minute description. The switch is moved by means of a hand-lever, E, as usual. To one of the rails D' of the switch, near its free or disengaged end, a slotted plate, F, is connected, a pendent pin, *a*, from said rail, extending down through an oblong slot, *b*, in said plate, (see figs. 2 and 4.) One end of this plate F is provided with a cylindrical pendent hub, *c*, which is fitted in the upper end of a metal cylinder, G, the latter extending down into the earth and its upper end passing through the sleeper *e* and tie *d*, and also through the metal chain, on which the free or disengaged end of the switch rail D' works. The plate F is provided with an annular flange, *f*, to fit snugly around the upper end of the cylinder G and prevent the entrance of moisture into the same. The hub *c* is allowed to turn freely in the upper end of G, and said hub has a thin projection, *g*, extending down centrally from it and having parallel sides, (see figs. 2, 3, and 4.) Within the cylinder G there is fitted a wooden cylinder, H, to which there are secured two metal plates, *h h'*, at opposite sides and at its upper part. These metal plates *h h'* are let in the cylinder H, so that they will be free from the cylinder G, and said plates extend upward a short distance above the top of the wooden cylinder H, as shown clearly in figs. 2 and 3, the projection *g* extending down between the upper parts of the plates *h h'*. The lower end of the plate *h* has a copper wire, I, attached to it, and this wire is covered with any suitable insulating material, *i*, and is enclosed within a tube, J, of lead or other conducting material, (see figs. 2 and 3.) The tube J extends up within the wooden cylinder H, and is connected by a wire, *j*, with the plate *h'*. The tube J, with its enclosed insulated copper wire, I, extends under the surface of the ground to the station-house, and the tube J is connected, by a wire, *j'*, with one of the poles of a battery, K, while the other pole is connected by a wire, *k*, with an electro-magnet, L, with which the copper wire I is also connected, as shown in fig. 1. The electro-magnet L may be constructed in any proper manner to give an alarm when the circuit passes through it. A hammer, M, for instance, may be made to act against a bell, *m*. When the switch is in line with the main track the circuit will be broken, as the plate F, which is connected to the rail D' of the switch, is not in contact with the plates *h h'*, the projection *g* of the hub *c* being parallel with and free from said plates, as shown in fig. 3. But when the switch is adjusted in line with either of the branch tracks, B B or C C, the ends of the projection *g* will be in

contact with the plates *h h'*, and the circuit will be completed and the alarm sounded so long as the switch is allowed to remain thus adjusted. Hence it will be seen that in the event of a switchman adjusting the switch in line with a branch track to accommodate a train which is to pass thereon, and failing to readjust the switch in line with the main track after such train has passed, the prolonged alarm will arrest the attention of the station-master, who will see that the switch be properly readjusted in line with the main track.

This invention, it is believed, will effectually prevent accidents, which now too frequently occur owing to the carelessness or negligence of switchmen.

I do not confine myself to the precise construction and arrangement of parts herein shown and described, for it is evident that they may be varied and modified in different ways and the same end attained.

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

1. The combination of a railroad switch with an electric signal or alarm apparatus, substantially as described, so that the switch, in its movement to either side of the line rail, shall close the electric circuit and sound the alarm, and when in its proper line shall break and leave the circuit broken, using therefor the mechanical devices set forth, or any suitable mechanical equivalent.

2. I claim, in combination with the switch, the slotted lever *F*, the swivel-head *C*, the plate *g*, and the metallic connections, *h h'*, for operating an electric signal apparatus.

Witnesses:

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