

No. 808,459.

PATENTED DEC. 26, 1905.

L. L. LAKE.

RAILROAD SWITCH.

APPLICATION FILED OCT. 28, 1905.

2 SHEETS--SHEET 1.

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2 SHEETS—SHEET 2.

Fig. 2

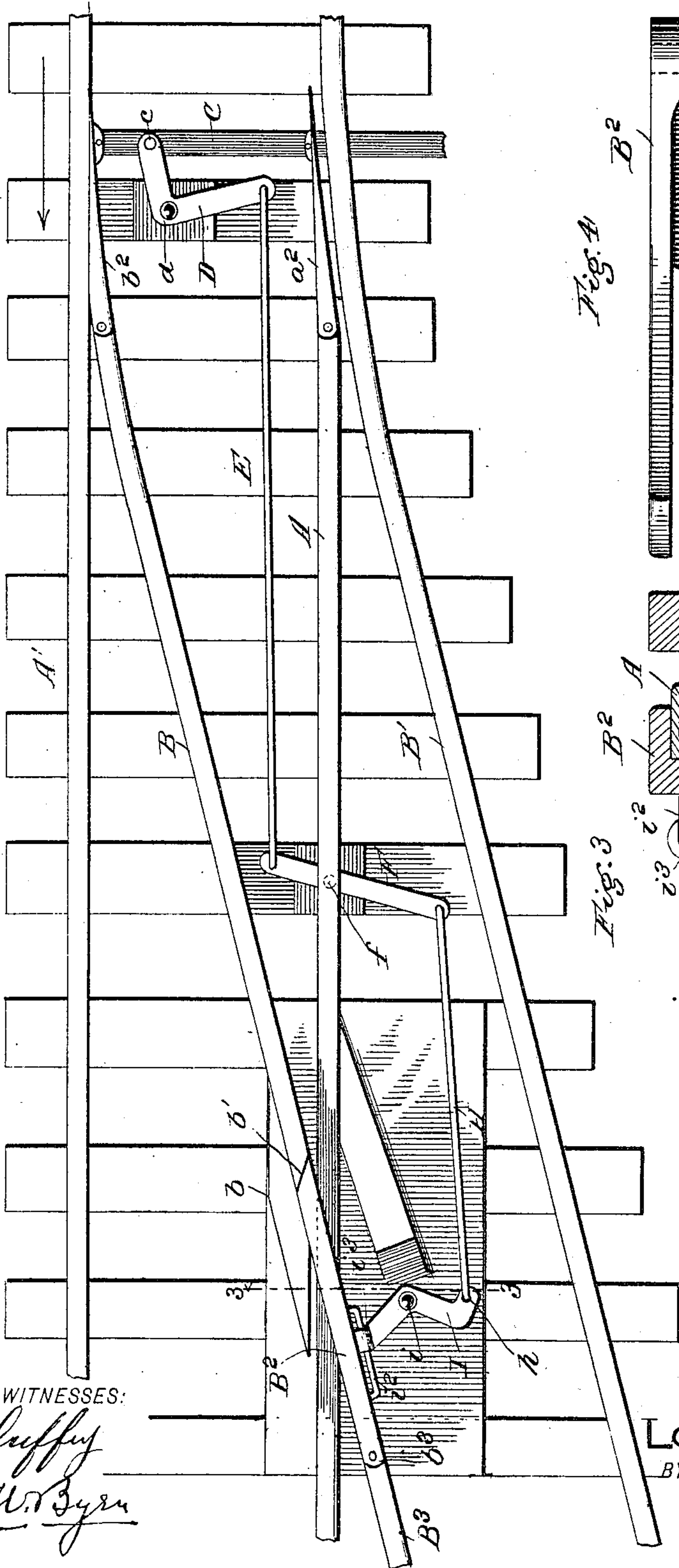
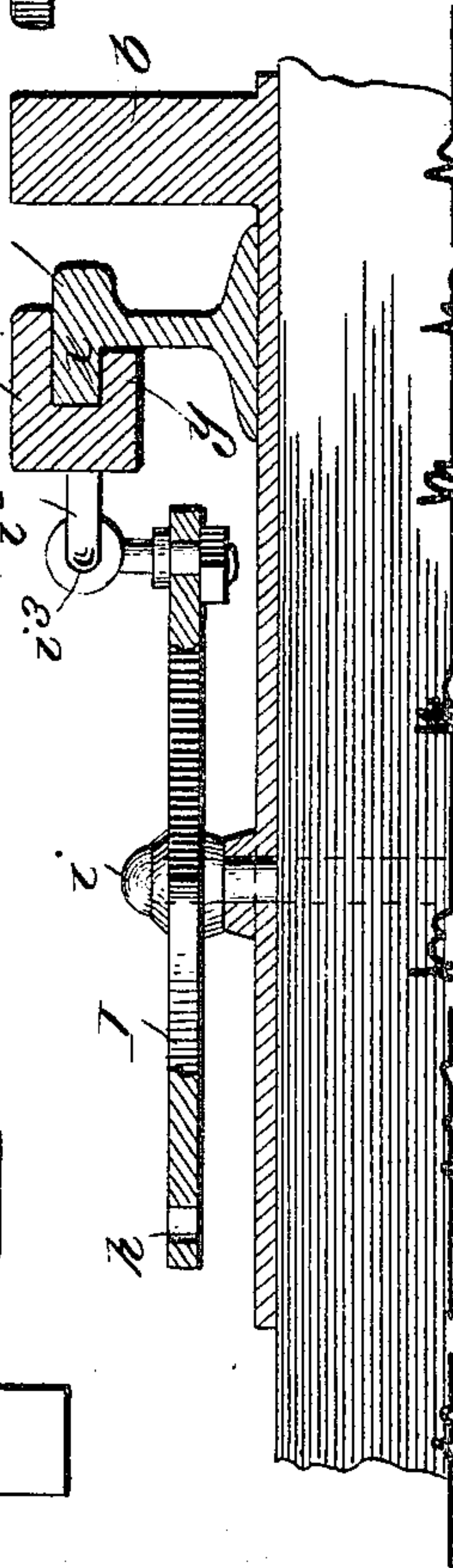


Fig. 4



Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOAMI L. LAKE, OF FONTANET, INDIANA.

RAILROAD-SWITCH.

No. 808,459.

Specification of Letters Patent.

Patented Dec. 26, 1905.

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To all whom it may concern:

Be it known that I, LOAMI L. LAKE, a citizen of the United States, residing at Fontanet, in the county of Vigo and State of Indiana, have
5 invented a new and useful Improvement in Railroad-Switches, of which the following is a specification.

My invention is in the nature of an improved railroad-switch designed to dispense with
10 frogs as ordinarily used and by so doing to avoid the jar and hammering action on the wheels of the rolling-stock, which in winter-time is liable to fracture the wheels and throw the cars from the track.

15 My invention provides a special construction of switch which leaves the main track smooth and unbroken when the main line is open and in which the switch-rail is raised slightly above the main track where it crosses
20 the rails of the main track and has an adjustable crossover-section which in one position leaves the main rails open and continuous and in another position laps over one of the main rails and carries the wheels of the cars
25 over the main rail onto the siding or diverging track.

My invention consists in the novel features as hereinafter fully described with reference to the drawings, in which—

30 Figure 1 is a plan view of my switch in the open position with the main rails continuous for through travel. Fig. 2 is a similar view with the switch set to divert the train onto the siding or a diverging track. Fig. 3 is an enlarged transverse section on line 3 3 of
35 Fig. 1, and Fig. 4 is a detail of the movable crossover-section of the switch looking at it from the side next to the main rail.

In the drawings, A A' are the two rails of the straight main track, which rails have no
40 break or interruption in the same in the nature of frogs or other similar appliances, so that when the main line is open the wheels of the train pass smoothly along the main rails
45 with no hammering action at the switch.

B and B' are the two switch-rails, which diverge at an acute angle from the main track. The middle part of the switch-rail B is stationary, and one end of it is formed with an
50 enlarged stationary head b , which is recessed on one side to form a seat b' . This enlarged head and also the middle portion of the switch-rail B is raised about two inches above the level of the main rails; but its other end and
55 its pivoted switch-tongue b^2 drops down to the level of the outer main rail A'. The en-

larged head b of the switch-rail B is set a distance away from the main rail A far enough to let the flange of the car-wheel pass by it on the main rail when the switch is open.

60 , B² is a movable section of the switch-rail B, which movable section is pivoted at b^3 on a vertical axis outside of the main track and at the end of the rail B³ of the side track, so as to swing horizontally to the open position in
65 Fig. 1 or be swung across the main rail A and into the seat b' of the enlarged stationary head b , as seen in Fig. 2, to render the switch-rails B and B³ continuous. In so doing the end of the movable switch-section B² laps
70 across the top of the main rail A, and for this purpose the movable section B² is made of the same height as the stationary switch-rail B—i. e., it is two inches higher than the main rail A.

75 At the point x of the main rail A, where the movable section B² overlaps it, the main rail is undercut below its head or tread-surface on the outer side, (see Fig. 3,) and the adjacent side of the movable section B² of the switch-
80 rail is formed with an underlapping tongue y , (see Fig. 4,) which when the section B² is across the rail A laps underneath the overhang of the main rail, and thus holds the end of the section B² down in its seat b' to the ex-
85 act level of the switch-rail B. This is an important feature, in that if the end of the section B² should not be held down flush with the top of B the wheels might abut against it and either break the switch or derail the cars,
90 or both.

The movable switch-section B² is adjusted simultaneously with and by the same movement which adjusts the switch. One of these
95 tongues b^2 lies inside the main rail A' and at a distance from the same to allow the flanges of the car-wheels to pass between the said tongues and main rail, as in Fig. 1; but said tongue b^2 is capable of being projected close
100 against the main rail A', as in Fig. 2, to allow the car-wheels to pass in the direction of the arrow from the main rail A' onto the switch-rail B. On the other side of the track the movable switch-tongue a^2 is capable of being
105 adjusted laterally against and into alignment with the main rail A. This movable rail switch-tongue a^2 and movable tongue b^2 are both mounted on and operated by a cross-bar C, which is manually operated by a hand-lever or by other means in the well-known way,
110 which it is not necessary to show.

To simultaneously adjust the movable cross-

over-section B^2 by the adjustment of the rail-tongues $a^2 b^2$, the cross-bar C is loosely connected at c to an elbow-lever D, which is fulcrumed at d to a cross-tie in the road-bed and
 5 has its other arm connected to a long horizontal rod E, running lengthwise the track between the rails. The other end of this rod is jointed to a horizontal lever F, which passes through a slot in the main rail A crosswise
 10 the same and is pivoted therein about a vertical axial bolt f . The outer end of this lever outside the main rail A is jointed to another rod H, which at h is jointed to an elbow-lever I, fulcrumed at i to a cross-tie in
 15 the road-bed, and the other arm of this elbow-lever is connected by a swiveling eye i^3 to a rod i^2 , secured parallel to the side of the movable crossover rail-section B^2 .

By the above-described devices it will be
 20 seen that when the switch-tongue b^2 is adjusted close against the main rail A' and the outer tongue a^2 is away from rail A, as in Fig. 2, to divert the cars onto the side track this movement of the cross-bar C, through the sev-
 25 eral levers and connecting-rods, throws the movable crossover-section B^2 over the top of main rail A and into registering alignment with the switch-rail B, as seen in Fig. 2, and the reverse movement of the same parts opens the
 30 main line, as seen in Fig. 1.

I am aware that the switch-tongues $a^2 b^2$ simultaneously operated are not new, and I am also aware that a crossover switch-section
 35 lapping across the main rail has been connected to the devices which operate the switch-tongues for simultaneous operation, and I make no broad claim to these features.

In pointing out the distinguishing features of my invention I wish to call attention to the
 40 special arrangement of the rods and levers connecting these parts and the middle lever being fulcrumed in and passing through a slot in one of the main rails and the elbow-lever, which operates the movable crossover-section,
 45 tion, being connected by a swiveling eye em-

bracing the parallel rod i^2 , which causes the crossover-section to be strongly operated and firmly held as the swiveling eye slides along the parallel rod and constantly increases the leverage of the elbow-lever against the cross-
 50 over-section in closing the same against its seat b' .

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

1. A railroad-switch, comprising a stationary switch-rail B having an enlarged head with seat b' set a short distance away from the main rail, a movable crossover-section B^2 pivoted outside the main track and having a
 60 tongue underlapping the main rail and an end fitting in the seat b' and a parallel rod i^2 connected to its side, an elbow-lever having a swiveling eye in one arm, said swiveling eye embracing the parallel rod, a pair of switch-
 65 tongues and means for simultaneously operating said switch-tongues and said elbow-lever.

2. A railroad-switch, comprising a stationary switch-rail B having an enlarged head
 70 with seat b' set a short distance away from the main rail, a movable crossover-section B^2 pivoted outside the main track, and having a tongue underlapping the main rail and an end fitting in the seat b' and a parallel rod i^2 con-
 75 nected to its side, an elbow-lever having a swiveling eye in one arm embracing the parallel rod, a cross-lever fulcrumed in a slot in the main rail, a rod connecting the outer arm of the elbow-lever to one end of the cross-le-
 80 ver, a rod connected to the other end of the cross-lever, an elbow-lever connected to said rod, a pair of adjustable switch-tongues and a cross-bar connected to the same and also to the last-mentioned elbow-lever for simulta-
 85 neous action.

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Witnesses:

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