

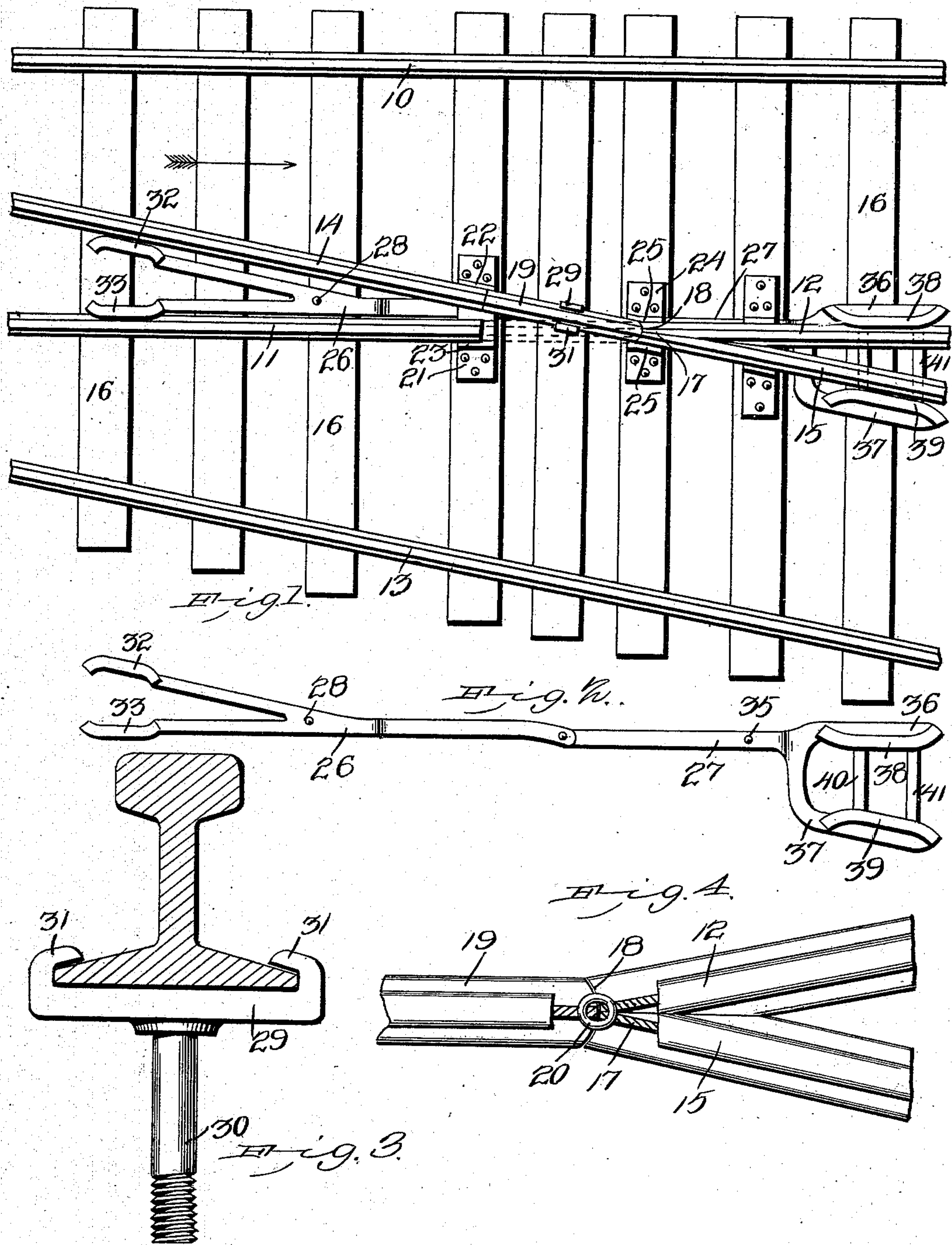
No. 714,392.

Patented Nov. 25, 1902.

O. McNORTON, JR.  
SWITCH OPERATING DEVICE.

(Application filed July 9, 1902.)

(No Model.)



Witnesses  
*E. H. Howard*  
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Attorneys



UNITED STATES PATENT

ORVILLE MCNORTON, JR., OF GLEN JEAN, WEST VIRGINIA.

SWITCH-OPERATING DEVICE.

part of Letters Patent No. 714,392, dated November 25, 1902. Serial No. 114,949. (No model.)

17, and the extremity of the  
as shown at 18.  
ent ends of the  
distance f  
15 a

UNITED STATES

ORVILLE McNORTON, JR., OF GLEN JEAN,

**SWITCH-OPERATING DEVICE.**

SPECIFICATION forming part of Letters Patent No. 714,392, dated November 25, 1902.

Application filed July 9, 1902. Serial No. 114,949. (No model.)

My concern:

ORVILLE McNORTON, Jr., residing at Glen Jean, State of Pennsylvania.

at 17, and the extremity of the combined rails 12 and 13 concaved, as shown at 18. The adjacent ends of the rails 14 and 15 stopped a short distance from the combined rails 12 and 13. The combined section of rail 19. The next to the end 18 is formed conforming to the concaved end, which is adapted to engage the

**SPECIFICALLY**

*To all whom it may concern:*

Be it known that I, ORVILLE  
a citizen of the United States  
of the county of Franklin  
have invested

**SPECIFICATION** Application

*To all whom it may concern:*

Be it known that I, ORVILLE MCNORTON, Jr., a citizen of the United States, residing at Glen Jean, in the county of Fayette and State of West Virginia, have invented a new and useful Switch-Operating Device, of which the following is a specification.

This invention relates to that part of railroad switch mechanism which embraces the "frog" action with the switch construction and the construction of the frog will be

Be it known that  
 I, a citizen of the United States,  
 of West Virginia, in the county of Lincoln,  
 have invented a new and useful  
 Switch-Operating Device, of which the  
 following is a specification.

This invention relates to that part of rail-  
 way construction which embraces the "frogs"  
 and has for its object the construction of a  
 safety device operative by the trains approach-  
 ing from either direction which will bridge  
 the gap in the rail at the "frog-points," and  
 thereby provide a continuous rail not only for  
 the main line, but also for the rail leading into  
 a switch; and the invention consists in cer-  
 tain features of the construction,  
 shown and described, and spe-

15 the gap in the main line, but also the switch; and the in-  
tain novel features  
hereinafter shown  
20 fied in the claims.  
In the drawings  
Figure 1 is a  
Figure 2 is a

the gap in the main line, but also thereby provide a means of connecting the main line, and the invention of the switch; and the invention of the novel features of the combination hereinafter shown and described, and defined in the claims.

In the drawings illustrative of the invention, Figure 1 is a plan view of a portion of a railway-track at the point where the siding-rail crosses the main line with the improvement applied. Fig. 2 is a plan view of the frog-rail-operating levers detached. Fig. 3 is an enlarged sectional detail of the lever-coupling clip. Fig. 4 is an enlarged sectional detail of the arrangement of the lever-forms of railway construction when applied to a section of the main line.

25 rail crosses  
rail applied.  
ment applied.  
frog-rail-operating lever.  
an enlarged sectional detail  
illustrating the arrangement of  
coupling clip. Fig. 4 is an enlarged sec-  
30 detail of the frog-rail-joint mechanism.  
The device will be applied to any of the  
ordinary forms of railway construction where-  
in switches are employed, and in the draw-  
ings, for the purpose of illustration, the im-  
35 provement is shown applied to a section of  
railway-track which embraces the main line,  
where the siding-rail crosses the main line.  
The outside main-line rail is represented at  
portion of the inside main-line rail at 11, and  
switch-lever is represented at 12, and the  
main-line rail on the siding is represented at 13, and the

30 detail of the device. The device is shown in ordinary forms of rail switches, for the purpose of illustrating, for the purpose of illustration, improvement is shown applied to a railway-track which embraces the portion where the siding-rail crosses the main line. The outside main-line rail is represented at 10, the portion of the inside main-line rail toward the switch-lever is represented at 11, and the portion of the main-line rail on the opposite side of the frog is represented at 12. The outside rail leading to the siding from the side of the frog is represented at 13, and the other side of the frog is represented at 14, and the outside rail on the opposite side of the frog is represented at 15.

35 proven  
railway-tra  
where the siding  
The outside main-line  
10, the portion of the inside  
ward the switch-lever is represented at 12.  
40 the portion of the main-line rail on the  
side of the frog is represented at 13, and the other  
the outside rail leading to the siding from  
is represented at 14, and the  
the main-line rail on the oppo  
represented at 15, and the ordin

10, the  
ward the  
the portion of the  
side of the frog is  
the outside rail leading  
is represented at 13, and  
between the frog and the  
at 14, and the  
on the oppo-  
at 15, all  
ordinary

the outside rail is represented between the inside rail on the right and the outside rail on the left, and the ordinary one of the

The outside rail leading to the frog at 13, and the inside rail leading to the frog at 14, are represented at 15, all in ordinary position.

tion of the switch-lever is  
on of the main-line  
of the frog is represented  
outside rail leading to the siding  
is represented at 13, and the other  
between the frog and the  
represented at 14, and the  
rail on the oppo-  
nted at 15, all  
ordinary

of the inside  
h-lever is represented  
the main-line rail on the  
the frog is represented at 12.  
the rail leading to the siding from  
represented at 13, and the other  
between the frog and the  
at 14, and the  
on the oppo-  
at 15, all  
ordinary

crossed by the main-line rail is 11, and the inside main-line rail is represented at 11, and the frog is represented at 12. The main-line rail on the opposite side of the siding from the frog is represented at 13, and the other main-line rail leading to the siding is represented at 14, and the frog between the frog and the main-line rail on the opposite side of the siding is represented at 15, all of which are ordinary

uses the main-line rail is represented at 11, and side main-line rail to be represented at 12. The main-line rail on the opposite side is represented at 13, and the other main-line rail to the siding from the frog and the other side is represented at 14, and the main-line rail on the opposite side is represented at 15, all of which are ordinary

19 will be shown in Fig. 1, the ends of the r plate or chair 21 ner to the tie, rail-spikes or be provided, the tie-flang ing stops to movable e The po and the one of t

The abutting  
19 will be disposed  
shown in Fig. 1,  
the ends of the r  
plate or chair 21  
ner to the tie,  
rail-spikes or  
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continuous of the rail 19 or 11 12, as the case may be. The abutting ends of the rail 19 will be disposed as shown in Fig. 1, the ends of the rail 11 being secured to the plate or chair 21 by means of a screw or bolt 22, and a nut 23, and a washer 24, and a tie-plate 25, and a rail-spike 26, and a tie-flange 27, and a tie-stop 28, and a movable end 29. The position of the rail 11 and the position of the rail 19 are shown in Fig. 1, and the position of the rail 11 and the position of the rail 19 are shown in Fig. 2.

the center of the continuous rail will be 19 or 11 1/2, as the case may be. The abutting ends of the rail 19 will be disposed as shown in Fig. 1, the ends of the rail 19 being secured to the tie-plate or chair 21 by means of rail-spikes or bolts. The tie-flanges of the rail 19 will be provided with the tie-flange stops 22, which are movable on the tie-flanges. The position of the tie-flange stops 22 and the position of the tie-flange stops 22 will be determined by the position of the tie-flange stops 22 and the position of the tie-flange stops 22.

to engage either of the rail 19 closely or 11 12, as the case may be. The abutting end of the rail 19 will be disposed as shown in Fig. 1, the ends of the rail being secured to the tie-plate or chair 21 by means of the rail-spikes or bolts 22. The tie-flanges 23 are provided with the movable stop 24. The portions of the rail 19 and the tie-plate or chair 21 are of the ordinary

joint at the  
er, so that when  
gage either of  
s rail will be fo  
rail 19 closely  
12, as the case  
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will be disposed  
own in Fig. 1,  
e ends of the r  
plate or chair 21  
ner to the tie,  
rail-spikes or  
be provided  
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ing stops to  
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The segment at the other end of the tie, which is either of the same length or will be found to be closely as the case putting end be disposed in Fig. 1, the ends of the rods of the r or chair 21 to the tie, -spikes or provided, the tie-flange stops to movable end. The portion and the one of the

the other side of the road, where the road is very narrow, and the houses are very close together. The houses are very old, and the streets are very narrow. The houses are very old, and the streets are very narrow. The houses are very old, and the streets are very narrow.

(



[illegible]



strength to resist the strains. 7  
and their attachments will prefer  
steel.

5 The tie-bars 40 41 may be forme  
with the forked ends 36 37 or attac  
to by rivets or bolts, as may be pr

10 The frog-rail 19 will preferably  
tion of an ordinary rail of the sar  
size as the other rails with which  
with the ends convex, as before n  
and with a perforation for the en  
20; but this portion of the devic  
formed of a special section of ra  
ferred.

15 The whole device is very simple  
easily constructed and installed, an  
of being formed to operate with cert  
precision, so that the chances for  
its operation will be eliminated en

20 The lengths of the levers will be  
to bring the ribs 32 33 and 38 39 at a  
distance from the rail 19 to avoid a  
for the wheels after acting on th  
reach the space between the rails

25 12 15 before the frog-rail 19 has b  
ated.

The proportions may be modified  
spond to the conditions of the road  
other circumstances under which t  
30 is to be employed, as the device is a  
to all the varying conditions of rail  
struction.

The device is operative entirely  
ver principle and no springs are re  
35 the construction. This is an impor  
ture of the invention, as springs  
liable to become weakened by con  
tion and refuse to act at some cri  
ment. With this device, however, t  
40 are always in position for action  
their construction and mode of ope  
before stated, operate with precision  
tainty when required.

The device is entirely independe  
45 switch-operating mechanism and w  
affected by any improper operation  
switch mechanism or by any negle  
switchmen or trainmen and requir  
tention from the operatives, as it  
50 automatic. The device will not req  
attention from operatives further  
occasional inspection in the same  
as other parts in the main line, bu  
quire no further attention than the  
55 inspection.

Where the levers 26 27 or any of  
tachments come in contact with the  
ties, wear-plates of suitable metal  
erably be employed between the le  
60 the ties, and these plates may be arr  
any suitable manner and modified  
the device to the different details of c  
tion which may be met with.

Having thus described the inventi  
65 I claim is—

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