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H. B. REINOEHL, EXECUTRIX OF C. W. REINOEHL, DEC'D.
RAILROAD STRUCTURE.

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1,017,315.

Patented Feb. 13, 1912.

Fig. 2.

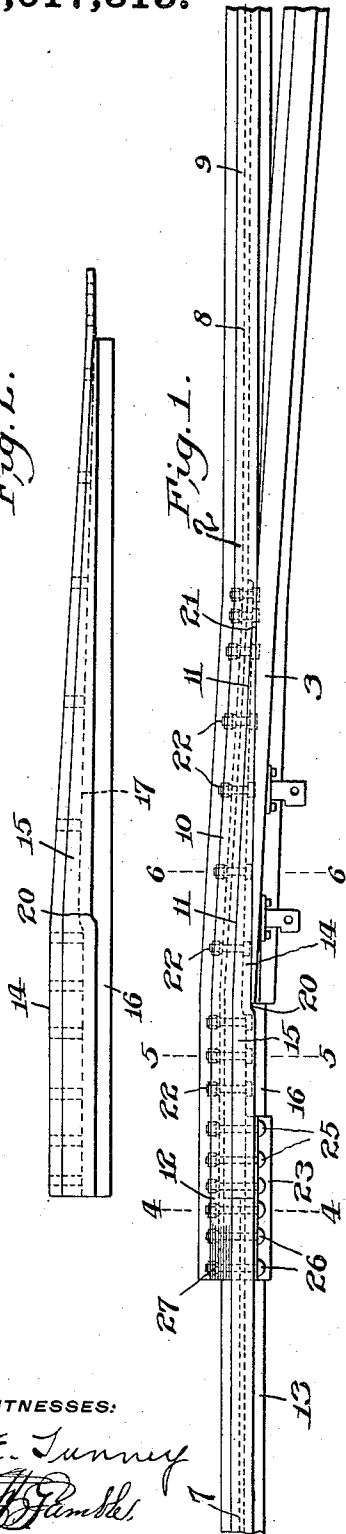


Fig. 3.

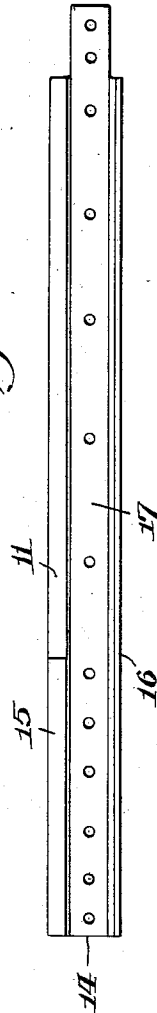


Fig. 6.

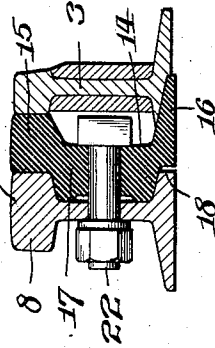


Fig. 5.

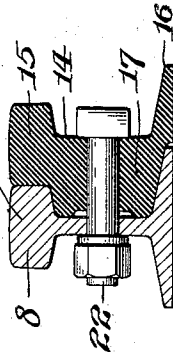
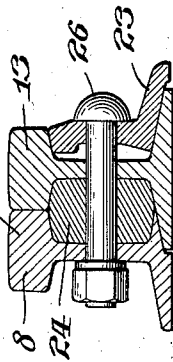


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES W. REINOEHL AND WILLIAM M. HENDERSON, OF STEELTON, PENNSYLVANIA; HELEN B. REINOEHL, OF STEELTON, PENNSYLVANIA, EXECUTRIX OF SAID CHARLES W. REINOEHL, DECEASED.

RAILROAD STRUCTURE.

1,017,315.

Specification of Letters Patent.

Patented Feb. 13, 1912.

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To all whom it may concern:

Be it known that we, CHARLES W. REINOEHL and WILLIAM M. HENDERSON, citizens of the United States, residing at Steelton, Dauphin county, State of Pennsylvania, have invented certain new and useful Improvements in Railroad Structures, of which the following is a specification.

The object of our invention is to provide in a railroad structure, a main line or stock rail of novel, simple and efficient construction, having a portion thereof increased in strength to withstand the wear and strain in localities where there is extremely heavy traffic; and a further object of our invention is to provide a main line or stock rail of novel, simple and efficient construction, having a portion thereof increased in strength and so related to a movable switch rail as to take the lateral thrust of car wheels and withstand the wear and strain, and increase the life of the main line or stock rail, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a plan view of a portion of a railroad structure embodying our invention. Fig. 2 is a plan view, enlarged, of the hard metal wear piece. Fig. 3 is a side elevation of the hard metal wear piece. Figs. 4, 5, and 6 are transverse sections, enlarged, on lines 4—4, 5—5, and 6—6, respectively, of Fig. 1.

2 designates a main or stock rail, 3 a tapering switch rail adjacent the main or stock rail 2 and movable toward and from the same, and 7 a lead rail to which the heel end of the switch rail is connected.

The main or stock rail 2 is of the following construction:—8 designates a section of railroad rail which is of usual and well known construction, comprising a head, a vertical web and a base. The rail section 8 is provided with a straight portion 9 arranged parallel to the main line of the railroad track and an outwardly bent portion 10 forming a recess 11 adjacent the point end of the switch rail 3 and outwardly of the inner or wheel-flange-engaging face of the head of the straight portion 9 of the rail section 8, the recess 11 diminishing in width toward the heel end of the adjacent switch rail 3.

The end 12 of the outwardly bent portion 10 of the rail section 8 extends parallel to

the vertical plane of the straight portion 9 of the rail section 8 and overlaps one end of a second rail section 13, which is alined with the straight portion 9 of the rail section 8, the end of the overlapping portion of the rail section 13 forming an end wall for the wide end of the recess 11.

Arranged within the recess 11 is a tapering hard metal wear piece 14 having its wide end adjacent or abutting against the end of the rail section 13 and its narrow end extending toward the heel end of the switch rail 3. This hard metal wear piece 14 comprises a head or tread portion 15, a base flange 16, and an intermediate body portion 17. The outer face of the head 15 of the hard metal wear piece 14 is fitted against the inner face of the head of the outwardly bent portion 10 of the rail section 8, the body portion 17 rests upon the base of the rail section 8 and is fitted to said section between the head and base thereof as shown, and the base flange 16 extends inwardly from the body portion 17 providing a space between the base flange 16 and the head 15 of the hard metal wear piece.

A portion of the inner side of the base of the rail section 8 is cut away, as at 18, Fig. 6 for a portion of its length to accommodate the base flange 16 of the wear piece 14 for a portion of its length.

The hard metal wear piece 14 forms a stop or abutment for the switch rail 3, when it is in the closed position, against the main or stock rail 2, as shown in the drawings; and, when the switch rail 3 is in this closed position, the point end thereof rests upon and is supported by the base flange 16 of the hard metal wear piece 14.

The inner or wheel-flange-engaging face 19 of the head 15 of the hard metal wear piece 14, is alined with the inner or wheel-flange-engaging faces of the heads of the rail section 13 and straight portion 9 of the rail section 8, excepting that the face 19 is provided with a recess 20, to receive the point end of the switch rail 3 to protect the switch rail against the picking of its point by car wheel flanges in passing from the main or stock rail 2 to the switch rail 3.

A portion of the head of the rail section 8 is cut away adjacent the narrow end of the recess 11 forming a shoulder 21, adjacent which the narrow end of the head 15

of the hard metal wear piece 14 is arranged, to avoid bringing the narrow end of the head 15 to a sharp point.

The narrow end of the body portion 17 of the wear piece 14 is extended beyond the narrow end of the head 15 thereof, and between the head and base of the rail section 8 for strengthening purposes.

The hard metal wear piece 14 is firmly secured to the rail section 8 by transverse bolts 22 extending through the body portion 17 of the wear piece 14 and the web of the rail section 8, and having the heads on their inner ends arranged within the space between the head 15 and base flange 16 of the hard metal wear piece 14. Extending over the wide end of the hard metal wear piece 14 and the adjacent end of the rail section 13, is a splice bar 23; and interposed between the webs of the overlapping end portions of the rail sections 8 and 13, is a filler block 24. The rail section 8, hard metal wear piece 14, and splice bar 23, are secured together by suitable transverse bolts 25; and the rail sections 8 and 13, splice bar 23 and filler block 24, are secured together by suitable transverse bolts 26. Thus a very strong and durable means is provided for securing the rail sections 8 and 13 and hard metal wear piece 14 together, and maintaining them in proper relation to each other.

It will be observed that the heads of the overlapping portions of the rail sections 8 and 13, are engaged with each other, and that the portion of the base of the rail section 8 is cut away to receive the base of the overlapping portion of the rail section 13, thus enabling us to make the wide end of the head 15 of the hard metal wear piece 14 substantially equal in width to the head of a railroad rail.

The end of the overlapping portion of the head of the rail section 8 is beveled, as at 27, to form a pickup for false flanges of guttered car wheels.

The bottoms of the rail section 8 and the base 16 of the hard metal wear piece 14, are on the same horizontal plane and are adapted to be supported upon one upper face of the usual well known slide plates for railroad switches, the rail section 8 being secured to the slide plates in the usual well known manner; and the bottom of the switch rail 3 is on a horizontal plane slightly above the plane of the bottoms of the rail section 8 and wear piece 14 to be supported upon the surfaces of slide plates above the surfaces of the well known slide plates supporting the rail section 8, as is common and well known in railroad and switch construction.

The main or stock rail 2 and lead rail 7 are adapted to rest upon the usual well known supports provided for rails in railroad switches, and are adapted to be se-

cured together and to such supports in the usual well known manner; and the heel end of the switch rail 3 is connected to the lead rail 7 in the usual well known manner to permit the switch rail 3 to be moved toward and from the main or stock rail 2 to close and open the switch.

The wide end of the hard metal rail piece 14 extends ahead of the point end of the switch rail 3, and the narrow or tapering end of the hard metal rail piece lies adjacent the point end portion of the switch rail 3, the rail base narrowing toward the heel end of the switch rail. It will thus be seen that the hard metal rail piece 14 will receive the car wheels and take the lateral thrust thereof; and that the entire structure as hereinbefore described, will be strong and durable, and will withstand such lateral thrust and the great strain and wear to which the parts are subjected under heavy traffic.

By extending the rail section 8 beyond the joint between the hard metal rail piece 14 and rail section 13 so as to act as a pickup for false flanges, gives practically uniform wear upon the rail section 13, which would usually be constructed of ordinary rolled steel, and the special hard metal rail piece 14 which would usually be constructed of metal harder than the rail section 13.

We claim:—

1. In a railroad structure the combination of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the point end of the switch rail, a second rail section having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and abutting against the end of the second named section and forming a stop for the switch rail in one position thereof, means for securing said wear piece to the first named section, and means for securing the overlapping ends of said sections together.

2. In a railroad structure the combination of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section having a straight portion adjacent the heel portion of the switch rail and an outwardly bent portion forming a recess adjacent the point end of the switch rail, a second rail section aligned with the straight portion of the first named section and having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and abutting against the end of the second named section and forming a stop for the switch rail in one position thereof, means for securing said wear piece to the

first named section, and means for securing the overlapping ends of said sections together.

3. In a railroad structure the combination
5 of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the point end of the switch
10 rail, a hard metal wear piece within said recess and forming a stop for the switch rail in one position thereof and having an inwardly extending base flange supporting the point end of the switch rail in one position
15 thereof, and means for securing said wear piece to said rail section.

4. In a railroad structure the combination
of a main rail and a tapering switch rail adjacent the main rail and movable toward
20 and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the point end of the switch rail and having the inner portion of its base cut away adjacent the point end of the
25 switch rail, a hard metal wear piece within said recess and forming a stop for the switch rail in one position thereof and occupying the space of the cut away portion of the base of said rail section and having an inwardly
30 extending flange supporting the point end of the switch rail in one position thereof, and means for securing said wear piece to said rail section.

5. In a railroad structure the combination
35 of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the switch rail and diminishing in width toward the heel end of the
40 switch rail, a second rail section having an end portion overlapping the outwardly bent portion of the first named section, a tapering hard metal wear piece within said recess and having its wide end abutting against
45 the end of the second named rail section and its narrow end extending toward the heel end of the switch rail, means for securing said wear piece to the first named section, and means for securing the overlapping ends
50 of said sections together.

6. In a railroad structure the combination
of a main rail and a tapering switch rail adjacent the main rail and movable toward
55 and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the switch rail and diminishing in width toward the heel end of the switch rail, a second rail section having an
60 end portion overlapping the outwardly bent portion of the first named section, a tapering hard metal wear piece within said recess and having its wide end abutting against the end of the second named rail section and its
65 narrow end extending toward the heel end

of the switch rail, said wear piece having a recess therein receiving the point end of the switch rail, means for securing said wear piece to the first named section, and means
70 for securing the overlapping ends of said sections together.

7. In a railroad structure the combination
of a main rail and a tapering switch rail adjacent the main rail and movable toward
75 and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the switch rail and diminishing in width toward the heel end of the switch rail, a tapering hard metal wear piece within said recess and having its wide portion
80 adjacent the point end of the switch rail and its narrow end extending toward the heel end of the switch rail, a base flange projecting from said wear piece and supporting the switch rail in one position
85 thereof, and means for securing said wear piece to said rail section.

8. In a railroad structure the combination
of a main rail and a tapering switch rail adjacent the main rail and movable toward
90 and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the switch rail and diminishing in width toward the heel end of the switch rail, a tapering hard metal wear
95 piece within said recess and having its wide portion adjacent the point end of the switch rail and its narrow end extending toward the heel end of the switch rail, said wear piece having a recess therein receiving the point end of the switch rail, a base flange
100 projecting from said wear piece and supporting the switch rail in one position thereof, and means for securing said wear piece to said rail section.

9. In a railroad structure the combination
of a main rail and a tapering switch rail adjacent the main rail and movable toward
and from the same; said main rail including a rail section having a recess adjacent the
110 point end of the switch rail, a hard metal wear piece within said recess and forming a stop for the switch rail in one position thereof and having a head adjacent the head of said rail section, a base adjacent the base
115 of said rail section and an intermediate portion fitted to said rail section between the head and base thereof, and means for securing said wear piece to said rail section.

10. In a railroad structure the combina-
120 tion of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section bent outwardly forming a recess adjacent the point end of
125 the switch rail, a second rail section having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and forming a stop for the switch rail in
130

one position thereof and having a head adjacent the head of said rail section, a base adjacent the base of said rail section and an intermediate portion fitted to said rail section between the head and base thereof, means for securing said wear piece to the first named section, and means for securing the overlapping ends of said sections together.

10 11. In a railroad structure the combination of a main rail and a tapering switch rail adjacent the main rail and movable toward and from the same; said main rail comprising a rail section bent outwardly
15 forming a recess adjacent the point end of the switch rail, a second rail section having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and
20 abutting against the end of the second named section and forming a stop for the switch rail in one position thereof, a block interposed between the overlapping portions of said rail sections, means for securing said
25 wear piece to the first named section, and means for securing said block and the overlapping portions of said section together.

12. In a railroad structure a main line rail comprising a rail section having a
30 straight portion parallel to the main line and an outwardly bent portion forming a recess; a second rail section alined with the straight portion of the first named section

and having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and having an inner face alined with the inner faces of the heads of said rail sections, means for securing said wear piece to the first named rail section, and means for securing the overlapping ends of said rail sections together.

13. In a railroad structure a main line rail comprising a rail section having a straight portion parallel to the main line and an outwardly bent portion forming a recess; a second rail section alined with the straight portion of the first named section and having an end portion overlapping the outwardly bent portion of the first named section, a hard metal wear piece within said recess and having an inner face alined with the inner faces of the heads of said rail sections, means for securing said wear piece to the first named rail section, a block interposed between the overlapping portions of said rail sections, and means for securing said block and the overlapping portions of said rail sections together.

In testimony whereof, we affix our signatures in the presence of two witnesses.

CHARLES W. REINOEHL.
WILLIAM M. HENDERSON.

Witnesses:

A. V. GROUPE,
S. I. HARPER.