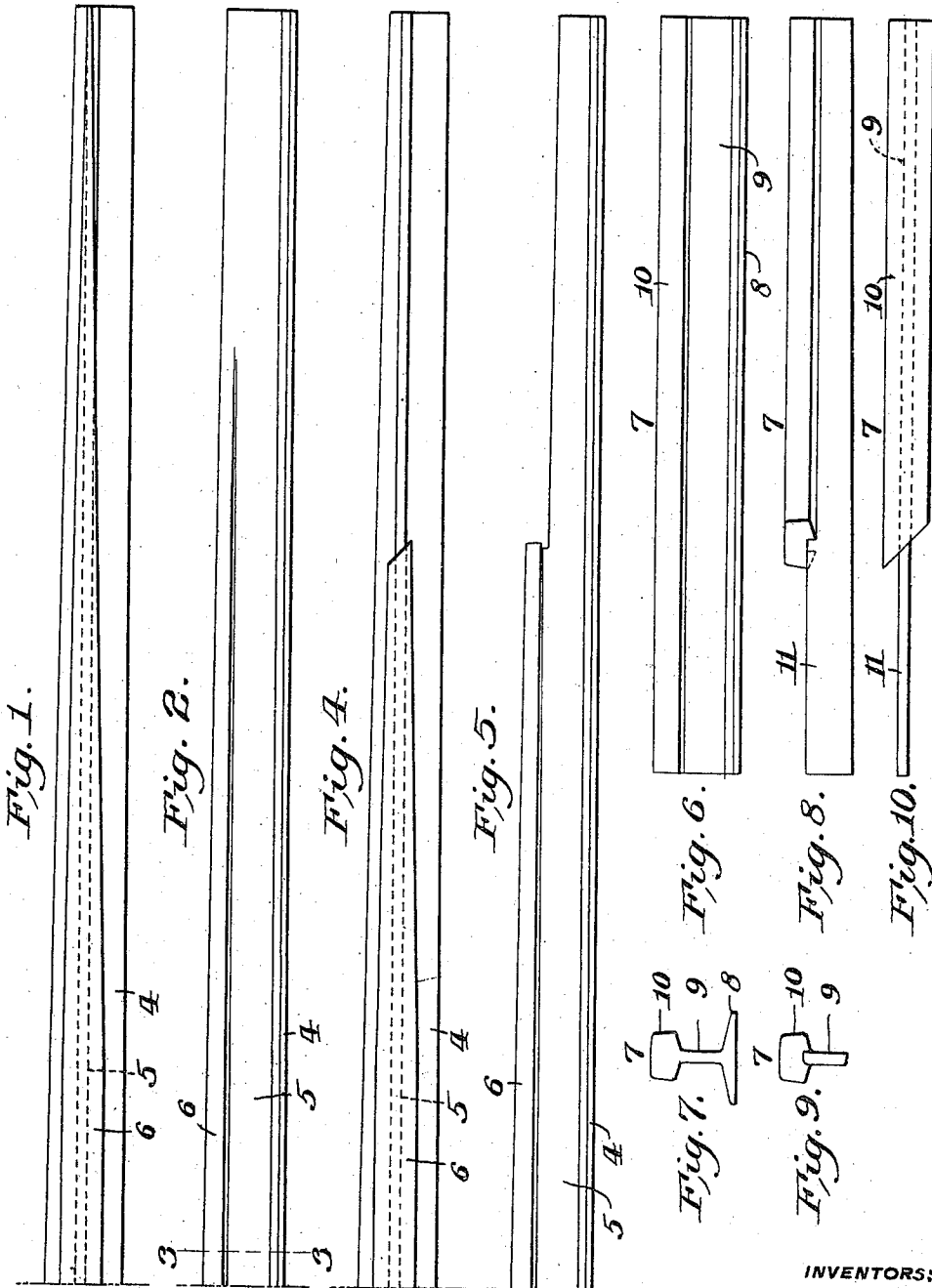


C. W. REINOEHL & B. L. WEAVER.
 ART OF RENEWING WORN RAILROAD SWITCH RAILS.
 APPLICATION FILED NOV. 15, 1909.

964,186.

Patented July 12, 1910.

28 SHEETS—SHEET 1.



WITNESSES
E. H. Gamble
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Fig. 3.

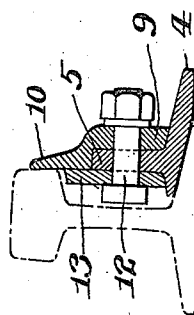
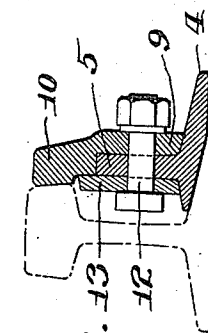
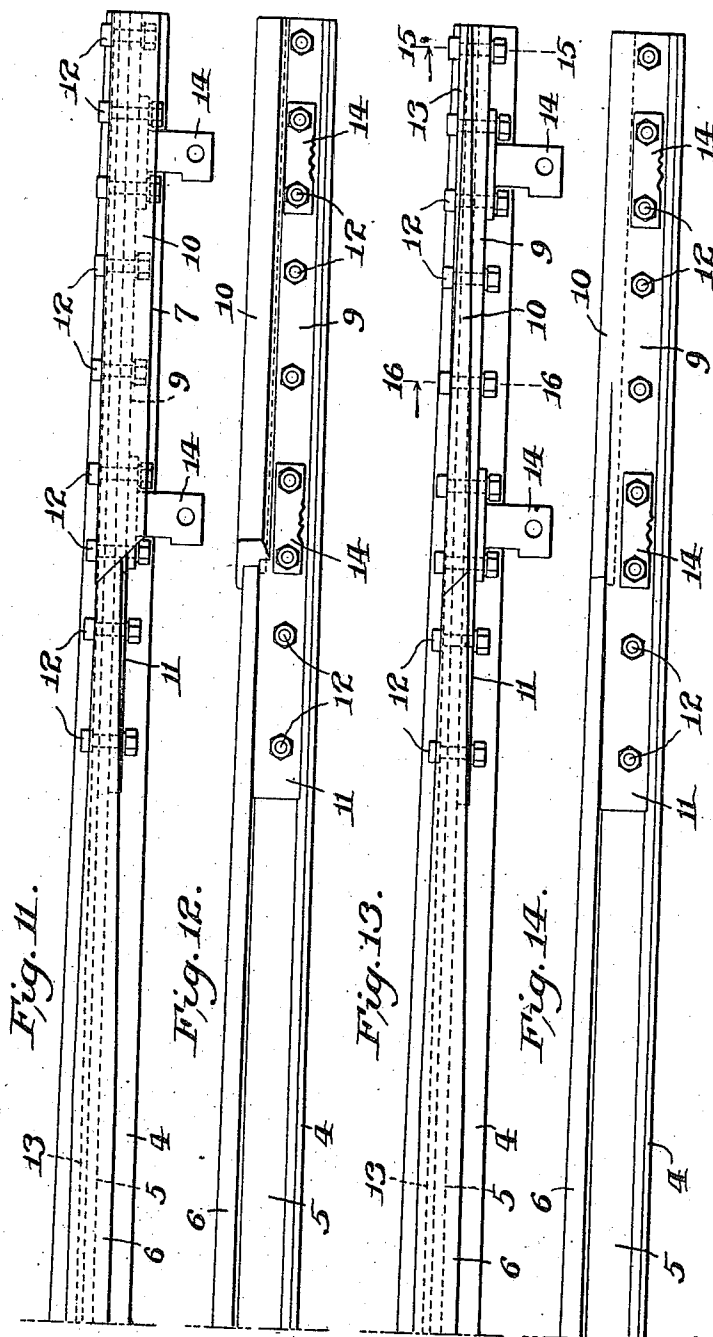
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES W. REINOEHL AND BENT L. WEAVER, OF STEELTON, PENNSYLVANIA.

ART OF RENEWING WORN RAILROAD-SWITCH RAILS.

964,186.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed November 15, 1909. Serial No. 528,033.

To all whom it may concern:

Be it known that we, CHARLES W. REINOEHL and BENT L. WEAVER, citizens of the United States, residing at Steelton, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in the Art of Renewing Worn Railroad-Switch Rails, of which the following is a specification.

Heretofore in renewing worn rolled steel railroad switch rails it has been the practice to cut away the worn point portion of the head of the rail for a certain distance from the point end of the rail, and to renew the switch rail by substituting for the cut away portion a steel casting comprising a web portion suitably secured to the web of the switch rail and a head portion replacing the cut away portion of the switch rail head and cast in substantially the original tapering form of the cut away portion.

The object of our invention is to improve the art of renewing rolled steel switch rails by renewing the worn point end by cutting away the worn tapering point portion of a switch rail and renewing said worn portion by substituting therefor a length of rolled steel rail which is of substantially uniform cross section throughout its length, due to the rolling operation, and reducing said length of rolled steel rail by a planing operation to the original tapering form of the cut away portion of the switch rail, thereby renewing the worn portion of the switch rail with rolled steel with all its advantages due to the working of the steel during the rolling operation, and producing a renewed switch rail the renewed portion and the original body portion of which are both formed of rolled steel.

The invention consists in the improvement in the art of renewing worn railroad switch rails as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a plan view of the tapering point end of a rolled steel railroad switch rail showing the condition of the rail before it has become worn. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse section, on line 3—3 of Fig. 2. Fig. 4 is a plan view of the switch rail similar to Fig. 1, after the point portion of the head of the rail has been removed. Fig. 5 is a side elevation of the switch rail after the point portion of the head thereof has been removed, as shown in Fig. 4. Fig. 6 is

a side elevation of a length of rolled steel railroad rail employed in the renewing of the switch rail. Fig. 7 is an end view of the length of rail, shown in Fig. 6. Fig. 8 is a side elevation of the length of rail, shown in Fig. 6, after certain parts have been cut therefrom. Fig. 9 is an end view of the length of rail, as shown in Fig. 8. Fig. 10 is a plan view of the length of rail, as shown in Fig. 8. Fig. 11 is a plan view of the switch rail, as shown in Fig. 4, having the length of rolled steel rail, as shown in Figs. 8, 9 and 10, applied thereto. Fig. 12 is a side elevation of the switch rail, shown in Fig. 11, with the length of rolled steel rail applied thereto. Fig. 13 is a plan view of the switch rail, as shown in Fig. 11, after the length of rolled steel rail has been reduced to tapered form in renewing the cut away worn portion of the point end of the head of the switch rail. Fig. 14 is a side elevation of the parts, shown in Fig. 13. Fig. 15 is a transverse section, on line 15—15 of Fig. 13, showing by dot-and-dash lines, the position of the main rail against which the switch rail rests. Fig. 16 is a transverse section on line 16—16 of Fig. 13, showing by dot-and-dash lines, the position of the main rail against which the switch rail rests.

Figs. 1, 2 and 3 illustrate the point end of a rolled steel railroad switch rail, showing its condition when originally put into use and before the same becomes worn. This switch rail is of well known construction, and it comprises a base portion 4, a web portion 5 and a head portion 6, one end of which has been planed into the tapering form shown in the drawings to form the switch point.

When the switch rail, as shown in Figs. 1, 2 and 3, is put into use, the point portion of the tapering head 6 soon becomes worn by the engagement of car wheel flanges therewith, and in fact the head 6 of the rail at the extreme point end thereof in the path of the car wheel flanges wears away entirely in some instances. It is therefore desirable to renew this worn portion of the switch rail so that the entire switch rail need not be discarded; and the renewal of this worn portion of the switch rail has been accomplished heretofore as previously described.

In carrying out our improvement, we first cut away the head 6 of the switch rail for a certain distance from the point end thereof, as shown in Figs. 4 and 5, leaving the base

4 and the main body of the web 5 in place. We next secure to the switch rail, shown in Figs. 4 and 5, a section of rolled steel rail; and for this purpose we preferably employ a section, or length of rolled steel railroad rail 5 of usual construction, as shown in Figs. 6 and 7, comprising a base 8, a web 9 and a head 10; we are thus able to utilize discarded short sections of railroad rail, which would otherwise have little value. We next reduce the section of rail shown in Figs. 6 and 7 to form shown in Figs. 8, 9 and 10 by removing the base 8 and a portion of the web 9 and a portion of one end of the head 10, the length 15 of the head portion 10 remaining in the section 7 corresponding with the length of the space from which the tapering point portion of the head 6 of the switch rail was removed leaving an extension 11 of the web 9; we also 20 reduce the web portion 9 so that it will fit against one side of the web 5 of the switch rail beneath the cut away portion of the head thereof, and reduce the extension 11 of the web 9 so that it will fit against the web 25 5 of the switch rail between the head 6 and base 4 thereof.

When the rail, as shown in Figs. 6 and 7, is cut into the condition shown in Figs. 8, 9 and 10 it may be applied to the cut-away 30 switch rail shown in Figs. 4 and 5 so that the assembled parts will appear as shown in Figs. 11 and 12, in which the web 9 of the section 7 rests against the web 5 of the switch rail and the head 10 of the section 7 abuts 35 against the head 6 of the switch rail and extends into and beyond or above and laterally of the space previously occupied by the cut away worn portion of the head of the switch rail. The webs 5 and 9 are then 40 firmly secured together by transverse bolts 12, said webs having been previously drilled for the reception of the bolts.

After the rolled steel section 7, shown in Figs. 8, 9 and 10, has thus been secured to 45 the switch rail, shown in Figs. 4 and 5, the assembled parts appearing as shown in Figs. 11 and 12, the head 10 is reduced by a suitable planing operation into tapered form and into alinement with the faces of the head 6 50 of the switch rail, as shown in Figs. 13, 14, 15 and 16, thus renewing the worn pointed

portion of the head 6 of the switch rail and bringing said head 6 back into substantially the condition shown in Figs. 1 and 2 before the switch rail was subjected to wear. 55

A reinforcing strap 13 is usually employed; and some of the bolts 12 also serve to secure in place the brackets 14 for the connecting rods of the switch.

On reference to Figs. 11 and 12, it will be 60 observed that the head 10 projects above the head 6 and that the head 10 also projects some distance laterally of the head 6. If desired the head 10 may be planed down roughly before the section 7 is secured to the 65 switch rail. But in order to secure perfect alinement between the faces of the heads 6 and 10 at the completion of the process, the final planing should not be done until after the section 7 is secured to the switch rail. 70

The rolled steel section may be of any form in cross section that may be secured to the switch rail and that will fill and extend beyond the space previously occupied by the cut away, worn portion of the switch rail. 75

We claim:—

The process of renewing worn railroad switch rails, which consists in cutting away a portion of the head of the switch rail at 80 the worn end thereof, removing the base and a portion of the vertical web of a section of rolled railroad rail and also a portion of its head, whereby to leave an extension of its web projecting at one end, assembling said 85 section upon the switch rail with its head abutting the head of the switch rail, and the extension at the end of the section projected against the side of the web of the switch rail and fitted between the head and base of the 90 switch rail, securing said section in said position, and planing the head of said section into tapering form and into alinement with the faces of the head of the switch rail.

In testimony we affix our signatures in 95 presence of two witnesses.

CHARLES W. REINOEHL.
BENT L. WEAVER.

Witnesses:

E. M. WARE,
WM. HARRISON SMITH.