B. WOLHAUPTER.

RAIL ANCHOR.

APPLICATION FILED JULY 17, 1918.

1,292,555. Patented Jan. 28, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

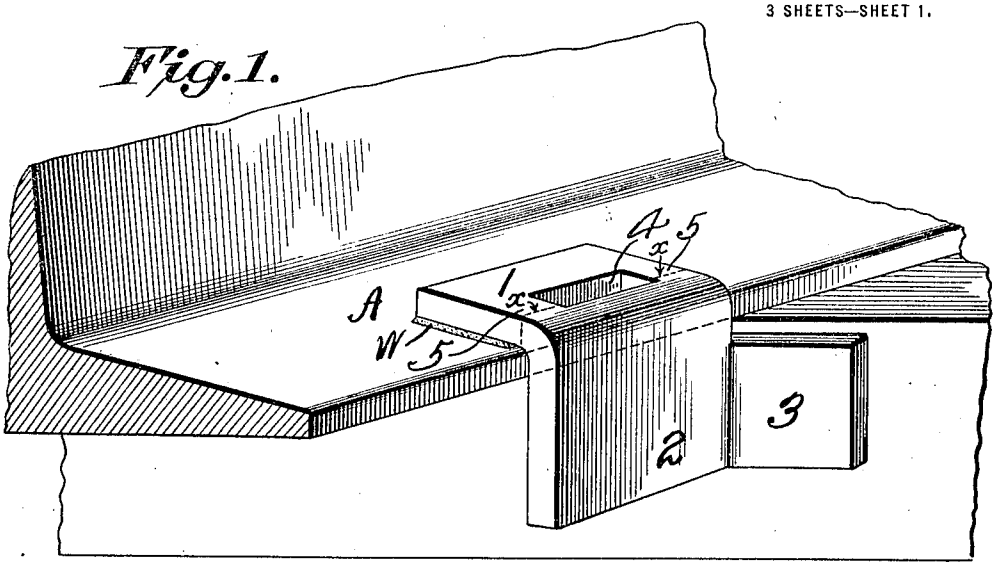


Fig. 2.

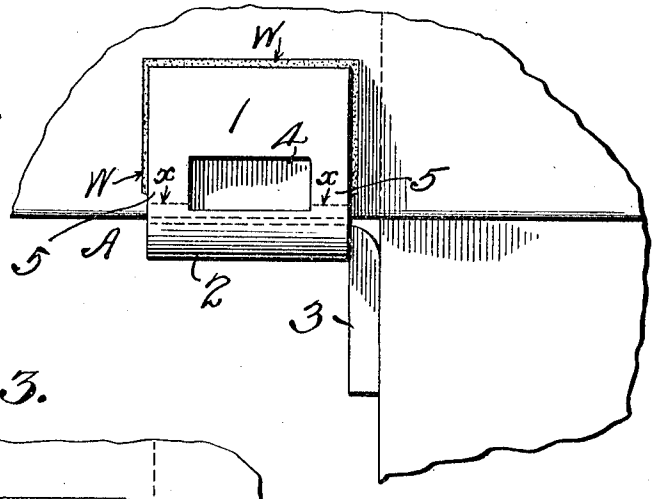
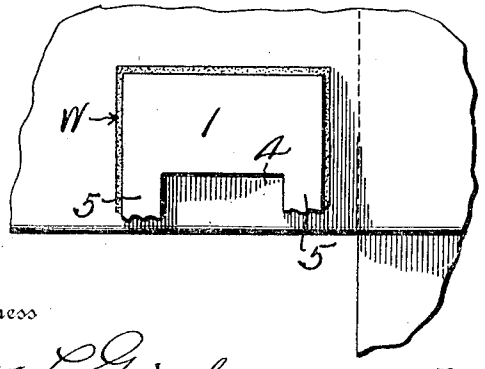


Fig. 3.



Witness

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3 SHEETS—SHEET 2.

Fig. 4.

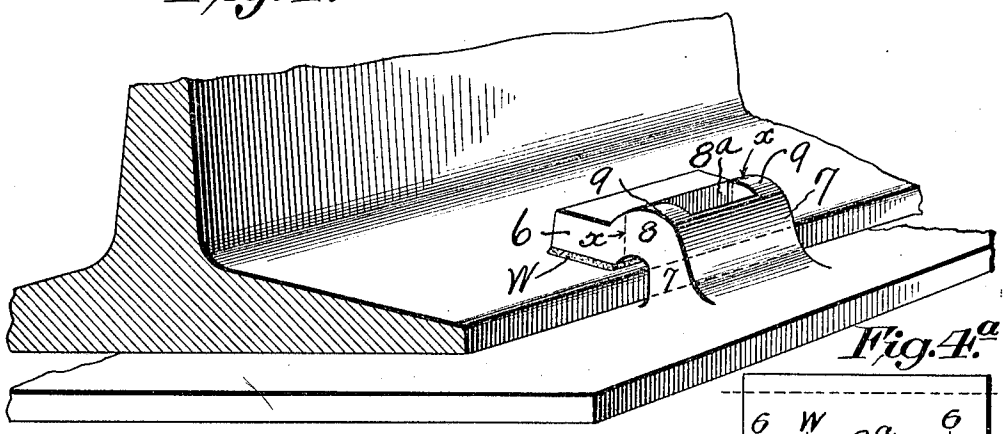


Fig. 4a.

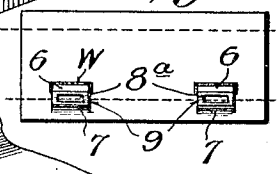


Fig. 5.

Fig. 6.

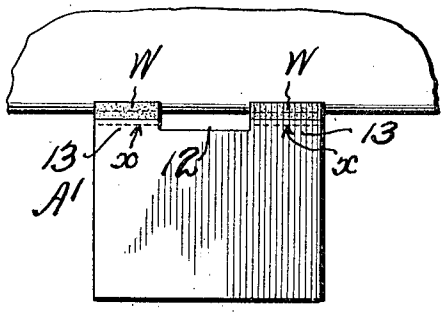
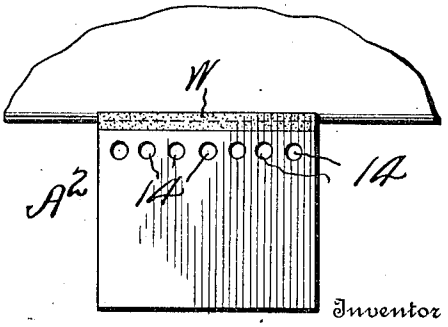


Fig. 7.



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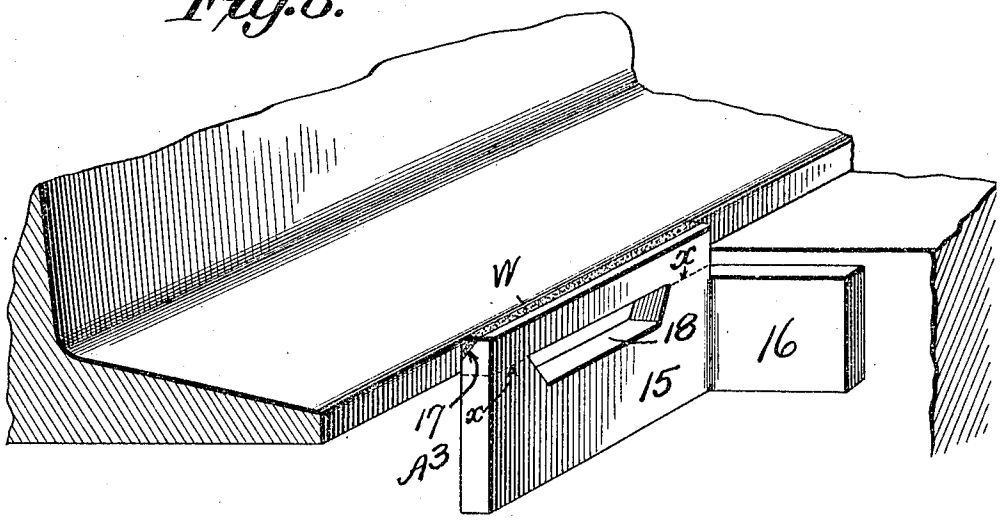
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3 SHEETS—SHEET 3.

Fig. 8.



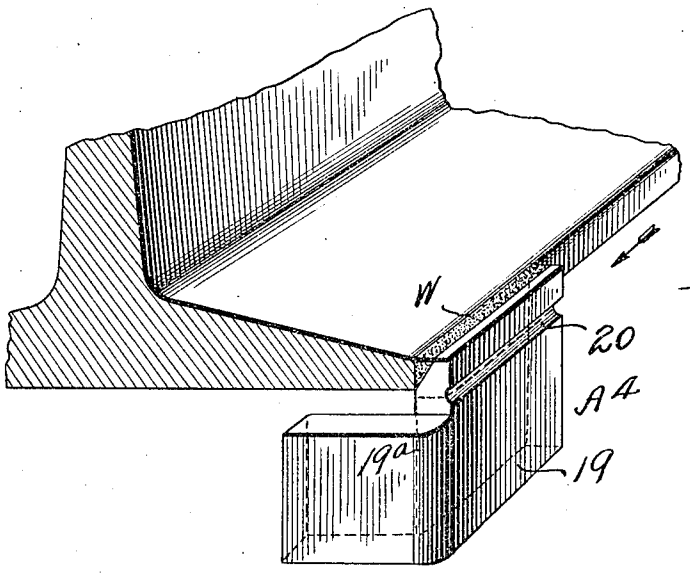


Fig. 9.

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UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW ROCHELLE, NEW YORK.

RAIL-ANCHOR.

1,292,555. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed July 17, 1918. Serial No. 245,409.

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Rail-Anchors, of which the following is a specification.

This invention relates to rail anchors, and has special reference to an improvement in that type of anchor which is permanently affixed to a rail by a welding operation or its equivalent.

A practical objection to rail anchors of the type which are permanently affixed to a rail flange, is that when it is desired to move the rails to a new location they are greatly in the way of handling the rail, or when it is found necessary or desirable to move or replace the ties, the original spacing arrangement of the anchors on the rail is found to be entirely unsuitable, since they will not have the same arrangement as they had when originally applied to the rail. Furthermore if left on the rail without performing the functions of an anchor, they are simply an obstruction which is more or less in the way and can serve no useful purpose whatever.

It is therefore a necessary practice to cut away the anchoring element which is permanently affixed to the rail when the original track arrangement is disturbed, and as these anchoring elements are necessarily of a substantial nature, considerable time, labor and expense is involved in removing the same, and occasionally a portion of the rail flange is broken off in the removal operation.

The foregoing objections are not only confined to anchors of the single tie abutting type, but also exist in connection with the strap type of anchor which is designed and adapted to engage a plurality of ties, as well as other well-known expedients which provide a permanent connection between the anchor and the rail flange.

Accordingly, the present invention has primarily in view the provision of a rail anchor which as to many of its practical forms may be economically and expeditiously manufactured from ordinary stock material, such as a steel bar, cut and bent to proper form by simple operations, and which, furthermore, provides at some convenient point a relatively weak portion or spot which will greatly facilitate the breaking or fracturing of the anchor at a predetermined location to effect its removal from the rail, without leaving any part of the anchor in an obstructing position on the rail. Therefore, a novel and distinctive feature of the present invention resides in the provision of a rail anchor structure which is so designed that it will receive and readily sustain all of the strains which are imposed upon it in performing its functions as an anchor, while at the same time having a portion thereof which is relatively weaker than the rest of the anchor, either by reason of the fact that said portion has less metal than the rest of the anchor, or is otherwise properly weakened to accomplish the desired functions. A rail anchor embodying these features of construction will possess the distinct and important advantage of being capable of facile removal from the rail when desired to do away with the useless outlying or abutment engaging portion of the anchor, so that the reapplication of the rail or readjustment of the ties will in no way be interfered with or impaired.

It will thus be apparent that the invention is fundamentally concerned with a rail anchor structure having a readily fracturable part which of course is susceptible of embodiment in various forms to meet all requirements. In each case, however, the anchor structure which permits of the fracturable characteristic thereof is conserved, and for the purpose of illustration, several practical forms of the invention are shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a portion of a rail and a tie with an anchor constructed in accordance with the invention applied thereto.

Fig. 2 is a top plan view of the structure shown in Fig. 1.

Fig. 3 is a detail plan view of the anchor after the tie abutting portion has been broken away from the flange engaging portion.

Fig. 4 is a perspective view of a modification of the invention which involves an anchor carried by a tie plate, the anchor in this case taking the place of the well-known type of tie-plate shoulder.

Fig. 4ª is an outline diagram showing in plan the full tie plate having thereon a pair of spaced anchoring elements constituting the rail flange abutting shoulder, the dotted lines indicating the rail position.

Fig. 5 is a similar view to Fig. 4 showing a modified anchor.

Fig. 6 is a detail plan view of an anchor which is welded to the edge of the rail flange and projects laterally therefrom.

Fig. 7 is a further modification of the type of anchor shown in Fig. 6.

Fig. 8 is a perspective view of a portion of a rail and a tie showing a tie abutting anchor welded to the edge of the rail flange and depending below the same.

Fig. 9 is a perspective view showing a further modification of the invention, the same general type of anchor being shown in this figure as in Fig. 8.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying the present invention into effect, it is proposed, as previously indicated, to utilize materials which may be readily formed and shaped to provide an anchor which will have ample strength to prevent the creeping of the rail, while at the same time having a relatively weak portion or spot confined to a restricted location, and which under the action of a suitable tool or instrument, may be readily broken or ruptured to enable that portion of the anchor projecting away from the rail to be readily removed without damaging the rail flange in any way, or otherwise impairing the usefulness of the rail.

The invention is obviously susceptible of embodiment in various forms of construction, capable of accomplishing the desired results, and referring first to the construction shown in Fig. 1 of the drawings, the rail anchor here illustrated is designated generally as A, and consists of an upper rail flange engaging member 1 and an angularly disposed depending member 2 which carries an offset tie abutment element 3. According to the present invention the said member 1 of the anchor is secured permanently to the upper side of the rail flange preferably by suitable fillet welding W or equivalent welding operation, and as will be observed from the drawings this member 1 is provided at a suitable point, adjacent the bend which connects the members 1 and 2, with a cut-away portion or slot 4 which considerably reduces the amount of metal at the outer edge of the member 1 and provides the relatively narrow unsecured neck portions 5 at each side of the anchor, thus reducing the amount of metal thereat and producing weak spots at a point where the member 2 may be readily severed from the rail flange engaging member 1. It will of course be understood that any suitable means may be employed to subject the member 2 to a force which will either bend the same after the manner of a lever so that it will break or fracture substantially at the point indicated by the dotted lines x, or, if desired, a track chisel may be used to rupture the two members at this point. Obviously the provision of the relatively narrow portions of metal at each side of the anchor causes the weakest part of the anchor to be located at substantially the point x where the same will either bend under the influence of the blows of a hammer or maul and thus break off, or by such other means as above set forth, to thus only leave the relatively small portion 1 of the anchor fastened to the rail as shown in Fig. 3. This part of the anchor when left on the rail will not interfere with the rail being readily handled and placed in its new position, or otherwise affect the normal functions thereof in service.

The invention is also susceptible of application to the anchor abutments carried by a tie plate as shown in Figs. 4 and 5 of the drawings. According to this phase of the invention the rail anchor members are carried by the tie plate in the place of the usual rail flange engaging shoulder so that the anchor members will not only perform the function of anti-creepers but also take the place of the usual tie-plate shoulder and form abutments against which bear the edge of the rail flange. In the illustration of Fig. 4 of the drawings, one of these rail abutting anchoring members is illustrated as projecting upwardly from the top surface of the tie-plate and said member includes a rail flange engaging portion 6 adapted to overlie the rail flange and to be fillet welded as at W or otherwise permanently secured thereto. Also the said anchor member illustrated in Fig. 4 is provided with an upright shoulder element 7 against which the rail flange abuts and an arched or bowed connecting portion 8 between the said shoulder element and the rail flange engaging portion 6. This arched or bowed connecting part 8 is arranged to clear the edge of the rail flange and has formed therein an opening or cut-away portion 8^a to provide the relatively narrow connecting webs or necks 9 producing the relatively weak spots or readily fracturable portions which permit of the convenient severing of the anchoring body along the lines x—x. Fig. 5 illustrates a tie plate anchor wherein the rail engaging member 10 consists of a relatively long narrow body of metal welded to the rail as at W and connected with the shoulder element S of the tie plate by a narrow intermediate connecting web 11 which provides the relatively weak spot permitting the convenient breaking away of the unsecured part of the anchor from the rail along the dotted line x, at the same time separating the rail from the tie plate.

Figs. 6 and 7 of the drawings show the application of the invention to another type

of anchor, namely a simple plate type which is welded directly to the edge of the rail and projects laterally therefrom to abut against a spike or similar abutment. In these figures the anchor plates A' and A^2 are united to the edge of the rail flange by a suitable weld W, and the provision of a relatively weak area in the case of the anchor A' is accomplished by providing the intermediate portion of the anchor plate, adjacent the rail flange, with a suitable notch 12 which leaves the relatively weak and narrow spaced portions 13 on opposite sides of the anchor body, and thus offers comparatively little resistance to severing along the line x. In Fig. 7 the desired weakening of the metal at the proper location is obtained by providing a series of relatively small holes 14 arranged in relatively close proximity and in parallel relation to the edge of the anchor plate which is welded to the rail flange.

Fig. 8 of the drawing shows the application of the invention to an anchor of the same general type as shown in Figs. 6 and 7, but which, instead of projecting laterally from the rail flange, depends therefrom to abut against the sides of a tie or the like. In this form the anchor A^3 consists of a body plate 15 having at one end thereof an offset tie-abutting flange 16 while its upper edge is suitably beveled or scarfed as at 17 to provide a trough or valley for receiving the welding material which forms the weld W. According to this embodiment, it is proposed to provide the depending body plate 15 of the anchor with a slot 18 whose longest side is in line with the base of the rail, thus effectively limiting the weakness of metal to the opposite upper edges of the body 15 and also to a point where the least part of the anchor will be left upon the rail after the severing operation, which takes place along the dotted lines x—x when the plate 15 is subjected to a hammer blow or the action of a suitable tool at those points.

Fig. 9 is a view somewhat similar to Fig. 8, the general position of the anchor being reversed. In this embodiment, the body 19 of the anchor A^4 is secured to the rail in the same manner as set forth in connection with the anchor shown in Fig. 8, that is by a scarf weld, but instead of employing a slot for obtaining the desired weak spot or readily fracturable part the said body of the anchor is provided on the side opposite the scarf and at a point lying in the plane of the rail base with a longitudinal groove 20. The formation of the groove 20 at this point of course facilitates the separation of the anchor from the rail in a manner to be readily understood from the foregoing description, whereby the depending body plate 19 and its tie abutting flange 19^a may be removed.

In all embodiments of the invention the relatively weak portion or spot is arranged to have its line or plane of greatest strength and resistance, disposed in the direction of the running of the rail to thereby maintain the full efficiency of the anchor to resist creeping tendencies; said line or plane of greatest strength and resistance being preferably at right angles to the direction in which the weak part or spot of the anchor is readily responsive to a breaking strain for the purposes of the present invention.

From the foregoing it will be apparent that the present invention aims to provide a rail anchor of the type which may be permanently affixed to the rail and yet removed therefrom when necessary without damage to the rail, and although numerous modifications have been shown in the foregoing drawings it will be apparent to those familiar with the art that the invention is susceptible of application to other similar structures without departing from the principles of the invention or sacrificing any of the advantages or structural features heretofore pointed out, and hereinafter claimed.

I claim:—

1. A rail anchor having a relatively readily fracturable part.

2. A welded rail anchor having an unsecured fracturable weakened part adjacent the weld.

3. A rail anchor consisting of abutment engaging and rail attaching members and having a relatively fracturable part arranged between the said rail attaching and abutment members thereof.

4. A rail anchor consisting of abutment engaging and rail attaching members and having a relatively fracturable weakened part arranged between the said rail attaching and abutment members thereof and located adjacent the rail attaching member.

5. A rail anchor permanently carried by the rail and having a relatively fracturable portion located adjacent its permanent union with the rail.

6. A rail anchor consisting of abutment engaging and rail attaching members, and an intermediate connecting part of less cross-sectional area than the said members.

7. A rail anchor having a relatively weakened part.

8. A welded anchor having a relatively weakened part in the unwelded portion to permit ready severance thereof from the welded portion.

9. A rail anchor having a relatively weakened part whereby the anchor may be readily severed for detaching from the rail.

10. A welded rail anchor having a weakened part whereby the anchor may be readily severed for detaching from the rail.

11. A welded rail anchor, including a part weaker than the rest whereby the anchor

may be readily severed from the rail at that point.

12. A welded rail anchor, including a weakened part near the edge of the rail flange, whereby the anchor may be readily severed.

13. A rail anchor, including a portion with relatively small cross-sectional area to allow for one portion of the anchor to be severed from the balance thereof.

14. A rail anchor permanently affixed to a rail, including a portion with relatively small cross-sectional area provided to allow for one portion of the anchor to be severed from the balance thereof.

15. A rail anchor consisting of rail flange attaching and abutment engaging portions and having a relatively fracturable weakened part for permitting the removal from that portion affixed to a rail flange of the underlying and abutment engaging portion.

16. A rail anchor consisting of a rail flange attaching portion and an abutment engaging portion and having a relatively fracturable weakened part for permitting the removal from that portion permanently affixed to a rail flange of the said underlying and abutment engaging portion.

17. A rail anchor having a readily fracturable weakened area whose line of greatest strength and resistance is arranged in the direction of the running of the rail.

18. A rail anchor having a relatively weakened spot whose line of maximum strength and resistance is arranged in the direction of the running of the rail.

19. A rail anchor having a readily fracturable relatively weakened spot whose line of greatest strength is parallel with the line or plane of greatest strength of the anchor body.

20. A rail anchor having a relatively weakened spot whose line of greatest resistance is in the direction of the running of the rail, and whose line or plane of least resistance is at right angles thereto.

21. A rail anchor having a relatively weakened spot whose line of greatest strength is in the direction of the running of the rail and whose line or plane of least strength is at right angles thereto.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:
R. W. LICKLEY,
JOHN K. MCAVOY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."