

(No Model.)

J. M. MORRIS & S. J. HARKNESS.
CAR REPLACER.

No. 533,077.

Patented Jan. 29, 1895.

Fig. 1.

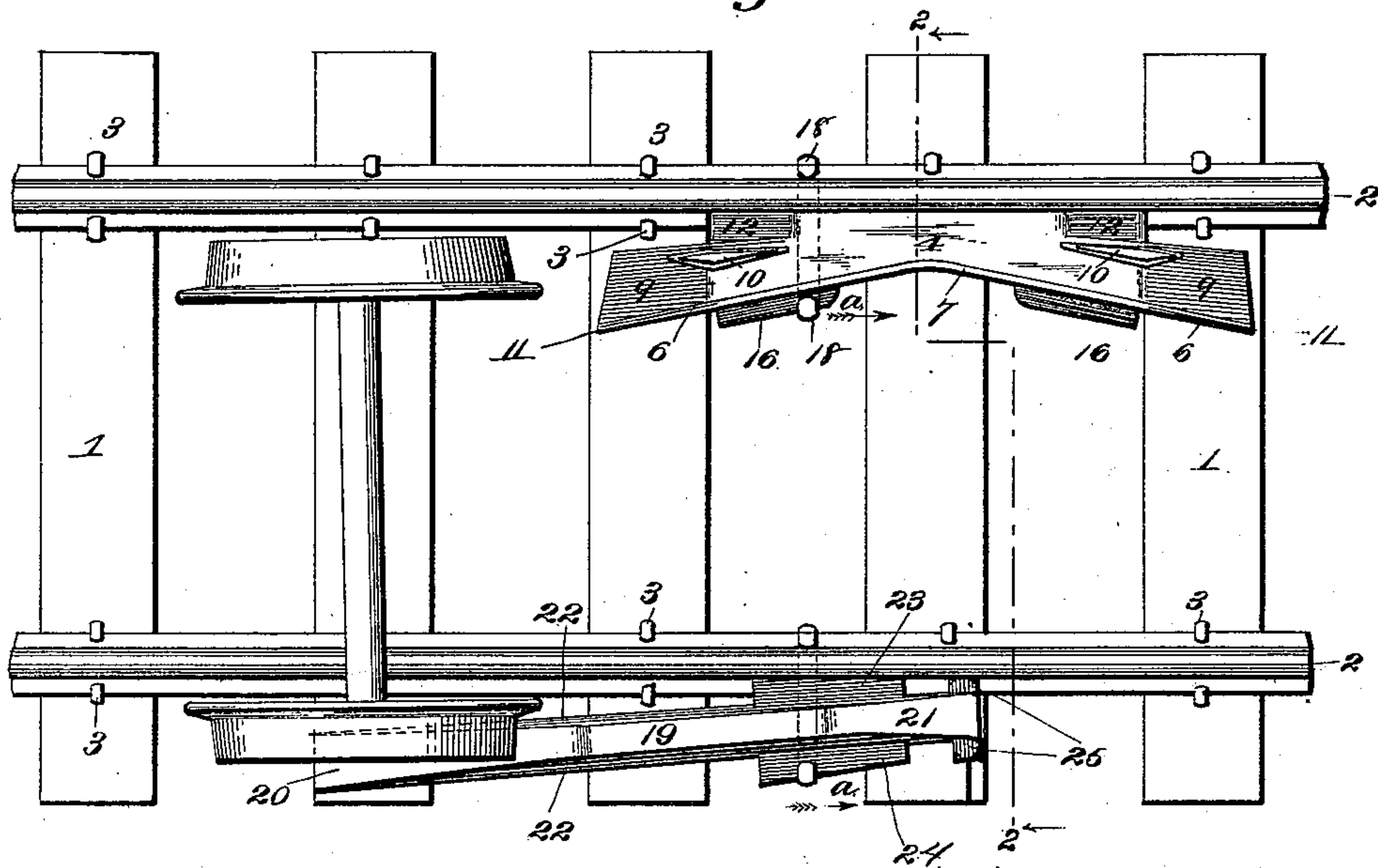


Fig. 2.

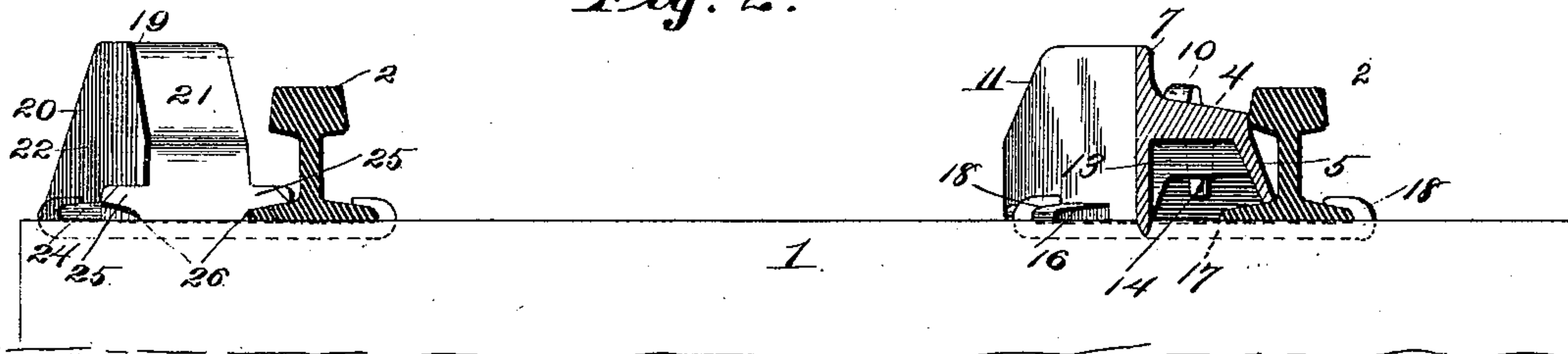


Fig. 3.

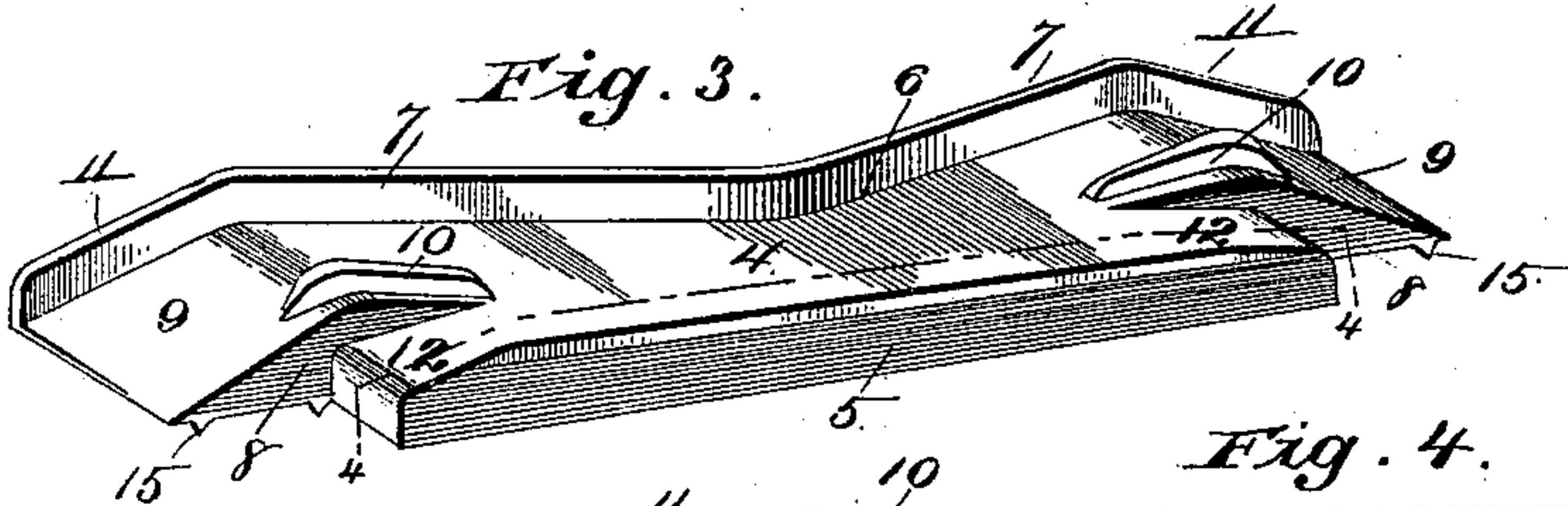


Fig. 6.

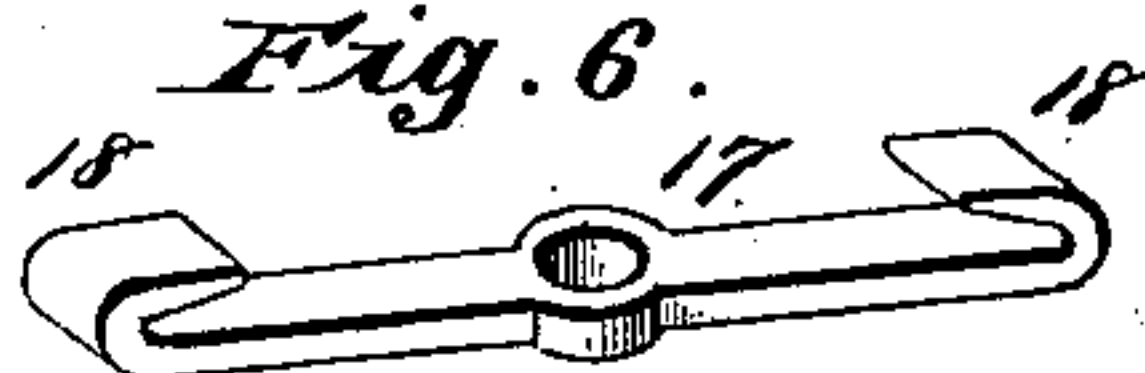


Fig. 4.

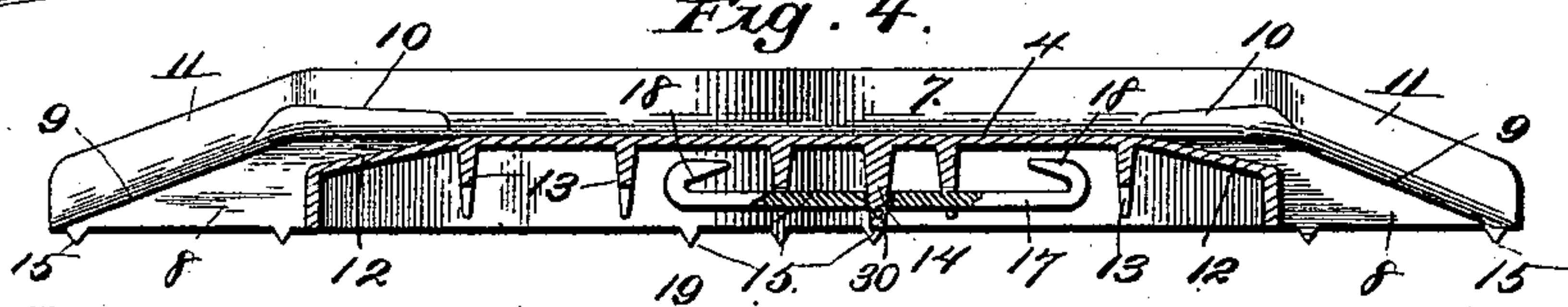
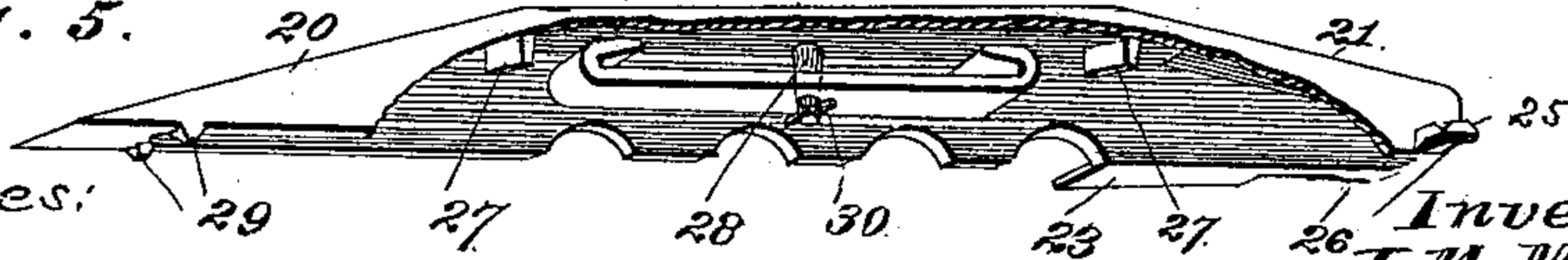


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CAR-REPLACER.

SPECIFICATION forming part of Letters Patent No. 533,077, dated January 29, 1895.

Application filed September 27, 1894. Serial No. 524,222. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. MORRIS, of Salt Lake City, Salt Lake county, and SUMNER J. HARKNESS, of Scofield, Carbon county, Utah Territory, have invented certain new and useful Improvements in Car-Replacers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to devices for replacing derailed cars upon the track, and our object is to produce a car replacer which may be quickly and easily secured in position or removed therefrom, and which will not interfere with the free passage of cars which are already upon the track; furthermore to produce a car-replacer which is simple, strong, durable, inexpensive of construction, and conveniently portable.

To the above purposes, the invention consists in certain novel features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1. is a plan view of a portion of a track and a portion of a car-truck, and showing secured in operative position relative to the track, a car-replacer embodying our invention. Fig. 2. is a vertical sectional view on an enlarged scale, taken on the line 2—2 of Fig. 1. Fig. 3. is a detail perspective view of one section of the car-replacer. Fig. 4. is a vertical section taken on the line 4—4 of Fig. 3. Fig. 5. is a perspective view broken away of the other section of the car-replacer, and Fig. 6. is a perspective view of one of the retainer-bars.

In the said drawings, 1 designates a number of cross-ties, and 2 the track-rails, which are secured thereon in the ordinary manner by spikes 3.

The inner section of the car-replacer is in the form of a casting having an inclined top surface 4, which terminates at the side adjacent to the corresponding rail in a straight margin, which bears against the head of the rail near its lower margin, and the inclined

portion 5, which rests upon the foot of the rail at its junction with the inner side of the web thereof. The said inclined surface 4, at its outer margin, diverges from its middle toward the opposite track-rail, as shown at 6, and projecting upwardly from said diverging margins and extending the full length of said inclined surface 4, is the vertical flange 7. Said casting projects beyond each end of the inner portion 5, so as to provide or form the vertical and longitudinally extending shoulders 8, the upper surfaces of which are inclined downwardly, as shown at 9, from their point of junction with the opposite ends of the inclined surface 4, and projecting upwardly from said inclined surface and extending parallel with and adjacent to the shoulders 8, are the elongated guide-ribs or lugs 10. Vertical flanges 11, forming a continuation of the flange 7, project from the outer margins of the inclined surfaces 9. The inclined surface 4, terminates at each end and inward of the shoulders 8, in downwardly extending or inclined surfaces 12. The said section is preferably cast hollow, as illustrated in Figs. 2 and 4, and is provided with the depending brace-ribs 13, and also at a convenient point with the depending pin or cylindrical lug 14, the object of which will be hereinafter explained, and said section is also provided at suitable points with the depending prongs or points 15, which are embedded, by the weight of the car passing over the section, firmly into the cross-ties, and thus prevent the accidental movement of said section after being arranged properly in position. The section is also provided at its inclined margin with the longitudinal shoulders or lugs 16, which converge toward the middle portion of the section.

When the car being replaced upon the track is moving in the direction indicated by the arrows *a*, Fig. 1, the retainer-bar 17, consisting of a straight body-portion and inwardly disposed hooks 18, is fitted against the under side of said section and the corresponding track-rail, and with the hooks 18 engaging the outer flange of said rail, and the shoulder or lug 16 which is adjacent to the approaching car, so that any pressure of the car toward moving the said section forward will

only tend to cause the said retainer-bar to clamp the section more firmly, as will be understood. When the car being replaced upon the track approaches from the opposite direction the retainer-bar is engaged with the track-rail and with the other shoulder or lug 16.

The outer section of the car-replacer comprises a casting having the horizontal surface 19 in a plane corresponding to the upper surface of the flange 7, and terminating at its opposite ends in the downwardly extending inclined surfaces 20 and 21, the surface 20 being disposed toward the approaching car. The sides of this section also diverge downwardly as shown at 22, to form a broad base or foundation without unnecessarily widening the top surface, and projecting from opposite sides of said section and near the front end of the same, are the shoulders or lugs 23 24, the side margins of which converge forwardly, as clearly shown in Fig. 1, and for a purpose which will be hereinafter explained, and projecting from opposite sides of the front end of said section, are the strengthening ears or lugs 25, which are recessed in their under side as shown at 26. This section is also in the form of a hollow casting, and is provided with brace or strengthening ribs 27, and is also provided with a depending pin or cylindrical projection 28, similar to the pin or projection 14 hereinbefore referred to, and depending from this section are the prongs or pins 29, similar to the prongs or points 15. In securing this section in position, it is placed preferably one tie to the rear of the inner section, and with the side margin of one of the shoulders, 23, in this instance fitting squarely against the outer side of the web of the corresponding track-rail. As this margin is at an angle to the longitudinal center of the section, the said section is thrown at an angle to the rail, and with its rear end at a greater distance therefrom than its front end, as clearly shown in Fig. 1. A retainer-bar similar to the retainer-bar 17, is fitted against the under side of said section and said rail, and the inwardly-disposed hooks at the end thereof engage the inner flange of the base of the rail and the shoulder or lug 24, and as the margin of said lug or shoulder converges forwardly toward the rail, it will be apparent that any inclination or tendency toward forward movement of said section will only the more tightly clamp the same in position. It will also be obvious that said retainer-bars in conjunction with the prongs or points embedded in the cross-ties will successfully resist any tendency toward the lateral movement or displacement of said sections, by reason of the flange of the rails coming in contact with and exerting their pressure against the forwardly inclined flange 7, and the forwardly inclined side 22, respectively.

The replacer being secured operatively in the position shown in Fig. 1, the car is moved

forward so that the flange of the wheel at the outer side of the track will enter the open end of the V-shaped space between the said rail and the outer section of the replacer. The continued movement of the car next causes the tread of said wheel to begin its upward travel on the inclined surface 20, the flange frictionally engaging the surface 22, which converging with the rail tends to force the wheel in a lateral direction toward the said rail. By the time this wheel has reached the upper end of the inclined surface 20, the companion wheel begins its upward travel on the inclined surface 9, at the corresponding end of the other or inner section of the replacer, and the flange of said wheel next comes in contact and is deflected to one side of its direct course by the flange 7. As the said wheels,—the first-mentioned rotating upon its tread and the last-mentioned upon its flange,—approach their respective track-rails, they roll naturally upon said rails, the converging flange 7 of the inner section and the outer section being assisted by the gravity of the car itself in the accomplishment of the purpose in view, this gravitating movement taking place because the tread of the outside wheel upon the horizontal surface 19 occupies a higher plane than the tread of the inner wheel, which is sufficiently high only to clear the upper surface of its corresponding track-rail.

The inclined surface 21, at the front end of the outer section, allows the flange of the elevated wheel to glide smoothly upon the rail without any severe jar or pounding, so that the rolling stock is not injured in the slightest degree. If the flange of the inner wheel should come in contact with the elongated lug or rib 10, at the approached end of the inner section the beveled or wedgelike formation of the same would deflect it toward the converging flange 7, as will be understood.

When in the position described and shown, the inner section of the replacer will not interfere with the free passage of the car upon the track, as the flange of each wheel will engage the inclined surface 12 at the approached end and be elevated so that its tread just clears the tread of the rail, and maintains that position until it begins the descent of the similar inclined surface 12, at the opposite end of said section, when the wheel is replaced gently upon the rail. After service, the sections of the replacer are removed from position, and the apertures in the retainer or clamp bars 17 are fitted upon the pins 14 and 28, of the inner and outer sections, respectively, and said retainer bars or clamps are secured in such position by the pins or keys 30 engaging apertures in the projecting ends of said pins.

The elongated lugs or ribs 10 are from the track-rail a distance less than the width of the flangeless drive-wheels (termed blind drivers) of a locomotive, so that in case a lo-

comotive is to be replaced upon the track the blind driver at the corresponding side will ride upon the said lug or rib, and thereby be elevated sufficiently to roll easily upon the upper surface of the rail. If these ribs were not provided it would be next to impossible to get the blind driver upon the rail, as will be understood.

From the above description, it will be apparent that we have produced a car replacer which is conveniently portable, is positive and reliable in operation, and is simple, strong, durable and inexpensive of construction.

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

1. In a car replacer, the combination with a section fitting against the inner side of one of the track-rails, and having its inner margin diverging inwardly from a point about midway its length, and having its upper surface from said margin inclined downwardly to the track-rail, a flange projecting vertically upward from the inclined margin, and elongated lugs or ribs projecting upwardly from the upper side of said section, of a companion section arranged at the outer side of the other track-rail, and having a horizontal upper surface terminating at its opposite ends in downwardly divergent surfaces, substantially as set forth.

2. A car replacer, comprising an inner section having a straight margin and a margin extending divergently outward from a point about midway its length, and formed in the shape of a hollow casting, and having its upper surface inclined downwardly toward the straight margin, downwardly divergent beveled surfaces 12, 12, at the opposite ends of said upper surface, downwardly divergent

surfaces 9, 9, also at the opposite ends of said upper surface and projecting beyond the ends of the surfaces 12, 12, so as to form vertical shoulders 8, and guide-ribs projecting vertically upward from the surfaces 4 and 9 and extending approximately parallel with the shoulders 8, substantially as set forth.

3. A car replacer, comprising a section in the form of a hollow casting, and a pin or lug depending from the bottom of said casting, and provided with an aperture near its lower end, in combination with a retainer bar or clamp, having an aperture engaging said pin or lug, and a removable pin engaging the aperture in said pin or lug and supporting said retainer bar or clamp in position, substantially as set forth.

4. A car replacer, comprising a section having a straight margin fitting against the side of a track-rail, and having its opposite side provided with an upwardly projecting flange which extends divergently from a point about midway the length of the section; having its upper surface inclining downwardly toward the rail and terminating in downwardly divergent inclined end-surfaces 9, and terminating also in inclined end-surfaces 12, prongs or points depending from said section, an inclined shoulder or lug projecting from said section, a retainer-bar or clamp hook fitting against the under side of the section and the rail and engaging said inclined shoulder and the foot of the rail, substantially as set forth.

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

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SUMNER J. HARKNESS.

Witnesses:

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