

1,227,585.

2 SHEETS—SHEET 1.

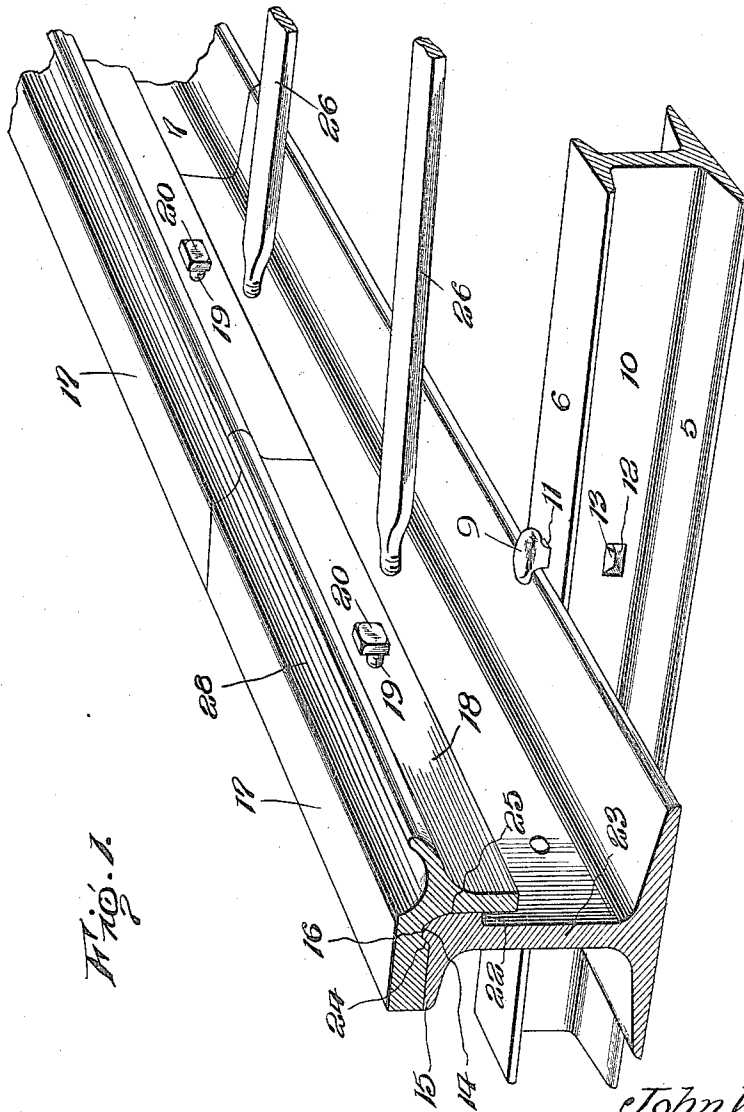


Fig. 1.

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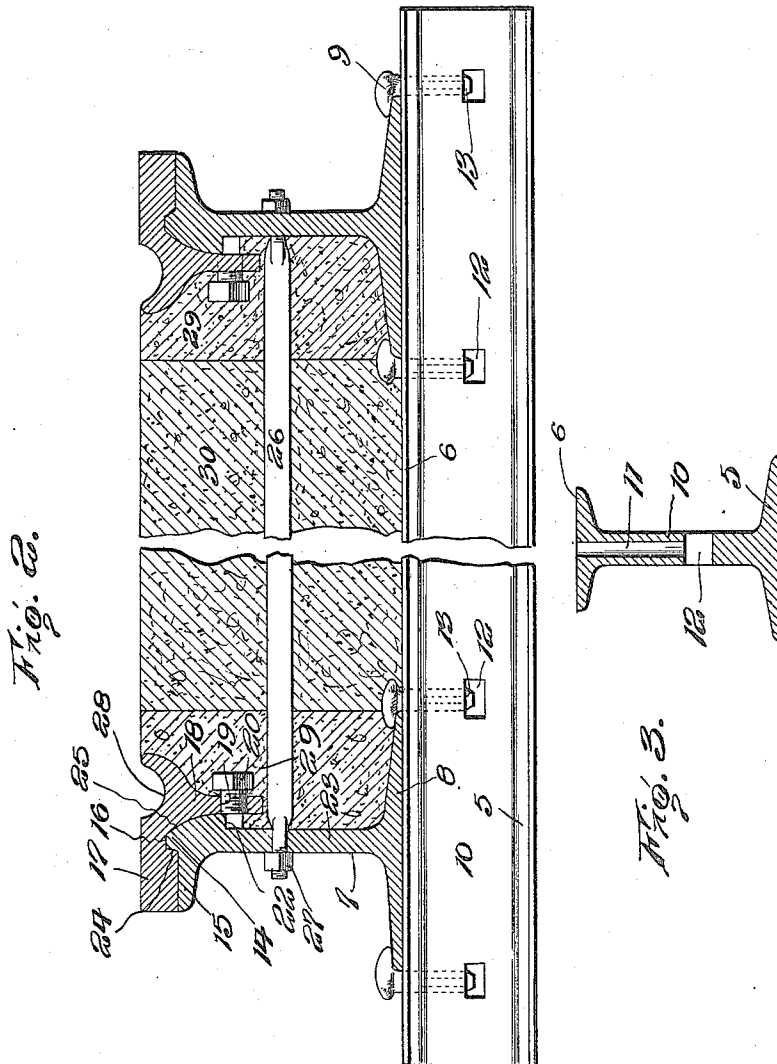
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J. W. COOPER, DEC'D.
C. H. COOPER, ADMINISTRATOR.
STREET RAILWAY SYSTEM.
APPLICATION FILED SEPT. 13, 1916.

1,227,585.

Patented May 29, 1917.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN W. COOPER, DECEASED, LATE OF BUFFALO, NEW YORK, BY CHARLES H. COOPER, ADMINISTRATOR, OF BUFFALO, NEW YORK, ASSIGNOR TO THE TRUMPFHELLER MANUFACTURING CORPORATION, OF BUFFALO, NEW YORK, A CORPORATION OF SOUTH DAKOTA.

STREET-RAILWAY SYSTEM.

1,227,585.

Specification of Letters Patent.

Patented May 29, 1917.

Application filed September 13, 1916. Serial No. 119,941.

To all whom it may concern:

Be it known that JOHN W. COOPER, deceased, late a citizen of the United States and resident of Buffalo, in the county of Erie and State of New York, did invent certain new and useful Improvements in Street-Railway Systems, of which the following is a specification.

This invention relates to railways and more particularly to a novel form of rail especially designed for use in the construction of street railways.

The object of the invention is to provide a railway rail having a detachable head, whereby the tread surface of the rail may be renewed when worn or otherwise damaged by the constant passage of rolling stock thereover without the necessity of detaching the rail from the cross tie or replacing the worn rail by a new one.

A further object is to provide a railway rail including a longitudinal sill or stringer having a retaining rib formed in the top thereof and adapted to enter a seating groove in the removable head or tread surface, thus to center the head on the stringer and effectually prevent lateral displacement thereof.

A further object is to form the head with a depending flange having spaced openings for the reception of bolts or similar fastening devices, which latter engage a shoulder on the adjacent stringer and lock the head against vertical movement.

A still further object of the invention is generally to improve this class of devices, so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claim.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which;

Figure 1 is a perspective view, partly in section of a portion of a street railway constructed in accordance with the invention;

Fig. 2 is a transverse sectional view;

Fig. 3 is a detail vertical sectional view of one of the cross ties.

In constructing a street railway in accordance with this system, there are provided a plurality of spaced cross ties 5, preferably in the form of I-beams, the latter being anchored or otherwise embedded in the road bed, as shown.

Secured to the upper surface 6 of the I-beams are horizontally disposed sills or stringers 7, each provided with a flat base 8 for contact with the bearing surface 6 of the adjacent cross tie and to which it is rigidly secured by spikes 9.

The flanges 6 are pierced by vertical openings 11 adapted to receive the shanks of the spikes 9, there being transverse openings 12 intersecting the openings 11 for the reception of the ends of the spikes, the latter being retained in engagement with the base of the stringers 7 by upsetting the metal within the openings 12 to produce oppositely disposed stop shoulders 13.

The upper edge of each stringer 7 is provided with a longitudinally disposed retaining rib 14 defining a laterally extending supporting flange 15, said rib being adapted to enter a seating groove 16 formed in the adjacent face of a detachable head or tread piece, indicated at 17. The inner edge of each head or tread piece 17 is provided with a depending flange 18 having a plurality of spaced openings 19 formed therein, the walls of which are threaded for engagement with correspondingly threaded bolts 20. The inner ends of the bolts 20 are devoid of threads and bear against a shoulder 22 extending laterally from the vertical web 23 of the adjacent sill or stringer.

Thus it will be seen that the rib 14, by engagement with the seating groove 16, serves to center the head or tread piece 17 on the adjacent stringer and prevent lateral displacement thereof, while the bolts 20, by engagement with the shoulders 22, serve to prevent vertical movement of said head or tread piece.

It will here be noted that the opposite side faces of the rib 14 are inclined or beveled at 24 so as to permit the head or tread piece 17 to be readily placed in position on the adjacent stringer without danger of mutilating said rib. It will also be noted that the inner face of each stringer between the rib 14 and shoulder 22 is curved inwardly and downwardly, as indicated at 25, for engage-

ment with a correspondingly curved surface on the inner face of the adjacent flange 18.

The webs 23 of the sills or stringers 7 are connected by transverse tie rods or braces 26, the opposite ends of which are threaded and extend through suitable openings in said webs for engagement with nuts or similar fastening devices 27, thus to assist in maintaining the stringers in proper parallel relation and reduce liability of spreading of said stringers to a minimum.

The heads or tread pieces 17 are made in predetermined lengths and are positioned on the stringers 7 with the abutting ends of the heads 17 arranged to break joint with the abutting ends of the adjacent stringers 7 so that a strong, rigid structure is produced which will effectually withstand any strain or stress to which it is subjected incident to the passage of cars or other railway rolling stock thereover.

The outer longitudinal edges of the heads 17 are preferably disposed in alinement with the outer edges of the adjacent flanges 15 so as to present a smooth, unobstructed surface, while the inner faces of the heads 17 are provided with guiding grooves 28 adapted to receive the flanges of the car wheels.

When the rails are used in the construction of street railways, paving blocks or stones 29 will be laid next to the inner faces of the stringers and the space between said blocks filled with concrete or cement 30. If desired, however, the space between the stringers may be filled entirely with cement or blocks or both, without departing from the spirit of the invention.

Thus it will be seen that when the tread piece or head of a rail becomes worn or damaged from the constant passage of roll-

ing stock thereover, said head may be readily detached by removing the adjacent paving blocks or stones 29 and unscrewing the bolts 20 so as to permit a new head or tread piece to be positioned on the stringers without the necessity of detaching said stringers from the adjacent cross ties or without the necessity of replacing the worn rail by an entire new rail.

It will here be noted that when the track is used for overhead or under ground electric roads, the tread pieces, by breaking joint with the stringers, form a continuous electric conductor, thus dispensing with the usual bonding wires and preventing the current from jumping or being short circuited through gas or sewer pipes and damaging the latter.

Having thus described the invention, what is claimed as new is:

A railway rail including a stringer having its upper portion provided with a longitudinal retaining rib defining a laterally extending supporting flange, the side walls of the rib being inclined in opposite directions and the inner face of the stringer curved inwardly and downwardly to form a stop shoulder, a head resting on the supporting flange and provided with a correspondingly shaped seating groove for the reception of the rib, the inner edge of said head being provided with a depending flange having a curved surface for contact with the curved surface of the stringer, and fastening devices extending through the flange of the head and bearing against said shoulder.

In testimony whereof I affix my signature.

CHARLES H. COOPER, [L.S.]

Adm'r. John W. Cooper, deceased.