

F. H. WELLENDORF.

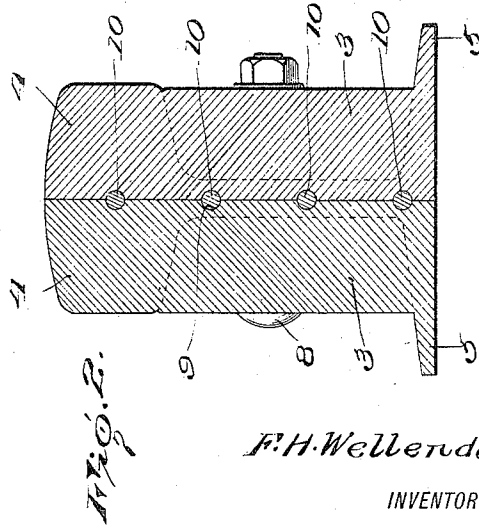
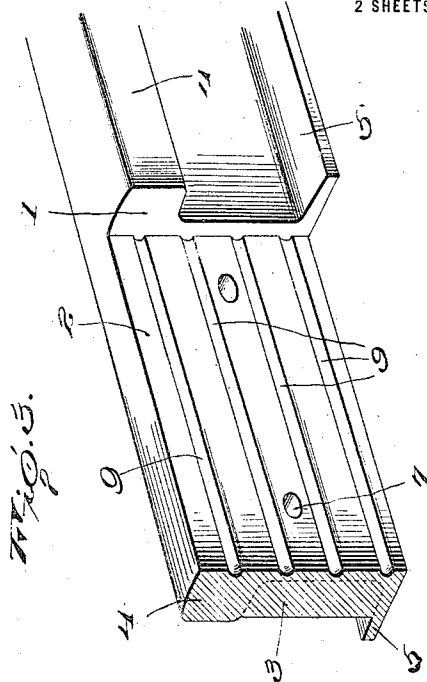
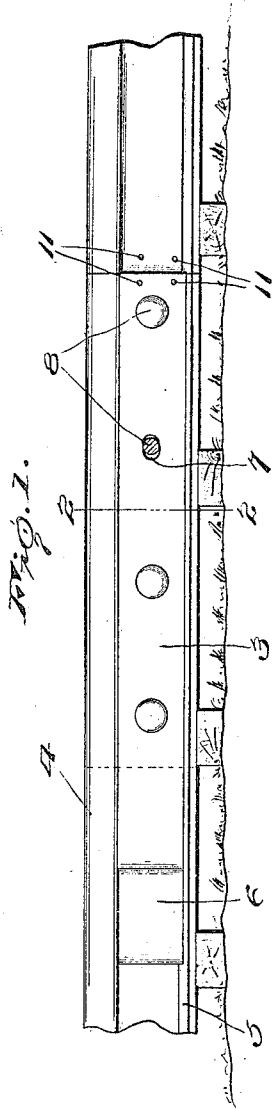
RAIL JOINT.

APPLICATION FILED MAY 17, 1917.

1,237,982.

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.



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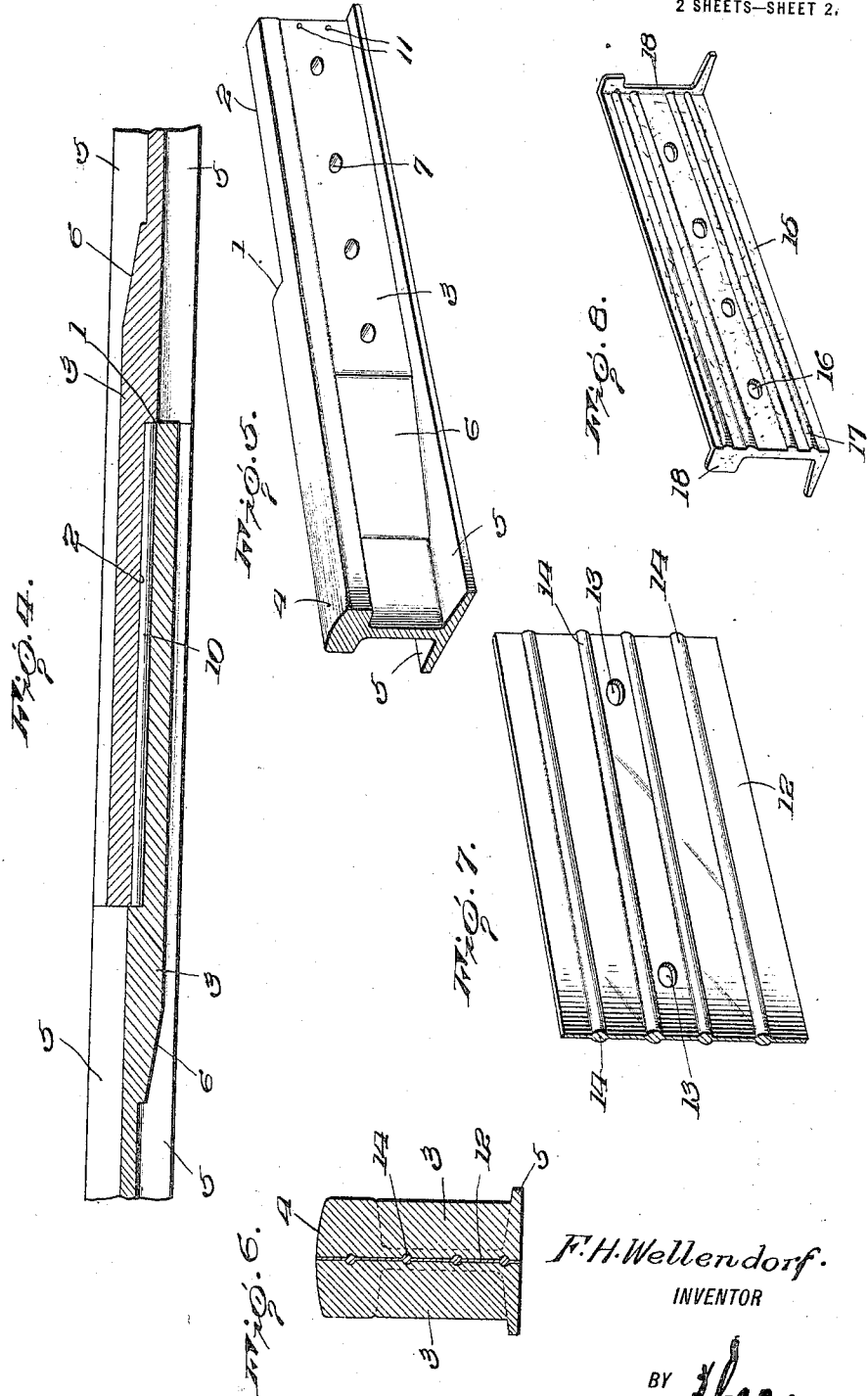
INVENTOR

BY *H. A. Wacey*
ATTORNEYS

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F. H. Wellendorf.
INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK H. WELLENDORE, OF MURDO, SOUTH DAKOTA, ASSIGNOR OF ONE-HALF TO
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RAIL-JOINT.

1,237,982.

Specification of Letters Patent.

Patented Aug. 21, 1917.

Application filed May 17, 1917. Serial No. 169,283.

To all whom it may concern:

Be it known that I, FRANK H. WELLENDORE, a citizen of the United States, residing at Murdo, in the county of Jones and State of South Dakota, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to rail joints and has for its object the provision of a simple and inexpensive construction whereby the meeting ends of the rails of a railroad track may be effectually connected so that the relative movement thereof will be prevented and the rails easily and effectually bonded or insulated.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a rail joint embodying my improvements;

Fig. 2 is a cross section on the line 2—2 of Fig. 1;

Fig. 3 is a detail perspective view of one end of one of the rails;

Fig. 4 is a horizontal section;

Fig. 5 is a view similar to Fig. 3 but looking at the opposite side of the rail;

Fig. 6 is a transverse section showing a plate inserted between the rails at the joint;

Figs. 7 and 8 are detail perspective views of a bonding plate and an insulating plate respectively.

In carrying out my invention, I cut away the end of the rail longitudinally so as to provide a recess defined by a transverse wall 1 and a longitudinal wall 2, the said longitudinal wall being located in the central longitudinal plane of the rail. Upon the outer side of the reduced extremity of the rail, I provide a reinforcement 3 which will fill the space between the head or tread member 4 of the rail and the base flange 5 of the same. The end of this reinforcement 3 will extend beyond the plane of the transverse wall 1 and will be gradually tapered and merge into the web of the rail, as shown at 6, and this reinforcement should be at least equal in weight and volume to the weight of the metal removed when cutting away the rail. The strength of the rail will thus be maintained and the necessity of fish plates at the joint overcome. Transverse openings 7

are formed through the reinforced portion of the rail and these openings will be elongated somewhat horizontally so that the connecting bolts 8 will not prevent contraction and expansion of the rails under weather influences. It will be understood, of course, that the reinforcements 3 may be formed integral with the rail when it is rolled or may be added afterward and welded to the rail.

Within the longitudinal wall 2, I provide the horizontal recesses or grooves 9 and these grooves are adapted to receive keys or locking pins 10. The said keys or locking pins may be of any cross sectional contour and will be of such dimension that one-half of each key will project from the face of the wall 2 to engage mating grooves or recesses in the meeting rail. These keys may be formed integral with the reduced portion of one rail or welded to the same, as will be readily understood.

It will be readily understood that the reduced portions of the rails are at opposite sides of the same at opposite ends thereof so that when the ends of the rails are brought together, the longitudinally extending portions will overlap and the joint will, consequently, extend through its greater portion longitudinally of the rail, and the travel of a car wheel from one rail to the next rail will be easy and without liability to cause excessive wear upon the rail by reason of jarring and pounding which now ordinarily is incidental to such travel. The reinforced portions of the rails will, of course, be disposed at opposite sides of the joint so that the rails will be very materially strengthened at their ends and vertical displacement of the rails relative to each other will be overcome by reason of the keys 10 engaging the mating grooves in the adjacent faces of the rails. Openings or sockets 11 may be provided in the webs of the rails immediately adjacent the transverse wall 1 and in the extremities of the rails as shown in Figs. 1 and 5, to receive bonding wires when the rails are to be used in electric railway systems, this arrangement overcoming the necessity for the long bonding wires now generally employed.

In Fig. 7 I illustrate a bonding plate 12

of metal having such dimensions that it will fit between the opposed walls 2 and completely cover the same. This plate will be formed with bolt-holes 13 to register with the bolt holes in the rails and will also have the longitudinal keys or ribs 14 to engage the grooves 9. A very effectual bond will thus be provided and relative vertical movement of the rails prevented.

10 Fig. 8 shows an insulating plate which will be inserted between the rails when a block signal system is employed. This plate 15 will be of fiber or other non-conducting material and will be provided with bolt-holes 16 and keys or ribs 17 as will be readily understood. At its ends, the plate is constructed with wings 18 extending in opposite directions and having the same contour as the rails so as to fit between opposed transverse walls. The rails will thus be completely insulated from each other.

20 My improved rail joint is exceedingly simple in the construction and arrangement of its parts and may be applied to a track at a very low cost. The rails may be very quickly connected or secured together and when once connected will be effectually prevented from coming apart. The track structure is very materially strengthened over the structures now generally employed while

the fish plates now generally used are dispensed with.

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

1. In a rail joint, the combination of rails having their meeting ends reduced longitudinally, a plate fitted between the opposed faces of said reduced portions and coextensive therewith, and means on said plate to prevent vertical displacement.

2. In a rail joint, the combination of rails having their meeting ends reduced longitudinally and having longitudinal grooves in the inner opposed faces of the reduced portions, a plate fitted between the opposed faces of said reduced portions, and ribs on said plate engaging said grooves.

3. In a rail joint, the combination of rails having their meeting ends reduced longitudinally, a plate fitted between the opposed faces of said reduced portions and coextensive therewith and having oppositely extending wings at its ends, said wings having the cross-sectional contour of the rails, and means on said plate to prevent vertical displacement.

In testimony whereof I affix my signature.

FRANK H. WELLENDORF. [L. S.]