No. 775,954. PATENTED NOV. 29, 1904.

D. O. WARD.

RAIL JOINT.

APPLICATION FILED OCT. 15, 1900.

NO MODEL.

Fig. 1.

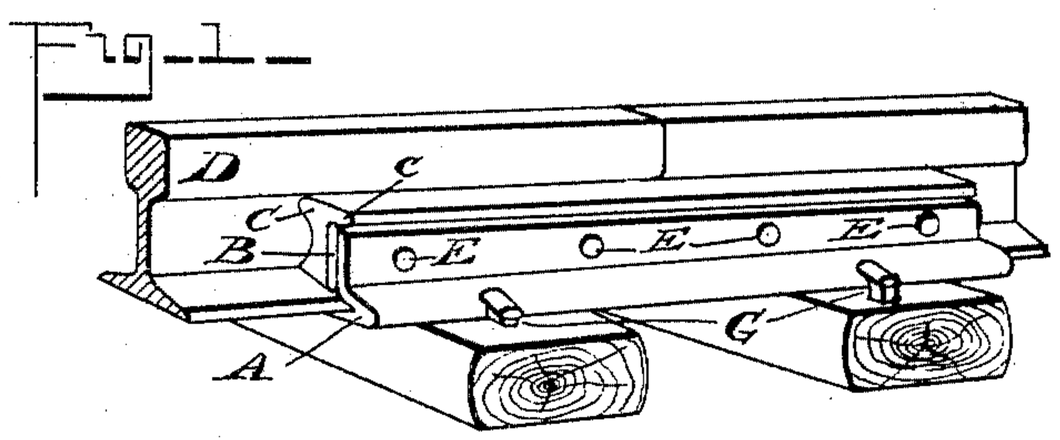


Fig. 2.

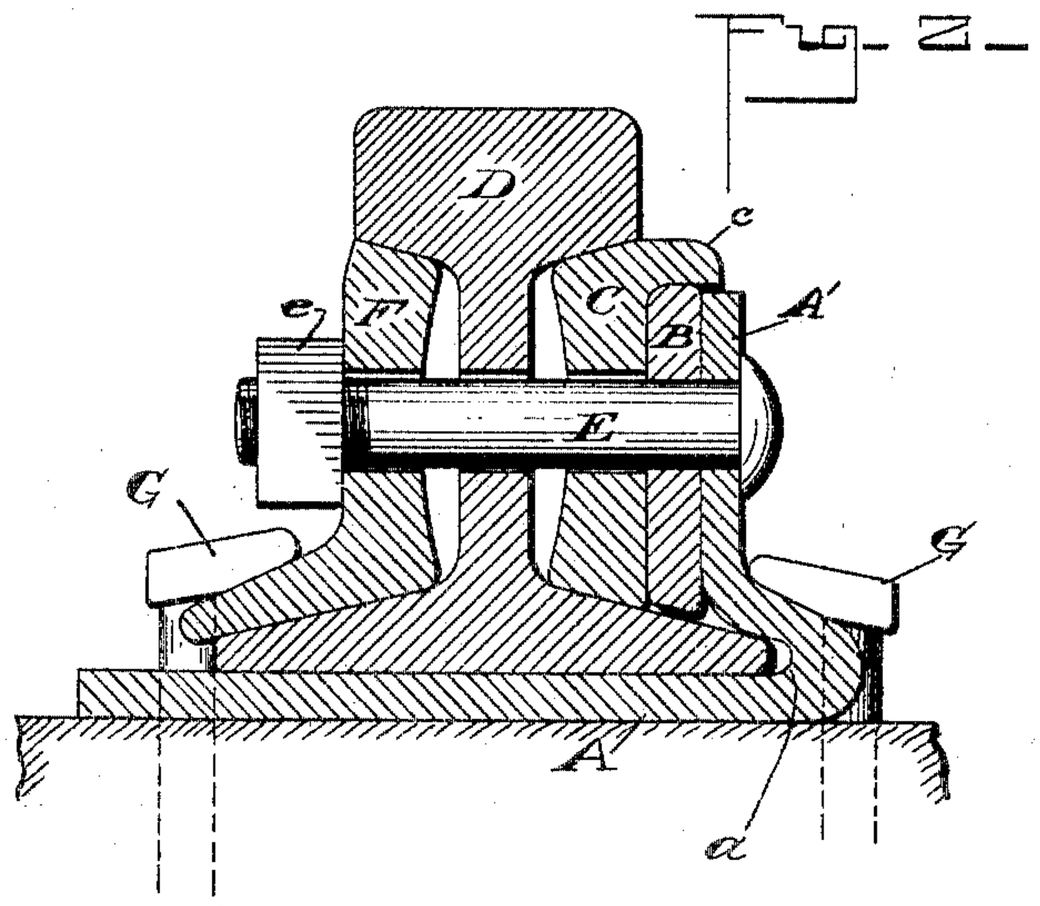


Fig. 3.

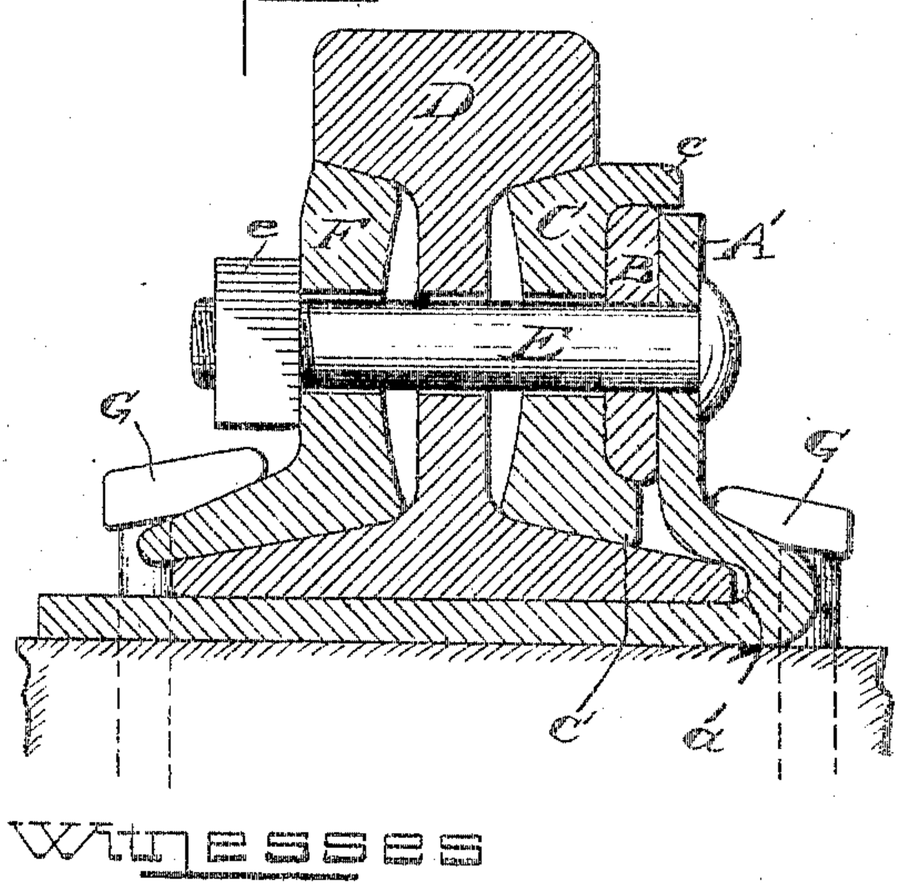
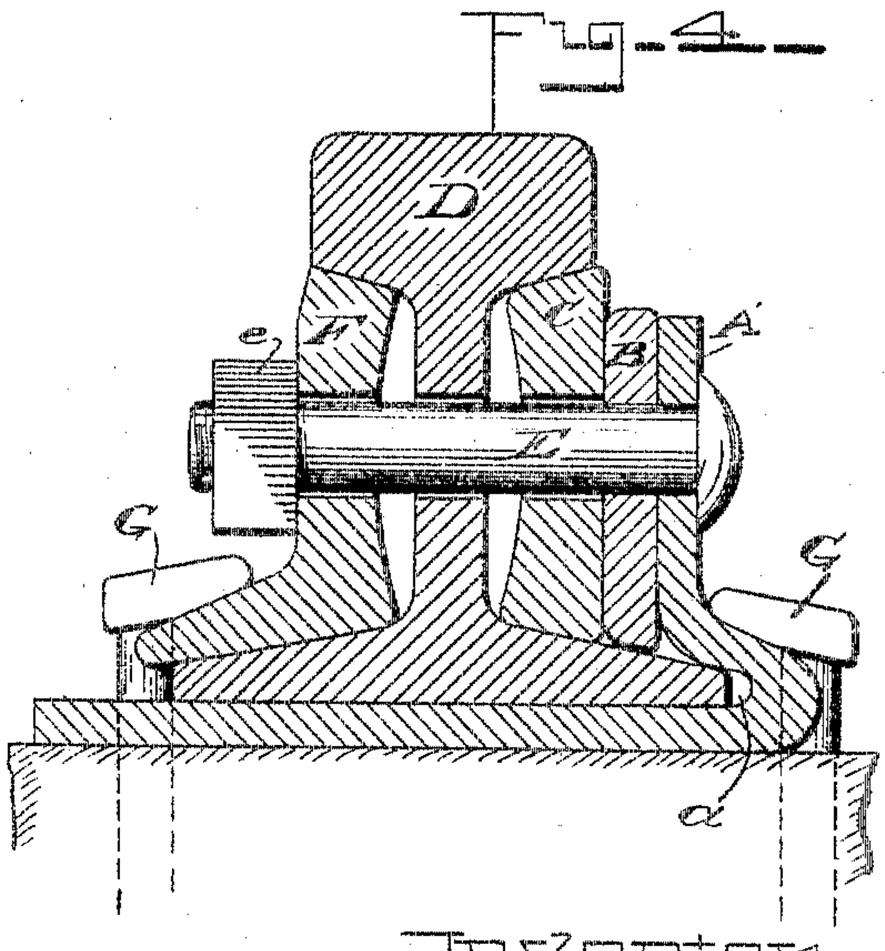


Fig. 4.



Witnesses

H. C. Gaither,

Robert Hair

Inventor

Daniel O. Ward

By John A. Nicol

Atty.

No. 775,954. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

DANIEL O. WARD, OF OAK PARK, ILLINOIS, ASSIGNOR TO THE WEBER RAILWAY JOINT MANUFACTURING COMPANY, A CORPORATION OF WEST VIRGINIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 775,954, dated November 29, 1904.

Application filed October 15, 1900. Serial No. 33,090. (No model.)

To all whom it may concern:

Be it known that I, DANIEL O. WARD, a citizen of the United States of America, residing at Oak Park, Cook county, Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a description.

Referring to the accompanying drawings, wherein like reference-letters indicate like or corresponding parts, Figure 1 is a perspective view of my improved rail-joint assembled and in position. Fig. 2 is a transverse section, and Figs. 3 and 4 are modified forms.

The object of my invention is to make a rail-joint for railway-rails in which the several parts may be readily adjusted from time to time to compensate for wear of the metal parts or wear and shrinkage of the filler, so as to constantly maintain tight bearings of all the parts of the joint.

To this end my invention consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, A is a sole-plate or shoe adapted to pass transversely across beneath the base of the rail and provided with an upright yielding leg A′, adapted to bear against a filler B when in use. The juncture of the sole-plate with the upright leg does not form a right angle one with the other, but forms a bend or curve, as at *a*, of such size and contour as to make a loose fit with the base of the rail.

C is a fish-plate or angle-bar of any preferred form adapted to fit the fishing-space in the rail D in the usual manner, and B is a compressible filler, preferably of wood or its equivalent, located between the fish-plate C and the upright leg A′ when the parts are assembled.

E E are bolts, provided with suitable nuts *e*, by means of which the parts may be secured together and the leg A′ brought close onto the filler. A fish-plate F of any preferred form may be employed upon the opposite side of the rail, as shown. The sole-plate and rails may be secured to the underlying tie or structure by means of spikes G or equivalent means.

By the use of the term "loose fit" of the bend *a* with the base of the rail I wish to be understood as meaning a fit of sufficient looseness for the purposes of adjustment to compensate for wear in the metal parts and wear and shrinkage in the filler. The outer curve *a* of the sole-plate also affords favorable means for spiking the parts to the outside of the joint, to the ties, or underlying structure, inasmuch as the heads of the spikes are located outside of all the parts and so may be readily driven with a hammer or sledge. The mode of operation is obvious.

In the preferred form a longitudinal channel is formed for the reception of the filler B. This may be provided by constructing the fish-plate with a horizontal extension *c* near its upper edge, which in conjunction with the base of the rail will form such a channel as shown in Fig. 2, and if preferred the fish-plate may be also provided with an extension *c′*, preferably shorter than the extension *c*, and located at its lower edge as shown in Fig. 3, the two extensions thus forming a channel for the filler. In practice I find it preferable to construct the fish-plate C with an extension upon its upper edge alone and construct the upright leg A′ of a length that will permit it to freely pass beneath the extension *c* in adjusting the parts, as shown in Fig. 2. In such form the base of the rail coacts with the horizontal extension *c* to form the longitudinal channel for the filler, which is practically covered by the extension *c*, excluding snow and rain. It will therefore be understood that where in the claims I refer to a longitudinal channel for the filler I wish to be understood as meaning a channel formed either in the fish-plate alone or by the fish-plate and the base of the rail coacting to form such a channel.

I am aware of the patent issued to William E. Henry, July 6, 1869, numbered 93,310, and do not claim the improvement therein set forth.

What I claim as new, and desire to secure by Letters Patent, is—

1. A railway fish-plate comprising an angle-bar provided with a portion adapted to fit the fishing-space of the rail, and a portion ex-

tending from one of its edges at substantially right angle thereto to form with the base of the rail a longitudinal channel having a laterally open face, substantially as described.

2. A railway fish-plate comprising an angle-bar having its upper and lower edges inclined to fit the inclined under surface of the head and the inclined surface of the upper face of the base of the rail creating a wedging contact and having a portion extending from one of its edges at substantially right angles thereto to form with the base of the rail a longitudinal channel having a laterally open face, substantially as described.

3. In a rail-joint, a plate A provided with an upright leg A′ and a return-bend *a* at the juncture of the two in combination with the fish-plate C and a filler B whereby the filler is positioned directly between the fish-plate and the upright leg, substantially as described.

4. In a rail-joint a sole-plate A provided with an upright leg A′ and a bend *a* adapted to embrace a part of the base of the rail, in combination with a fish-plate C provided on one or both of its edges with horizontal extensions to form a laterally open-sided channel, and a filler B whereby the filler is positioned within said longitudinal channel, and faced by the upright leg, substantially as described.

5. In a rail-joint, a sole-plate A, provided with an upright leg A′ and a bend *a* to embrace a part of the base of the rail, in combination with a fish-plate C, provided with an extension *c* upon its upper edge arranged to extend outwardly and terminating above the horizontal plane of the top of the upright leg A′, substantially as set forth.

6. A chair or sole plate having a base portion extending below the rail and bent upward and backward to loosely embrace the base of the rail and thence upward to form a spring or yielding leg, in combination with a fish-plate comprising an angle-bar provided with a vertical section C adapted to fit the fishing-space of the rail and a horizontal section *c* whereby when the parts are in position a compressible filler may be located in a longitudinal channel faced by and in contact with the yielding leg of the sole-plate, substantially as described.

7. The combination of an angle-bar or fish-plate adapted to be applied to the inner side of railroad-rails, a channel-bar adapted to be applied to the outer side of railroad-rails and provided with a longitudinal channel on its outer surface, a sole-plate or shoe having an upright leg and being provided with a curve at its juncture with the edge of the flange or base of the rail, as at *a*, of such size and extent as to form a loose fit between the curve and the outer and upper surface of the edge of the flange or base of the rail, a compressible filler arranged in the channel-bar against which the upright leg bears, and means for attaching the parts together and tightening the bearings from time to time as desired, substantially as described.

8. The combination of railway-rails, an angle-bar or fish-plate on the inner side of the rails, a channel-bar provided with a longitudinal channel on its outer surface, a sole-plate or shoe having an upright leg and provided with a curve at its juncture with the edge of the flange or base of the rail, as at *a* and terminating below the upper horizontal member of the channel-bar, a compressible filler arranged in the channel of the channel-bar; the said fish-plate or angle-bar, the channel-bar and filler and sole-plate all to be of sufficient length to lap the meeting ends of the rails when the latter are in track, and means for attaching or fastening the parts together and tightening the bearings from time to time as desired, substantially as described.

9. The combination of railway-rails, an angle-bar or fish-plate on the inner side of the rails lapping their juncture, a channel-bar provided with a longitudinal channel on its outer surface, a sole-plate or shoe having an upright leg and being provided with a curve at its juncture with the edge of the flange or base of the rail as at *a* of such size and extent as to form a loose fit between the curve and the outer and upper surface of the edge of the flange or base of the rail and terminating below the upper horizontal member of the channel, a compressible filler arranged in the channel-bar against which the upright leg bears, and means for attaching the parts together and tightening the bearings from time to time as desired, substantially as described.

10. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair having an upright constructed to constitute a spring, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar arranged upon the other side of the rail-sections, and having outwardly-extending portions at its upper and lower edges, and bolts for securing the parts together.

11. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar arranged upon the other side of the rail-sections and having outwardly-extending portions at its upper and lower edges so constructed as to converge at their extremities, and bolts for securing the parts together.

In testimony whereof I sign this specification in presence of two witnesses.

DANIEL O. WARD.

Witnesses:

JOHN H. BERKSTRESSER,

JOHN W. HILL.