

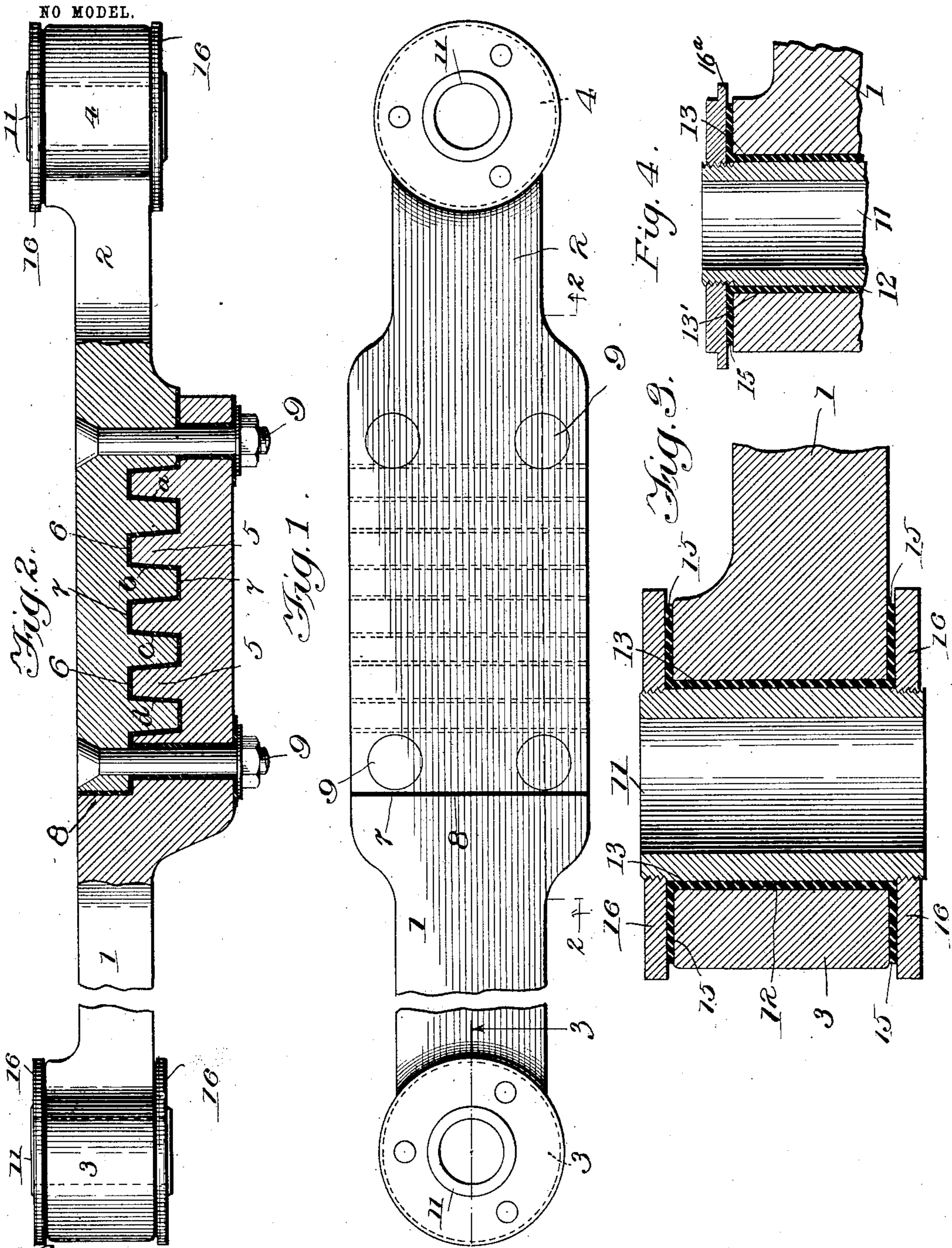
No. 743,925.

PATENTED NOV. 10, 1903.

H. E. PROCUNIER.

INSULATING DRAW BAR OR DRAFT LINK FOR RAILWAY TRAINS.

APPLICATION FILED SEPT. 22, 1902.



Witnesses:

H. S. Gaither
Fred G. Fischer

Inventor:
Henry E. Procunier
by Burton Burton
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY E. PROCUNIER, OF OAKPARK, ILLINOIS.

INSULATING DRAW-BAR OR DRAFT-LINK FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 743,925, dated November 10, 1903.

Application filed September 22, 1902. Serial No. 124,861. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. PROCUNIER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Insulating Draw - Bars or Draft-Links for Railway-Trains, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide improved means for connecting two members of a railway-train, specifically and more particularly the locomotive and the tender, by means for communicating the draft from one member to the other, as a draw-bar or draft-link, which shall at the same time effect electrical insulation of the two train members.

In the drawings, Figure 1 is a plan view of my improved insulating draw-bar or draft-link. Fig. 2 is a longitudinal section at the line 2 2 on Fig. 1. Fig. 3 is an enlarged detail section at the line 3 3 on Fig. 1. Fig. 4 is a view similar to Fig. 3, showing a modified construction.

My improved draw-bar or draft-link comprises two members 1 and 2, which are joined together at one end of each in a manner hereinafter described and have at their remote end the eyes 3 and 4, respectively, said remote ends being adapted to enter link-sockets of the draw-heads of one of the train members to be connected by the link and to receive a link-pin. For the purpose of effecting by means of this draft-link or draw-bar electrical insulation between the two train members connected by it I construct the two members of the draft-link at their ends, which are joined with interlocking tongues and grooves 5 and 6, respectively, the grooves being wider than the thickness of the tongue, and thereby adapted to contain around the tongue insulating material 7, in which the tongues are embedded when the two members of the draft-link are united by the interlocking of their tongues and grooves. The insulating material 7 extends also over the ends of the tongues and along the remainder of the surfaces of the two parts and between the end of the member 2 and the shoulder 8 of the other member, which is preferably formed, as illustrated, with the end portion which has

the interlocking tongues and grooves offset downward from the general plane of the remainder of said member, as is desirable for convenience in connecting the draft-link with the tender in order, to make the upper surface of the link substantially level throughout its entire length, except as to the bosses at the end in which the eyes 3 and 4 are formed. The two members are secured together with their tongues and grooves interlocked and separated by insulating material, as described, by means of bolts 9, of which four may be employed in positions shown in Fig. 1, said bolts being insulated from one of the members, preferably the lower member, through which they take from above downward, and being secured by nuts at the lower end, as seen in Fig. 2. By means of the interlocked structure described there are provided a multiplicity of layers, preferably quite thin, of insulating material 7, among which the stress of the draft is distributed. The area of the surfaces of insulating material in contact with the metal at both sides is thus rendered very large relatively to the amount of the insulating material, and the resistance which the adhesion or friction between the insulating material and said metal surfaces opposes to any tendency of the insulating material to be squeezed out by the pressure is made very large, and the danger of the insulation being thus forced out of position by the stress of draft is reduced proportionately, and it will be seen that the four separate layers *a*, *b*, *c*, and *d* of insulating material, for example, which will be subject to the stress of draft, present resistance to crushing which is many times greater than would be presented by the entire mass of insulating material if it were assembled on one layer having the sum of the thickness of the four. Preferably for the purpose of taking up any play which might arise by compression of insulating material, which will be very slight when the layers are thin, as described, I make the tongues and grooves with a very slight taper, so that by tightening the bolts 9, forcing the tongues a little deeper into the grooves, the loss due to shrinkage or compression of the insulating material may be compensated.

In addition to the means for insulating the

two members of the draft-link or draw-bar between its ends it may be desirable to afford insulation for each member at its connection with the draw-head of the locomotive or tender, and for this purpose I make the eyes 3 and 4 at the ends of the members in the manner shown specifically in Fig. 3, comprising a sleeve or bushing 11, which extends through the opening 12 in the end of the draft-link, being in diameter less than the opening, so that between its outer surface and the inner surface of said opening insulating material 13 may be lodged. Both ends of the bushing or sleeve 12 are threaded exteriorly, and the said threaded ends project above and below the draft-link, and around them, on the upper and lower surfaces, respectively, of the draft-link, are lodged insulating-washers 15, outside of which the retaining-heads, which may be in the form of nuts 16, are applied and screwed onto the ends of the bushing, thus binding the insulating-washers securely in place between the nuts and the draft-link. The nuts 16 or the flanges or washers 16^a at the under side of said nuts (see Fig. 4) are of such diameter as to extend beyond the body of the link at the end and sides, and so prevent contact of said body with the inner surface of the link-socket of the draw-head, into which the eye is thrust to receive the link-pin, which enters through the central aperture of the bushing. Thus every part of the draft-link which is in metallic connection by contact, through the pin or otherwise, with the draw-head is separated by the insulation from the remainder of the draft-link, which extends from the eye toward the other end. When both eyes are formed as described and the two members of the link are connected by the interlocking tongues and grooves described, there are three independent insulations interposed by means of such link between the train members, and the chances of the passage of electric current through the draft-link are thus rendered very slight.

I claim—

1. A draft-link or draw-bar for railway-trains comprising two metal members adapted for connection with two parts of the train respectively, such members having each a projection extending across the line of draft between the train connections of said members respectively, such projection on each member being between the corresponding projection on the other member and the train connection of such other member; suitable insulation interposed between said projections and extending across the line of draft, and insulated means for retaining said mem-

bers against relative displacement transversely to the line of draft.

2. A draw-bar or draft-link for trains comprising two members which are lapped on each other along a portion toward one end of each, their lapping faces being provided transversely with interlocking tongues and grooves; insulating material interposed in the grooves for embedding the tongues, and means binding the two members together with their tongues and grooves thus interlocked; said means being insulated from one of the members.

3. A draw-bar or draft-link for trains comprising two members having each a multiplicity of interlocked transverse tongues and grooves; the grooves being wider than the thickness of the tongues and the excess of space therein being occupied by insulating material, and the tongues being slightly tapered, diminishing in thickness from root to extremity.

4. A draw-bar or draft-link for trains having an eye to receive the link-pin, said eye having an insulated bushing projecting above and below the surfaces of the link; insulating-washers around the protruding ends of the bushing on the upper and lower surfaces of the link and retaining-heads secured on said protruding ends outside the bushing and extending horizontally so as to project beyond the link at the end and sides; whereby the body of the link at the end having the eye is held out of contact with the surfaces of the link-socket and draw-head.

5. A draw-bar or draft-link for trains comprising two members having each a projection extending across the line of draft between the train connections of said members respectively, such projection on each member being between the corresponding projection of the other member and the train connection of such other member; insulation interposed between said projections and insulated means for retaining said members against relative displacement transversely to the line of draft, said members having at their remote ends respectively eyes for receiving the link-pins provided with insulated bushings.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 9th day of September, A. D. 1902.

HENRY E. PROCUNIER.

In presence of—

CHAS. S. BURTON,
FRED. G. FISCHER.