No. 777,707. PATENTED DEC. 20, 1904.

G. A. WEBER & P. HOLBROOK.

INSULATED JOINT.

APPLICATION FILED NOV. 13, 1903.

NO MODEL. 6 SHEETS—SHEET 1.

Fig. 1.

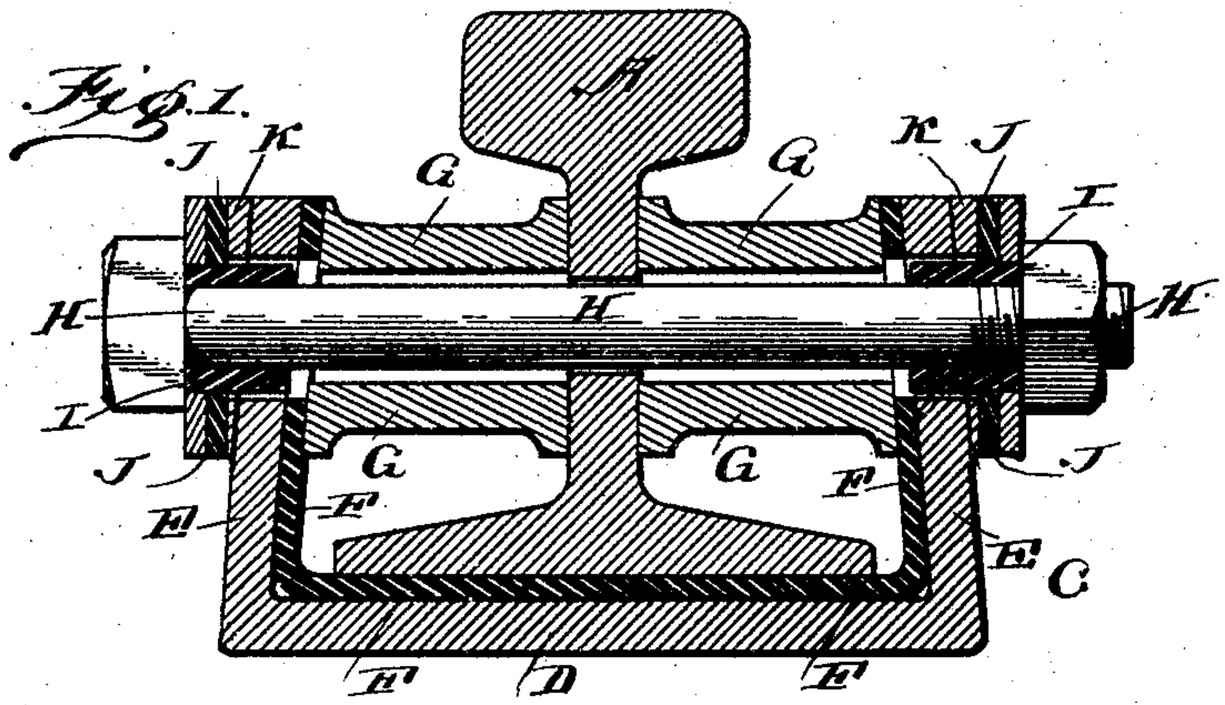
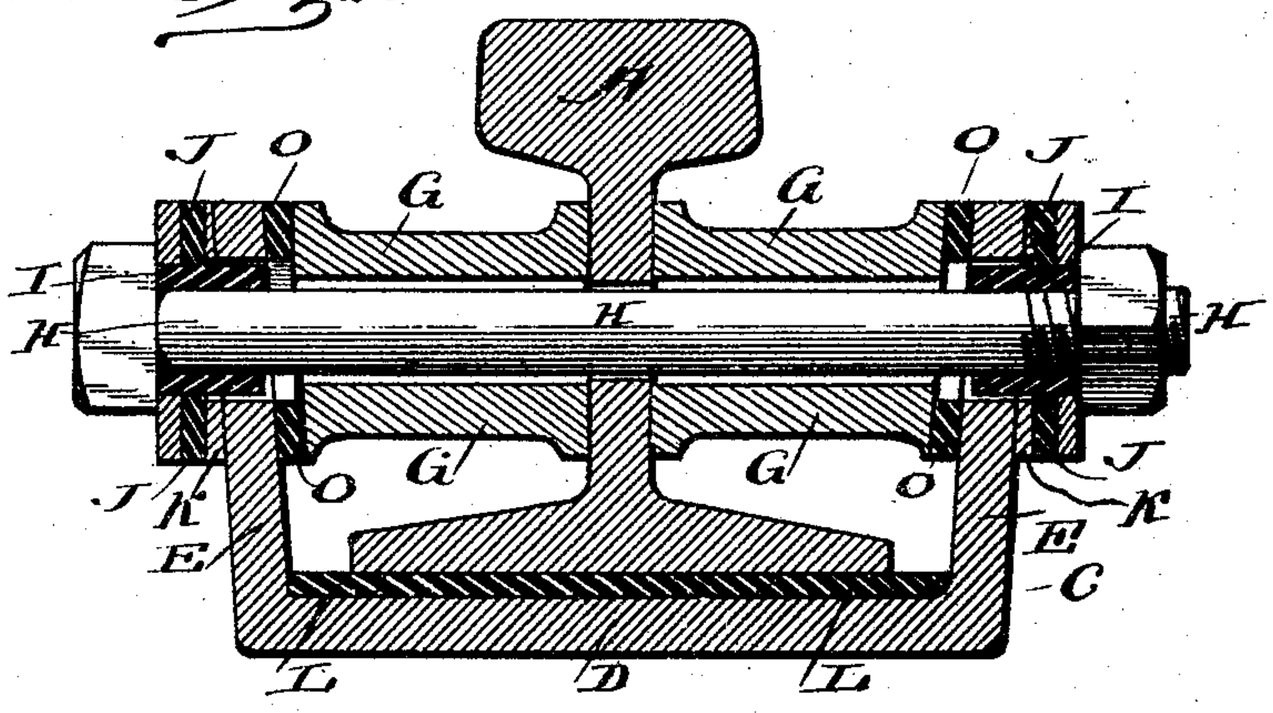


Fig. 2.



Witnesses
A. L. O'Brien
Henry C. Garretson

George A. Weber
and Percy Holbrook
Inventors
By Dickerson Brown
Rayner & Binney
Attys

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NO MODEL. 6 SHEETS—SHEET 2.

Fig. 3.

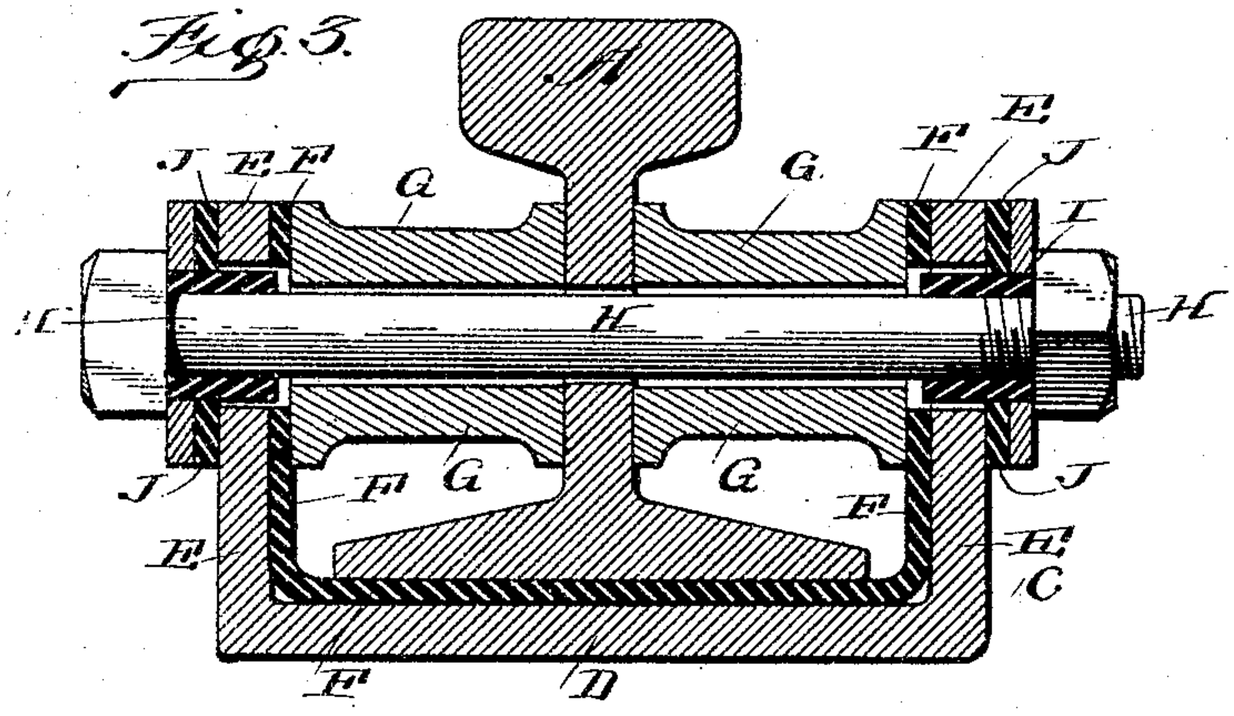
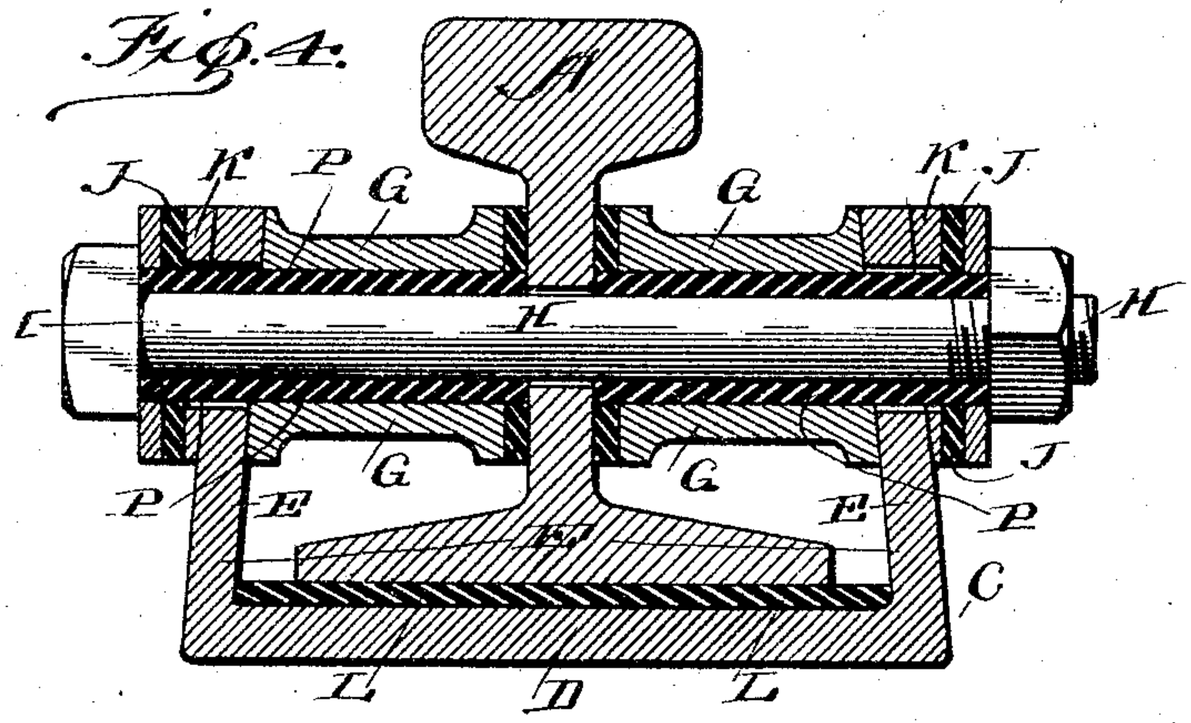


Fig. 4.



Witnesses.
A. L. O'Brien
Henry C. Garretson

George A. Weber
and Percy Holbrook
Inventors
By Duckham Brown
Pruyne & Binney
Attys

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NO MODEL. 6 SHEETS—SHEET 3.

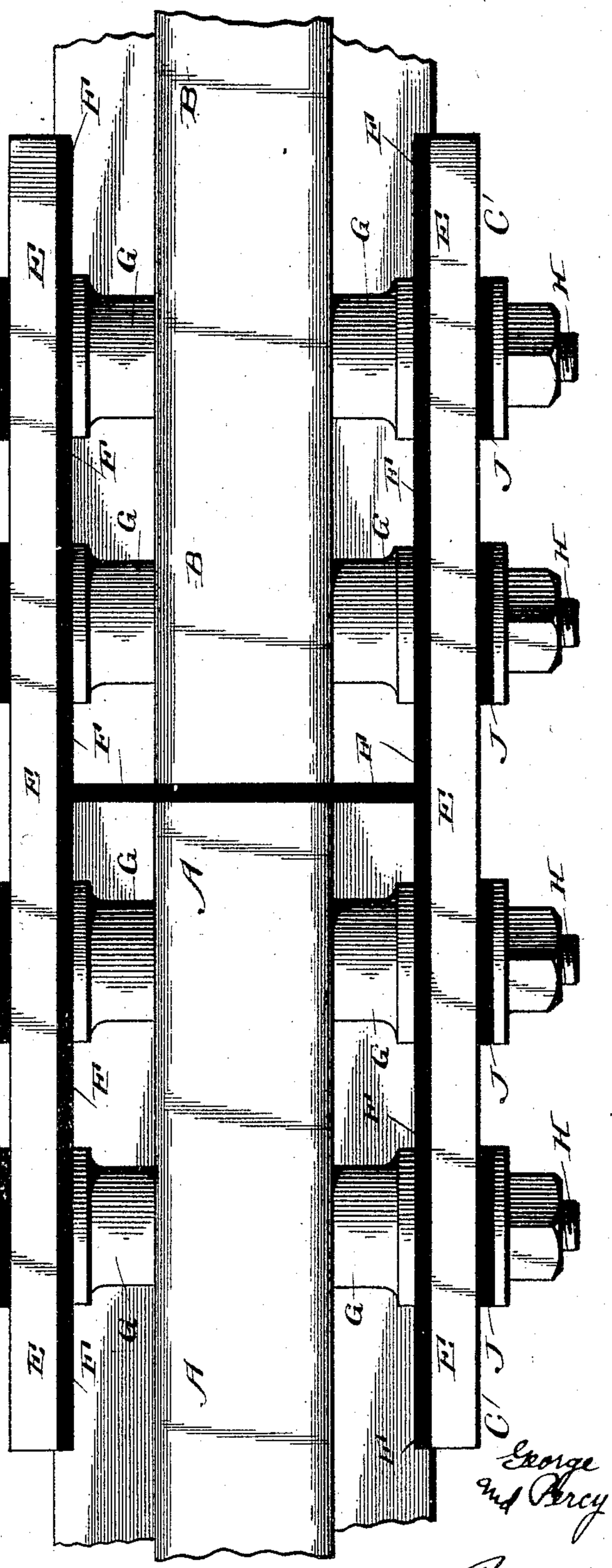

Fig. 5.

Witnesses
A. L. O'Brien
Henry C. Garretson

George A. Weber
and Percy Holbrook
Inventors
By Dickerson Brown
Pagenstecher & Burney
attys

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NO MODEL. 5 SHEETS—SHEET 4.

Fig. 6.

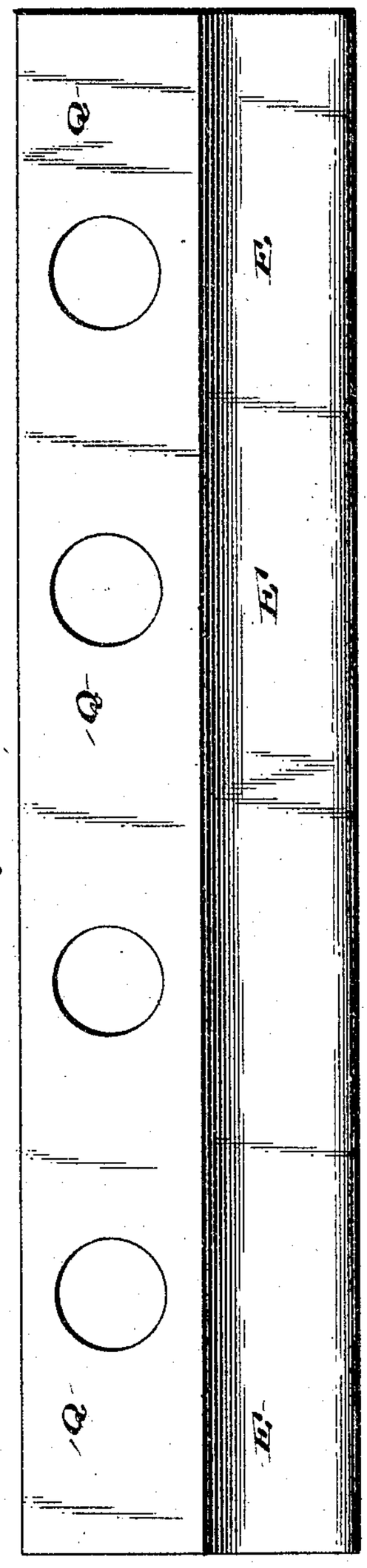


Fig. 7.

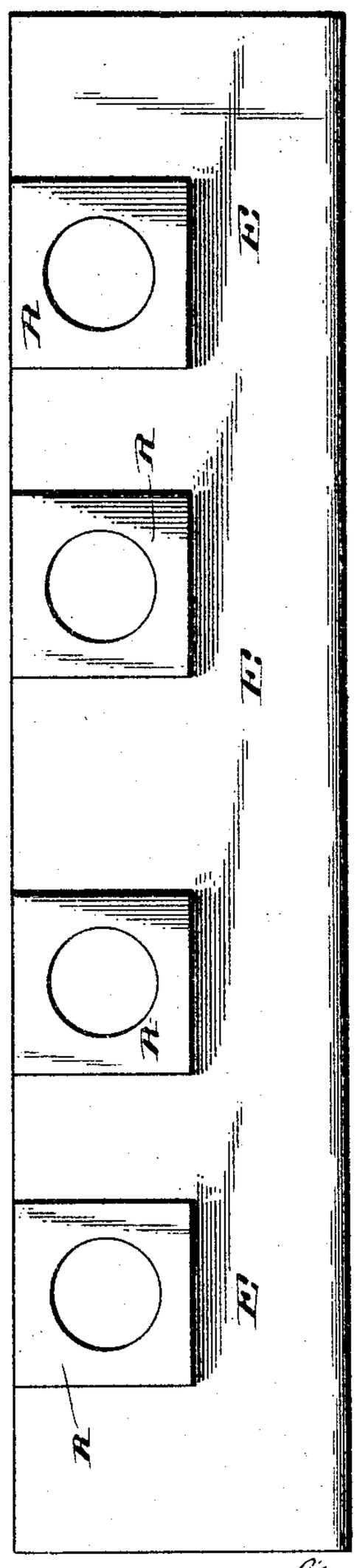
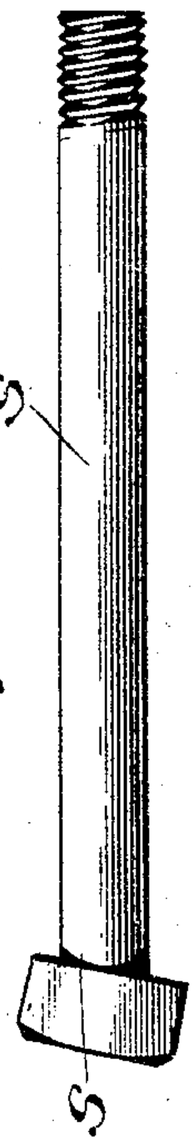


Fig. 8.



Witnesses
A. L. O'Brien
Henry C. Garretson

George A. Weber
and Percy Holbrook
Inventors
By Dickerson Brown
Rayner & Brinsey
attys

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NO MODEL. 5 SHEETS—SHEET 5.

Fig. 9.

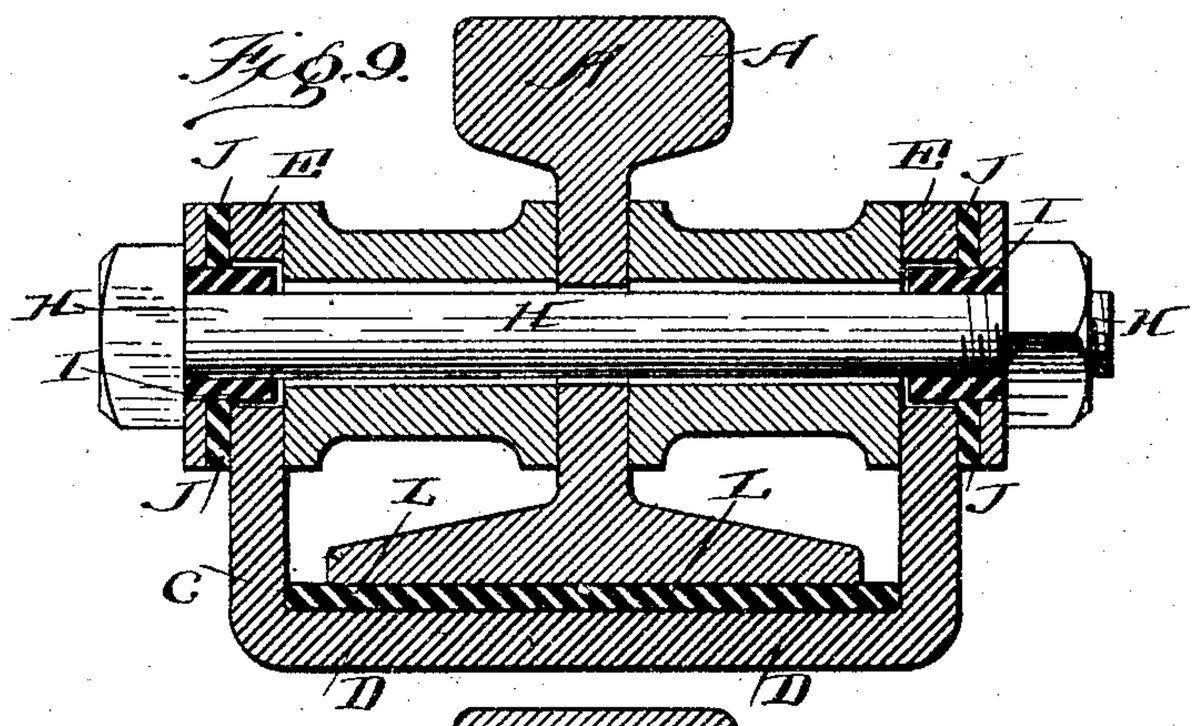


Fig. 10.

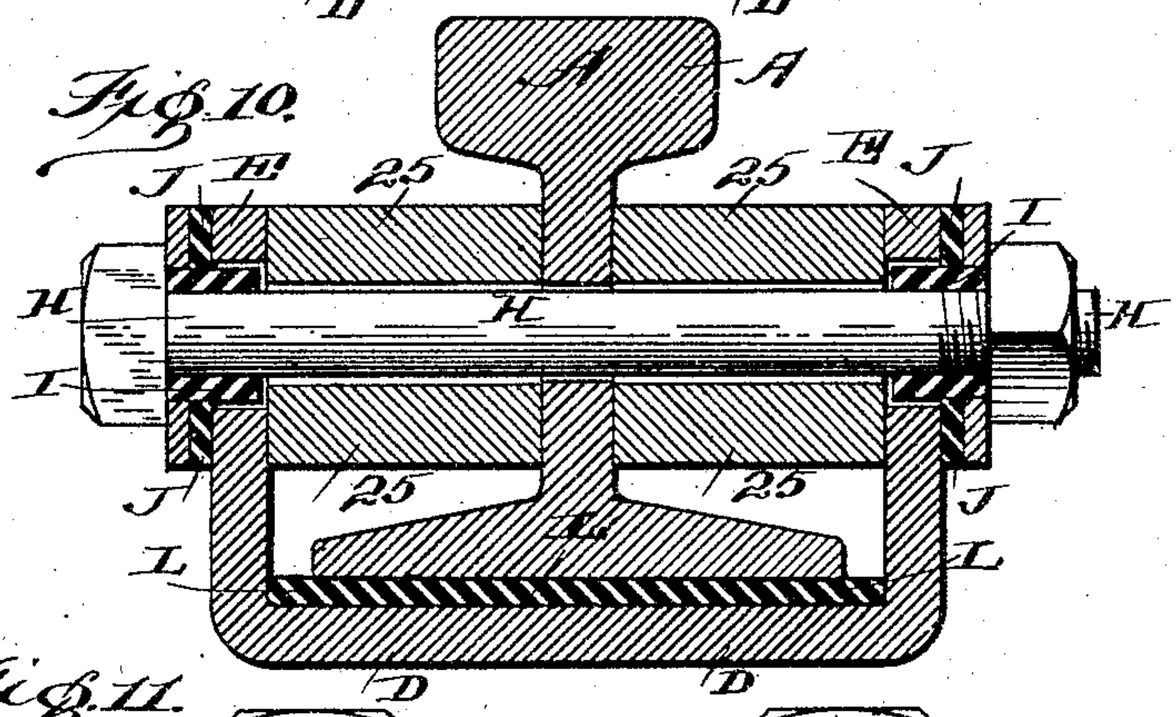
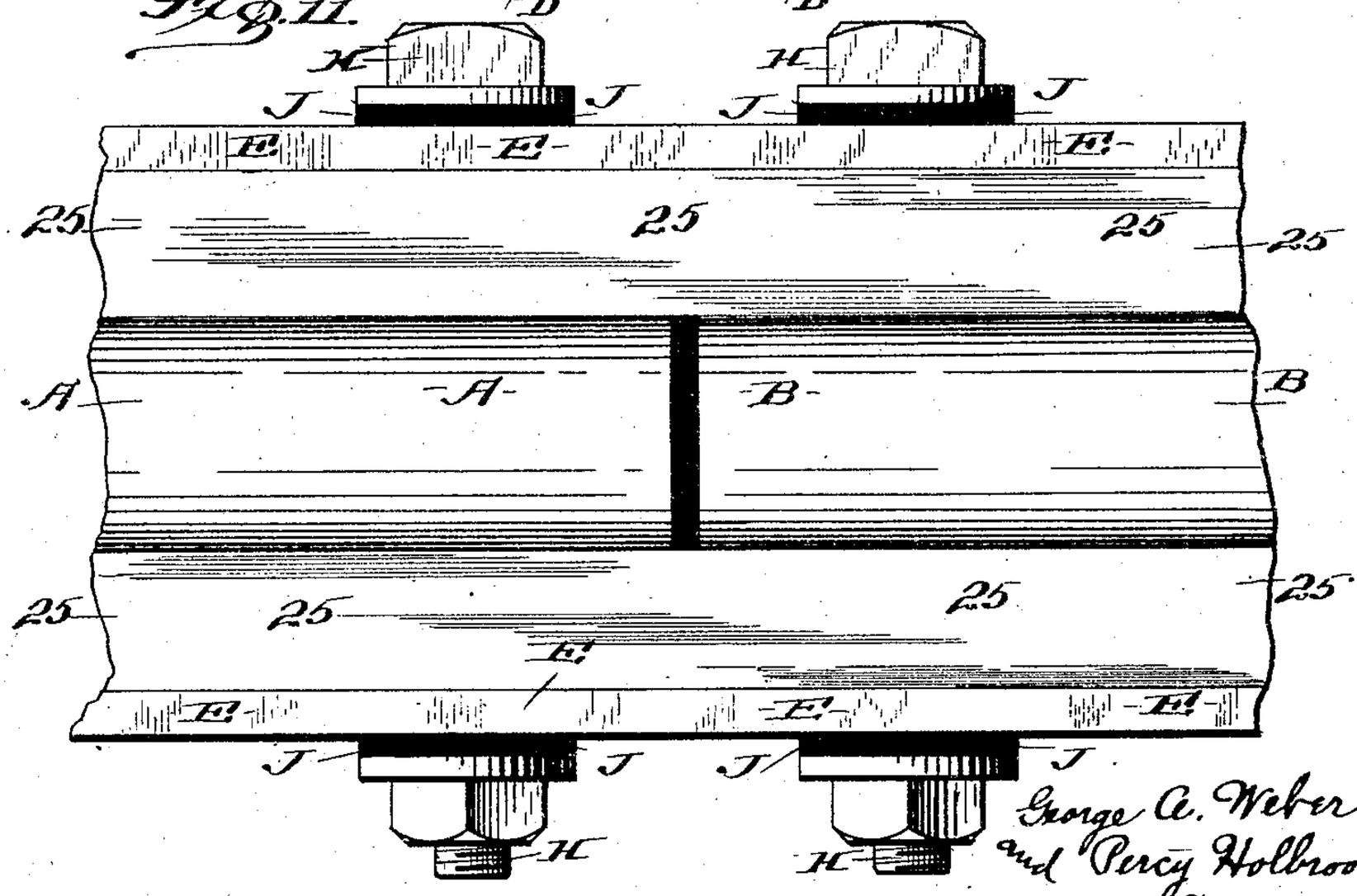


Fig. 11.



Witnesses
Henry C. Garretson
A. L. O'Brien

George A. Weber
and Percy Holbrook
Inventors
By Dieterich Bonn
Rayner & Binney
Attys

No. 777,707. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

GEORGE A. WEBER AND PERCY HOLBROOK, OF NEW YORK, N. Y., ASSIGNORS TO WEBER RAILWAY JOINT MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

INSULATED JOINT.

SPECIFICATION forming part of Letters Patent No. 777,707, dated December 20, 1904.

Application filed November 13, 1903. Serial No. 181,020.

To all whom it may concern:

Be it known that we, GEORGE A. WEBER and PERCY HOLBROOK, citizens of the United States, and residents of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Insulated Joints, of which the following is a specification, accompanied by drawings.

This invention relates to insulated joints for railway-rail sections in which the rails are supported in a channeled rail-chair or shoe-angle, the metallic parts of the joint being so insulated that current cannot pass from one rail to the other.

The objects of the invention are to improve upon the construction and efficiency of such joints and afford simplicity of parts with strength and lightness.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of an insulated joint for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts, substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a transverse sectional view of a joint embodying the invention with the uprights of the shoe bent inward. Fig. 2 is a transverse sectional view of a joint having the uprights of the shoe bent outward. Fig. 3 is a transverse sectional view of a joint having the uprights of the shoe at a right angle to the base. Fig. 4 is a transverse section of a joint, showing a different mode of insulation. Fig. 5 is a plan view of the joint. Fig. 6 is a side elevation of a shoe having a rib running the length of the joint on the outside faces of the vertical legs. Fig. 7 is a side elevation of a shoe having a boss at each bolt. Fig. 8 is a side view of a bolt having a head shaped to fit the slope of the shoe. Fig. 9 is a sectional view showing wooden filling-blocks. Fig. 10 is a transverse sectional view of a modification. Fig. 11 is a plan view of Fig. 10.

Referring to the drawings, A and B represent the ends of rails to be insulated from each other, and C represents a shoe, shown in this instance in the form of a channel upon the base D of which the rails rest.

In Fig. 1 the uprights E of the shoe are bent slightly inward from the vertical, and the base of at least one of the rails is insulated from the base D of the shoe by means of the insulation F. In this instance the insulation F is extended upwardly along the inside of the uprights E to aid in maintaining the same securely in position.

According to this invention filling-pieces G of any suitable material, as wood or other insulation or metal—in this instance shown in the form of spools—are arranged between the webs of the rails and the uprights of the shoe, while the bolts H pass through these spools. When the filling-blocks G are of metal, they are insulated from the uprights of the shoe, and the uprights are insulated from the bolts by means of the usual insulating-sleeves I and washers J.

In Fig. 1 wedge-shaped equalizers in the form of washers K are arranged adjacent the uprights of the shoe on the outside on account of the angle of the uprights.

In Fig. 2 the uprights E are bent outward instead of inward from the vertical, and the insulation F is not shown in one continuous piece. Instead a sheet L, of fiber, is shown beneath the base of at least one of the rails, while insulating-washers O are arranged between the uprights of the shoe and the filling-pieces G.

In Fig. 3 the uprights E of the shoe are shown at a right angle to the base.

In Fig. 4 a different mode of insulation is shown for the filling-pieces G. In this instance they are permitted to contact directly with the uprights of the shoe and are insulated from the bolts by the sleeves P, while the insulating-washers O are arranged between the webs of the rails and the ends of the filling-pieces G.

In using shoes of the types shown in Figs.

1 and 2 there will be required on the outside face of the upright legs either a rib Q, (shown in Fig. 6,) running the length of the joint, or a boss R (shown in Fig. 7) on each bolt-hole, or pieces of metal K as equalizers or bolts with heads S, (shown in Fig. 8,) shaped to fit the slope of the shoe, with equalizers K under the nuts.

In Fig. 9 the filling-blocks are shown of insulating material, as wood, and are uninsulated from the chair, while in Figs. 10 and 11 instead of separate spools over the bolts continuous straps 25, of wood or other suitable insulating material, are shown arranged between the rails and the uprights of the chair.

All of the forms of joint illustrated make strong and efficient joints which will maintain the rails in surface and alinement and afford high insulation for the rails. It will also be seen that the joint is cheap and easy to make and readily assembled.

Obviously some features of this invention may be used without others, and the invention may be embodied in widely-varying forms.

Therefore, without limiting the invention to the construction shown and described nor enumerating equivalents, we claim, and desire to secure by Letters Patent, the following:

1. An insulated joint, comprising the meeting ends of rails, a shoe in the form of a channel upon which the rails rest, and filling-pieces between the webs of the rails and the uprights of the shoe, suitable insulation being provided for insulating one rail from the other, for substantially the purposes set forth.

2. An insulated joint, comprising the meeting ends of rails, a shoe in the form of a channel upon which the rails rest, the uprights of the shoe being bent at an angle to the vertical, and filling-pieces between the webs of the rails and the uprights of the shoe, suitable insulation being provided for insulating one rail from the other, for substantially the purposes set forth.

3. An insulated joint, comprising the meeting ends of rails, a shoe in the form of a channel upon which the rails rest, the uprights of the shoe being bent inwardly from a right angle, and filling-pieces between the webs of the rails and the uprights of the shoe, suitable insulation being provided for insulating one rail from the other, for substantially the purposes set forth.

4. An insulated rail-joint, comprising the meeting ends of rails, a shoe in the form of a channel upon which the rails rest, filling-pieces between the webs of the rails and the uprights of the shoe, insulation beneath the base of at least one of the rails, bolts for securing the parts of the joint together, insulating sleeves and washers for insulating the uprights of the shoe from the bolts, and suitable insulation for preventing completion of the circuit between the webs of the rails and the uprights of the shoe through the filling-pieces, for substantially the purposes set forth.

In testimony whereof we have signed this specification in the presence of the subscribing witnesses.

GEORGE A. WEBER.
PERCY HOLBROOK.

Witnesses as to signature of George A. Weber:

E. VAN ZANDT,
A. L. O'BRIEN.

Witnesses to signature of Percy Holbrook:

A. L. O'BRIEN,
MARION HALL.