

No. 772,455.

PATENTED OCT. 18, 1904.

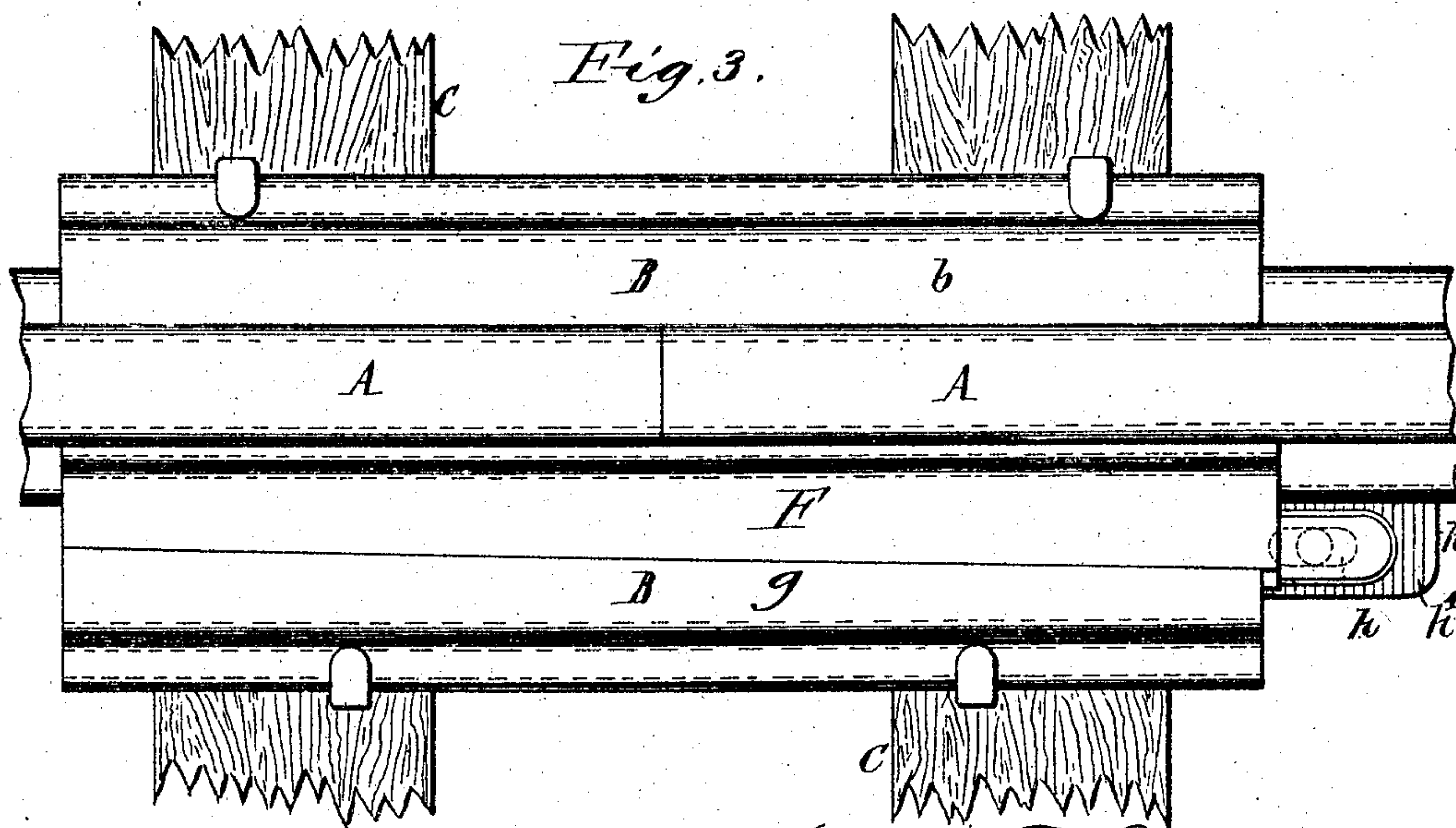
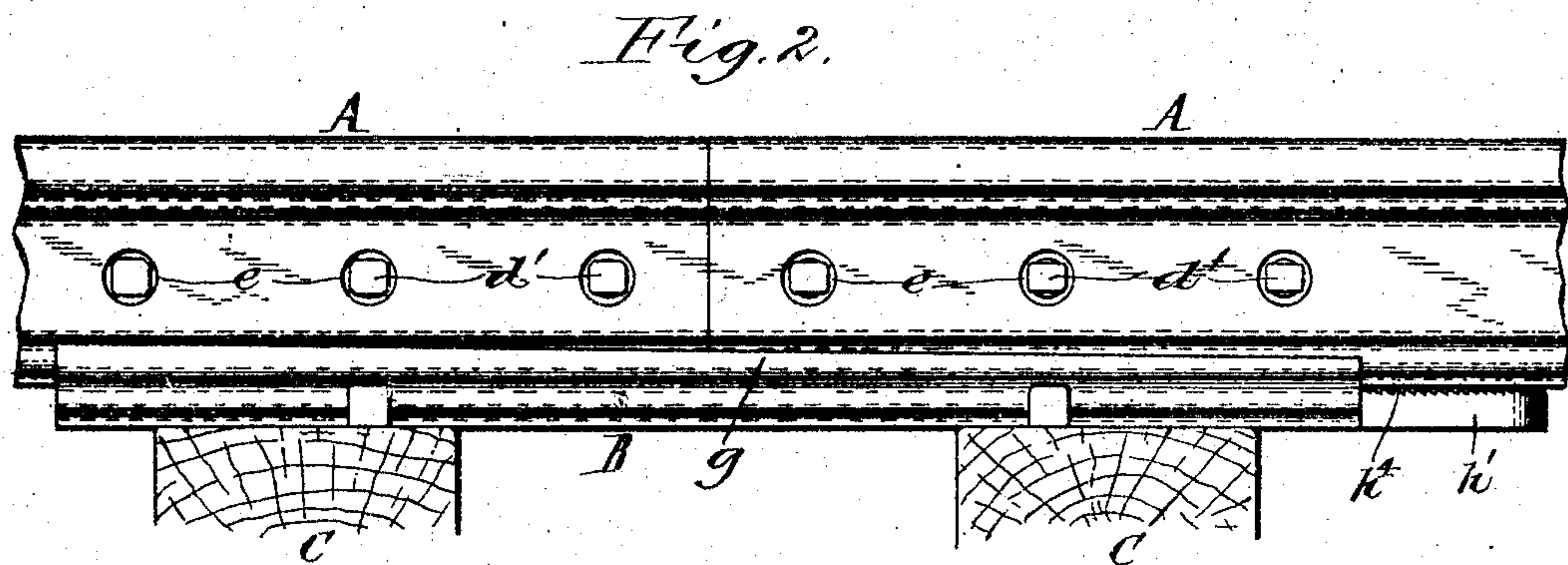
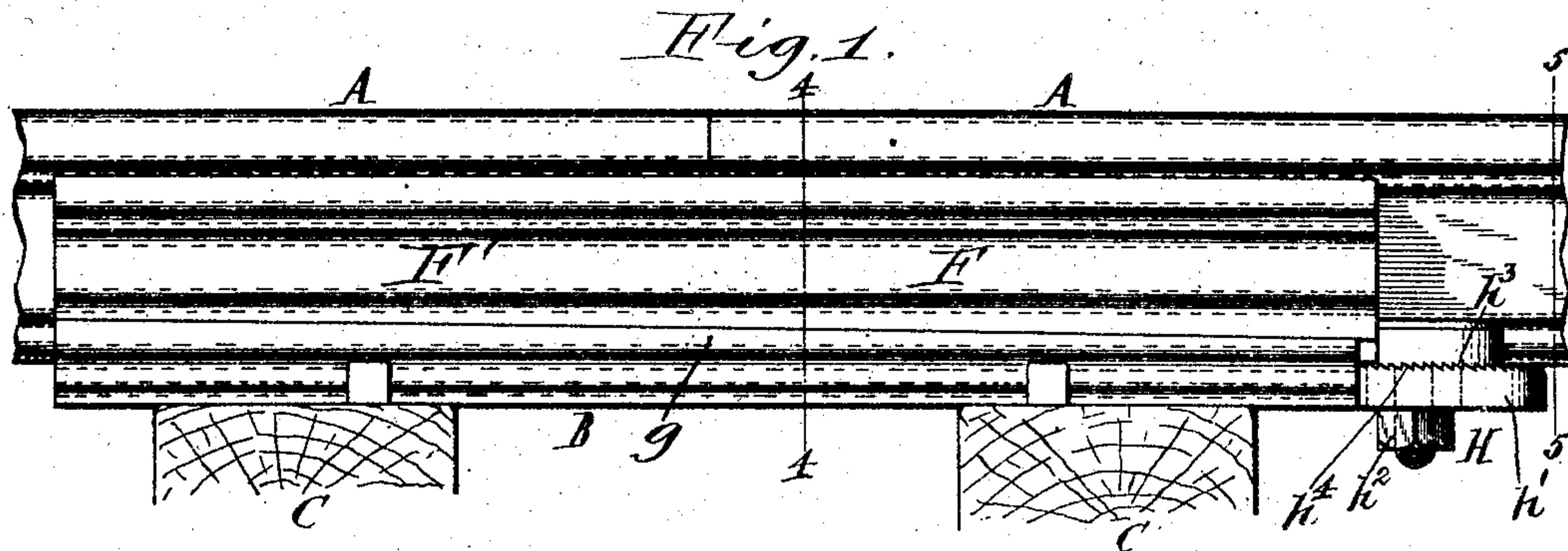
W. F. BURROWS.

RAIL JOINT.

APPLICATION FILED MAR. 3, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Robert Weithrecht,
Louis W. Gratz.

William F. Burrows,
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By Geyer & Popp
Attorneys

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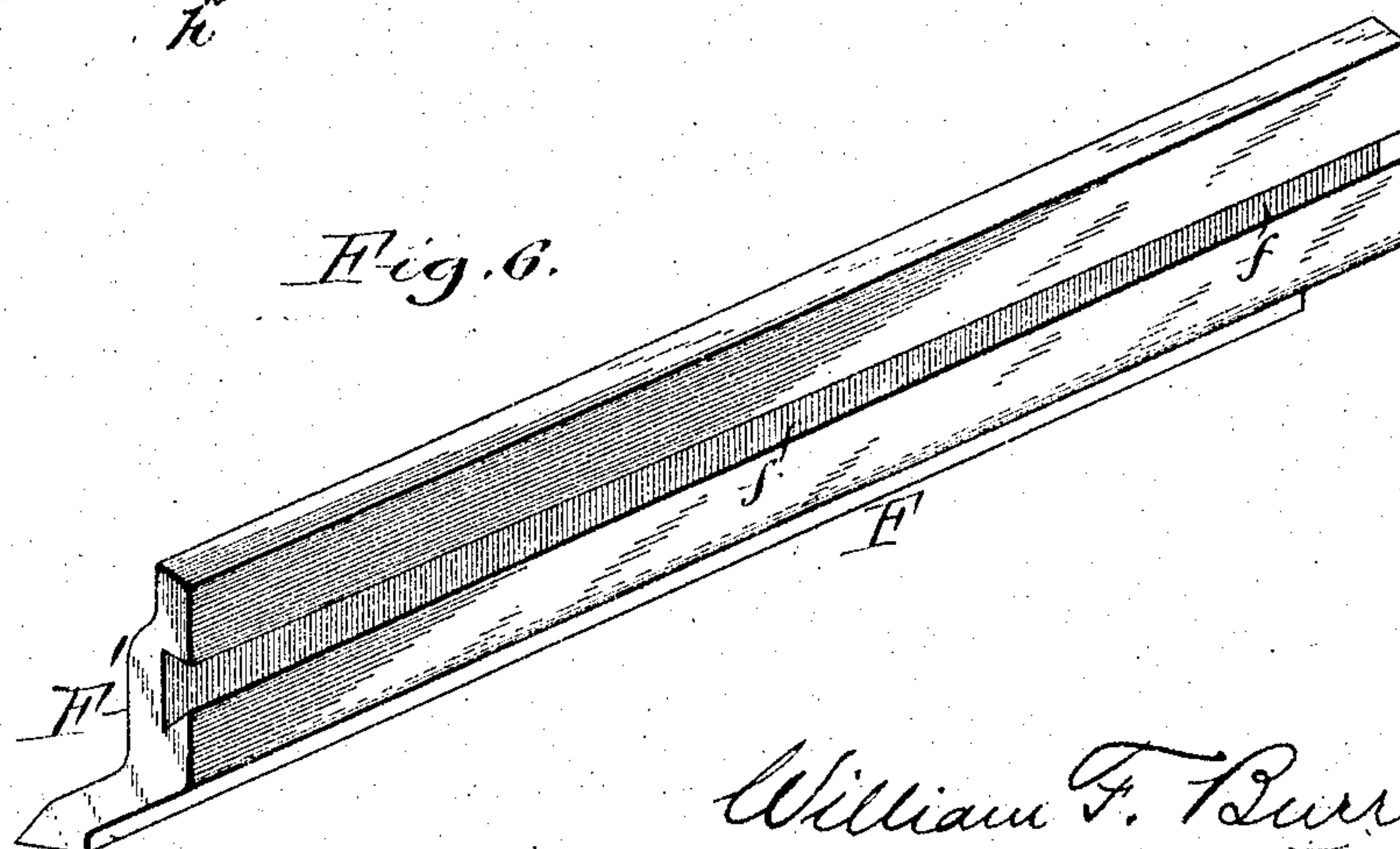
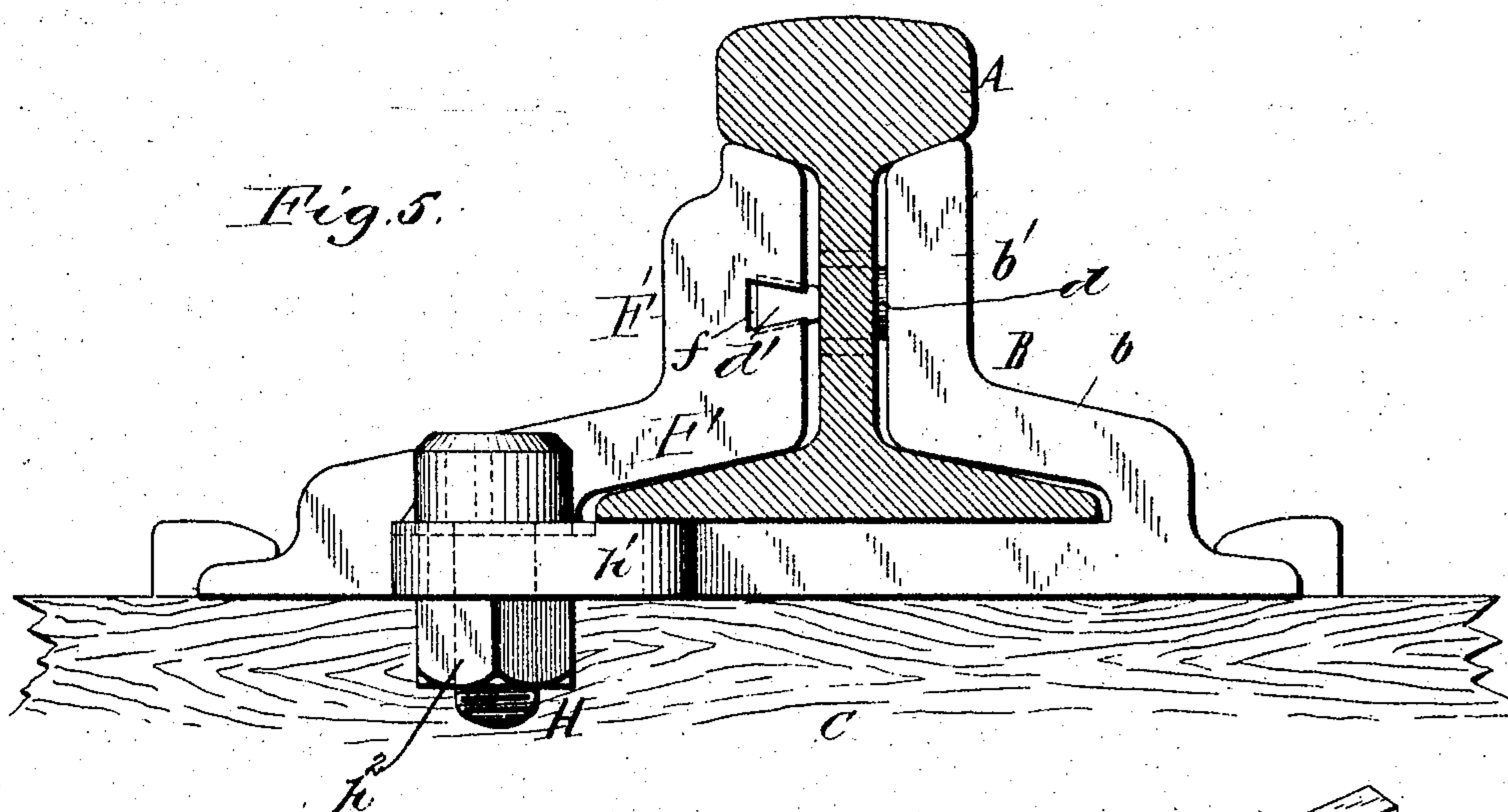
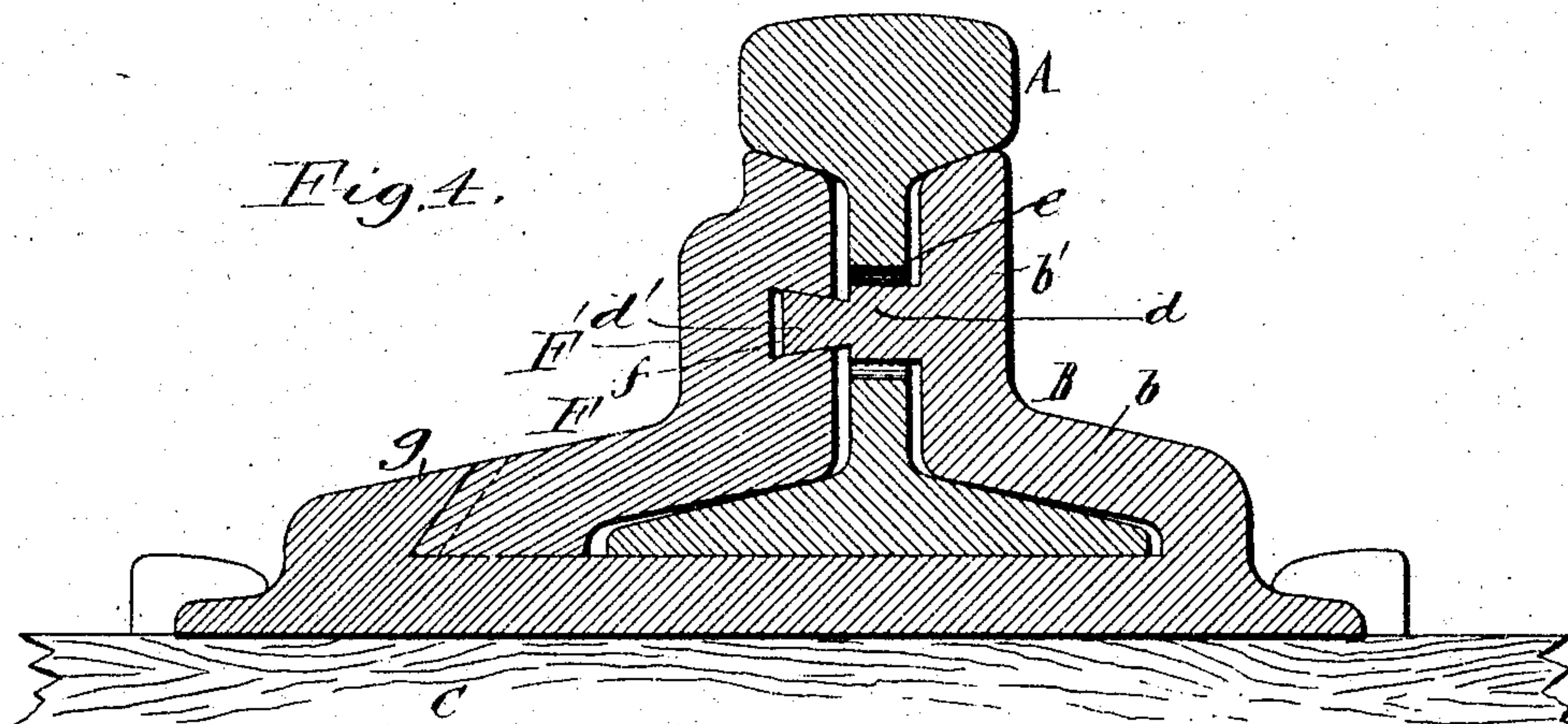
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UNITED STATES PATENT OFFICE.

WILLIAM F. BURROWS, OF BUFFALO, NEW YORK.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 772,455, dated October 18, 1904.

Application filed March 3, 1904. Serial No. 196,296. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BURROWS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates more particularly to rail-joints employing a chair in which the adjoining ends of the rails are seated and a locking or wedge plate driven between the chair and one side of the rails.

The object of my invention is to provide a strong, tight, and durable joint of simple construction which permits the ready connection and disconnection of the rails and which is applicable to old as well as new rails.

In the accompanying drawings, consisting of two sheets, Figure 1 is a fragmentary side elevation of two rails connected by my improved joint. Fig. 2 is a similar view omitting the locking or wedge plate. Fig. 3 is a top plan view of the joint. Figs. 4 and 5 are cross-sections in lines 4-4 and 5-5, Fig. 1. Fig. 6 is a perspective view of the wedge-plate.

Similar letters of reference indicate corresponding parts throughout the several views.

A A indicate adjoining rails of the type used for steam-railways; but the invention is equally applicable to other rails—such, for instance, as are employed for street-railways.

B is a chair or base which is suitably secured to the ties C and which supports and partly incases the adjoining ends of the rails. The preferred chair shown in the drawings consists of a bottom plate provided at one side with an inwardly-extending flange *b*, which overlaps the adjacent base-flanges of the rails and terminates in an upright wall *b'* of the proper height or width to fit closely between said base-flanges and the heads of the rails, as shown. From the inner side of this wall project horizontal pins or studs *d*, which pass through holes *e* in the webs of the rails. Six of such pins are preferably employed, as shown, and they are spaced to coincide with the usual bolt-holes of ordinary rails to adapt the joint to old as well as new rails. The outer portions of these pins terminate in dovetail heads *d'*, which project beyond the webs

of the rails and are adapted to interlock with a continuous dovetail groove *f*, formed lengthwise in the inner side of a locking or wedge plate F. The latter is arranged between the adjacent side of the rails and a raised longitudinal flange or shoulder *g*, located at the opposing edge of the chair B. This plate is tapered throughout its length, and the space between the shoulder *g* and the rails is correspondingly tapered, so that upon driving the wedge-plate home the rails are clamped between the wall *b'* of the chair and a similar wall or upright flange *F'*, arranged at the inner edge of the wedge-plate. The flange *F'* of the wedge-plate fits tightly between the contiguous base-flanges and heads of the rails. In order to hold the outer portion of the wedge-plate down in place, the shoulder *g* is undercut and the outer edge of the plate is correspondingly beveled, as shown in Fig. 4.

A suitable retaining device may be employed for preventing accidental loosening of the wedge-plate. I have shown for this purpose a stop-bolt H, the head of which bears against the wide end of the wedge-plate. This bolt passes through a longitudinal slot *h*, formed in an extension *h'* of the chair-base, and is clamped therein by its nut *h²*. To lock the bolt in place and also permit it to follow up the wedge-plate, the head of the same is provided on its under side with transverse ratchet-teeth *h³*, which interlock with similar teeth *h⁴*, formed on the upper side of the extension *h'*.

In order to insure a tight joint between the dovetail heads *d'* of the pins and the wedge-plate F, the groove of this plate is tapered in the opposite direction to the taper of the plate and the dovetail heads are made square or oblong in cross-section and correspondingly tapered, the heads of the series of pins thus increasing in thickness progressively toward the narrow end of the wedge-plate, as shown in Fig. 2. By this construction upon driving the wedge-plate home the rails are not only firmly clamped between the wall *b'* of the chair and the wedge-plate, but the tapering groove of the latter exerts a drawing action upon the tapering dovetail heads of the pins, thus obtaining a double clamping effect, which

increases the security of the connection and insures a very strong and tight joint. The groove in the wedge-plate is somewhat deeper than the length of the dovetail heads, so as to
5 leave the necessary clearance at the ends of the heads to permit of this drawing action.

In the drawings the taper of the wedge-plate, its groove, and the dovetail heads d' are exaggerated for clearness of illustration. In
10 practice the degree of taper is comparatively small. The portions of the pins d arranged in the holes of the rail-webs are preferably cylindrical, as shown, and fitted loosely therein to allow for the expansion and contraction
15 of the rails under atmospheric changes.

While the pins d are preferably integral with the chair B, they could obviously be made separate from the same and riveted in openings in the chair-wall b' or otherwise suitably
20 secured thereto.

The joint consists of but few parts, rendering its cost comparatively small, and it can be quickly applied to or removed from either old or new rails.

25 I claim as my invention—

1. A rail-joint, comprising a wall or member adapted to bear against one side of the adjoining rails, said member having projecting pins adapted to pass through holes in the rail-
30 webs and provided with dovetail heads which are tapered lengthwise of the member, and a locking-plate having a continuous tapering groove adapted to interlock with said dovetail heads, substantially as set forth.

35 2. A rail-joint, comprising a chair having an upright wall against which the adjoining rails are adapted to be clamped, said wall having projecting pins adapted to pass through holes in the rail-webs and provided with dove-

tail heads constructed of progressively-in- 40 creasing thickness, and a locking-plate having a continuous tapering groove adapted to interlock with said dovetail heads, substantially as set forth.

3. A rail-joint, comprising a chair provided 45 at one edge with a longitudinal shoulder and near its opposite edge with an upright wall against which the rails are adapted to be clamped, said wall having projecting pins adapted to pass through holes in the rail-webs 50 and provided with dovetail heads which are tapered lengthwise of the chair, and a wedge-plate adapted to be driven between said shoulder and the rails and having a continuous longitudinal groove adapted to interlock with said 55 dovetail heads and tapered to conform to the same, substantially as set forth.

4. A rail-joint, comprising a chair provided at one edge with a longitudinal shoulder and near its opposite edge with an upright wall 60 against which the rails are adapted to be clamped, said wall having projecting pins adapted to pass through holes in the rail-webs and provided with dovetail heads which are tapered lengthwise of the chair, and a wedge- 65 plate adapted to be driven between said shoulder and the rails and having a continuous tapering groove adapted to interlock with said dovetail heads and constructed of greater depth than the length of said heads, substan- 70 tially as set forth.

Witness my hand this 27th day of February, 1904.

WILLIAM F. BURROWS.

Witnesses:

CARL F. GEYER,
EMMA M. GRAHAM.