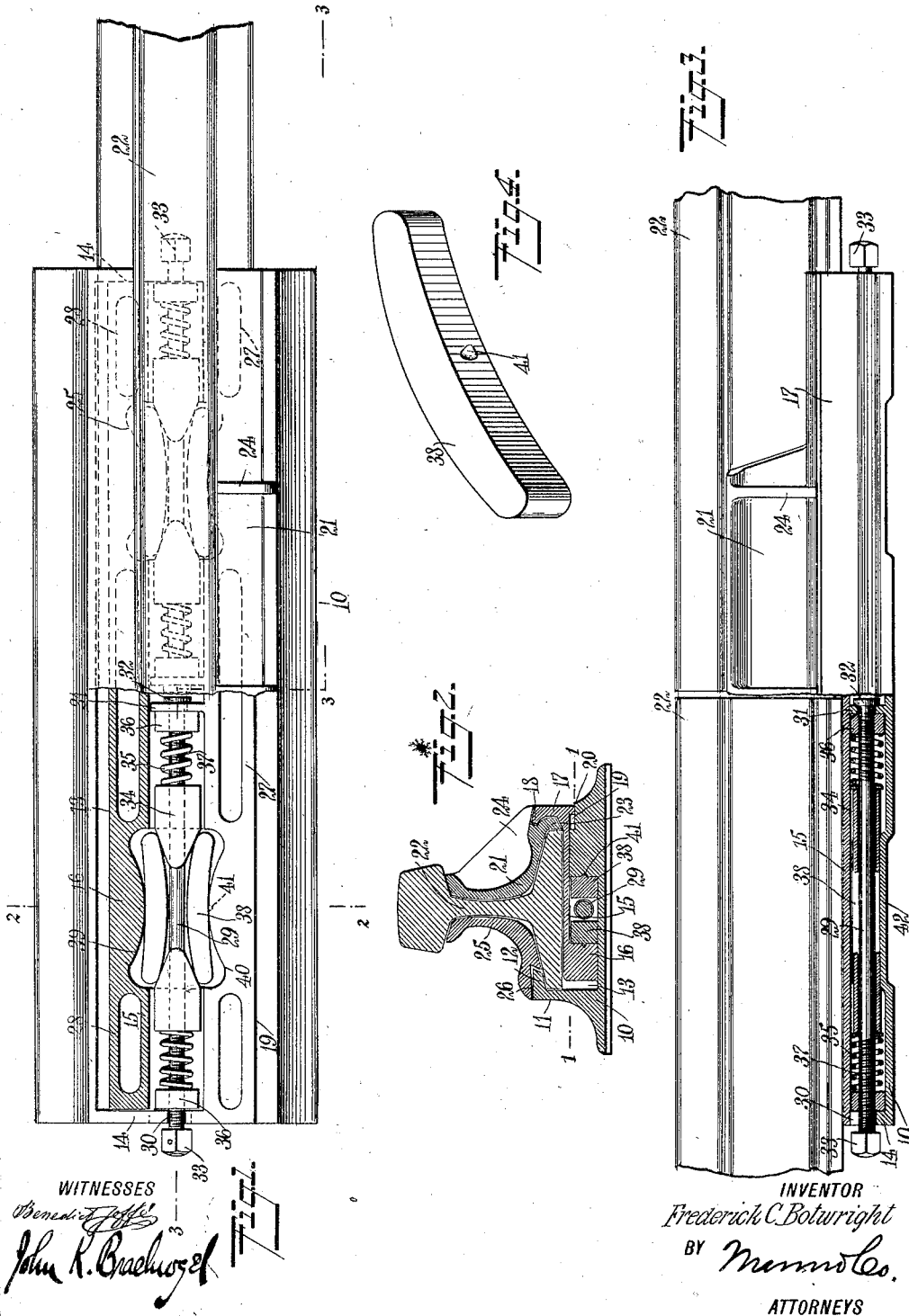


F. C. BOTWRIGHT.
RAIL JOINT.
APPLICATION FILED OCT. 8, 1910.

1,003,582.

Patented Sept. 19, 1911.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed October 8, 1910. Serial No. 586,007.

To all whom it may concern:

Be it known that I, FREDERICK C. BOTWRIGHT, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Rail-Joint, of which the following is a full, clear, and exact description.

This invention relates to rail joints for connecting the ends of railway track and like rails, and has reference more particularly to a rail joint which comprises a base having rail-engaging means, a chair movably mounted upon the base and adapted to support the rail ends, means for causing the relative lateral movement of the base and the chair to secure the rail ends in position, and means for holding the rail ends.

The object of the invention is to provide a simple, strong and durable rail joint for connecting the ends of railway track rails and the like, which is compact in form and comparatively light in weight, by means of which the rail ends can be securely held upon the ties, without the use of fish plates, fish bolts and other like devices, which can be easily and quickly manipulated, which permits the rails to expand and contract under the influence of temperature changes, and by means of which the rails can be held securely against lateral movement.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a plan view of an embodiment of my invention, showing part of a rail end mounted thereon and having a portion illustrated in horizontal section; Fig. 2 is a transverse section on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary longitudinal section on the line 3—3 of Fig. 1, and Fig. 4 is a perspective view of a detail of the mechanism for effecting the relative lateral adjustment of the base and chair, showing one of the spreaders.

Before proceeding to a more detailed explanation of my invention, it should be clearly understood that my new form of rail joint obviates entirely the use of fish plates, fish bolts or other like devices, for securing

the adjacent rail ends together. The rail ends are securely clamped in position relative to the joint and to each other, as will appear more clearly hereinafter. The device can be fashioned of any suitable material, though I prefer to employ cast steel or like metal. Certain of the details of construction form no part of the present invention and can be varied in accordance with individual preference or special conditions without departing from the underlying spirit of the invention.

Referring more particularly to the drawings, I employ a base 10, of elongated form and having the sides inclined or rounded. At one edge it has an upwardly-extending flange 11, which at the upper portion 12 is inwardly disposed and of tapered cross section. The base has a recess 13 between the flange 11 and the opposite side, which terminates inwardly of the side of the base remote from the flange and does not extend to the ends of the base, whereby end walls 14 are formed. A chair 15, comprising a flat plate, is movably mounted upon the base and has at one edge, a downwardly-disposed rib 16, located within the recess 13. The chair at the outer edge, has an upwardly-disposed flange 17, the upper portion 18 of which is inwardly disposed and of tapered cross section. Near the outer edge, the side of the base remote from the flange 11 is cut away to form a shoulder 19, adapted to be engaged by a downwardly-directed flange 20 of the chair, to limit the lateral movement of the chair relative to the base.

I employ a rail holder 21, which engages at one side of the rail ends 22. The latter are supported upon the chair and have the flanges at one side engaging under the flange 11. The rail holder is curved to fit upon the rail base against the rail web and under the rail head. The holder also has the lower edge 23 shaped to fit under the flange 17 and between the latter and the corresponding edges of the rail bases. I prefer to provide the holder with transverse bracing ribs 24, the extremities of which project over the flange 17. I employ a second holder 25 positioned at the other side of the rail ends and likewise shaped to engage the rail bases, the rail webs and under the rail heads. It has, at the outer under portion, a recess 26, which receives the edge 12 of the flange 11.

The base has parts 27 cut away for the

purpose of decreasing the weight of the joint; for a like purpose, the chair has parts 28 cut away.

I employ adjusting spindles 29, which are
 5 movable, respectively, in openings 30 of the end walls 14, and in registering openings of inwardly-disposed lugs 31 projecting into the recess 13. Each spindle has at the end,
 10 a head 32 engaging at one of the lugs. At the extremity of each spindle projecting through the end wall, is a head 33, of angular form, by means of which the spindle may be turned with the use of a wrench or other suitable implement.

15 Loosely mounted upon each spindle is a pair of wedge members 34, engaged by helical springs 35, which likewise engage blocks 36, each having threaded openings therethrough and mounted upon a corre-
 20 spondingly threaded portion 37 of the spindle. The threaded portions of each spindle are oppositely threaded so that when the spindle is turned, the wedges are caused to approach each other or to recede. Be-
 25 tween each pair of wedges and at opposite sides of the spindles are slightly curved spreaders 38, arranged adjacent to correspondingly formed recesses 39 and 40 of the rib 16 and the side of the recess 13. Each
 30 spreader has a stud 41, adapted to engage a depression in the wall adjacent to it. The bottom of the base has upwardly-disposed parts 42, upon which the wedges and the spreaders can rest and slide easily. The
 35 spreaders are preferably of spring metal.

It will be understood that by turning the heads 33 of the spindles in one direction or the other, the spreaders can be forced apart or allowed to approach each other. By forc-
 40 ing the spreaders apart, the chair is drawn toward the flange 11 of the rail joint, and consequently the rail ends are securely clamped between the parts. By turning the spindles in the opposite direction, the rail
 45 ends can be released. The springs 37 serve resiliently to hold the wedges in place, and thus the rail ends are resiliently clamped, and while they are held securely, they can adjust themselves to varying temperature
 50 conditions.

Having thus described my invention, I claim a new and desire to secure by Letters Patent:

1. A rail joint, comprising a base, a
 55 chair mounted to slide transversely of said base, means for adjusting said chair and said base relative to one another, and holders for engaging the rail ends, said holders respectively, engaging said base and said
 60 chair.

2. A rail joint, comprising a base having a rail-engaging flange at one side, a chair mounted upon said base and slidable trans-
 65 versely of the length thereof, said chair at the side remote from said flange of said base,

having a flange, said chair being adapted to support the rail ends, rail holders respectively engaging said flange of said chair and said flange of said base and adapted to engage the rail ends, and means for wedg-
 70 ing said chair in position relative to said base.

3. A rail joint, comprising a base having a rail-engaging flange at one side, a chair mounted upon said base and slidable trans-
 75 versely of the length thereof, said chair at the side remote from said flange of said base, having a flange, said chair being adapted to support the rail ends, a rail holder engaging said flange of said chair and adapted to engage the rail ends, means for wedging said chair in position relative to said base, and a rail holder adapted to
 80 engage said rail ends at the side opposite to the engagement thereof by said first-mentioned holder, said last-mentioned holder engaging said flange of said base.

4. A rail joint, comprising a base, a chair movably mounted thereon and adapted to support the rail ends, and means for
 90 resiliently holding said chair and said base in any one of a plurality of positions relative to each other.

5. A rail joint, comprising a base having a rail-engaging flange, a chair mounted to slide transversely of said base and having a
 95 rail-holding flange, spreaders for adjusting said chair relatively to said base, a wedge for operating said spreaders, and means for manually operating said wedge.

6. A rail joint, comprising a base having a rail-engaging flange and a recess, a chair mounted to slide transversely of said base and having a part extending into said recess,
 105 said chair having a rail-engaging flange, a spindle extending through said recess, spreaders between said part and a wall of said recess, and a spring-pressed wedge controlled by said spindle and adapted to en-
 110 gage between said spreaders.

7. A rail joint, comprising a base having an under-cut flange adapted to engage rail ends, a chair adjustably carried by said base holder positioned against the rail ends and chair having an under-cut flange, a rail
 115 holder positioned against the rail ends and engaging said flange of said chair and extending between said last-mentioned flange and the rail bases, and a second rail holder adapted to engage the rail ends and having
 120 a part cut away to receive said flange of said base.

8. A rail joint, comprising a base having rail-engaging means, a chair mounted to slide transversely of said base, and a rail
 125 holder adapted to engage said chair and the rail ends, said base and said chair having shoulders adapted to engage to limit the relative movement thereof.

9. A rail joint, comprising a base having 130

a rail-engaging flange at one side and a recess, a chair slidably mounted upon said base and having a part extending into said recess, said chair having a flange and being
5 adapted to support rail ends, rail holders adapted to engage said flanges and the rail ends, a spindle extending into said recess and operable from the outside of the joint,
10 tending to hold said wedge in a normal position, and spreaders arranged at opposite sides of said spindle and adapted to be

forced apart by said wedge and against said part and a wall of said recess, respectively, said part and the wall of said recess hav- 15
ing recesses to receive said spreaders.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK CHARLES BOTWRIGHT.

Witnesses:

JAS. B. McCONNELL,

J. FRED KNOWLAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
