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Patented Aug. 16, 1898.

W. M. SMITH.

RAIL JOINT.

(Application filed Nov. 9, 1897.)

(No Model.)

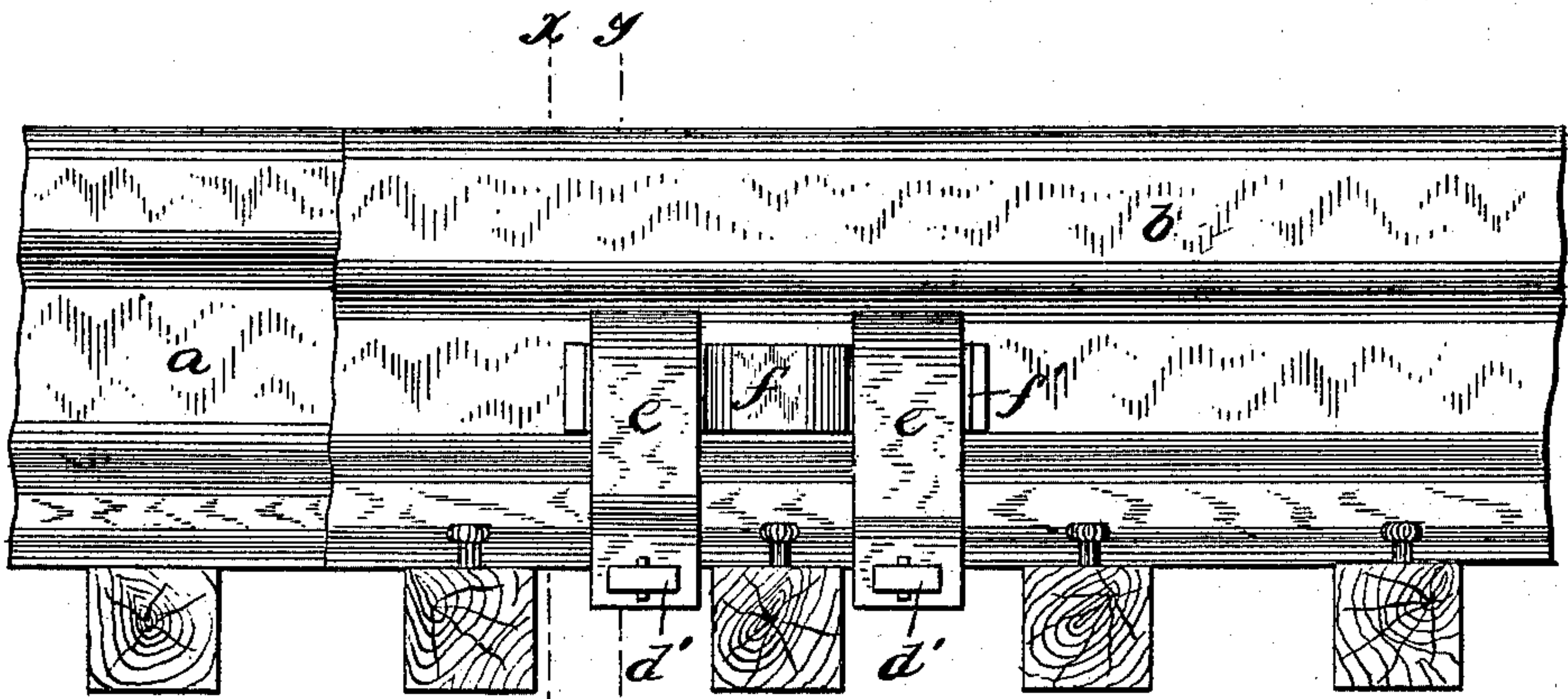
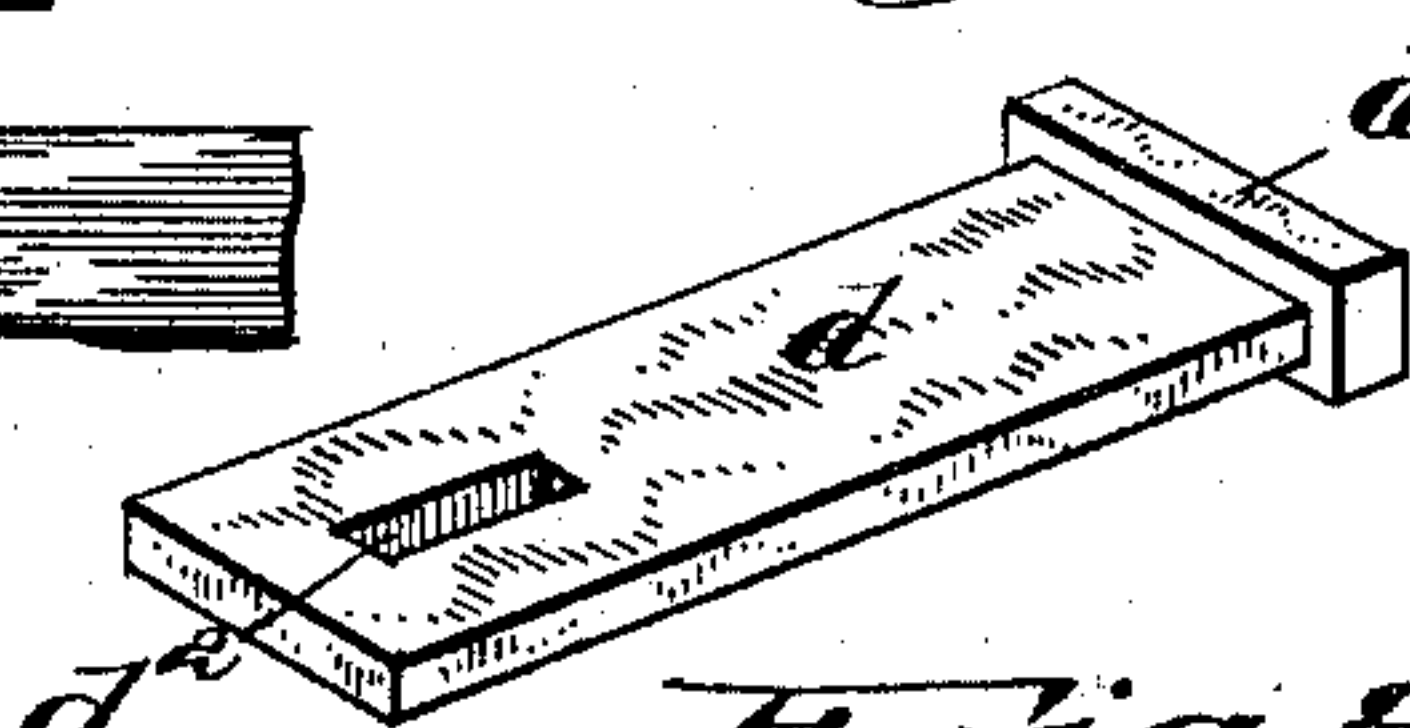
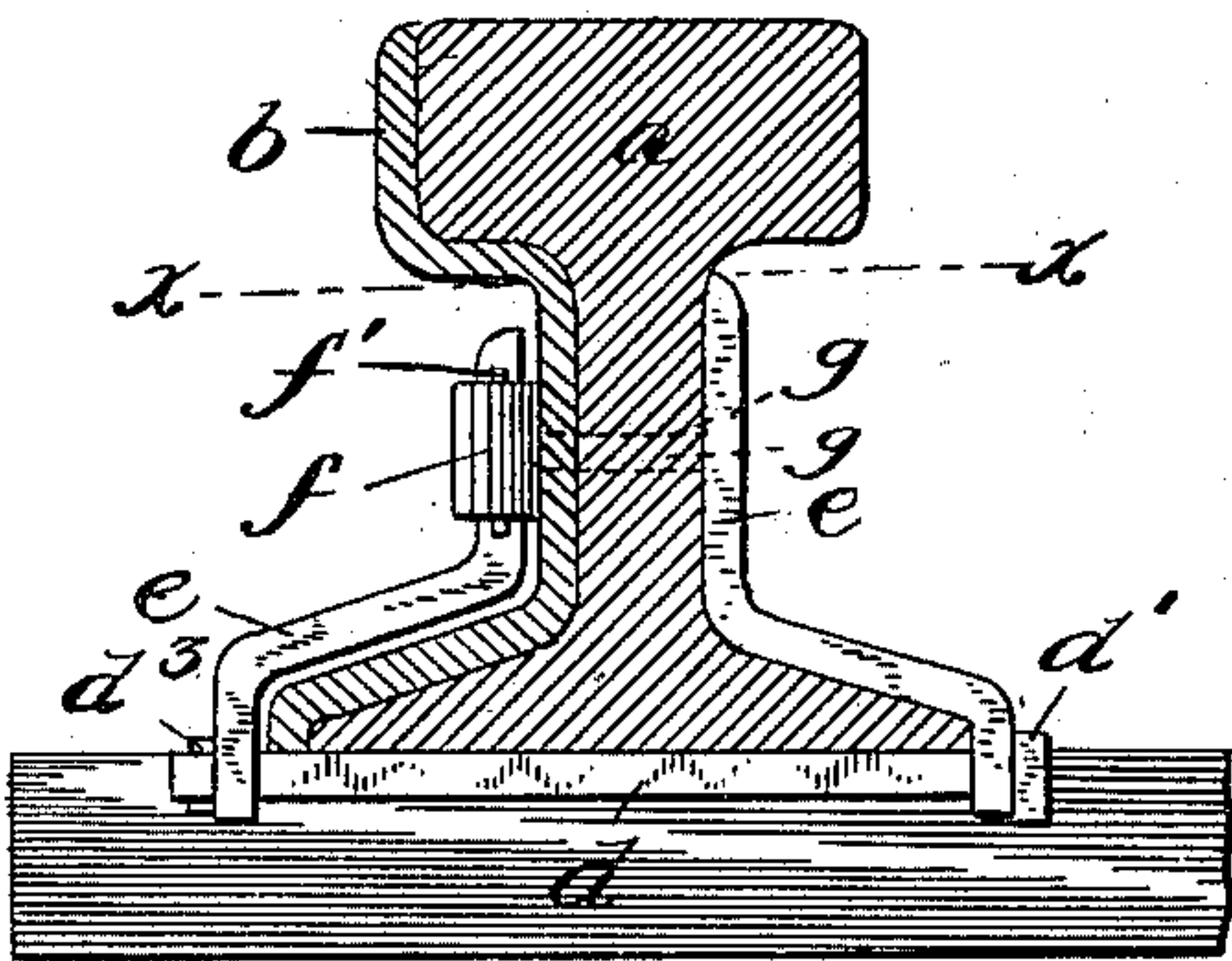


Fig. 3.



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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 609,304, dated August 16, 1898.

Application filed November 9, 1897. Serial No. 657,923. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. SMITH, a citizen of the United States of America, residing at New Cumberland, in the county of Hancock and State of West Virginia, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in rail-joints, and might also be referred to as a "compound" rail, the object of the invention being to secure as far as practicable a continuous tread upon which
15 the wheels can travel in order to reduce wholly or partially the jars produced by the passage of the wheels over the transverse joints of the heads or treads of the rail.

20 The leading features of my invention consist in placing a supplemental rail on the outer face of the ordinary rail in a manner that the transverse joints of the supplemental rail will be at a point about midway of each of the ordinary rails, so that there will be no
25 continuous transverse joints for more than two parts, and the invention further consists in the novel manner for securing the supplemental rail in position without the aid of the ordinary fish-plates and bolts usually employed.
30

The invention further consists in the novel construction which will permit the reversing of the ordinary rail when one side of its tread has become worn so as to bring the unworn
35 side into position for the wheels, and also to provide means for the expansion and contraction of the members, so that the same will not cause the rail to buckle or strain.

40 With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the claims.

45 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—
50

Figure 1 is a side view of a portion of the rails, showing my improvement in position.

Fig. 2 is a cross-sectional view taken on the line X X of Fig. 1. Fig. 3 is a similar view taken on the line Y Y of Fig. 1. Fig. 4 is a longitudinal sectional view taken on the line X X of Fig. 2. Fig. 5 is a perspective view of the tension-spring employed for holding the securing-plates in position. Fig. 6 is a perspective view of one of the clamping-wedges. Fig. 7 is a similar view of the locking key or wedge. Fig. 8 is a similar view of the cross-bar binding the plates on each side of the rail firmly in position.

Referring now to the drawings by reference- letters, *a* represents the ordinary rail, which has placed at the outer side thereof a supplemental rail *b*, which is rolled to conform to the shape of the main rail *a* and rests firmly against the same. This rail *b* is secured in its position by means of clamping-wedges *e*, having a downwardly-projecting end *c'*, which extends below the base of the main rail *a* and the supplemental rail *b* when both rails are in their position on the cross-ties, said projection being preferably with a slot *c²* to receive the fastening-bar *d*. This fastening-bar *d* is provided on its one end with a head *d'*, which engages against the clamping-wedges *e*, used for the inner face of the rail, said clamping-wedges *e* being also provided with a downwardly-projecting end having a slot to receive the securing-bar, and this bar being provided near its end which projects through the clamping-wedges *e* with an oblong slot *d²* to receive the fastening key or wedge *d³*, the form of which is fully illustrated in Fig. 7 of the drawings, which shows the same provided with a cut-away portion, thus forming lugs *d⁴*, which prevent the wedge from dropping out of its seat in the slot *d²*.

In order to bind the supplemental rails firmly against the face of the main rail and also hold the clamping-wedges *e* firmly in their position, I provide a stiff tension-spring *f*, which may be of as many ply as desired, with the bow of the same abutting against the outer face of the supplemental rail *b*, and the outer or longer ply thereof is provided with projections *f'* to engage the sides of the clamping-wedges, and thus retaining the spring in its position, said wedges being preferably provided with cut-away portions *c³*, into which the main ply of the spring fits.

The manner of placing the parts in position will, it is thought, be fully understood from the foregoing description and by reference to the accompanying drawings, and it will be
 5 observed that by this arrangement the joints of the main rail are obviated by placing the joints of the supplemental rail at a point distant from the joints of the main rail, so that no jar will be occasioned by the wheels passing
 10 over the joints of the main rails.

The spikes employed for fastening the rails to the cross-ties will of course engage the base-flange of the main rail on the inner side and the flange of the supplemental rail at the
 15 outsides of the track.

I desire also to call attention to the fact that by this construction no bolt-holes are required in the main rail, thus serving to materially strengthen the main rail at the joints
 20 of the same.

In order to prevent what is commonly termed as "running" of the rails, and also to provide for the expansion and contraction of the rails when the joints are so locked as to
 25 prevent the running, I provide slots *g*, extending through both the main and supplemental rails, so placed that when both rails are in position the slots will be exactly opposite each other. These slots are oblong in the
 30 direction of the length of the rails, and in these slots is inserted a plain sheet-key *g'*, which is held therein by the clamping-wedges and serves to securely lock the joint and prevent the running of the rails.

In order to allow for the expansion and contraction of the rails, these keys are preferably made of less diameter than the length of the slots, thus allowing for the contraction of the rails. In other words, whatever may be nec-
 35 essary may be provided for in these keys.

I also desire to call attention to the fact that on branches or light traffic lines, where it is desired to construct the track as cheaply as possible, the supplemental rail may be cut
 45 into sections and used simply as joint-splices and still accomplish the above-specified purpose.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my
 50 invention.

Having fully described my invention, what

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

1. The combination with the main rail of 55 a supplemental rail conforming to the shape of the main rail, clamping-wedges engaging the inside of the rail and projecting below the main rail and being provided with a slot to receive a fastening-bar, a fastening-key to
 60 secure the fastening-bar in position, and means engaging the supplemental rail, and clamping-wedges, whereby said rail is held firmly against the main rail, substantially as shown and described. 65

2. In a rail-joint, the combination with the main rail of a supplemental rail engaging the face of the same and conforming to the shape thereof, clamping-wedges engaging the inner face of the main rail and the outer face of the
 70 supplemental rail, said wedges having an end extending below the lower face of the main and supplemental rails, a fastening-bar passing through slots in said ends, a fastening-key locking said bar in position, a spring secured
 75 between the upper end of the wedges and the supplemental rail, whereby the same is held in position.

3. In a rail-joint, the combination of a main rail, a supplemental rail engaging the outer
 80 face of the same and conforming to the shape thereof, the outer face of said supplemental rail being parallel with the outer face of the main rail and being substantially the same length of the main rail, the joints of the main
 85 and supplemental rails being so arranged as not to register with each other, clamping-wedge engaging the inner face of the main rail and the outer face of the supplemental rail, said wedge having an end extending be-
 90 low the lower face of the main and supplemental rails, a fastening-bar engaging slots formed in said ends, a fastening-key locking the bar in position and a spring engaging the supplemental rail and the upper ends of the
 95 wedges to hold the supplemental rail in engagement with the main rail, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. SMITH.

Witnesses:

JOHN NOLAND,
 GEO. B. PARKER.