

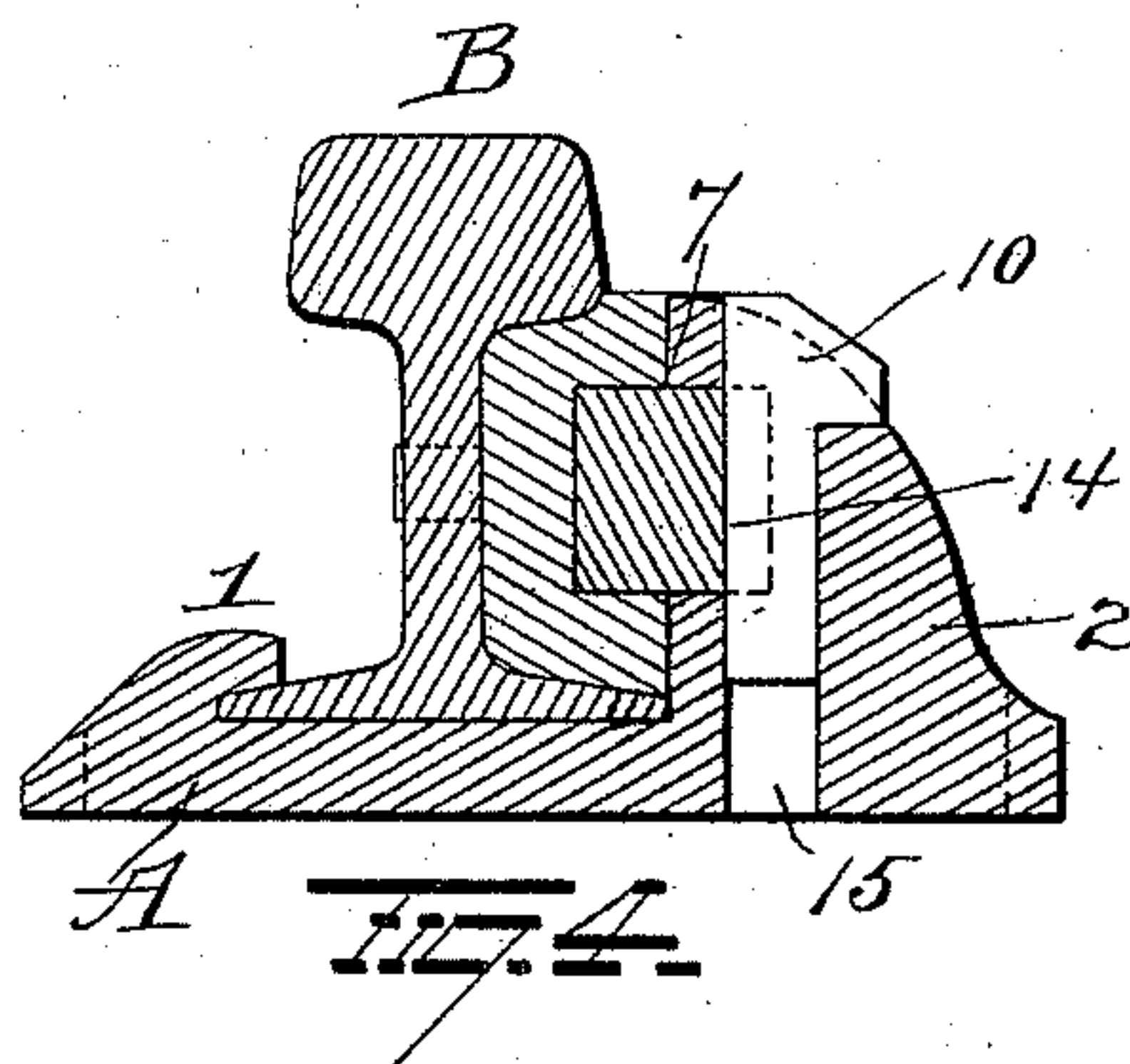
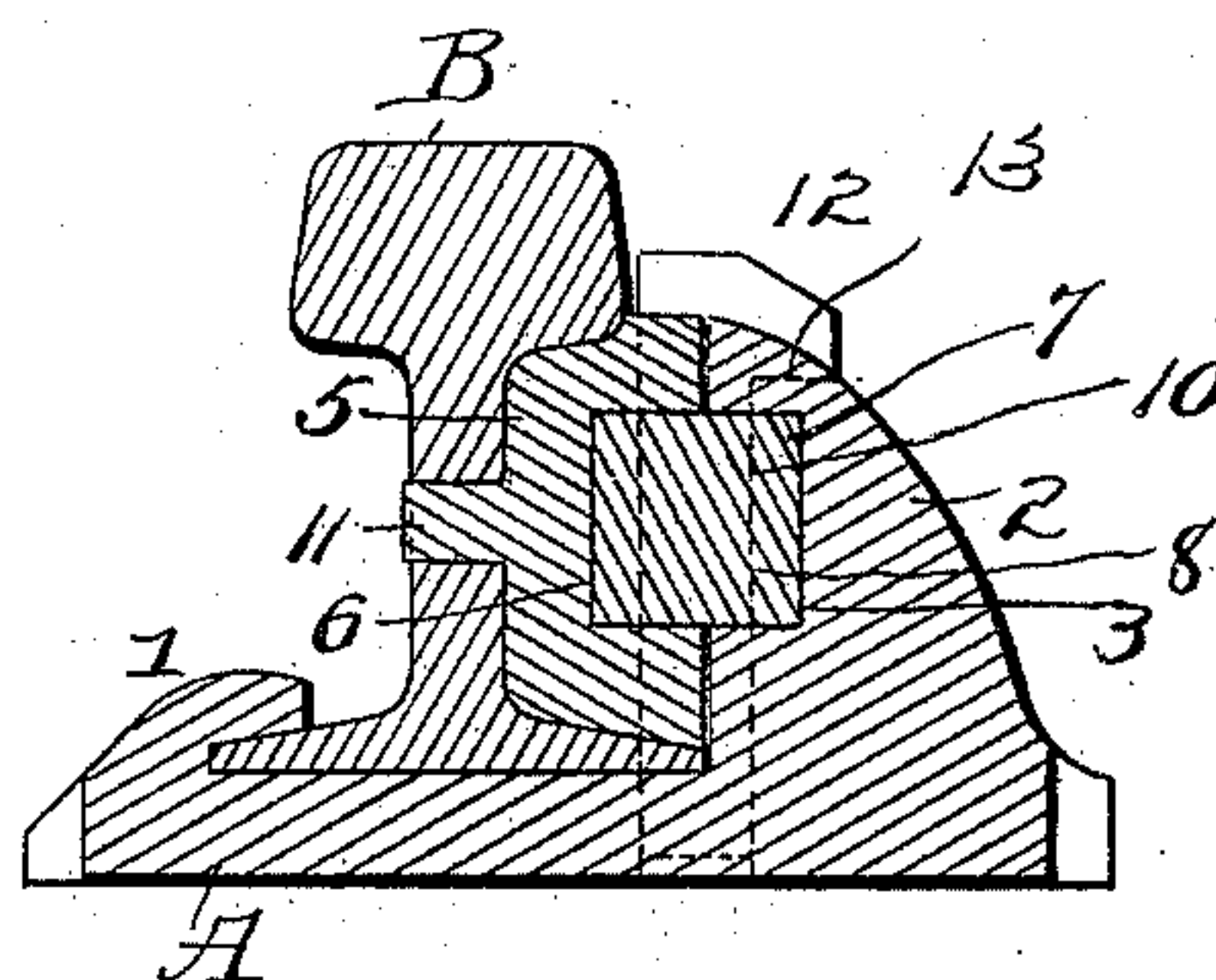
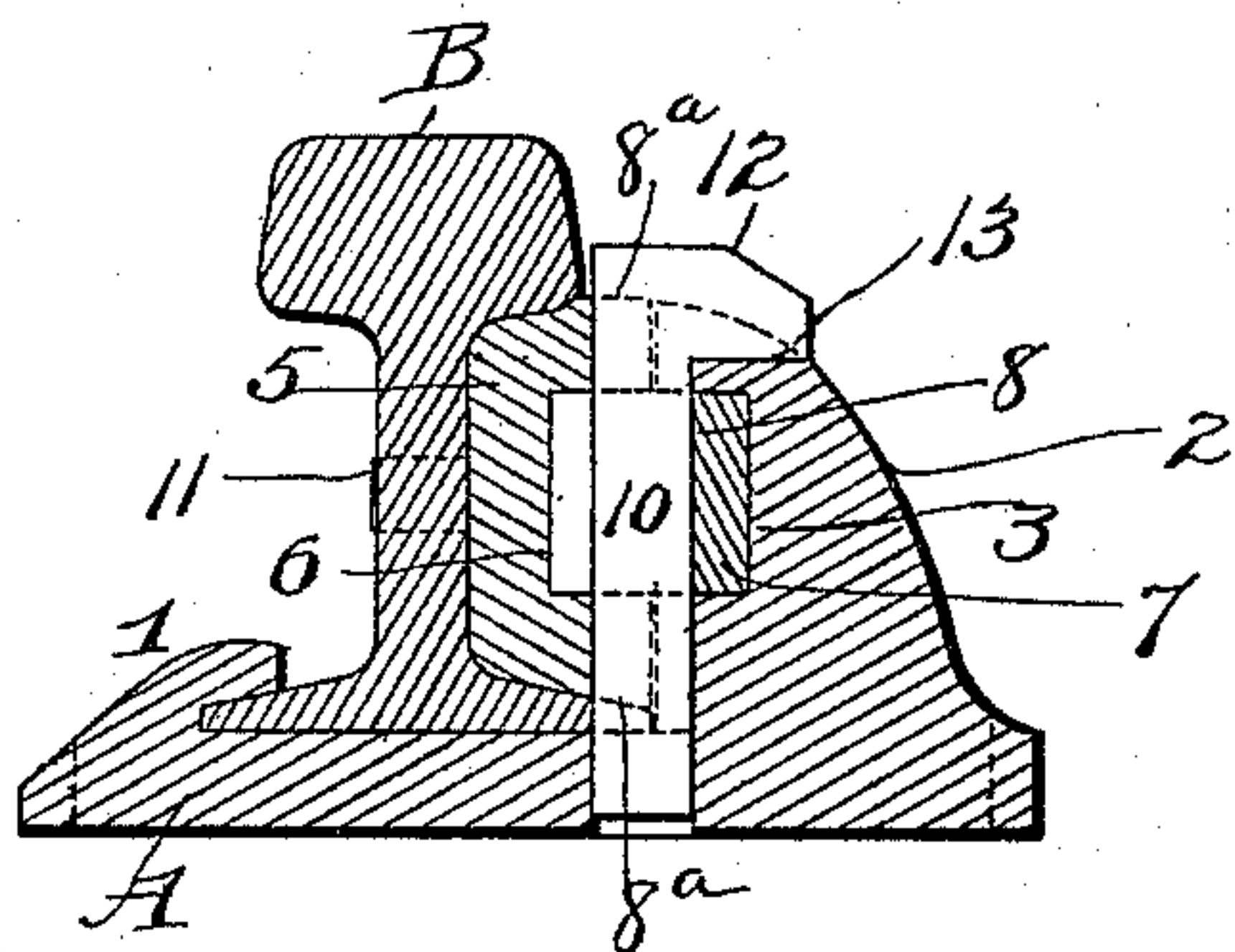
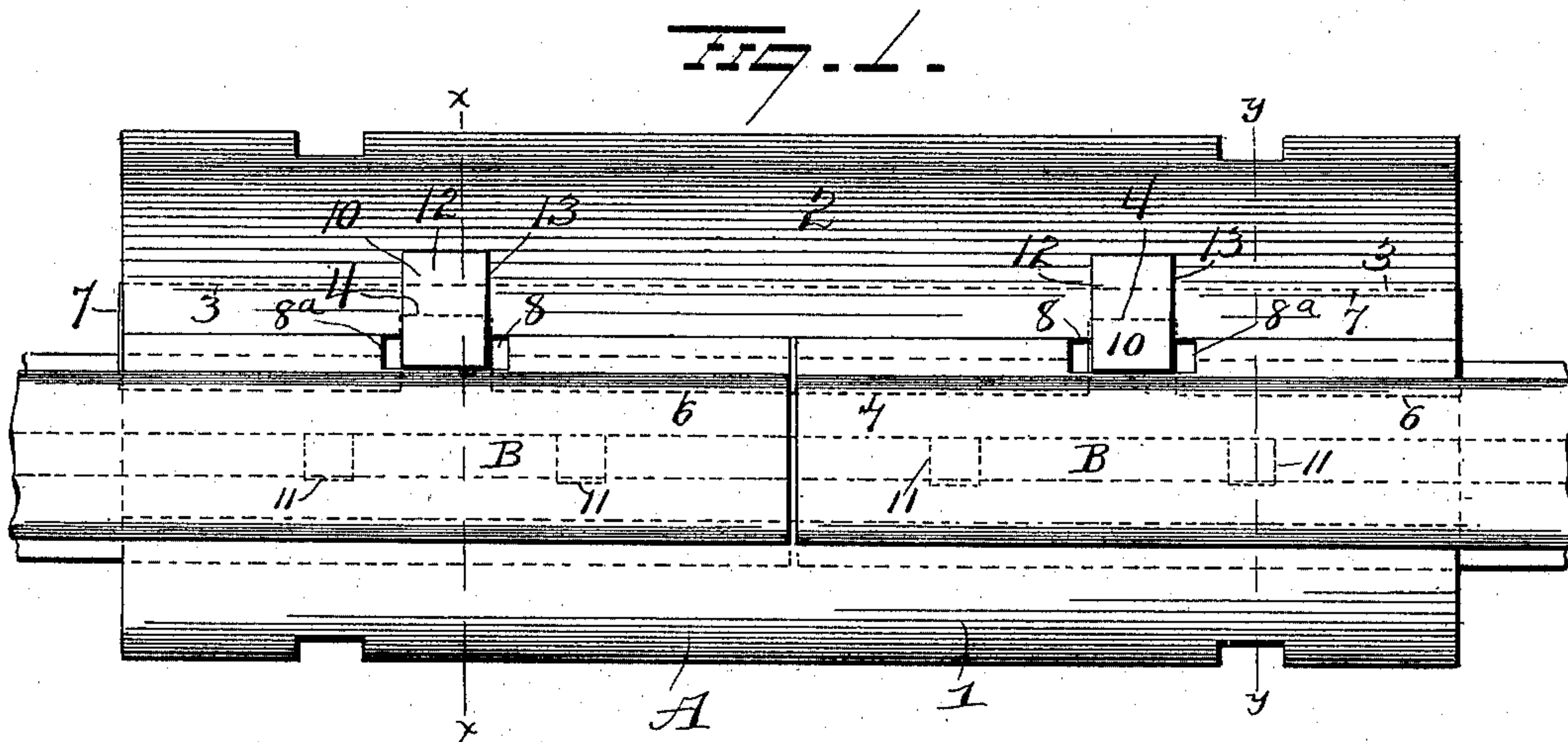
No. 608,208.

**Patented Aug. 2, 1898.**

W. H. MILLS.  
RAIL JOINT.

(Application filed Mar. 28, 1898.)

(No Model.)



*WITNESSES*

WITNESSES  
E. J. Nottingham  
G. F. Downing

INVENTOR

W. H. Mills  
By A. A. Seymour  
Attorney



# UNITED STATES PATENT OFFICE.

WILLIAM HENRY MILLS, OF WESTFIELD, NEW YORK.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 608,208, dated August 2, 1898.

Application filed March 28, 1898. Serial No. 675,452. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY MILLS, a resident of Westfield, in the county of Chautauqua and State of New York, have  
5 invented certain new and useful Improvements in Rail-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it  
10 appertains to make and use the same.

My invention relates to an improvement in rail-joints, the objects of the invention being to so construct a rail-joint as to avoid the use of threaded bolts commonly used  
15 and at the same time provide a lock for abutting rail-sections which shall be simple in construction, which shall compensate for expansion and contraction of the rails, which can be used with any rails of ordinary construction, which will permit the removal of  
20 one rail-section without disturbing the other, which will prevent the sagging of the rails at the joint, and which shall be effectual in all respects in the performance of its functions.

25 With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

30 In the accompanying drawings, Figure 1 is a plan view illustrating my invention. Figs. 2 and 3 are sectional views, and Fig. 4 is a modification.

A represents a chair on which the abutting  
35 ends of two rail-sections B B are seated, said chair being provided at one side with a flange or lip 1 to engage one flange of each rail-section. At the other side the chair is made with an enlarged upright portion 2 of a height  
40 somewhat less than that of the rail and preferably has an outer curved face, while its inner face is made perpendicular to the base of the chair and is provided throughout its full length with an angular groove 3 and at  
45 intermediate points with transverse grooves or notches 4. A curved plate 5 is adapted to conform to the contour of and lie against one side of each rail-section, and each of said plates is made with an angular groove 6, the  
50 groove of one plate alining with the groove of the other and the grooves 6 of both plates

coöperating with the groove 3 of the portion 2 of the chair to form an elongated opening, extending the full length of the chair, for the reception of a rectangular bar 7. The bar 7  
55 is provided with notches 8, adapted to aline with the transverse grooves or notches 4 in the portion 2 of the chair and with notches 8<sup>a</sup> in the upper and lower edges of the curved plates 5. Through these notches vertically-  
60 disposed keys 10 are passed, whereby to lock the plate 5 and bar 7 together and to the chair, and the plates 5 are secured to the rail-sections by means of pins 11, made integral with said plates and passing through the webs  
65 of the rail-sections. Thus it will be seen that when the parts above described are assembled the rail-sections will be firmly locked to the chair and that the joint thus formed cannot sag.

70 In order to compensate for expansion and contraction of the rail-sections, the notches 8<sup>a</sup> in the curved plates 5 are made somewhat longer than the thickness of the keys, and to prevent any possibility of the keys moving  
75 laterally they are provided with heads 12, which are seated in notches 13 in the upper edge of portion 2 of the chair.

Should one of the rail-sections break; it can be readily removed and replaced by a  
80 new one without disturbing the other rail-section, and in such case the pins on the plate 5 may be omitted, if desired. It will also be observed that by removing the keys  
85 10 and bar 7 the rail-sections can be removed sidewise from the chair, and thus facilitate the removal of one section without disturbing any other.

If desired, the notches in the bar 7 may be made in the outer side, as at 14, instead of  
90 the inner side, as shown in Fig. 4, and the portion 2 of the chair be provided with holes 15 for the reception of the keys to pass through the notched bar. In this form of the invention the notches in the bar 7 will be made of  
95 sufficient width to compensate for expansion and contraction of the rails.

My improvements are very simple in construction, comprise few and inexpensive parts, necessitate no change of construction  
100 of the rails, and are effectual in all respects in the performance of their functions.



Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a chair having an upwardly-projecting portion provided with a groove in its side face, of a bar disposed in said groove, keys engaging said upwardly-projecting portion of the chair and said bar, and plates adapted to be disposed between said bar and the rail-sections on the chair, substantially as set forth.

2. The combination with a chair having an upwardly-projecting portion provided with a groove in its inner face, of grooved plates adapted to bear against abutting rail-sections, one plate for each rail-section, a bar disposed in said grooved plates and in the groove in the upwardly-projecting portion of the chair, and keys engaging said upwardly-projecting portion of the chair and said bar, substantially as set forth.

3. The combination with a chair having an upwardly-projecting portion adapted to extend beyond the abutting ends of two rail-sections, said upwardly-projecting portion of the chair having a longitudinal groove and transverse notches in its inner face, of a grooved plate adapted to rest against each rail-section and having transverse notches, a bar extending from end to end of the chair and disposed in the longitudinal groove therein and in the grooved plates, said bar having transverse notches, and keys passing through the transverse notches in the extension on the

chair, the grooved plates and the bar, substantially as set forth.

4. The combination with a chair having an upward extension, rail-sections seated on the chair and having transverse holes in their webs and curved plates adapted to rest against the sides of the respective rail-sections, of pins projecting from said plates and passing through the holes in the webs of the rail-sections, a bar disposed between the curved plates and the extension on the chair, and transverse keys engaging said extension on the chair and said bar, substantially as set forth.

5. The combination with a chair having an upward extension and rail-sections seated on said chair, of plates adapted to bear against the rail-sections, a bar having bearings at its respective sides in said plates and said upward extension on the chair and keys passing through the chair and said plates and bar, substantially as set forth.

6. The combination with a chair having an upward extension provided with notches, and rail-sections seated on said chair, of plates adapted to bear against said rail-sections, a bar disposed in said plates and upward extension on the chair, keys passing through the chair and bar, and a head on each key adapted to be seated in the notches in said upward extension of the chair, substantially as set forth.

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

WILLIAM HENRY MILLS.

Witnesses:

G. S. FLAGLER,  
JEROME LA DUE.