No. 679,902. Patented Aug. 6, 1901.

E. A. MITZNER.

RAIL JOINT.

(Application filed Aug. 30, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

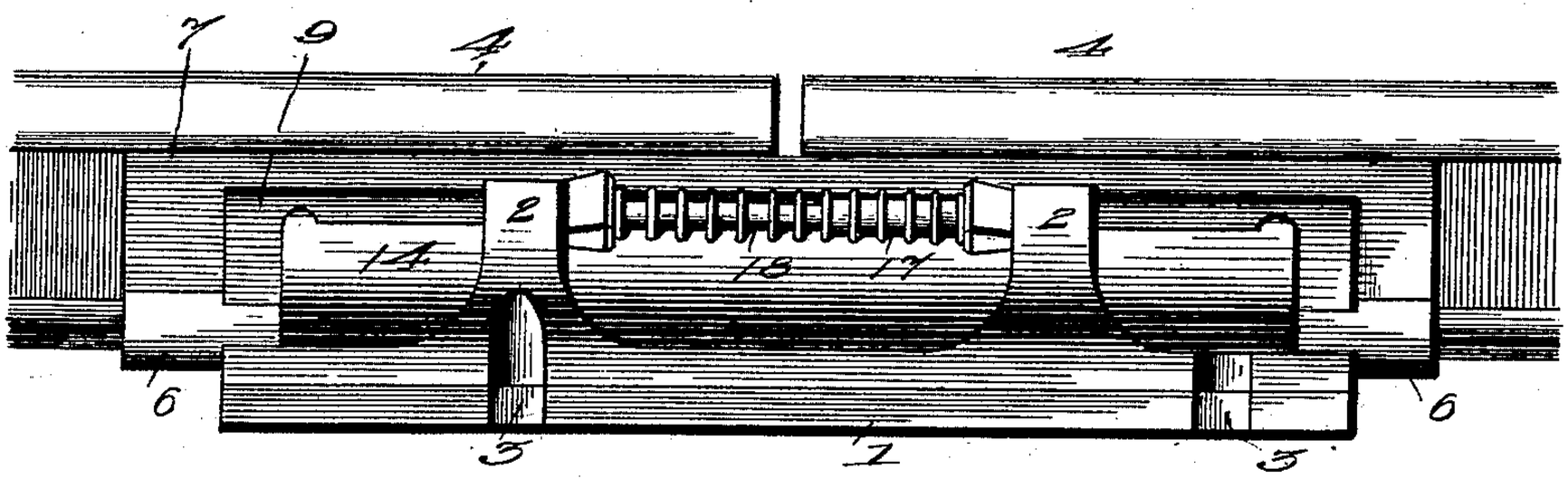


Fig. 2.

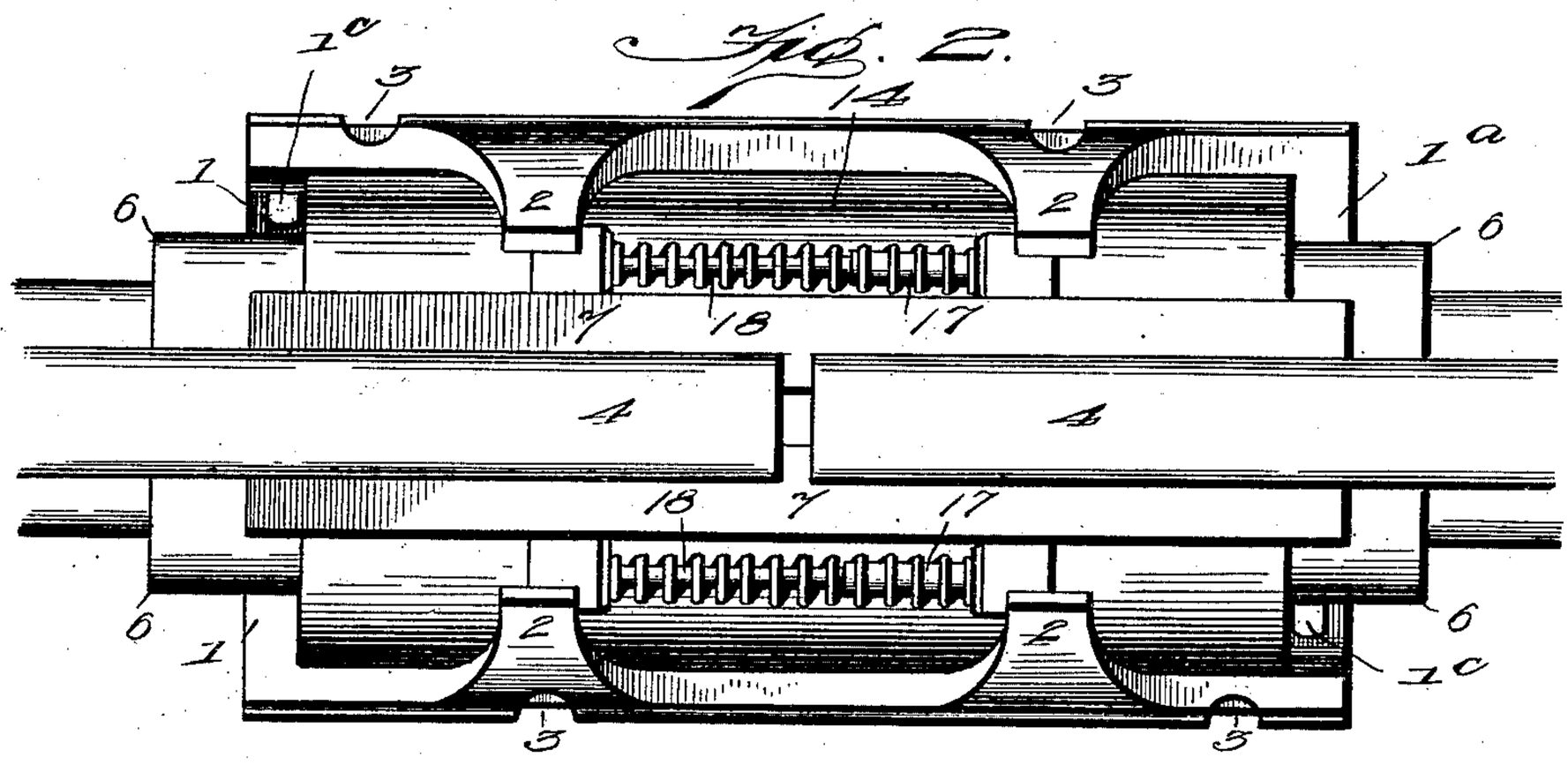
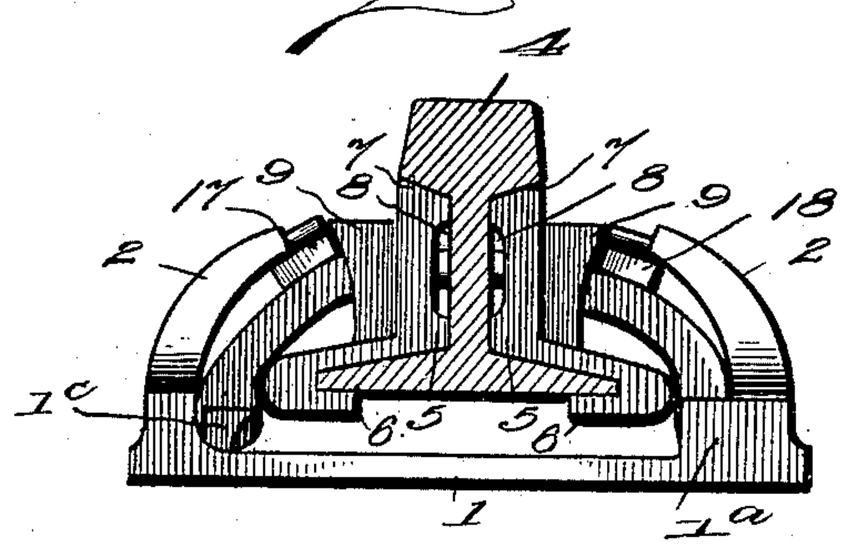


Fig. 3.



Inventor
E. A. Mitzner,

Witnesses
Chas. Roerth.
Herbert B. Lawson.

By Victor J. Evans Attorney.

No. 679,902.

Patented Aug. 6, 1901.

E. A. MITZNER.

RAIL JOINT.

(Application filed Aug. 30, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

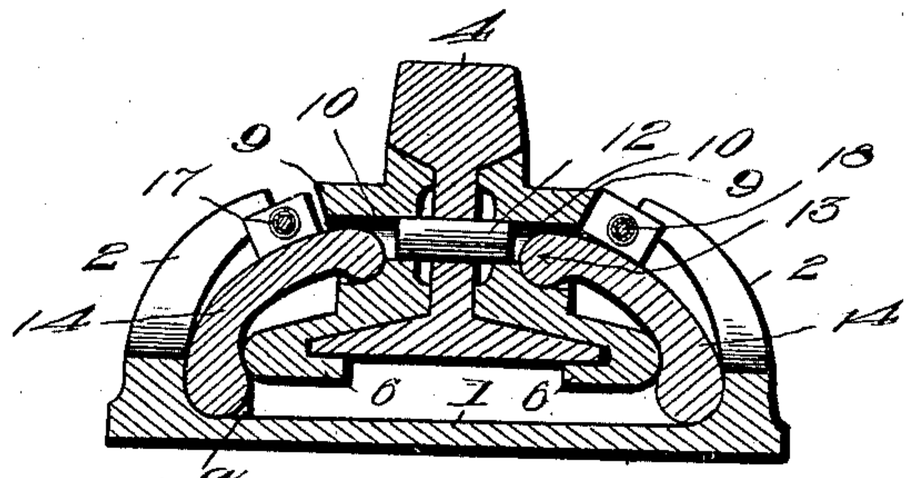


Fig. 5.

Fig. 6.

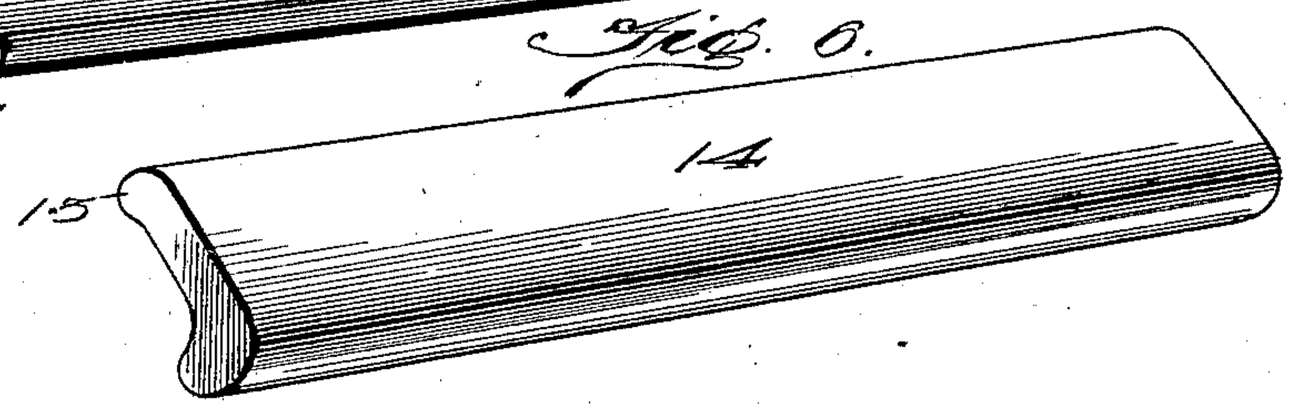


Fig. 7.

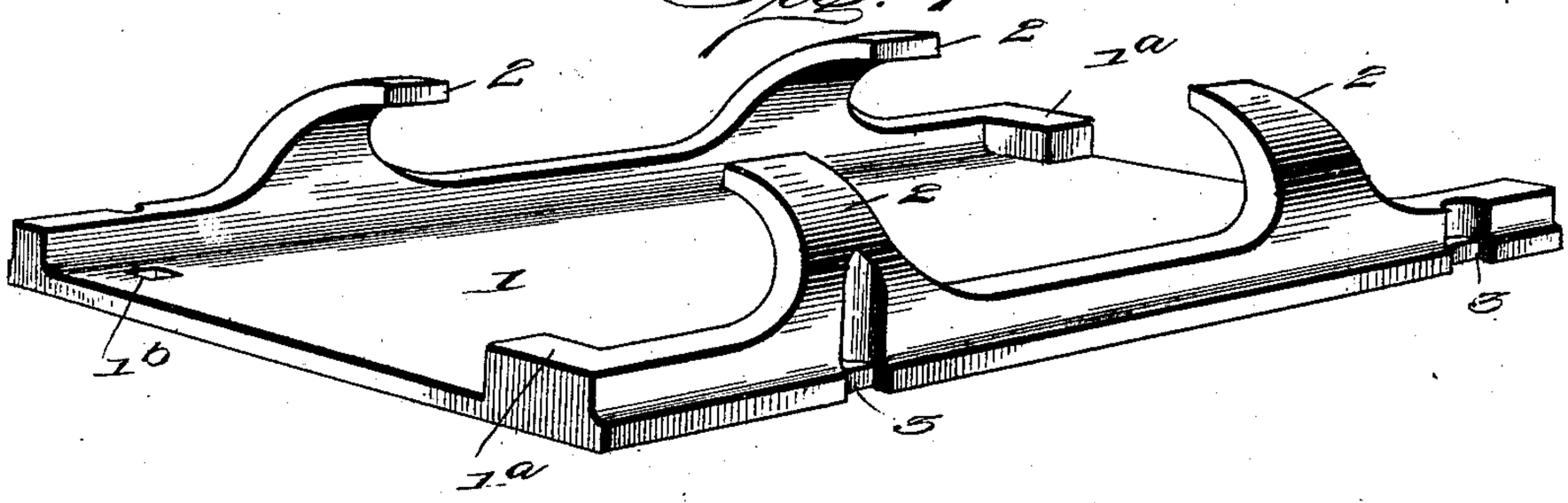
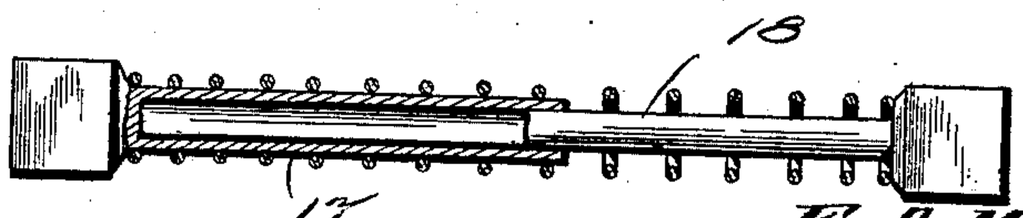


Fig. 8.



Witnesses:
Jno. Lord.
Herbert D. Lawson.

Inventor
E. A. Mitzner,
By Victor J. Evans. Attorney

UNITED STATES PATENT OFFICE.

ELLSWORTH A. MITZNER, OF THELMA, INDIANA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 679,902, dated August 6, 1901.

Application filed August 30, 1900. Serial No. 28,538. (No model.)

To all whom it may concern:

Be it known that I, ELLSWORTH A. MITZNER, a citizen of the United States, residing at Thelma, in the county of Porter and State of Indiana, have invented new and useful Improvements in Rail-Joints, of which the following in a specification.

This invention relates to new and useful improvements in rail-joints; and its primary object is to provide a device of this character which is adapted to tighten automatically as trains pass thereover, thereby insuring a tight joint at all times and preventing sagging of the meeting ends of the rails and the resulting jarring to the cars passing thereover.

To these ends the invention consists in providing a base having inwardly-curved side arms. The ends of the rail are placed upon the base, and side strips of peculiar form are slipped into engagement with the base-flange of said rails. These irons have thickened portions, which bear upon the web of the rails and are recessed to receive the upper edges of curved plates, which bear upon the base at the sides thereof. These plates extend under the arms of the base, and wedges are fitted therebetween, said wedges being normally projected by springs.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a side elevation thereof. Fig. 2 is a plan view. Fig. 3 is an end elevation. Fig. 4 is a transverse section. Fig. 5 is a detail view of a side strip. Fig. 6 is a similar view of the curved plate. Fig. 7 is a perspective view of the base; and Fig. 8 is a view, partly in section, of the wedge mechanism.

Referring to said figures by numerals of reference, 1 is a preferably rectangular base having inwardly-curved arms 2 extending from the sides thereof at each end. This base is also provided with recesses 3 in its edges for the reception of securing-spikes. The ends of rails 4 4 are placed upon the base and between the arms 2 thereof. A side strip 5 is then placed on each side thereof. These strips comprise each a lower U-shaped portion 6, adapted to engage one of the base-flanges of the rail, and a thick vertical extension 7 projects upward therefrom and is adapted to lie snugly against the web of the rails between the tread and the flange. This portion is recessed within its inner face, as at 8, said recess or groove extending the entire length of the strip. The outer face of the strip is provided with a preferably rectangular projecting portion 9, recessed as at 10. Apertures 11 are also formed in the bottom of the recess and register with similar openings formed in the rails. These are for the reception of binding-pins 12, which are employed for retaining the rails together in the event of expansion or contraction of the metal.

The recesses 10 receive the upper rounded edges 13 of curved plates 14. These plates are arranged at opposite sides of the rail and bear upon the base at the sides thereof. The plates 14 are of such length as to hold the rails and their side strips above the base 1.

Fitted between each arm 2 and the curved plates 14 is a wedge 15. Two wedges are employed upon each side of the joint, one for each arm, and one of them is secured to a tube 17, while the other is arranged at the end of a rod 18. This rod is slidably mounted within the tube 17, and a coiled spring 19 incloses both the tube and rod and bears at opposite ends upon the shoulders of the wedges, respectively.

It will be understood that as a train passes over the joint the weight thereof will have a tendency to press the rails downward. This movement of the rails, however, is impossible without an inward movement of the plates 14. Should these plates swing inward, the wedges 15 will promptly fill the increased gap under the arms 2 and prevent the return of the parts to their original position.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

1ª represents corner projections formed on the base, providing stops to limit the move-

ment of the plates 14 in one direction, which corner spike-holes 1^b are also formed in the base to receive spikes 1^c after the plates 14 are inserted, so as to prevent the dislodgment or endwise movement of the plates in the opposite direction.

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

1. In a rail-joint the combination with a base having arms thereto; of side strips engaging the rails said strips having recesses therein, a U-shaped portion to each strip adapted to receive a flange of each rail, inwardly-curved plates loosely mounted upon the base and supporting the rails, said plates engaging the recesses of the strips at points between the fulcrums of the plates.

2. In a rail-joint the combination with a base having arms thereto; of side strips engaging the rails, inwardly-curved plates loosely mounted upon the base and supporting the rails, said plates engaging the strips at points between the fulcrums thereof, wedges between the plates and arms, and means for automatically projecting the wedges therebetween.

3. In a rail-joint the combination with a base having arms thereto; of side strips engaging the rails, inwardly-curved plates loosely mounted upon the base and supporting the rails, said plates engaging the strip at points between the fulcrums thereof, wedges between the plates and arms, a tube to one wedge of each side, rods to the remaining wedges slidably mounted in the adjacent tubes, and a spring bearing at opposite ends upon the wedges.

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

ELLSWORTH A. MITZNER.

Witnesses:

GUSTE MITZNER,

W. A. CLIFFORD.