

W. A. DEAN.
RAILWAY STRUCTURE.
APPLICATION FILED MAR. 19, 1907.

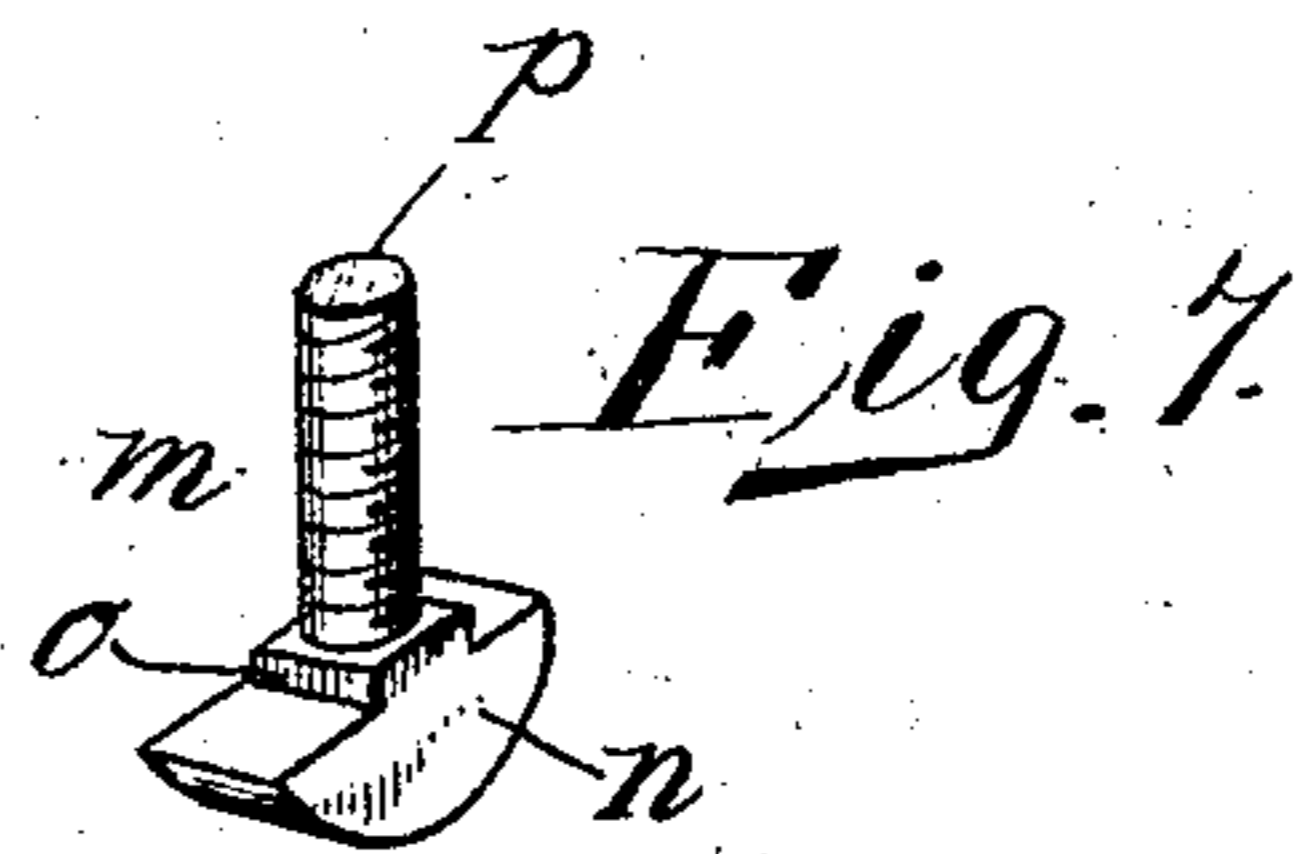
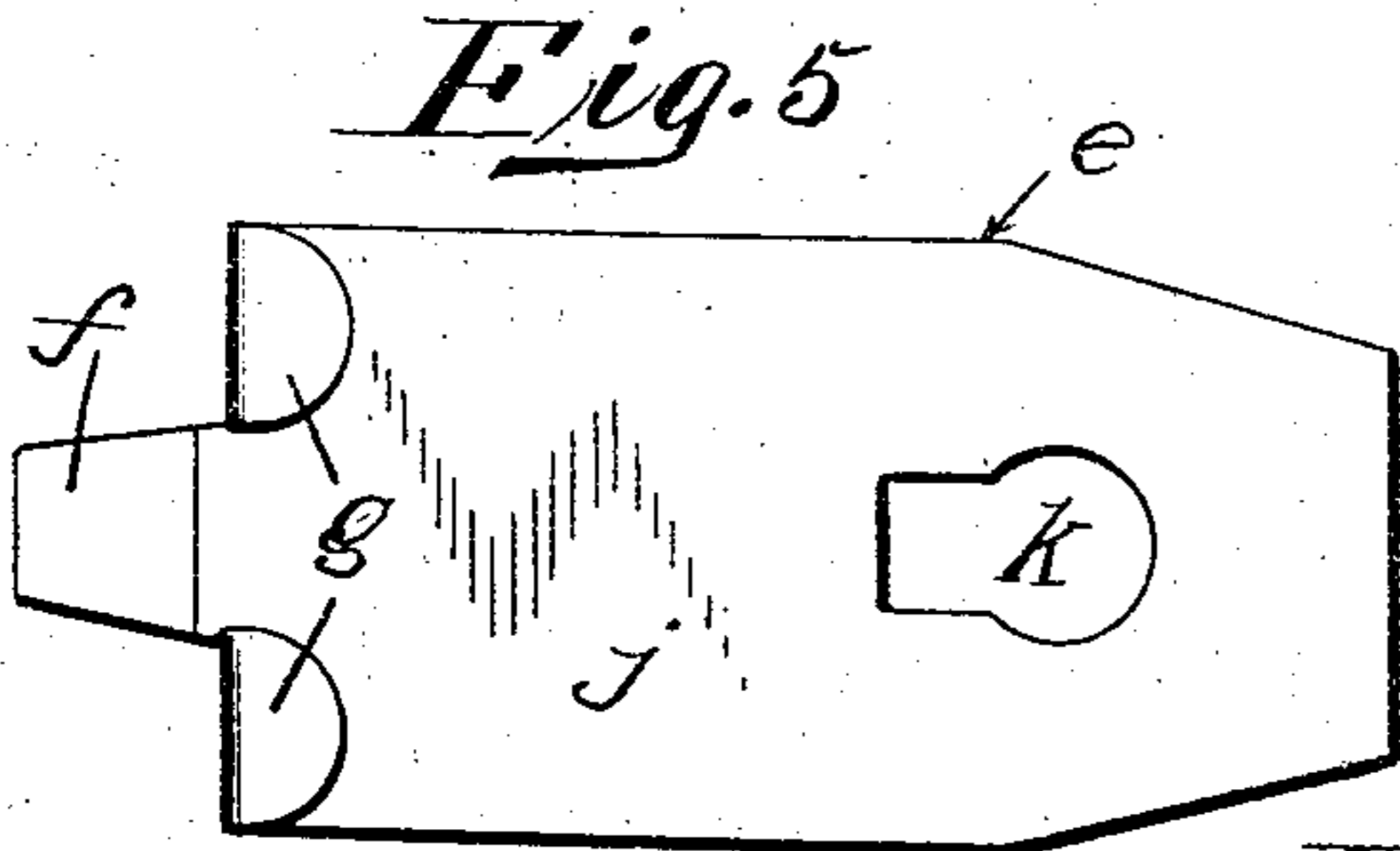
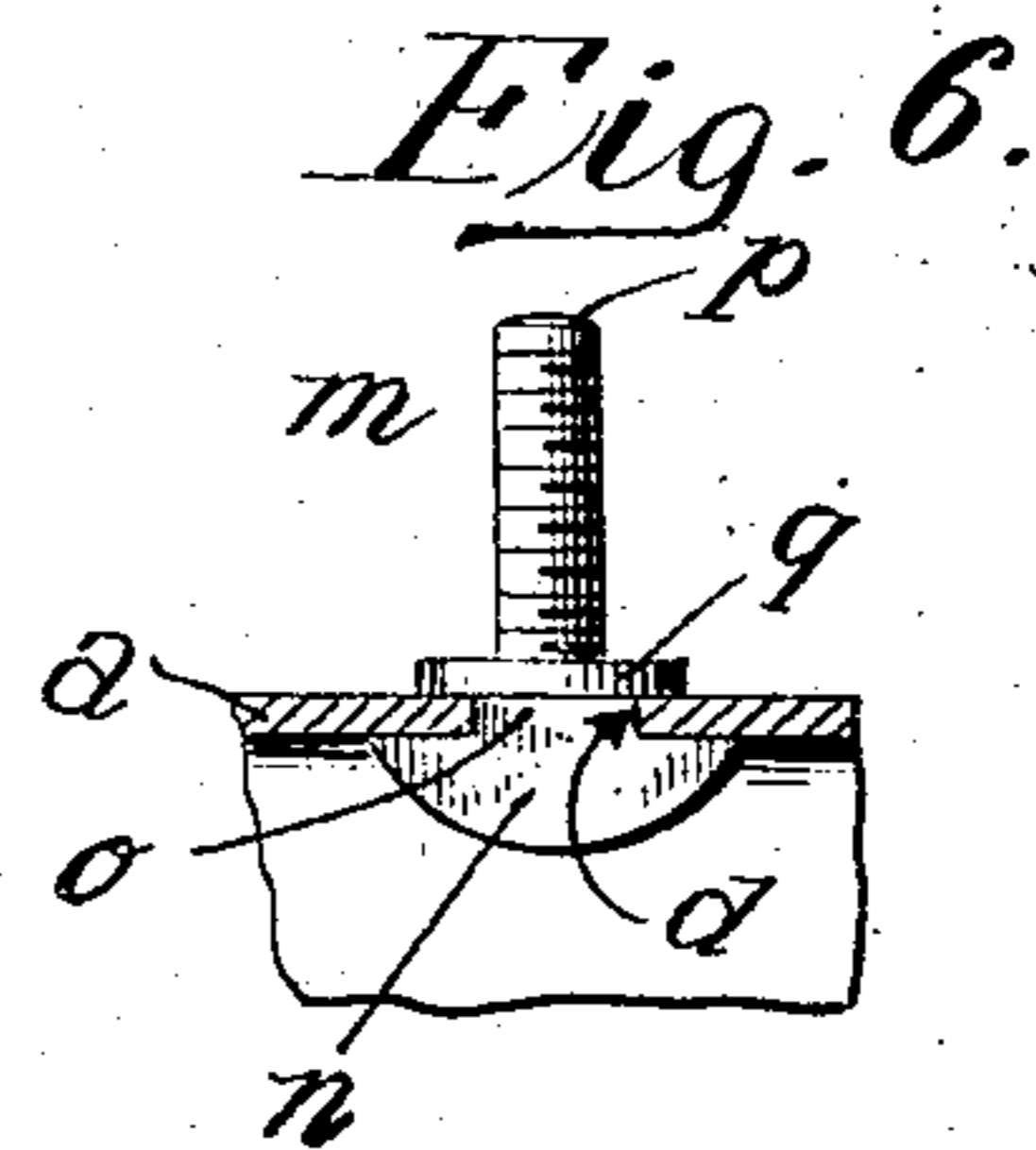
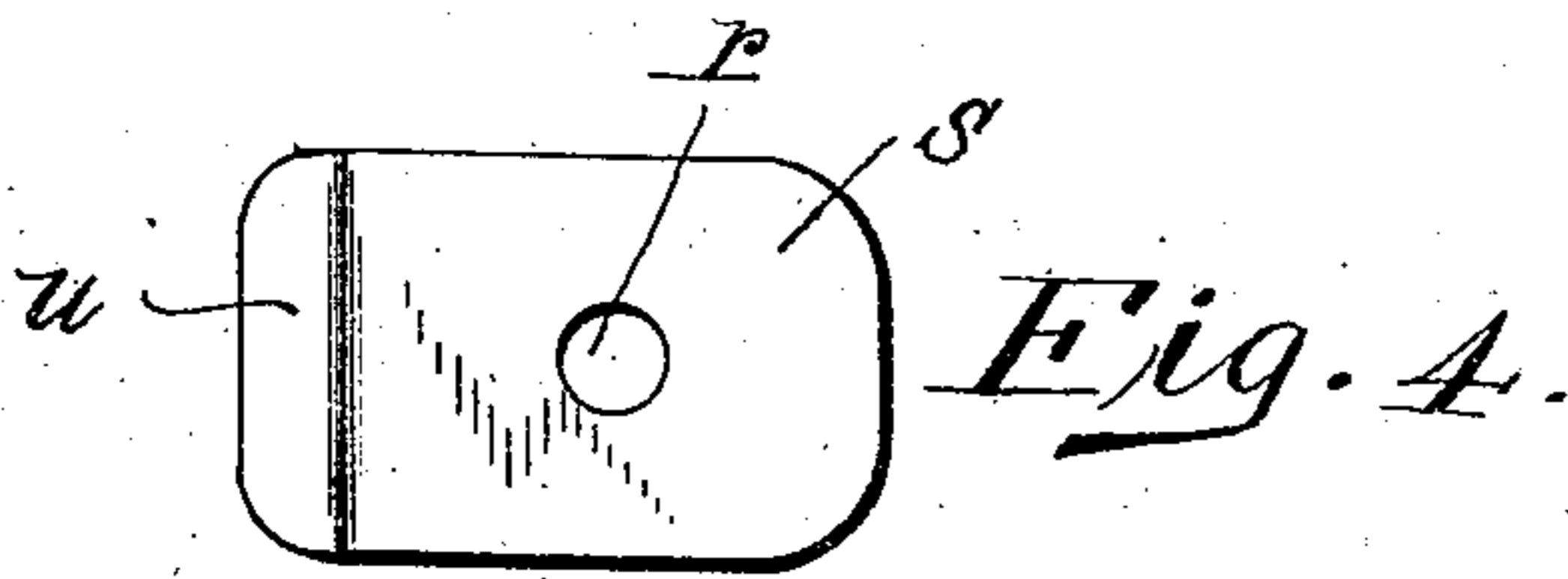
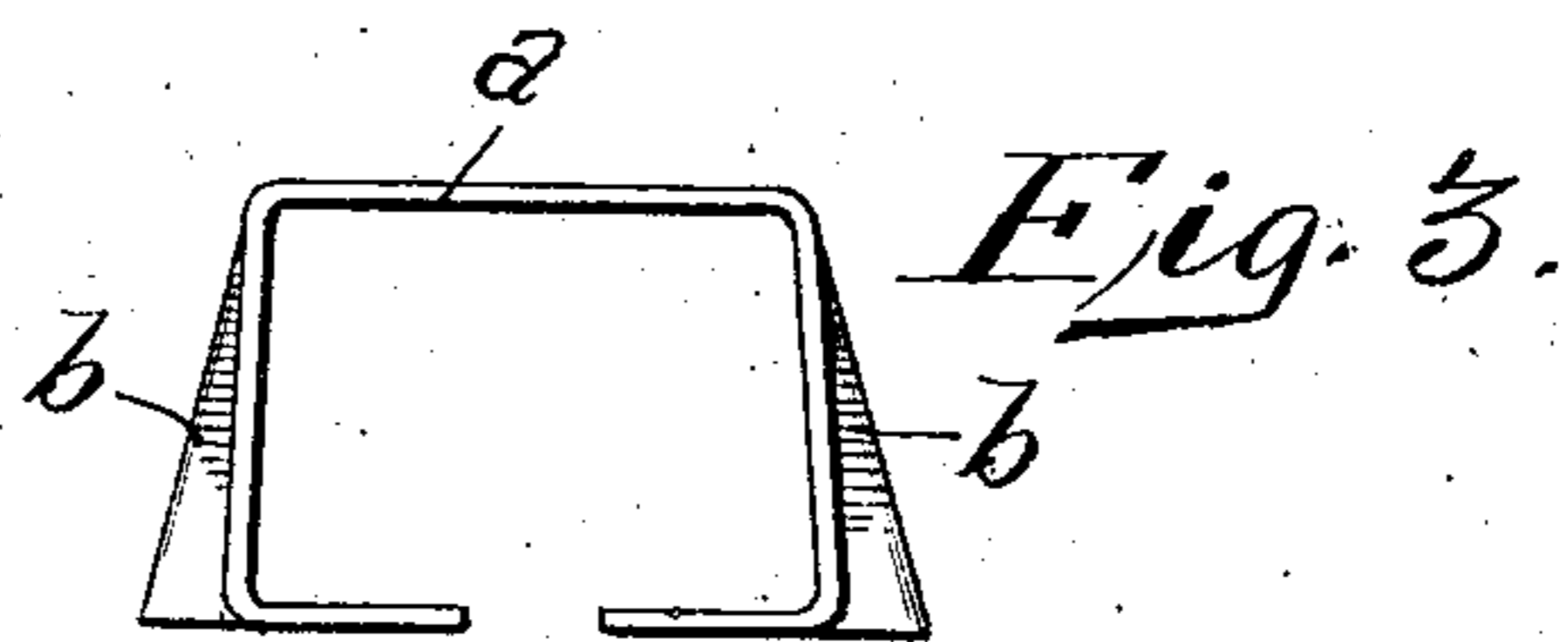
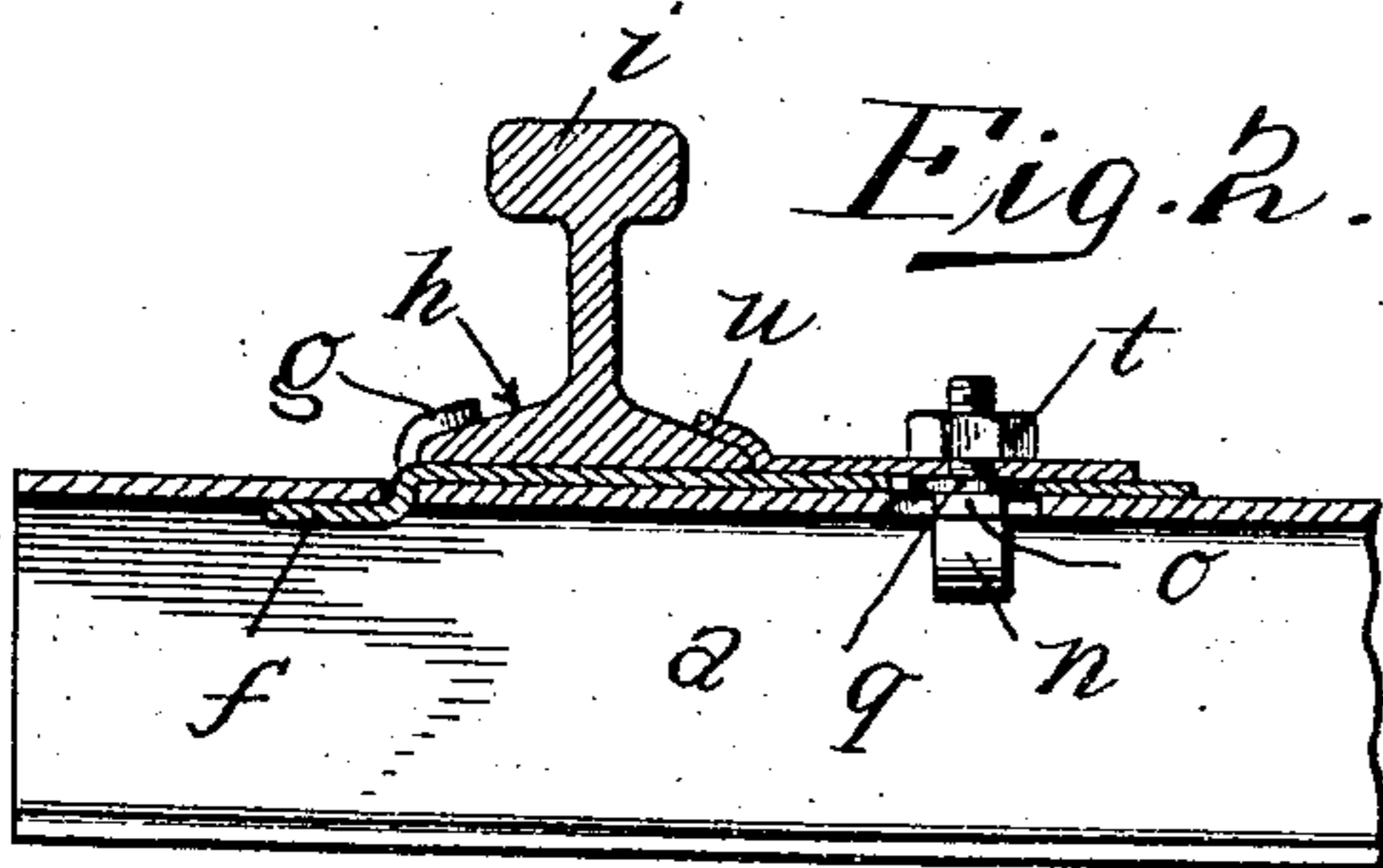
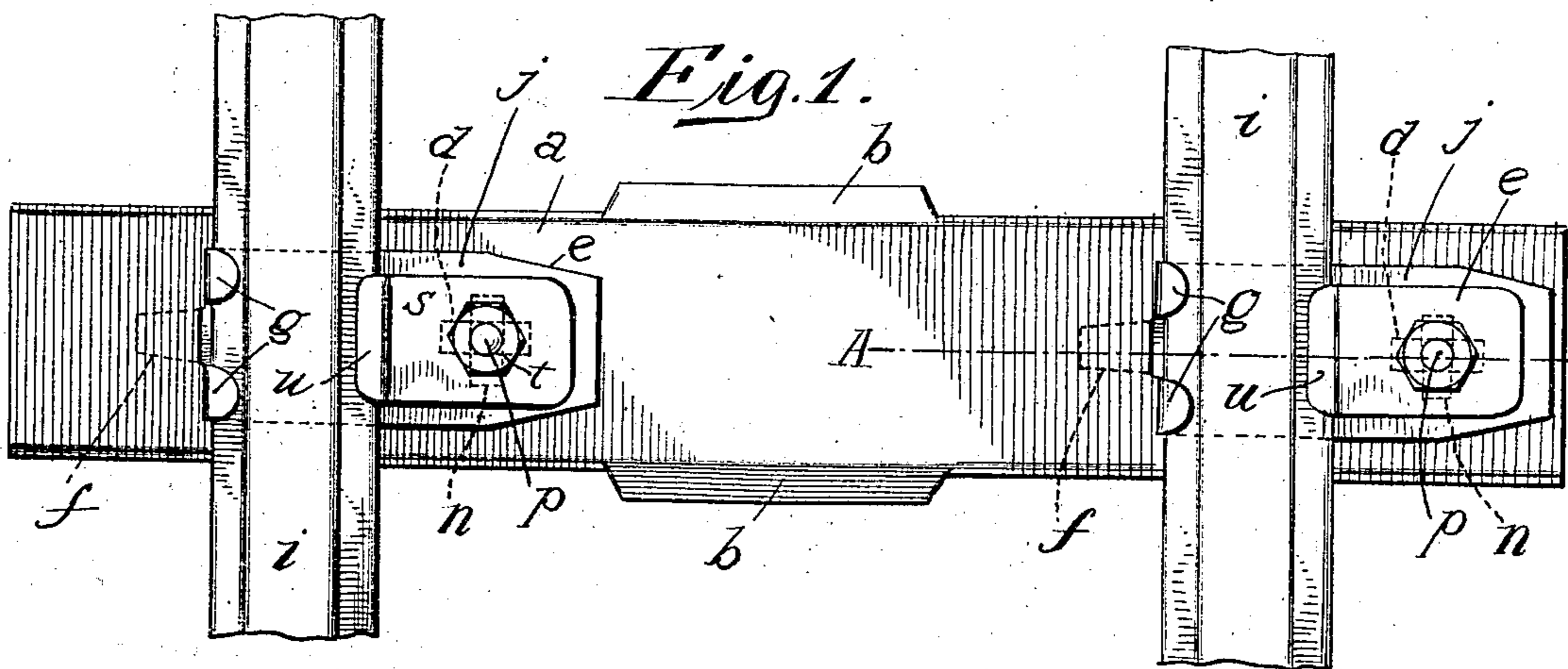
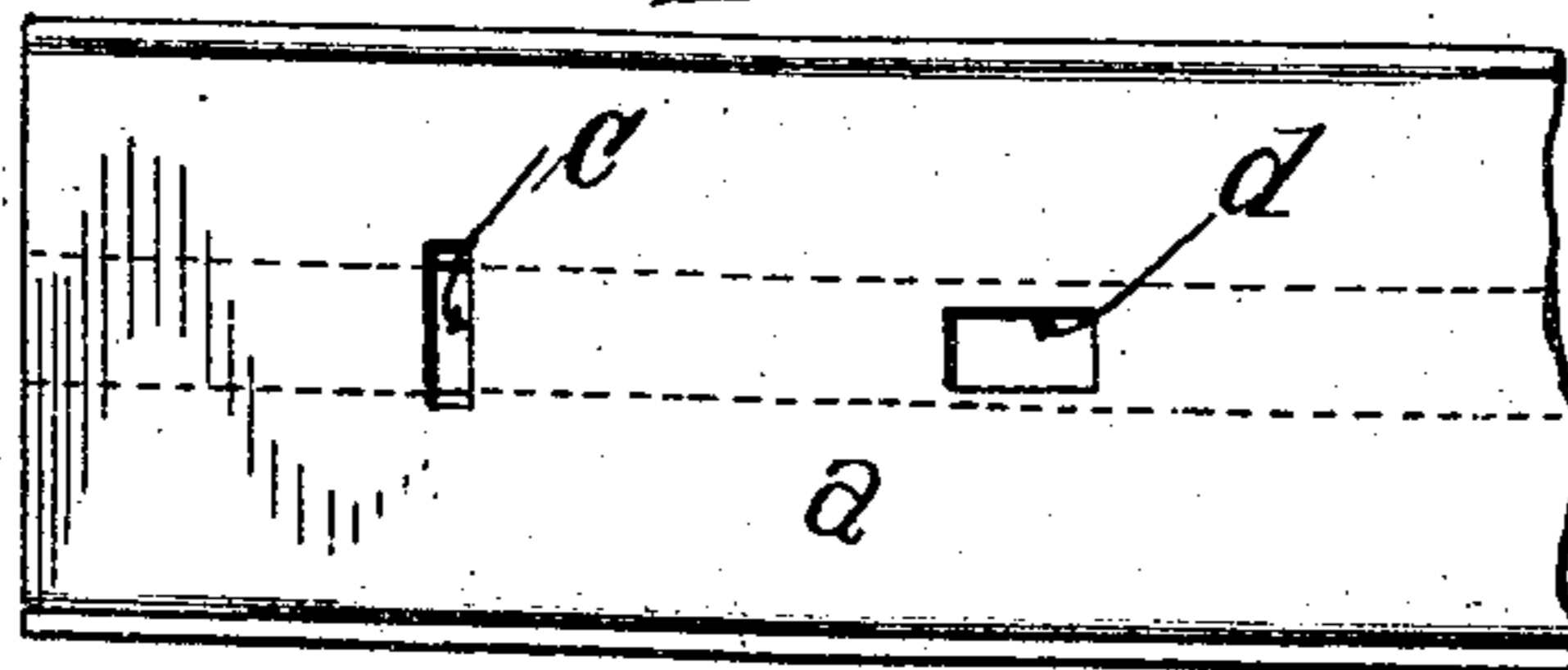


Fig. 8.



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UNITED STATES PATENT OFFICE.

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RAILWAY STRUCTURE.

859,207.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed March 19, 1907. Serial No. 363,304.

To all whom it may concern:

Be it known that I, WILLIAM A. DEAN, a citizen of the United States, residing at Corning, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Railway Structures, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in railway structures, and particularly to improvements in metallic railway ties and means for securing the rails thereto.

An object of my invention is to provide a structure of the class described which will be simple in construction, comparatively cheap in manufacture and efficient and safe in operation.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, Figure 1 is a top plan view of my new structure; Fig. 2 is a sectional view on the line AA of Fig. 1; Fig. 3 is an end view of the tie; Fig. 4 is a detail showing in plan the locking plate; Fig. 5 is a detail showing in plan the chair; Fig. 6 is a detail sectional view showing the retaining bolt in place in the tie; Fig. 7 is a perspective detail of the retaining bolt and Fig. 8 is a detail showing the location of the slots formed in the end of the tie.

The tie *a* is preferably made of sheet metal bent into the form best shown in Fig. 3 and having wing portions *b* at its mid-portion on each side which incline from the top downwardly and outwardly (Figs. 1 and 3). These wing portions prevent endwise creeping or displacement of the tie *a*. At each end the tie is formed with two slots *c* and *d*. The slot *c* extends across the tie while the slot *d* extends in the direction of the length of the tie. The chair or brace *e* is shown in Fig. 5 in detail and in Fig. 2 in sectional view. It is provided with a tongue or lip *f* adapted to pass through the slot *c* and engage the under side or face of the top of the tie, (Fig. 2). The chair *e* is further formed with ears *g* adapted to fit snugly over the inclined upper face *h* of the base of the rail *i*. The latter is seated upon the flat base portion *j* of the chair *e*; and this flat base portion is formed with a keyhole-shaped slot *k* which is adapted to register with the slot *d* in the tie *a*. The retaining bolt *m* is formed with a head *n* and a square shoulder *o*. The shank *p* of the retaining bolt *m* is pushed down through the slot *d* in the tie and turned through a quarter turn and then drawn back so that the square shoulder *o* engages the walls of the slot *d*, thereby serving to lock the bolt against rotation. In order to prevent the disengagement of the shoulder *o* from the walls of the slot *d* by the bolt falling, the collar or washer *q* is screwed down upon the shank *p* of

the bolt, until the washer rests upon the top of the tie *a* (Fig. 6). The shank *p* of the bolt *m* extends upwardly through the hole *r* in the locking plate *s* (Figs. 2 and 4) and a nut *t* is screwed down upon the shank, until it rests upon the top of the locking plate *s*, thereby securing the latter firmly in position. The locking plate *s* is formed with a lip *u* which fits over the top of the base of the rail *i*.

From the foregoing it will be seen that the chair or brace *f* is readily placed in position and that the rail *i* is securely held between the curved lips *g* of the chair and the lip *u* of the locking plate *s*. By the arrangement of the parts just described and shown in the drawings, the locking plate *s* is readily and securely placed in position by passing it over the shank *p* of the bolt *m* and screwing down the nut *t*. Thus, the laying of the track is greatly expedited; and the whole structure is very compact and secure and cannot be displaced by a twisting or turning of the chair *e*.

Details of construction may be varied without departing from the spirit of my invention. Thus, the locking plates *s* may be both placed upon the inside of the rails, while the braces *e* may be both placed on the outside thereof; or vice versa, by merely changing the position of the slots *c* and *d*, at one end of the rail.

I claim:

1. In a railway structure of the class described, the combination with the rail, of a tie formed with a slot; a brace formed with a tongue which engages in said slot and with ears which engage one side of the base of the rail; and a locking plate secured above said brace and tie and in engagement with the other side of the base of said rail.

2. In a railway structure of the class described, the combination with the rail, of a tie formed with a slot; a brace formed with a tongue which engages in said slot and with ears which engage one side of the base of the rail, said brace extending beneath said base to the other side thereof and resting upon the top of said tie; and a locking plate secured to said tie above said brace and formed with a lip which engages said other side of the base of the rail.

3. In a railway structure of the class described, the combination with the rail, of a tie formed with a slot; a bolt the shank of which extends through said slot upwardly from beneath the top of said tie, said bolt being formed with a shoulder which engages the walls of said slot to prevent rotation of the bolt and being provided with a collar to prevent said bolt's falling through said slot; rail-locking devices mounted on said tie; and a nut on said shank for holding said devices in place.

In testimony whereof I have hereunto set my hand in the presence of the two undersigned witnesses.

WILLIAM A. DEAN.

Witnesses:

GERTRUDE GIBSON,
EDWIN C. ENGLISH.