(No Model.)

A. J. MOXHAM.

TIE ROD FOR RAILROAD TRACKS.

No. 492,469. Patented Feb. 28, 1893.

Fig. 1.

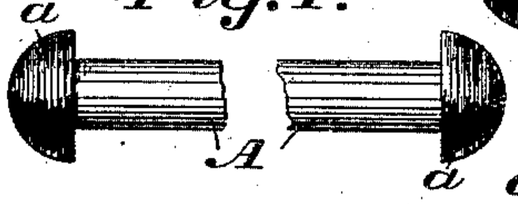


Fig. 12.

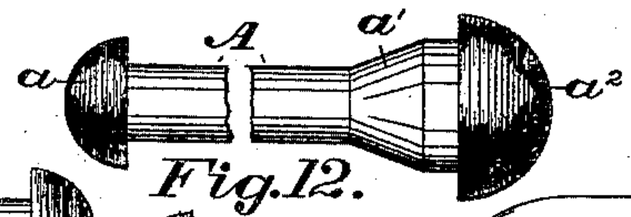
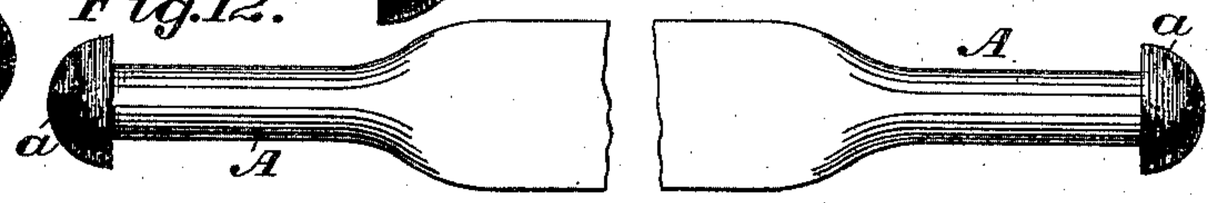


Fig. 2.



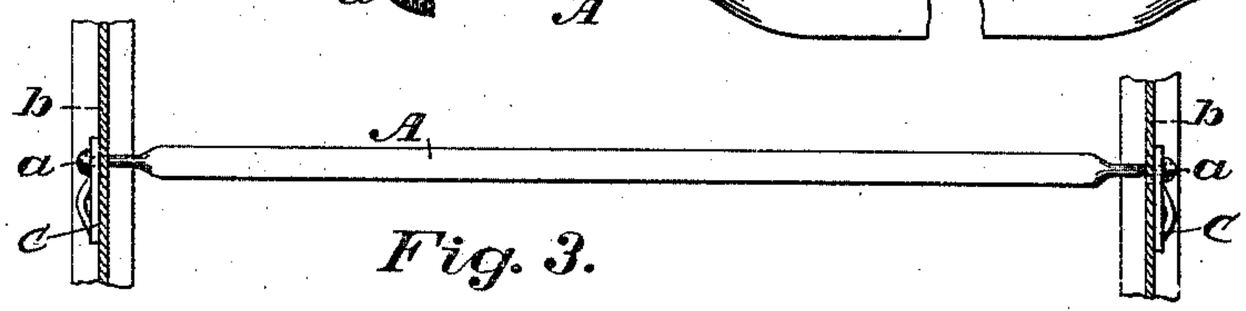


Fig. 3.

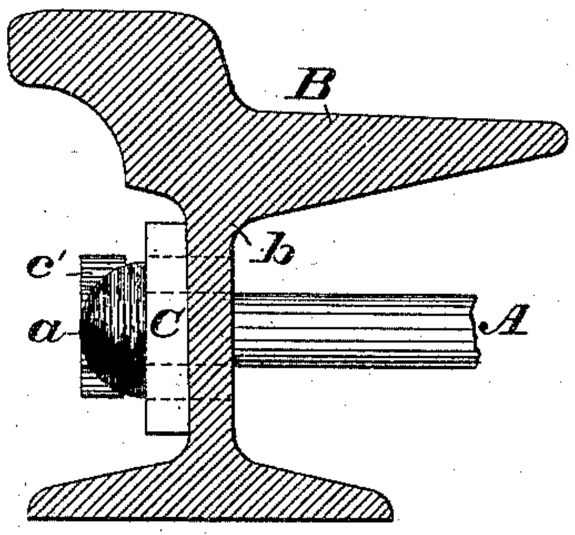


Fig. 4.

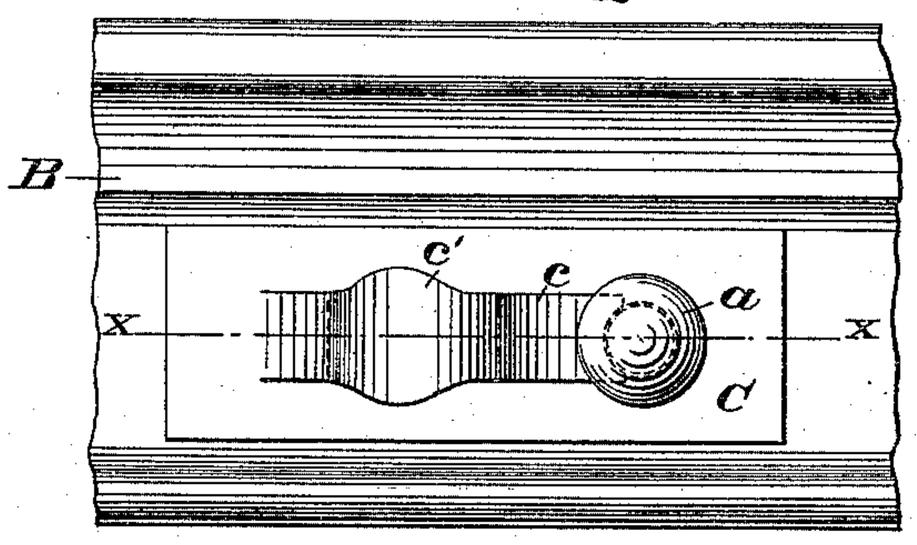


Fig. 5.

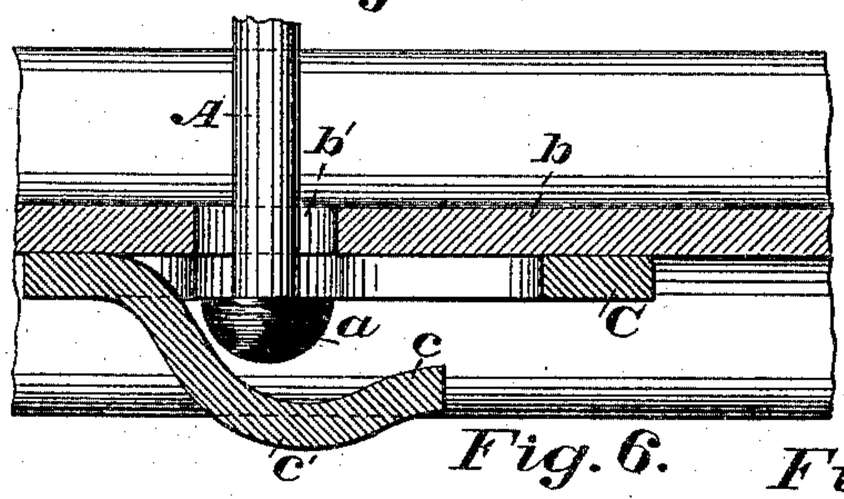


Fig. 6.

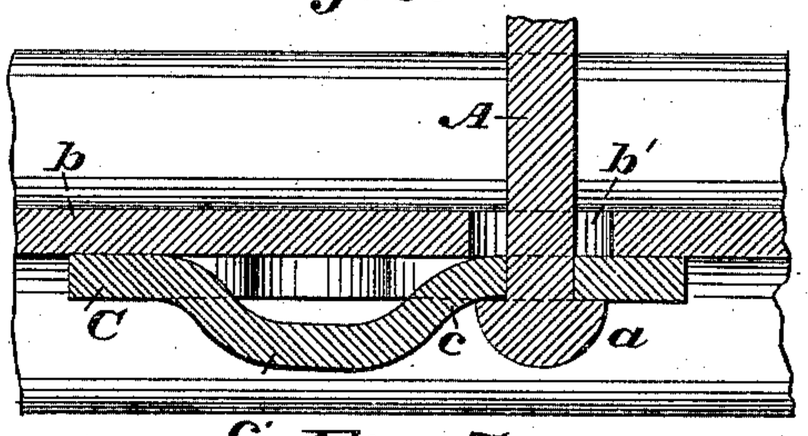


Fig. 8.

Fig. 7.

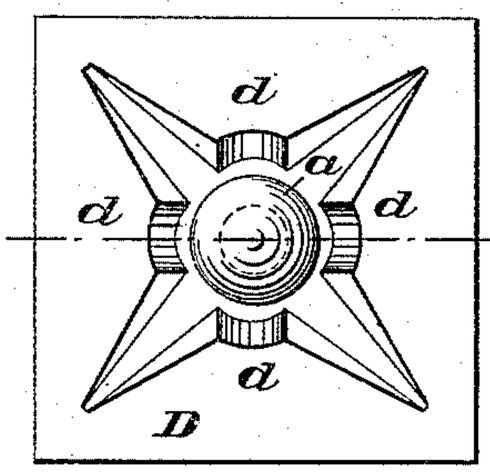
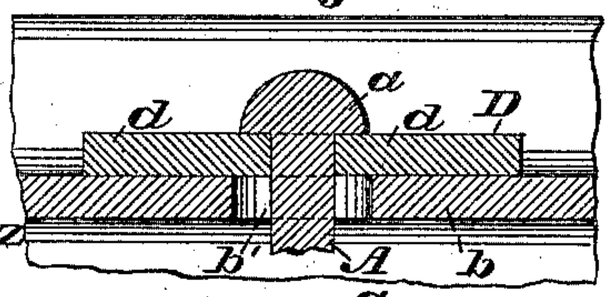


Fig. 9.



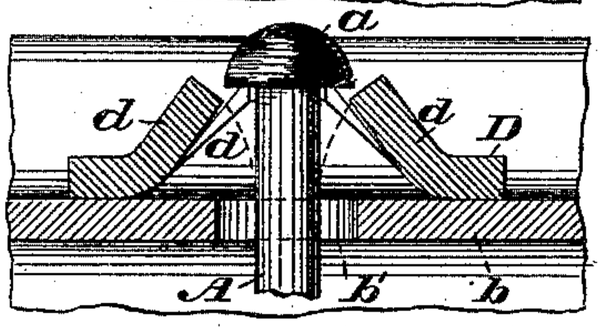


Fig. 10.

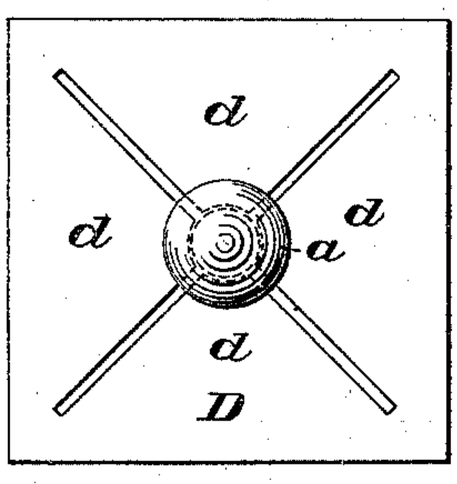


Fig. 11.

WITNESSES:

Francis P. Reilly.

W. F. Brickell,

INVENTOR

A. J. Moxham

BY R. H. Dorsheimer

ATTORNEY.

UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

TIE-ROD FOR RAILROAD-TRACKS.

SPECIFICATION forming part of Letters Patent No. 492,469, dated February 28, 1893.

Application filed February 2, 1892. Serial No. 420,089. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Tie-Rod for Railroad-Tracks, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide a tie-rod which will hold the rails absolutely to gage, screw-threading being avoided and the rod thus left of its full or normal strength.

The invention will first be described in detail and then particularly set forth in the claims.

In the accompanying drawings, Figures 1 and 2 are views in plan of tie-rods embodying my invention. Fig. 3 is a view in plan showing a tie-rod, such as that shown in Fig. 2, tying together two parallel rails of a railroad track, the heads of the rails being removed. Fig. 4 shows a rail in cross-section, enlarged, having one end of the tie-rod secured thereto. Fig. 5 is a side-elevation of Fig. 4, looking from the left. Fig. 6 is a horizontal sectional view showing the manner of assembling and locking the parts. Fig. 7 is a horizontal section taken through Fig. 5 at the line *x*, *x*. Figs. 8 to 11 inclusive show a modification of my invention. Fig. 8 is a horizontal section taken through the center of the tie-rod and its washer. Fig. 9 is an elevation of the tie-rod and washer shown in Fig. 8, before the tongues of the washer have been closed upon the rod as hereinafter described. Fig. 10 is a section taken through Fig. 9 at the line *z*, *z*. Fig. 11 is an elevation similar to Fig. 9, showing the tongues of the washer closed upon the tie-rod. Fig. 12 is a view in plan showing a modified form of tie-rod-head.

In said figures the several parts are respectively indicated by reference letters as follows:—

The letter A indicates the tie-rod having at each end a head *a*. The central portion of said rod may be of any desired form in cross-section but is preferably either round, as shown in Fig. 1, or rectangular, as shown in Figs. 2 and 3. The shanks or portions of the rod contiguous to the heads *a*, are preferably (though not necessarily) round, as shown.

The letter B, indicates a well-known form of rail provided with a web *b*. At suitable intervals, holes *b'* are punched in said web, to receive the heads of the tie-rod, which is inserted before both of the rails are fastened down. As shown in Figs. 3 to 7 inclusive a rectangular locking-washer C is provided, preferably at both ends of the tie-rod as shown in Fig. 3, these washers being located outside of and bearing against the webs *b* of the rails. The washer C has a tongue *c* stamped up therefrom but left at one end integral therewith, as shown in Figs. 5, 6 and 7. The free end of said tongue and that portion of the slot from whence it came correspond in width with the tie-rod next inside the rod-head, so that if the rod were in position at the narrow end of the slot the head could not be withdrawn, that is the head would be too large to pass the slot. A portion of the tongue *c* is larger than the rest as shown at *c'*, and in the larger hole formed in the washer by the stamping out of such enlarged portion, the head *a*, of the tie-rod is inserted, as shown in Fig. 7. The washer C, is then moved sidewise in order to bring the tie-rod in the narrow portion of the slot in the washer C. The tongue *c*, of said washer is then hammered or forced back sufficiently to lock the washer against end-movement on the rod, the different members being then in approximately the relative positions shown in Fig. 7.

In Figs. 8 to 11 inclusive, an approximately square washer D, is shown, provided with a central hole of suitable size to receive the portion of the tie-rod contiguous to its head *a*. Said washer is then slit from said hole outward, thus dividing the washer, internally, into a series of tongues *d*. The free ends of these tongues are bent outward to enlarge the hole so as to permit the passage of the head *a* of the tie-rod. When said rod has been inserted the tongues *d* are bent back to, or toward, their normal position, as shown in Figs. 8 and 11, thus reducing the size of the hole so that the head of the tie-rod cannot pass through the same.

If desired, instead of using a washer at both ends of the tie-rod, one head of said rod may be made so large as to not require a washer, as shown in Fig. 12. In this case, the shank

a' contiguous to the head a^2, would be preferably made large enough to fit the hole b' in the web of the rail.

I do not confine myself to the forms of washer shown, as it is obvious that the same may be varied without departing from my invention, so long as said washer has a hole to permit the passage of the tie-rod-head and means for locking the washer to the rod to prevent said head from withdrawing from the washer. It is also obvious that my invention is applicable to many other forms of rails than that shown in the drawings.

Having thus fully described my said invention, I claim—

1. The combination with a tie-rod for railroad tracks, of a washer provided with means for locking the same to said rod by closing the washer upon the rod.

2. The combination with a tie-rod for railroad tracks, of a washer provided with a locking tongue or tongues adapted to be closed upon said rod.

3. The combination with a tie-rod for railroad tracks having a head on its end, of a washer provided with a locking tongue or tongues fitting under said head and adapted to be closed upon said rod.

4. The combination of two parallel girder-rails; a tie-rod passing through the webs of said rails; and a washer for said tie-rod provided with a locking tongue or tongues adapted to be closed upon said rod.

5. The combination of two parallel girder-rails and a tie-rod passing through the webs of said rails; one end of said rod being fitted to a hole in the web of one of said rails and the other end being held in place by a washer having a locking tongue or tongues.

6. A washer for a railway tie-rod provided with a stamped-up tongue or tongues, for locking the body of said rod.

7. A tie-rod, for railways, having a head at each of its ends, said rod being provided with a locking washer for one or both of its heads adapted to be closed upon the body of said rod.

ARTHUR J. MOXHAM.

Witnesses:
WM. A. DONALDSON,
C. R. POWELL.