No. 855,472. PATENTED JUNE 4, 1907.

R. G. MUSGROVE.

RAILWAY RAIL FASTENING.

APPLICATION FILED SEPT. 6, 1906.

Fig. 1.

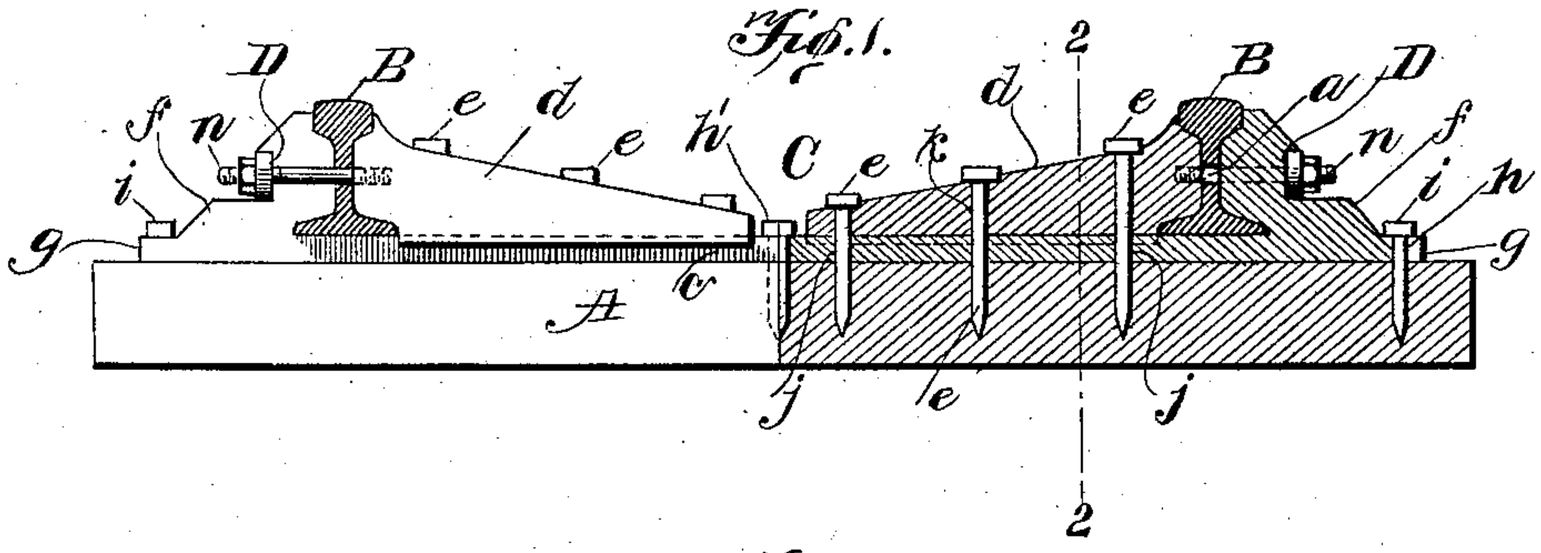

Fig. 2.

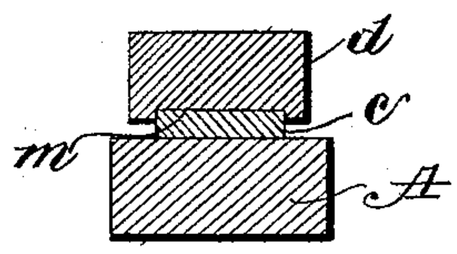

Fig. 3.

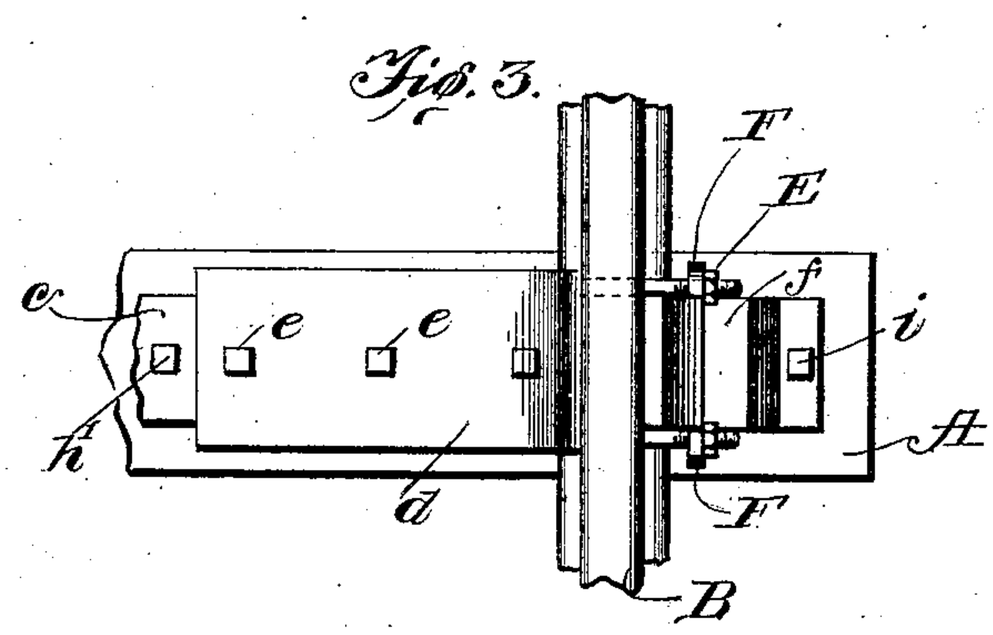

Fig. 4.

Witnesses
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ROBERT G. MUSGROVE, OF JACKSON, MISSISSIPPI.

RAILWAY-RAIL FASTENING.

No. 855,472. Specification of Letters Patent. Patented June 4, 1907.

Application filed September 5, 1906. Serial No. 333,388.

To all whom it may concern:

Be it known that I, ROBERT G. MUSGROVE, a citizen of the United States, residing at Jackson, in the county of Hinds and State of Mississippi, have invented new and useful Improvements in Railway-Rail Fastenings, of which the following is a specification.

My invention has relation to railway rail fastenings; and it contemplates the provision of a rail fastener and protector embodying such a construction that the necessity of employing angle bars and fish-plates is obviated, and one which is adapted to tightly hold and support rails, to maintain the rails at the proper distance apart, and to withstand the great strain imposed on the outer rail at a curve.

Other advantageous features of my invention will be fully understood from the following description and claims when the same are read in connection with the accompanying drawings, forming part of this specification, in which:

Figure 1 is a transverse section, partly in elevation, illustrating my improved fastening as properly arranged relative to two rails and a sleeper or tie. Fig. 2 is a section taken on the line 2—2 of Fig. 1. Fig. 3 is a detail plan view illustrating the relative arrangement of one rail and one abutment and block of the fastening, and: Fig. 4 is a perspective view of one of the blocks of the fastening, removed.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is a sleeper or cross-tie of the ordinary or any other suitable construction.

B B are rails arranged above the sleeper in the usual manner and having transverse apertures *a* in their webs, and C is my novel rail fastener and protector as a whole.

The rail fastener and protector C is made of steel or any other metal suitable to the purpose, and comprises a tie-bar *c*, rail-engaging blocks *d*, and means, preferably nails or spikes *e*, for connecting the tie-bar *c* and blocks *d* together and to the sleeper A. The tie-bar *c* extends between and outward beyond the rails B, Fig. 1; and it is provided at its ends with abutments *f*, shaped at their inner ends to conform to and rest at the outer sides of the rails and flush with the treads thereof, and is also preferably provided with end extensions *g* having apertures *h* for the passage of nails or spikes *i* which are driven into the sleeper so as to assist in holding the tie-bar on the same. Said tie-bar is further provided at intervals between the rails with apertures *j*, Fig. 1, for the passage of nails or spikes *e* which are driven into the sleeper.

In the outer ends of the abutments *f* on the tie-bar *c*, notches or recesses D are provided for a purpose presently set forth in detail.

The rail-engaging blocks *d* are arranged on the tie-bar *c* between the rails, as illustrated in Fig. 1, and have their outer ends shaped to conform to and bear against the inner sides of the portions of the rails below the heads thereof, and also have apertures *k*, arranged to register with the apertures *j* of the tie-bar *c* and receive the nails or spikes *e* which connect the blocks and tie-bar together and to the sleeper or tie A. In their undersides the blocks *d* are provided with channels *m*, whereby they are adapted to straddle the tie-bar *c;* and they are also respectively provided with two outwardly extending bolts *n*. These bolts may be formed integral with the blocks *d* or threaded into the same, in the discretion of the manufacturer; and they are designed to extend through the apertures *a* of the rails and be connected, preferably through the medium of nuts E, to a bar F disposed in the notch D of one abutment *f*. The bolts *n* and the bar F connected therewith constitute a yoke, and by virtue of this construction it will be seen that the abutments *f* are strongly tied or connected to the blocks *d*, and hence the fastening is better adapted to hold, support and protect the rails and to withstand the great pressure or strain imposed by a train on the outer rail at a curve.

When desirable a comparatively large central pin *h'* may be employed with the pins or nails *h* to connect the tie-bar *c* to the sleeper independently of the rail-engaging blocks *d*.

In practice, the tie-bar *c* is arranged as shown with respect to the sleeper A and the rails B are arranged on the tie-bar and against the abutments *f* thereof, after which the blocks *d* are disposed on the tie-bar with their outer ends against the inner sides of the rails, and are connected to the tie-bar and the sleeper through the medium of the nails or spikes *e*. When said blocks *d* are arranged as stated, their channels *m* receive the tie-bar, and hence lateral movement of the blocks due to the tendency of the rails to creep is effectually prevented, and the

nails or spikes *e* are relieved of a great portion of the strain which would otherwise be placed upon them.

When the blocks *d* are positioned on the tie-bar *c*, their bolts *n* are passed through the apertures *a* in the rail webs, after which the bars F are arranged in the notches D of the abutments *f* and are tightly connected to the bolt *n* through the medium of the nuts E. Thus the abutments *f* will be tied to the blocks *d* and reinforced and the strength of the rail fastener and protector as a whole will be increased.

It will be gathered from the foregoing that my improved rail fastener and protector obviates the necessity of employing angle bars, fish-plates and the like, and that it serves to support and protect the rails at both sides thereof, and in addition to permanently maintaining the rails at the proper distance apart, and serves when located at a curve, to distribute between the rails the great strain and pressure imposed on the outer rail incident to the passage of trains.

The construction herein illustrated and described constitutes the preferred embodiment of my invention, but I desire it understood that in practice such changes in the form, construction and relative arrangement of parts may be made as fairly fall within the scope of my invention as claimed. For instance ordinary railway spikes or screws of a common length may be used in lieu of the nails or spikes *e*, *h'* and *i*, illustrated.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In a railway rail fastening, the combination of a rail, an abutment arranged to support the rail at one side thereof, a block arranged to support the rail at the opposite side thereof, and a yoke straddling the abutment and extending through the web of the rail and connecting the abutment and the block.

2. In a railway rail fastening, the combination of a sleeper, a rail, a bar resting between the sleeper and the rail and having an abutment arranged at the outer side of the rail and provided in its outer end with a notch or recess, a block arranged at the inner side of the rail, means connecting the block and bar together and to the sleeper, threaded bolts fixed to the block and extending through the web of the rail, a bar seated in the notch or recess of the abutment and receiving the bolts, and nuts mounted on said bolts.

3. A railway rail fastening comprising a bar arranged to rest under a rail and having an abutment for supporting the rail at one side, a block for supporting the rail at the opposite side thereof, bolts fixed to the block and extending through the web of the rail, a bar arranged on the abutment and receiving said bolts, and nuts mounted on the bolts.

4. The combination in a railway rail fastening, of a wood sleeper, opposite rails having transverse apertures in their webs, a tie-bar, formed of one piece of metal, interposed between the sleeper and the rails and having nail holes and also having abutments at its ends shaped to conform to and bear against the outer sides of the rails and rest flush with the treads thereof; said abutments being provided in their outer ends with notches, metal blocks arranged on the tie-bar between the rails and having nail holes registered with those of the tie-bar, and longitudinal channels in their undersides receiving the tie-bar and also having their outer ends shaped to occupy the spaces between the heads and the bases of the rails at the inner sides thereof, nails extending through the registered holes of the blocks and tie-bar and connecting the same together and to the sleeper, threaded bolts fixed to the blocks and extending through the apertures in the rail webs, bars arranged in the notches of the abutments and receiving the bolts, and nuts mounted on said bolts.

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

ROBERT G. MUSGROVE.

Witnesses:

HERBERT A. THORPE,

ALBERT LAVIOLETTE.