E. L. KNIGHT.

RAIL FASTENER.

APPLICATION FILED JAN. 13, 1920. RENEWED OCT. 16, 1920.

1,367,401. Patented Feb. 1, 1921.

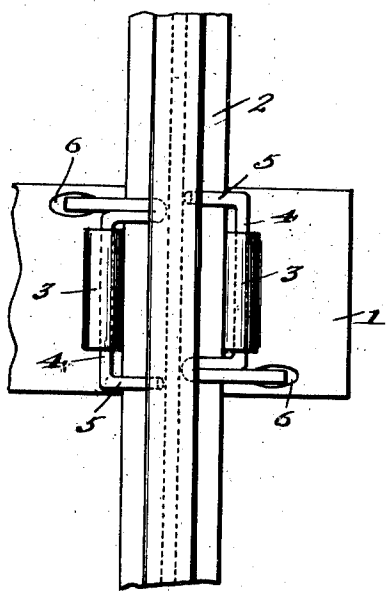


Fig. 1.

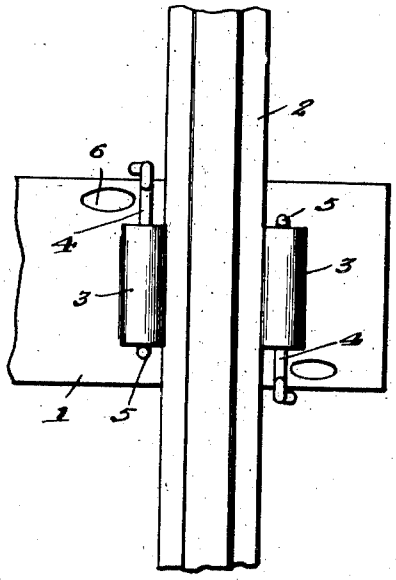


Fig. 2.

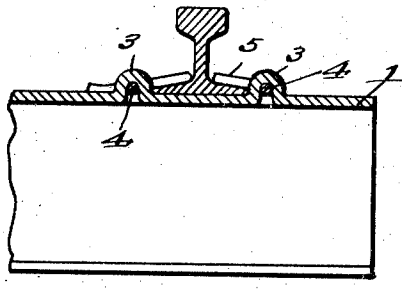


Fig. 4.

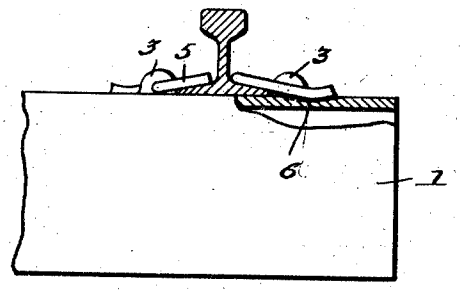


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

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RAIL-FASTENER.

1,367,401. Specification of Letters Patent. Patented Feb. 1, 1921.

Application filed January 13, 1920, Serial No. 351,136. Renewed October 16, 1920. Serial No. 417,531.

To all whom it may concern:

Be it known that I, ELLSWORTH L. KNIGHT, a citizen of the United States, residing at Princeton, in the county of Mercer and State of West Virginia, have invented new and useful Improvements in Rail-Fasteners, of which the following is a specification.

This invention relates to means for fastening rails to the ties and the principal object of the invention is to provide releasable means whereby the rail may be easily and quickly clamped to the tie.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a plan view showing a portion of a rail and tie with my invention in use.

Fig. 2 is a like view showing the holding means in inoperative position.

Fig. 3 is a side elevation with a part broken away to show the locking recess.

Fig. 4 is a longitudinal section.

In these views 1 indicates the metal tie and 2 the rail. This tie has a pair of loops 3 formed adjacent each end thereof by slotting the metal and punching the metal between the slots upwardly to form transverse loops. Each pair of these loops are spaced apart a sufficient distance to receive the rail between them.

The rail holding means comprises a pair of T-shaped shafts 4 which are held in said loops so as to have rocking movement on the tie. After the shaft is placed through the loop its end is bent at right angles as at 5 so that this end and one part of the T-head will engage the base of the rail when the shaft is in holding position. The other part of the head is adapted to engage a recess 6 formed in the tie adjacent the edge thereof. As will be seen the head of the T-shaft is slightly bent so that as one part is engaging the base of the rail the other part is held in the recess and the two engaging parts of the shaft will clamp the rail due to the spring action of the metal shaft. I prefer to run the shafts through the loops in opposite directions so that the head of one shaft will be opposite the bent end of the other shaft, as shown in the drawings.

Before the rail is placed in position the shafts are moved outwardly so that their heads are beyond the edges of the tie and the shafts rocked to throw their engaging parts away from the space to be occupied by the rail. This will permit the rail to be placed between the loops upon the tie and then the two shafts are rocked until their engaging parts engage the base of the rail. Then each shaft is struck by a hammer to move it longitudinally until a part of its head is driven into the recess. The springy nature of the material will permit the head to give slightly to pass over the rim of the recess and into the same.

Thus the rail is firmly clamped to the tie and it may be removed by hammering the shafts in the opposite directions so that they may be turned to release the rail.

My invention is mainly designed for use in mines, though of course it will be understood that I do not wish to be limited in this respect.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. Means for fastening a rail to its tie comprising a rock shaft carried by the tie and having portions for engaging the base of the rail and means for locking said shaft in operative position.

2. Means for fastening a rail to its tie comprising a pair of rock shafts carried by the tie and having portions for engaging the base of the rail and means for locking said shafts in operative position.

3. Means for locking a rail to its tie comprising a pair of loops formed adjacent each end of the tie, and spaced apart to receive the rail between them, a pair of shafts mounted in said loops and having right-angularly extending portions engaging the

base of the rail and another portion frictionally engaging the tie for locking the shafts in operative position.

4. Means for locking a rail to its tie comprising a pair of loops formed on the tie adjacent each end thereof, a T-shaped shaft carried by each loop and longitudinally movable therein, each shaft having its end bent at right-angles and this end and one part of the T-head engaging the rail base and a recess in the tie for receiving the other portion of the head.

In testimony whereof I affix my signature.

ELLSWORTH L. KNIGHT.