July 10, 1928. 1,676,888

B. M. CHENEY

BEARING PLATE FOR RAIL ANCHORS

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Fig. 2.

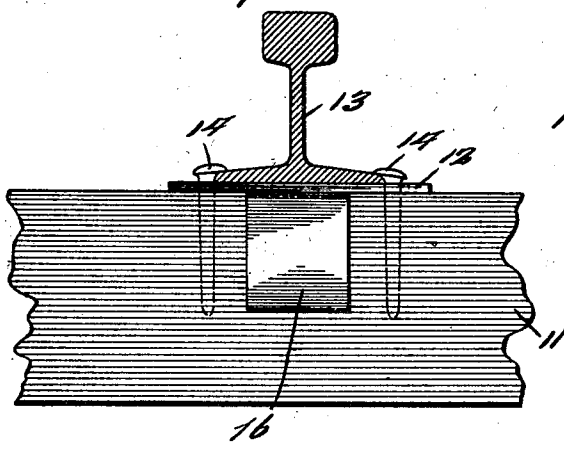


Fig. 1.

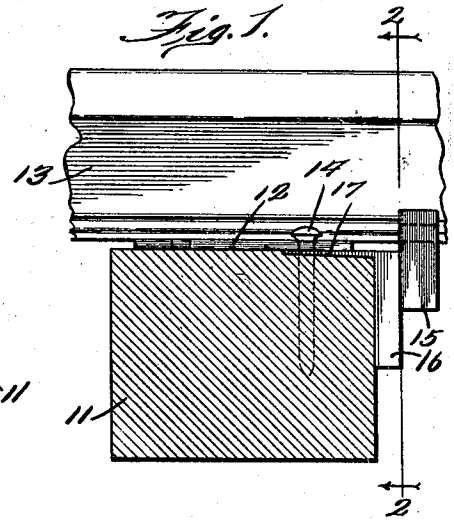


Fig. 3.

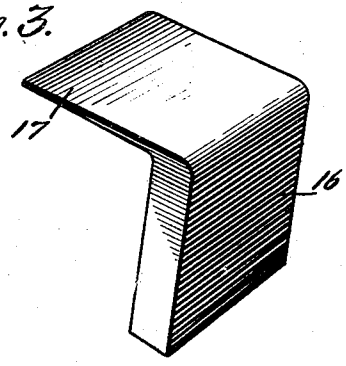
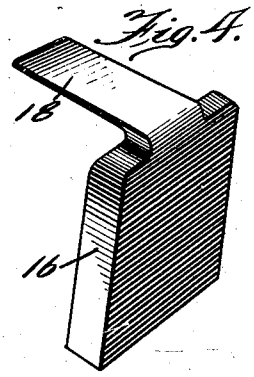


Fig. 4.



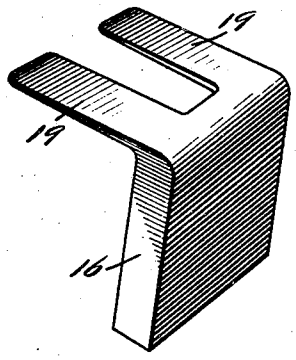


Fig. 5.

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Fig. 6.

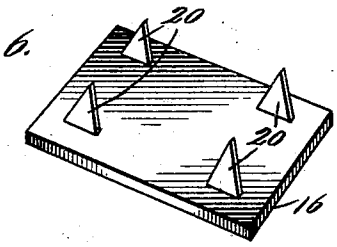


Fig. 7.

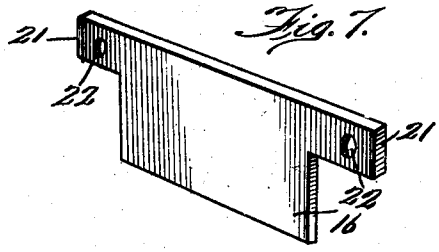
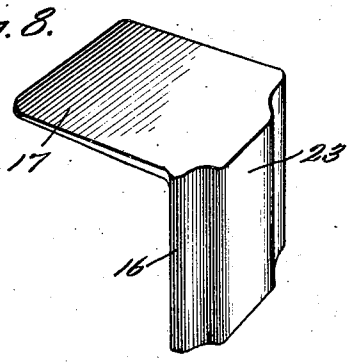


Fig. 8.



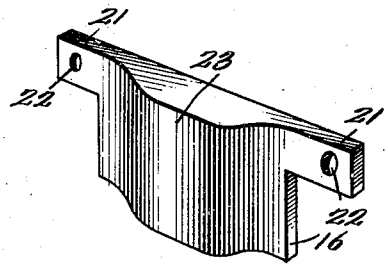
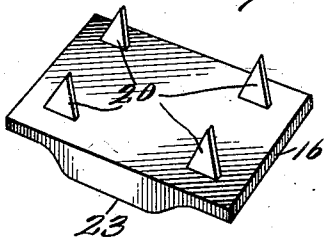


Fig. 9.

Fig. 10.



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Patented July 10, 1928. 1,676,888

UNITED STATES PATENT OFFICE.

BYRON M. CHENEY, OF CHICAGO, ILLINOIS.

BEARING PLATE FOR RAIL ANCHORS.

Application filed September 3, 1927. Serial No. 217,432.

This invention relates to means for protecting railway ties from the wearing effect of rail anchors and has for one object the provision of means for preventing the rail anchor from abrading the face of the tie.

A further object is the provision of means for receiving the pressure of the rail anchor and preventing the pressure from being transmitted to the rail spikes. Other objects and advantages will appear from the following description.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawings and described in the following specification, and it is more particularly pointed out in the appended claims.

In the drawings:—

Fig. 1 is an elevation of a portion of a railway rail showing the present invention applied thereto, the railway tie being shown in section;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a perspective view of the bearing plate shown in Figs. 1 and 2;

Figs. 4, 5, 6, 7, 8, 9 and 10 are all perspective views of modified forms of bearing plates.

The railway tie 11, shown in Figs. 1 and 2 is provided with the usual tie plate 12 which supports the rail 13 and through which the spikes 14 are driven for securing the rail to the tie. A rail anchor 15 of any suitable or approved form is clamped to the rail 13 for preventing longitudinal movement of the rail upon its supporting ties. A bearing plate 16 is interposed between the anchor 15 and the lateral face of the tie 11 to prevent the rail anchor from abrading the face of the tie where it engages the same.

In the present practice where a rail anchor is permitted to bear against the lateral face of the tie, the relative movement of the rail and tie soon wears away the wood fibers so that the anchor either becomes ineffective or engages the edges of the tie plate. Where the anchor contacts with the tie plate, pressure exerted thereby is transmitted to the tie plate and through the tie plate to the spikes. This has a tendency to loosen the spikes so that they become ineffective for holding the rail in place. This thrust against the track spikes has the effect of enlarging the spike holes, thus permitting water and moisture to enter the untreated center of the track tie and accelerating the decay of the tie. It often also causes splitting of the track ties and because of the pulling effect on the spikes necessitates frequent re-driving of spikes—one of the causes of so-called "spike killed" ties. It also has the effect of keeping the tie plate loose on the tie which accelerates the mechanical wear of the tie. Under present practice the rail anchor moving upward and downward with the wave motion of the rail under traffic, tends to cut and wear the track tie. A wide bearing surface on the lateral face of the rail anchor is of little service in overcoming this evil for the reason that there is a certain amount of vertical movement of the rail relative to the tie and this vertical movement will wear away the fiber of the wood even though the bearing surface is large. Increasing the bearing surface merely postpones for a short time the evil day when the anchor will reach the edge of the tie plate. To provide a flange on the tie plate arranged to extend between the tie and the rail anchor also fails to overcome the difficulty for if the flange is rigid with the tie plate, the pressure against the flange will be transmitted to the spikes because the metal of the tie plate forms a more rigid strut for transmitting the force to the spikes than does the wood against which the flange would rest. Furthermore, any shrinking or wearing of the tie between the plate and spike would transfer the pressure from the tie to the spike.

In the present invention, the bearing plate 16 is entirely separate both from the rail anchor and the tie plate. The plate may be held in place in a number of different ways, the form shown in Figs. 1, 2 and 3 being provided with a laterally extending relatively thin flange 17 which is driven between the tie plate 12 and the upper face of the tie, as shown in Fig. 1. The flange 17 may be driven in until the plate 16 bears tightly against the lateral face of the tie. The anchor 17 is then placed in position closely against the bearing plate 16 so that the bearing plate is retained in place and the rail anchor is provided with a metal bearing surface which transmits its pressure to the sur-

face of the tie without interfering with the tie plate or spikes. Any abrasion caused by the movement of the rail will be borne by the surface of the bearing plate, thus protecting the face of the tie from wear.

In the form of the invention shown in Fig. 4, the laterally projecting flange 18 is made narrow so that it forms a narrow tongue to be inserted between the tie plate and tie. This permits a larger range of lateral adjustment transversely of the rail than does the broader flange shown in Fig. 3. In some forms of rail anchors, it is desirable to have the bearing plate extend beyond the base flange of the rail in the direction of the length of the tie. The comparatively narrow tongue 18 of the form shown in Fig. 4 will permit the bearing plate to extend beyond the rail flange at either side of the rail.

In the form of the invention shown in Fig. 5, the bearing plate 16 is provided with spaced tongues 19. With this form of the invention, the tongues may be driven on opposite sides of a spike at one side of the rail, thus positioning the bearing plate at one side of the rail flange and providing a firm attachment because of the two tongues extending between the tie plate and the tie.

In the form of the invention shown in Fig. 6, the bearing plate 16 is provided with laterally projecting spikes or teeth 20 which may be driven into the lateral faces of the tie at any position desired, thus holding the bearing plate against the face of the tie at the most convenient position for the particular rail anchor with which it is used.

In the form of the invention shown in Fig. 7, the bearing plate 16 is provided with laterally projecting ears 21 having openings 22 therein through which spikes or nails may be driven into the face of the tie for holding the bearing plate in position. These ears may project at opposite sides of the rail to facilitate easy insertion of the spikes through the openings 22.

The form of the invention shown in Fig. 8 is similar to that shown in Fig. 3 except that the bearing plate 16 is made thinner and is provided with a projecting rib 23 for engaging the rail anchor.

The bearing plate shown in Fig. 9 is similar to that shown in Fig. 7 except that it is provided with a projecting rib 23 similar to that of Fig. 8.

The bearing plate shown in Fig. 10 is similar to that shown in Fig. 6 but is provided with a bearing rib 23.

I claim:—

1. The combination with a railway tie, a tie plate, a rail supported by said tie plate, and a rail anchor attached to said rail, of a bearing plate formed separately from said tie plate and rail anchor and interposed between said rail anchor and tie.

2. The combination with a railway tie, a tie plate, a rail supported on said tie plate, and a rail anchor attached to said rail, of a bearing plate formed separately from said tie plate and rail anchor and interposed between said rail anchor and tie, and means for attaching said bearing plate to said tie.

3. The combination with a railway tie, a tie plate resting on said tie, a rail supported on said tie plate, spikes extending through said tie plate for holding said rail to said tie, and a rail anchor attached to said rail, of a bearing plate interposed between said rail anchor and tie, and means for supporting said bearing plate on said tie independently of said tie plate and free from said spikes.

4. The combination with a railway tie, a tie plate resting on said tie, a rail supported by said tie plate, spikes extending through openings in said tie plate into said tie and engaging said rail, and a rail anchor clamped to said rail, of a bearing plate formed separately from said tie plate and rail anchor and interposed between the lateral face of said tie and said rail anchor, and means spaced from said spikes for securing said bearing plate in position against the face of said tie.

5. The combination with a railway tie, a tie plate resting on said tie, a rail supported by said tie plate, and a rail anchor attached to said rail, of a bearing plate interposed between said tie and rail anchor, said bearing plate having a laterally projecting flange thereon extending between the upper surface of said tie and said tie plate.

6. The combination with a railway tie, a tie plate resting thereon, a rail supported by said tie plate, and a rail anchor attached to said rail, of a bearing plate interposed between said rail anchor and the lateral face of said tie and having a laterally extending flange thereon extending substantially the full length of said bearing plate and projecting laterally therefrom between said tie and tie plate.

7. The combination with a railway tie, a rail mounted thereon, and a rail anchor secured to said rail, of a bearing plate interposed between said tie and rail anchor and having means thereon for engaging said tie to maintain said bearing plate in position.

8. The combination with a railway tie, a rail supported by said tie, and a rail anchor clamped to said rail, of a bearing plate interposed between said tie and rail anchor, said bearing plate having a laterally extending tongue extending over the upper surface of said tie for supporting said bearing plate.

9. The combination with a railway tie, a tie plate on said tie, a rail supported by said tie plate, and a rail anchor attached to said rail, of a bearing plate interposed between said tie and rail anchor and having spaced laterally projecting tongues engaging the

upper surface of said tie to support said bearing plate.

10. The combination with a railway tie, a rail supported by said tie, and a rail anchor attached to said rail, of a bearing plate interposed between said rail anchor and tie, said bearing plate having a projecting rib on the face thereof for engaging said rail anchor.

In testimony whereof I have signed my name to this specification on this 1st day of September, A. D. 1927.

B. M. CHENEY.