

H. L. HOLLIS.
RAILWAY TIE.
APPLICATION FILED NOV. 17, 1909.

988,875.

Patented Apr. 4, 1911.

Fig.1.

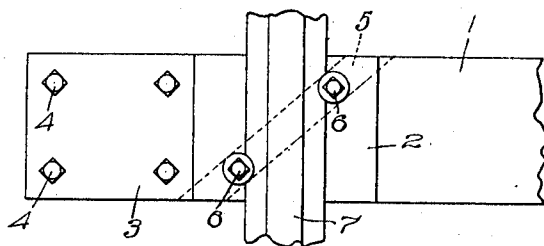


Fig.2.

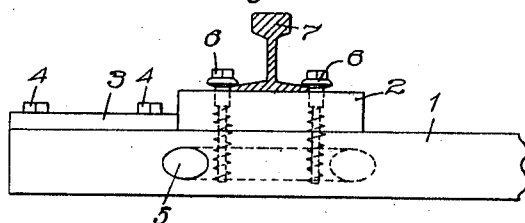


Fig.3.

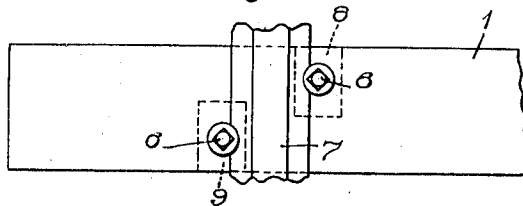
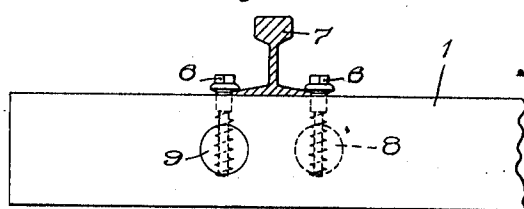


Fig.4.



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UNITED STATES PATENT OFFICE.

HENRY L. HOLLIS, OF WINNETKA, ILLINOIS.

RAILWAY-TIE.

988,875.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed November 17, 1909. Serial No. 528,432.

To all whom it may concern:

Be it known that I, HENRY L. HOLLIS, a citizen of the United States, residing at Winnetka, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railway-Ties, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to railway ties, and has particular reference to means for increasing the holding power of a railway spike.

According to the system which is at present used for attaching rails to ties, the spikes are either driven or screwed directly into the ties themselves. These ties are generally made of soft wood, with the result that after a comparatively short time the holding power of the spike is greatly decreased. This is particularly true if the spikes are withdrawn and the rail is moved a slight distance and the spikes then driven in again. The hole which was originally made by the spike causes the wood where the spike is driven the second time to be weak and afford only a poor holding power.

According to my invention, a hard-wood dowel, which is preferably cylindrical, is driven into the tie in a horizontal plane, and the spikes are then driven or screwed into this dowel. In this way, without incurring the expense of a hard-wood tie, the increased holding power of hard wood is obtained at a very slight expense. In the preferred form of my invention a single dowel is used, which is inserted in a hole passing diagonally across the tie, and into this dowel two spikes for supporting the rail may be driven or screwed. I do not confine myself, however, to the use of a single dowel, inasmuch as several dowels may be driven into the tie and afford holding means for several spikes.

I find that not only does the hard-wood dowel increase the holding power of the spike against a direct pull in the direction of the track, but also affords a much higher resistance against lateral thrust than is the case when a soft-wood tie alone is employed. In the case of a tie where the wood has become more or less rotted, the life of this tie may be considerably prolonged by the use of the hard-wood dowels of my invention.

It is therefore evident that my invention

has three chief advantages: First, the holding power of the spikes is greatly increased; second, the construction is very simple and cheap, no special tools being required to form or insert the dowel, and, third, the life of ties may be very considerably increased by use of this dowel. These and other advantages will be more apparent by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a tie having a rail block and abutment member, and a rail secured by spikes to the dowel. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is a plan view of a modification of my construction. Fig. 4 is a side elevation of the parts shown in Fig. 3.

Referring to Figs. 1 and 2, 1 is a tie on which the rail block 2 is mounted. This rail block is prevented from being laterally displaced by the abutment member 3, which is attached to it by means of bolts or spikes 4. A hole is bored diagonally through the tie 1, and into this hole is driven the dowel 5, which is made of wood harder than that of the tie 1. The spikes 6 are screwed downwardly through the rail block 2 and the upper surface of the tie 1 into the hard-wood dowel 5. The spikes 6 not only serve to securely attach the rail 7 to the rail block 2, but also attach the rail block to the tie 1.

In Figs. 1 and 2 I have illustrated my invention in connection with a special form of tie having a rail block and abutment member, as disclosed in my copending applications, Serial No. 459,657, filed October 26, 1908, Serial No. 471,593, filed January 11, 1909, and Serial No. 486,113, filed March 27, 1909. It is evident, however, that my invention may also be applied to the ordinary form of tie, where neither a rail block nor abutment member is used. In the latter case the rail 7 rests directly on the tie 1, and the spikes are driven or screwed into the hard-wood dowel 5 through the tie 1.

In practice, I preferably treat both the tie and dowel with preservatives in order to prolong their life. For the ordinary standard railway tie, eight feet long, eight inches wide and seven inches high, I ordinarily employ a dowel three inches in diameter, which is coated with tar before being driven into place.

In Figs. 3 and 4 is shown a modification of my invention. Into suitable holes bored

in the tie 1 are driven the dowels 8 and 9. The spikes 6 are screwed into these dowels in the same manner as into the single dowel illustrated in Figs. 1 and 2. This modification is not as well adapted for general work as the construction shown in Figs. 1 and 2, inasmuch as in the latter case it is necessary to bore only a single hole through the tie, and the dowel being driven in diagonally is afforded resistance to both lateral and longitudinal displacement by the wood of the tie itself; whereas in the construction shown in Figs. 3 and 4, the dowel is afforded the resistance of the tie itself to lateral thrust, but the pressure in a direction parallel to the track is along the axis of the dowel itself.

It is clear that many changes could be made in the exact construction which I have shown without departing from the spirit of my invention. Broadly described, the invention consists in the use of a wooden dowel or dowels driven into a tie in a substantially horizontal plane, and affording superior holding means for the spikes which are inserted into said dowel or dowels.

What I claim as new and desire to cover by United States Letters Patent is:

1. In combination, a wooden railway tie, a wooden dowel inserted in said tie intermediate of the top and bottom thereof in a substantially horizontal plane, and a screw spike for attaching the rail to the tie, said spike passing transversely into said dowel and held thereby.

2. In a railway tie, the combination of a main wooden rail-supporting member and a piece of relatively harder wood inserted in said supporting member intermediate of the top and bottom thereof in a substantially horizontal plane, said piece of harder wood being adapted to receive and hold a spike transversely thereof for attaching the rail to the supporting member.

3. In a railway tie, the combination of a main wooden rail-supporting member and a cylindrical dowel of relatively harder wood inserted in said supporting member

intermediate of the top and bottom thereof in a substantially horizontal plane, said dowel being adapted to receive and hold a spike transversely thereof for attaching the rail to said supporting member.

4. In combination, a wooden railway tie, a wooden dowel inserted in said tie intermediate of the top and bottom thereof in a substantially horizontal plane, and a spike for attaching the rail to the tie, said spike passing transversely into said dowel and held thereby.

5. In combination, a wooden railway tie, intermediate of the top and bottom thereof, a dowel of relatively harder wood inserted in said tie in a substantially horizontal plane, and a spike for attaching the rail to the tie, said spike passing transversely into said dowel and held thereby.

6. In combination, a wooden railway tie, a cylindrical dowel of relatively harder wood inserted in said tie intermediate of the top and bottom thereof in a substantially horizontal plane, and a spike for attaching the rail to the tie, said spike passing transversely into said dowel and held thereby.

7. In combination, a wooden railway tie treated with a preservative, a dowel of relatively harder wood also treated with a preservative and inserted in said tie intermediate of the top and bottom thereof in a substantially horizontal plane, and a spike for attaching the rail to the tie, said spike passing transversely into said dowel and held thereby.

8. In combination, a wooden railway tie, a wooden dowel inserted diagonally in said tie intermediate of the top and bottom thereof in a substantially horizontal plane, and a spike for attaching the rail to the tie passing transversely into said dowel near each end thereof.

In witness whereof, I hereunto subscribe my name this 15th day of November, 1909.

HENRY L. HOLLIS.

Witnesses:

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