C. D. RUSSELL.

SPIKE.

APPLICATION FILED DEC. 30, 1913.

1,103,542. Patented July 14, 1914.

Fig. 1.

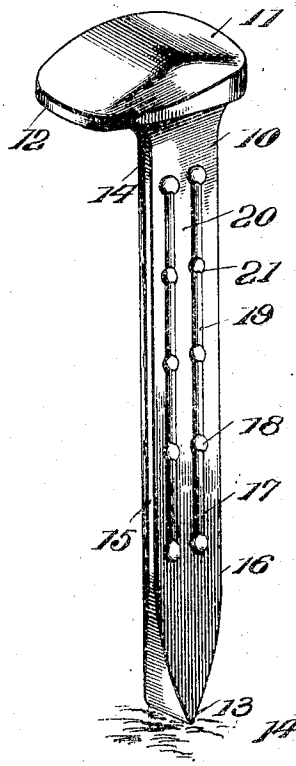


Fig. 2.

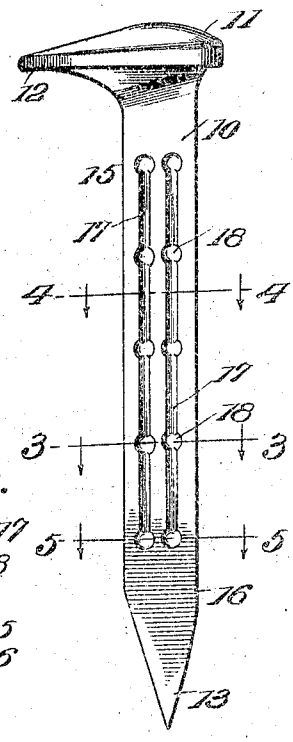


Fig. 6.

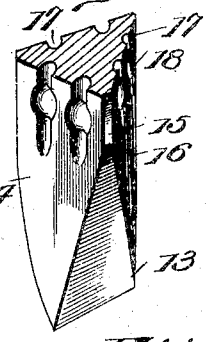


Fig. 3.

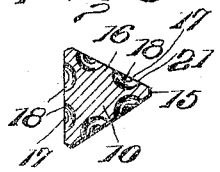


Fig. 4.

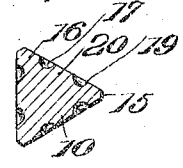
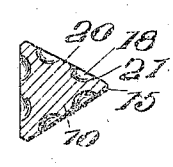


Fig. 5.



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Witnesses

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UNITED STATES PATENT OFFICE.

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SPIKE.

1,103,542. Specification of Letters Patent. Patented July 14, 1914.

Application filed December 30, 1913. Serial No. 809,506.

To all whom it may concern:

Be it known that I, CHARLES D. RUSSELL, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Spikes, of which the following is a specification.

This invention relates to railway spikes adapted for use in connection with the ordinary wooden railway cross ties.

The primary object of the invention is to provide a spike so constructed that when embedded in the tie, the fibers of the wood will expand into engagement with the spike to prevent its working loose, a difficulty experienced with the common form of railway spike, now in general use, such loosening of the spike being brought about by the severe jars and strains to which such spikes are subjected.

A further object of the invention is to provide a spike which will not turn upon its longitudinal axis when embedded in the tie. And a still further object of the invention is to provide a railway spike which may be readily and cheaply manufactured and which will be efficient in operation.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, wherein:

Figure 1 is a perspective view of my improved spike. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 2. Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 2. Fig. 6 is a detail fragmentary perspective view of a modified form of my invention showing the grooves formed in the side faces of the spike tapered at their lower extremities.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

My improved spike is formed with a shank portion 10, preferably substantially triangular in section, and has integrally formed at one extremity a head 11, having a laterally projecting extremity 12, preferably positioned in alinement with one of the edges of the spike, said laterally projecting portion 12 being adapted to engage the base of a railway rail. The outer end of the shank 10 is formed into a driving point 13, the rear face thereof and the opposite front edge being cut away adjacent their extremities, as shown. The edges 14 of the spike are cut away longitudinally to form beveled faces 15 intermediate of which are the flat side faces 16. Each side face has formed therein inwardly spaced parallel grooves 17. These grooves 17 extend longitudinally of the shank portion 10 throughout the major portion of the length thereof and may, at their lower extremities be tapered in depth, to facilitate entrance of the fibers of the wooden tie into said grooves.

Intersecting the grooves 17 at intervals are cup-shaped sockets 18 formed in the side faces 16, said sockets extending into the shank 10 of the spike below the bottom walls of the grooves thereby forming inwardly extending shoulders intermediate the inner extremities of the sockets and the bottom walls of said grooves. Any desired number of sockets may be provided, but preferably, said sockets are arranged in spaced parallel series, as shown, each of the grooves 17 preferably terminating in a socket at its extremities.

Particular attention is called to the fact that the sockets 18 extend laterally into the adjacent side walls 19 of the longitudinally disposed ribs 20 defined by the grooves 17, thereby forming transversely disposed and inwardly extending shoulders 21 on each side of said grooves at the intersection of the sockets.

As will be obvious, as the spike is driven into the tie, the fibers of the wood will enter the grooves 17 formed in each side face 16 of the spike and expand into the sockets 18 formed longitudinally of said grooves, the shoulders 21 of said sockets engaging against the portion of the tie so expanded into the sockets. The spike when seated in the tie will define longitudinally disposed tongues projecting from that portion of the wood bearing against the side faces 16, said tongues being the portion of the tie expanded into the grooves 17. These tongues will effectually prevent any transverse movement of the spike, and being relatively thin and being held against transverse expansion by the side walls 19 of the grooves 17, will be forced into the sockets 18, intersecting said grooves, which sockets, extending transversely into said side walls will allow such transverse expansion to oc-

cur in that portion of the tongues extending across said sockets, thereby entirely filling the sockets, the portion of the tongues therein being engaged by the transversely disposed shoulders 21 formed by said sockets to effectually prevent any vertical movement of the spike. In thus entirely filling the sockets, the portion of the tie so expanded therein will also be engaged by the inwardly extending shoulders formed intermediate the bottom walls of the grooves 17 and the inner extremities of the sockets, thus firmly holding the spike in the tie, both as against vertical and transverse movement. The rail engaging extremity 12 of the head being positioned in alinement with one of the edges 14 of the spike, the spike is, of course, designed to enter the tie with such edge adjacent the rail thereby presenting to the grain of the wood of the tie the adjacent angularly disposed side faces 16. The spike thus exerts along its forward faces a wedging action upon the fibers of the tie, instead of cutting them as is the case with the ordinary square form of spike now in common use, the wood being virtually pried apart as the spike is driven home. As a consequence the spike will be tightly gripped by the tie, the unbroken fibers on each side of the spike expanding into the sockets and grooves formed in the side faces thereof.

It will therefore be seen that I provide a very simple and efficient structure of railway spike, such as will effectually engage the tie when embedded therein to prevent loosening of the spike, and thereby overcoming the disadvantages of the common form of railway spike now in general use.

Having thus described the invention, what is claimed as new is:—

1. A railway spike including a shank formed at one end with a head and at its opposite extremity with a driving point, said shank being formed with angularly disposed faces, each of said faces having longitudinally extending grooves formed therein, said grooves tapering in depth at their lower extremities and being intersected by cup-shaped sockets formed in the side faces which extend laterally of the side walls of said grooves.

2. A railway spike including a shank formed at one end with a head and at its opposite extremity with a driving point, said shank being formed with angularly disposed faces, the said faces having longitudinally extending grooves formed therein and provided with sockets extending laterally of the adjacent side walls of said grooves and inwardly of the bottom walls thereof, inwardly extending shoulders being formed intermediate the inner extremities of said sockets and the bottom walls of the grooves.

3. A railway spike including a shank formed at one end with a head and at its opposite extremity with a driving point, said shank being formed with angularly disposed faces having longitudinally extending grooves formed therein, said grooves tapering in depth at their lower extremities and having adjacent laterally extending sockets formed in the side walls thereof, there being terminal sockets formed in the side faces of the spike at the upper extremities of said grooves.

4. A railway spike including a shank formed at one end with a head and at its opposite extremity with a driving point, said shank being formed with angularly disposed flat faces having longitudinally extending grooves formed therein and being provided with sockets formed from the adjacent side walls of said grooves, said sockets extending laterally of the grooves and below the bottom walls thereof.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES DANIEL RUSSELL. [L. S.]

Witnesses:
LENA SCHWARTZ,
D. A. BARTON.