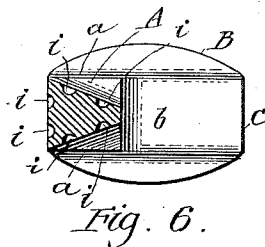
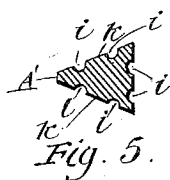
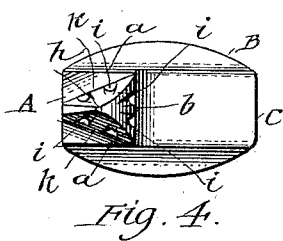
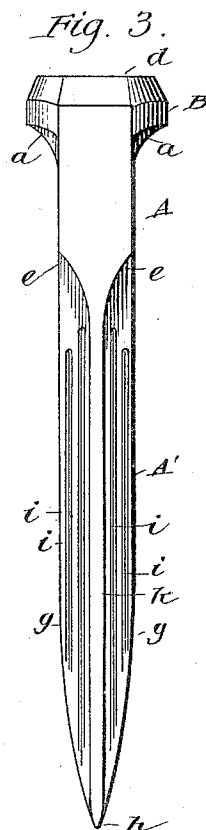
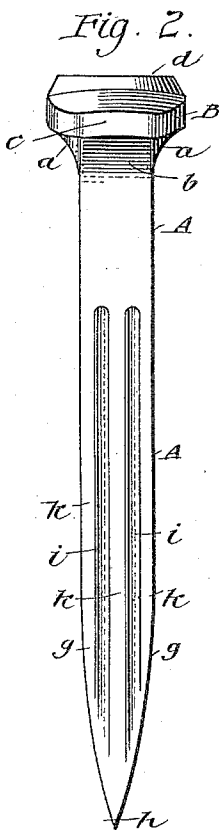
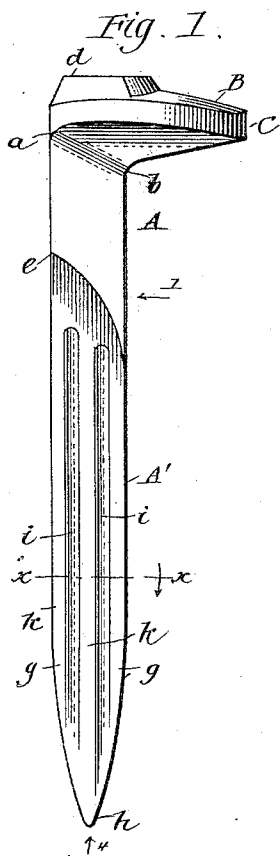


(No Model.)

J. S. VAN LEER & J. T. REDMON.  
SPIKE.

No. 460,412.

Patented Sept. 29, 1891.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN S. VAN LEER AND JOHN T. REDMON, OF SEDALIA, MISSOURI.

## SPIKE.

SPECIFICATION forming part of Letters Patent No. 460,412, dated September 29, 1891.

Application filed December 2, 1890. Serial No. 373,326. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN S. VAN LEER and JOHN T. REDMON, both of Sedalia, in the county of Pettis and State of Missouri, have  
5 invented a new and useful Improvement in Spikes, of which the following is a full, clear, and exact description.

This invention relates to improvements in spikes for securing railway-rails on cross-ties  
10 and for other purposes, and has for its objects to produce a spike which may be quickly and economically produced, be efficient in service, which will seal the puncture formed by the insertion of the spike in wood, and be easily  
15 guided to drive it in a straight line vertically or at any desired degree of inclination from a vertical plane.

To these ends our invention consists in certain features of construction, as is hereinafter  
20 described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

25 Figure 1 is a side view of the preferred form of construction. Fig. 2 represents the front side of the preferred form viewed in the direction of the arrow in Fig. 1. Fig. 3 is a view of the side of the spike opposite that shown in Fig. 2. Fig. 4 is an end view of the spike viewed in the direction of the arrow 4  
30 in Fig. 1. Fig. 5 is a transverse section of the preferred form on the line *xx* in Fig. 1, viewed in the direction of an adjacent arrow; and Fig. 6 is a transverse section of the spike  
35 in modified form viewed in the direction of its head.

The spike may be made of steel or iron of suitable length for its use, and in the preferred form consists of a metal-rod billet  
40 whereon a square shank portion A is formed. On one terminal of said shank a laterally-extended flange B is formed, which is coved where it joins the shank, as at *a*, thereby  
45 strengthening the junctional points of the head with the body or shank A. The head B is also strengthened by a cove-filling at the corner *b* on the front side of the spike, as shown in Figs. 1 and 2, the material of the  
50 head being tapered slightly toward the free edge *c*, whereby there is increased thickness

afforded where it is best adapted to prevent the head from fracture when struck. Upon the upper side of the head B a projecting boss *d* is integrally formed, and preferably  
55 the lateral extension of the head is made convex a proper degree on the upper surface, which thins the edge of said portion, while strength is preserved at the center where it is needed. At a proper point *e* below the  
60 head B the square portion of shank A is scalloped to remove the corners at the rear side of the spike, or on the side opposite the flanged projection of the head on the portion A' below the scalloped corners *e*, throughout  
65 the length of the shank, to a point *g*, from which point the triangular portion is lanceolated in a manner to produce a triangular point *h*, which is coincident with the longitudinal center of the shank and boss *d*, or  
70 nearly so. The side walls of the triangular portion A' are all longitudinally grooved to produce two parallel channels *i* on each side wall, which channels are of suitable depth and are preferably spaced apart, so as to  
75 leave ribs *k*, of equal width with the channels, standing between each pair and also on the outer edges of the side walls.

In the modified form shown in Fig. 6 the corners of the spike-body are cut away on the  
80 front or side below the overhanging flange of the head B, the same form of point and grooved conformation of the side walls being provided as has been explained with regard to the spike shown in Figs. 1, 2, 3, 4, and 5. 85

In use it is claimed that the peculiar form of the spike-body and manner of grooving and pointing it will permit it to enter hard wood with but little comparative resistance, and its bayonet-point, being nearly in a line  
90 with the center of impact on the head when driven, enables the operator to drive the spike with precision, there being no lateral divergence from the direction first given to the spike-body. The form of the head pre-  
95 vents cold checks or cracks in forming the spike, and the fillets also afford strength at the point of juncture of the head with the shank, and the boss on the head prevents the blows on it from striking out of a center line  
100 with the point. The triangular form of the shank of the spike and grooves therein lighten

the spike without any sacrifice of strength, the material being distributed to resist lateral strains and maintain a straight condition, and the shape of the body and shank  
5 above the scalloped portion obviates the rupture of wood fiber to a large degree when the spike is driven into cross-ties or other similar material, it being understood that the shank portion is not usually intended to enter the wood, but engages the base-flange of  
10 a rail or shoe therefor.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

15 A spike having its shank square near the

head, a laterally-projecting flange on its head, which flange is wedge-shaped, and a boss on the head directly above the shank, which shank is triangular below the square portion, each side of the triangular part being longitudinally grooved to afford channels and  
20 intervening ribs and all sides sloped to form a triangular point coincident with the axis of the shank, substantially as set forth.

JOHN S. VAN LEER.  
JOHN T. REDMON.

Witnesses:

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