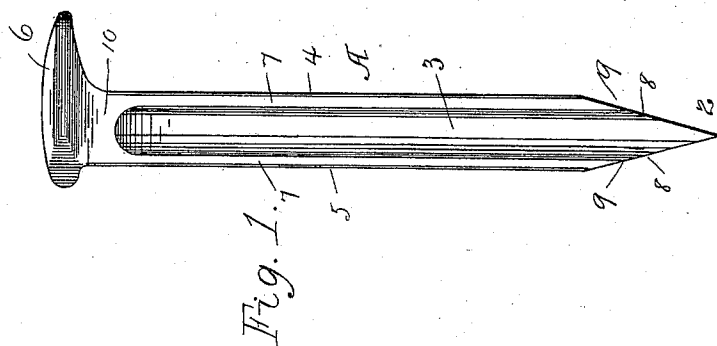
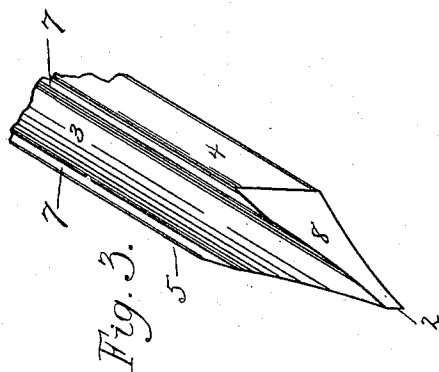
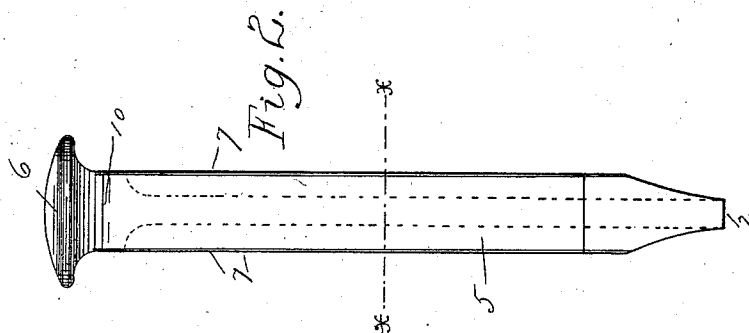


(No Model.)

J. A. MARKOE.  
RAILROAD SPIKE.

No. 550,795.

Patented Dec. 3, 1895.



Witnesses:  
F. Bradbury  
H. S. Johnson.

Inventor:  
John A. Markoe.  
per: T. D. Merwin  
Attorney.

# UNITED STATES PATENT OFFICE.

JOHN A. MARKOE, OF WHITE BEAR, MINNESOTA, ASSIGNOR TO LORENZO J. MARKOE, OF SAME PLACE.

## RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 550,795, dated December 3, 1895.

Application filed June 1, 1894. Serial No. 513,115. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. MARKOE, of White Bear, Ramsey county, Minnesota, have invented certain Improvements in Railroad-Spikes, of which the following is a specification.

My invention relates to improvements in railway-spikes, and has for its object the provision of a spike of this character which will drive straight into the railway-tie, possess great resistance to lateral strain and have great holding power, and which will drive into the tie, displacing or disrupting the fiber of the wood as little as possible.

To these ends the invention consists of a railway-spike constructed as hereinafter described, illustrated in the drawings, and pointed out in the claim.

In the drawings, Figure 1 represents a side elevation of a spike constructed in accordance with my invention; Fig. 2, a rear elevation thereof, and Fig. 3 a perspective view of the lower end of the stem of the spike.

An efficient railway-spike must have a great resistance to lateral strain, otherwise the tendency would be to loosen itself in the tie under the pressure of trains traveling upon the tracks, and when so loosened the tracks are not fastened with sufficient security. The spike must also have a great holding power, otherwise it will loosen itself in an upward direction in the track with the same result with respect to the tracks. It must also drive straight under the hammer into the wood and must displace or disrupt the wood fiber in as little a degree as possible. To attain these requisites of a spike has been the aim for a long time of experts in railway construction, and I believe I have by my invention provided a spike which more nearly than any other known to me possesses the requisites for an efficient railway-spike.

In the said drawings the reference-letter A designates the spike, the stem of which is provided with plain front and rear surfaces 4 5, which when the spike is driven into the tie guide it in its travel in a direct line. The spike is provided with a head 6, of usual construction, and the stem thereof is formed with a wearing-surface 10, immediately below said head, to bear against the rail of the

track, and the sides of said stem are grooved or channeled, as at 3, from the termination of said wearing-surface throughout the entire length of the stem of the spike to its extreme point or first-entering cutting-edge 2. These grooves are of semicircular form in cross-section and extend almost entirely throughout the cross-sectional area of the stem of the spike, leaving side projections 7. At the lower end the stem of the spike is beveled on its front and rear surfaces, as at 8, said bevels converging to the cutting-point 2, as shown in the drawings, and providing side cutting-edges 9, where they intercept the side projections 7 and the edges of the grooves 3, in this manner providing first-entering cutting-points 2 and continuous cutting-edges 9 immediately thereabove, which continue upward along the stem of the spike in the form of projections 7 at the front and rear sides of the grooves 3, said projections being of comparatively small cross-section. By this novel construction the spike displaces the fiber of the wood in the least possible degree in driving into the tie.

When the spike is driven into the tie, the displaced fiber thereof is crowded into the broad semicircular grooves 3 very firmly and as crowded therein offers great resistance to the lateral strain which is placed upon every railway-spike by force of the trains running upon the tracks. Experience and tests with my improved spike have demonstrated that the resistance to the lateral strain mentioned is such that the spike is not loosened in the tie. Crowding of the fiber into the grooves 3 also provides an increased vertical holding-surface for the spike in the tie, retaining the same firmly in its driven position in said tie.

Heretofore railway-spikes have been provided with stems which have been grooved at the front and rear and stems which have been provided with V-shaped grooves upon all four sides; but so far as I am aware no prior patent discloses a railway-spike the stem of which is provided with a wearing-surface immediately below the head with plain front and rear surfaces, the sides of which are provided with grooves semicircular in cross-section and extending from said wearing-surface throughout the entire length of the stem to

the first-entering cutting-point, the front and rear surfaces of this stem near its lower end being provided with converging bevels, which meet and form the first-entering cutting-point 2, and which intercept the projections 7 at the front and rear sides of the semicircular grooves to form continuous side cutting-edges 9, which extend upward along the edges of the stem and meet the projections 7, as hereinabove described, and illustrated in the drawings.

Having thus described my invention, what I claim is—

A railway spike having a head and a wearing surface 10, immediately below said head, a stem provided with plain front and rear surfaces and having semi-circular grooves in its sides extending from the wearing surface

throughout the entire length of the stem to the lowermost portion thereof, the lower front and rear surfaces of said stem being beveled to form a first-entering cutting-edge 2, said bevels intercepting projections 7 formed at the sides of said grooves and also the edges of said grooves to form continuous side cutting-edges 9, which extend upward along the edges of the stem and meet the projections 7, substantially as described and for the purposes set forth.

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

JOHN A. MARKOE.

Witnesses:

W. C. SWIFT,  
H. S. JOHNSON.