(No Model.)

J. CHURCHWARD.

RAILWAY SPIKE.

No. 492,527. Patented Feb. 28, 1893.

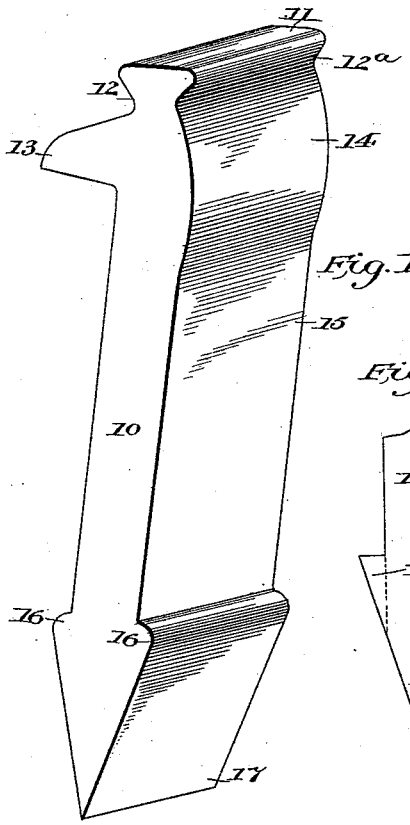

Fig. 1.

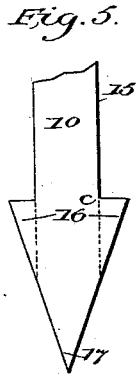

Fig. 5.

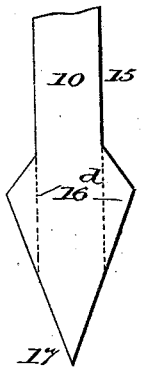

Fig. 3.

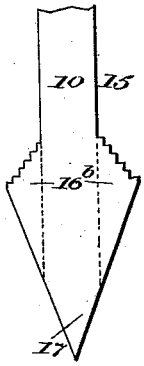

Fig. 4.

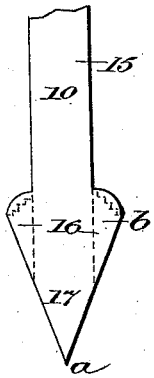

Fig. 2.

Witnesses.
L. F. Griffith
A. B. Chabot

James Churchward
Inventor.
by Field & Co
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES CHURCHWARD, OF BROOKLYN, NEW YORK.

RAILWAY-SPIKE.

SPECIFICATION forming part of Letters Patent No. 492,527, dated February 28, 1893.

Application filed February 11, 1892. Serial No. 421,216. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHURCHWARD, a subject of the Queen of Great Britain, and a resident of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Railway-Spikes, of which the following is a specification.

My invention relates to railway spikes, and its object is to provide a spike which while readily admitting of being driven to place in a railway tie, will when in place, resist to a maximum a tendency to loosen under use and which may be withdrawn whenever desired without materially unfitting the tie for its subsequent reception.

The invention consists of a railway spike constructed as hereinafter described and claimed, and as illustrated in the drawings forming a part hereof, in which similar numerals and letters of reference designate corresponding parts in the several views.

Figure 1 is a perspective view, on an enlarged scale of a spike embodying my invention; and Figs. 2, 3, 4 and 5 are partial side elevations of modified constructions.

The spike 10 is formed at its upper end with a head 11, having a flat upper surface and downwardly and inwardly extending side faces 12 and 12^a. Below the side 12 is formed a lip 13 adapted to bear upon the base of a rail and below the side 12^a is formed a convex projection 14, opposite the lip 13 and extending for some distance below the plane of the lower face of the lip. The sides 15 of the body of the spike are straight and above the point of the spike are formed enlargements, which are alike in form on each side of the spike and are designated as 16 in Figs. 1 and 2, having essentially convex upper faces, the sides of said enlargements merging into the point 17 of the spike.

In Figs. 3 and 4 the enlargements are disposed at an obtuse angle to the body of the spike, those in Fig. 3, designated as 16^a having smooth inclined upper faces, while those in Fig. 4, designated as 16^b, have formed on their upper faces a series of steps, and as shown in Fig. 5 the upper faces of the enlargements, designated as 16^c are horizontal and smooth. If found desirable the upper faces of the enlargements 16 may be formed with steps as shown in dotted lines in Fig. 2.

The swellings or enlargements above the point of the spike being equal on each side of the shank and the angles from the point *a* to the point *b* being the same in each instance, the spike when driven passes direct and straight into the tie, without curving or swerving which would cause the spike to be thrown off from or against the rail.

When the point 17 passes into the tie it cuts the fibers of the wood and as the enlargements above the point pass into the tie the fibers spring back and rest upon the upper faces of the enlargements. Thus it will be seen that it will require much greater power to withdraw the spike than if it were tapered or straight from the head to the point, as all the fibers must be reversed in position before the enlargements are fully released to permit of removing the spike.

The advantage of the form of the enlargements, particularly that shown in Figs. 1 and 2 is that the fibers of the wood are not ripped or broken as the spike is withdrawn but by a simple exercise of power upon the head of the spike the enlargements reverse the position of said fibers.

It will be readily seen that if there were an enlargement on only one side of the spike the spike could not be driven straight but would follow the course of the lesser angle, that is, the side opposite the enlargement, thus making such a construction impracticable and useless, as has been shown by actual tests with curved spikes.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A railway spike having a smooth straight body, and enlargements formed on the sides of the body above the point of the spike, said enlargements being alike in form, the upper faces of said enlargements meeting the sides of the body at an obtuse angle and their sides merging into the point of the spike, and the upper faces of said enlargements being formed with a series of steps, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 9th day of February, 1892.

JAMES CHURCHWARD.

Witnesses:
A. B. CHOBOT,
M. V. CRONIN.