

(No Model.)

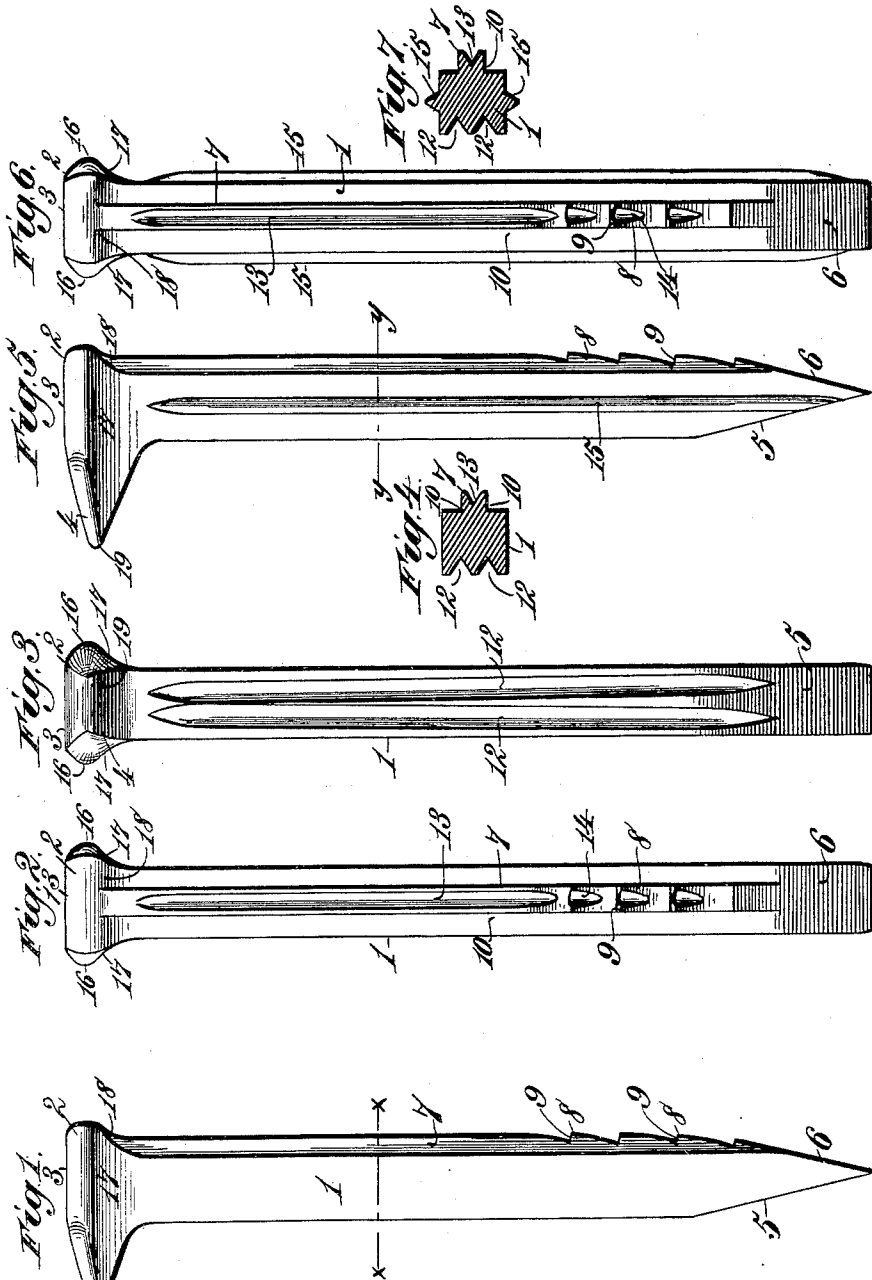
J. M. FENNERTY, Dec'd.

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RAILWAY SPIKE.

No. 477,171.

Patented June 14, 1892.



Witnesses
Robert Everett,
Albert H. Norris.

Inventor:
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By James L. Norris,
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UNITED STATES PATENT OFFICE.

JOHN M. FENNERTY, OF WASHINGTON, DISTRICT OF COLUMBIA; BARBARA FENNERTY ADMINISTRATRIX OF SAID JOHN M. FENNERTY, DECEASED.

RAILWAY-SPIKE.

SPECIFICATION forming part of Letters Patent No. 477,171, dated June 14, 1892.

Application filed August 6, 1891. Serial No. 401,894. (No model.)

To all whom it may concern:

Be it known that JOHN M. FENNERTY, deceased, late a citizen of the United States, and a resident of Washington, in the District of Columbia, did during his lifetime invent certain new and useful Improvements in Railway-Spikes, of which the following is a specification.

This invention has for its object to provide an improved railway-spike of such construction that it is strong, substantial, and durable, and possesses characteristic features that render it well adapted for driving without waste of force transmitted by the hammer.

The invention also has for its object to increase the holding power of a spike and render it exceedingly difficult of extraction, so that it is not liable to work loose in any manner under vibrations produced by the rolling-stock of a railroad.

The invention consists in a railway-spike having a flat driving-head, a rail-holding tongue or lip depressed below the flat head, a penetrating-point beveled front and rear into angles of different inclinations and lengths, the shortest one being at the rear side of the spike, longitudinal grooves in its front side which diverge from the head portion to the point, and a longitudinal rib so constructed and arranged as to provide parallel rabbets at the corners.

The invention also consists in other features of construction, which will be hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved spike. Fig. 2 is an elevation looking at the rear side of the spike. Fig. 3 is a similar view looking at the front edge of the spike. Fig. 4 is a transverse sectional view of the same. Fig. 5 is a side elevation of a modified construction. Fig. 6 is an elevation looking at the rear side of the same. Fig. 7 is a transverse sectional view of the modified construction.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates the shank of the spike, and 2 its driving-head, which is formed

with a flat striking-surface 3 and a rail-holding tongue or lip 4, having its top surface depressed below the flat striking-surface of the spike-head in such manner that when the spike is driven there is no liability of the blows of the hammer bending or otherwise disturbing the correct position of the rail-holding tongue or lip. The penetrating-point of the spike is formed with a long bevel 5 at the front edge of the spike and with a short bevel 6 at the rear edge thereof. These bevels extend at different angles of inclination relatively to the longitudinal axis of the spike, and they are of different lengths, with the short one located at the rear end of the spike. The rear edge of the spike is formed with a longitudinal laterally-projecting rib 7 running approximately the full length of the spike and extending along the back side of the spike-head 2 for the purpose of supporting and strengthening the head, and thereby preventing it from bending backward. The laterally-projecting longitudinal rib imparts considerable strength and rigidity to the spike shank or body and is square in cross-section, while its lower extremity gradually tapers and vanishes into the short beveled edge 6 of the penetrating-point. The lower end portion of the longitudinal rib is formed with a series of ratchet-like teeth 8, the shoulders 9 of which are uppermost, in order to interlock with the timber when the spike is driven thereinto. The longitudinal rib is so disposed along the median line of the spike as to provide at each side thereof a rabbet 10, so that the corners of the spike at the rear edge thereof are rabbeted in parallel lines, thereby materially facilitating the entrance of the spike into the timber, while securing the desired result of rendering it difficult to extract the spike. The front edge of the spike shank or body is formed with a pair of grooves 12, which diverge from the head portion of the spike to the beveled surface 5 of the penetrating-point. The divergent arrangement of the grooves causes them to extend in reverse diagonal directions, and when the spike is driven there is practically a dovetail connection between the same and the timber, which renders the spike difficult to extract and largely contributes to its hold-

ing power. The outer edge of the longitudinal rib 7 is formed with a longitudinal groove 13, and the points of the ratchet-like teeth 8 are likewise grooved longitudinally, as at 14, for the purpose of facilitating the penetration of the spike, while increasing its holding power.

In the modification, Figs. 5, 6, and 7, the construction is the same as described with reference to the remaining figures, and like numerals of reference indicate corresponding parts; but in the modification the sides of the spikes are formed with longitudinal ribs 15, which are rounded or approximately V-shaped in cross-section. These ribs contribute to the holding power of the spike by increasing the available bearing area without materially enlarging the size of the spike in cross-section. The available bearing area of the spike is largely increased by the peculiar construction and arrangement of the longitudinal rib 7, corner-rabbets 10, and divergent grooves 12, and consequently a firm holding or gripping action is obtained when the spike is driven.

The improved construction provides a strong, substantial, and durable spike possessing characteristic features that render it well adapted for driving in correct relation to the rail-flanges without waste of force on any part of the spike-head. It is difficult, if not impossible, for the spike to work loose or rise, and in fact the holding power of my improved spike is such as to render its extraction so difficult that I specially construct the under sides of the head to avoid slipping of the draw-bar in extracting the spike. For this purpose the sides of the head extend laterally, as at 16, to provide bearing-surfaces 17, each of which is continuous or unobstructed from the rear side 18 of the head to the extremity, or approximately to the extremity, 19 of the rail-holding tongue or lip 4. By this peculiar construction of head the claws of the draw-bar can engage with the bearing-surfaces 17 the full length of the head from its rear side to a point near the extremity of the holding tongue or lip, thereby effectually preventing the draw-bar from slipping when the spike is being extracted. This is a very desirable feature of my improved spike, which will recommend it as an efficient means for securing railway-rails.

A perfect rail-spike is of vital importance in constructing perfect railways, and while many different forms of spikes have been proposed many of them are objectionable from the fact that they do not possess the desired holding capacities and the available bearing area does not attain the desired result of perfect interlocked engagement with the timber.

The improved spikes herein described and shown will securely attach railway-rails, and its holding power is largely increased.

The flat striking-surface of the striker-head, elevated above the top surface of the rail-

holding tongue or lip, is an important and desirable element of the spike, in that it is arranged in line with the shank and receives all the force of the blow of a hammer, in consequence of which there is no waste of force on any other part of the spike-head.

The relative arrangement and peculiar construction of the penetrating-point fulfills the conditions required to properly guide the spike into the railway-tie and onto the rail-flange.

A firm hold or grip is secured in the timber by the increased available bearing area of the spike, and the construction is such that no lateral blows are required on the head to force it up to and on the rail-flange, because the penetrating-point of the spike is so formed that while it is being driven into the timber or tie the point of the spike has a tendency outward in the timber or tie, thereby causing the upper portion of the spike to closely hug the rail-flange while being driven.

The divergent grooves cut or separate the fibers of the wood without crushing or tearing them, so that they are carried down toward the point, and this cutting or separation of the fibers endwise commences at the penetrating-point, and therefore the timber is compressed into the grooves, which makes it impossible for water to enter around the spike and prevents that portion of the timber or tie from decaying or rotting, the peculiar construction of the grooves, whereby they diverge from the head portion of the spike to the penetrating-point or extend in reverse diagonal directions, rendering the spike susceptible of firmly holding in the timber or tie, and it will not yield to the vibratory motions of the rails produced by the rolling-stock of a railway. The construction of the grooves is such that when the spike is driven into the timber or tie there is a substantial interlocked connection, which effectually resists tendency of the spike to work loose by vibrations of the rail incident to traffic.

Having thus described my invention, what I claim is—

1. As an improved article of manufacture, a rail-spike having a flat driving-head, a rail-holding tongue or lip depressed below the flat surface of the head, a penetrating-point beveled front and rear into angles of different inclinations and lengths, the short one being at the rear edge of the spike, longitudinal grooves in the front edge, which diverge away from each other in a direction from the head portion to the penetrating-point, and a longitudinal rib extending along the rear side of the head and formed at its lower portion with ratchet-like teeth, substantially as described.

2. A railway-spike having a flat driving-head, a rail-holding tongue or lip depressed below the flat surface of the head, a penetrating-point beveled front and rear into angles of different inclinations and lengths, a longitudinal rib extending along the rear side

of the head and having its lower portion formed with teeth, and longitudinal rabbeted corners at the sides of the longitudinal rib, substantially as described.

5 3. A railway-spike having a flat driving-head, a rail-holding tongue or lip depressed below the flat surface of the head, longitudinal grooves in its front side, a longitudinal laterally-projecting rib on its rear side, and a
10 penetrating-point beveled front and rear into angles of different inclinations and lengths, substantially as described.

4. A rail-spike having a longitudinal laterally-projecting rib extending along the back
15 of its head and formed with a longitudinal groove in its outer edge, substantially as described.

5. A railway-spike having a longitudinal laterally-projecting rib grooved in its outer edge and formed with teeth at its lower portion, substantially as described. 20

6. A railway-spike having at one edge longitudinal grooves, which diverge from the head portion to the point, and at the opposite edge a laterally-projecting longitudinal
25 rib extending along the rear side of the spike-head, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JOHN M. FENNERTY. [L. S.]

Witnesses:

ALBERT H. NORRIS,
JAMES A. RUTHERFORD.