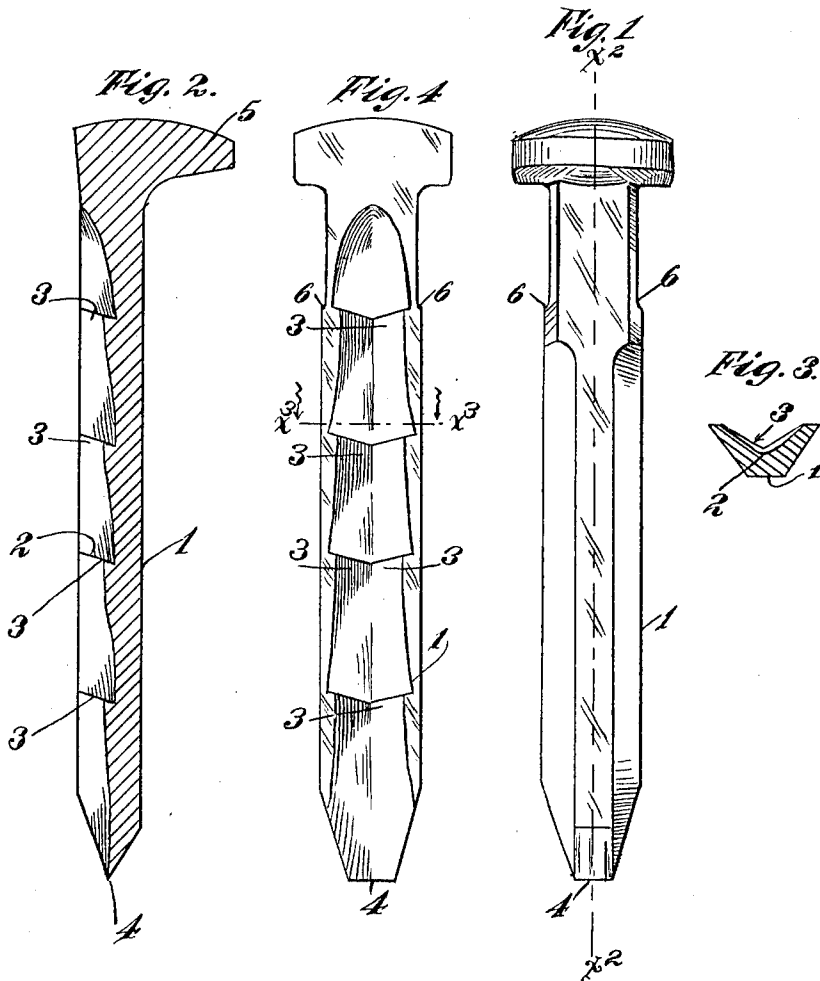


E. J. BRICKER.
RAILWAY SPIKE.
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1,001,612.

Patented Aug. 29, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

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RAILWAY-SPIKE.

1,001,612.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD J. BRICKER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Railway-Spikes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved railway spike, and to this end, it consists of the novel construction and arrangement of parts hereinafter described and defined in the claim.

Very many serious accidents have occurred due to the spreading of rails, and the spreading of rails can take place only when the spikes are loose or withdrawn from the ties. It is therefore of the utmost importance that a spike be provided that will not work loose when put under drawing strain, such as is due to strains incident to traffic. It is also important that the spike have a maximum of strength with a minimum of weight. These desirable features are accomplished in my improved spike.

The improved spike is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a front elevation of the improved spike; Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1; Fig. 3 is a horizontal section taken on the line $x^3 x^3$ of Fig. 1; and Fig. 4 is a rear elevation of the spike.

The body 1 of the spike is provided at its front face with three transversely diverging flat surfaces, that extend approximately from one end to the other thereof, and it is provided in its back with a channel 2 having ratchet-like teeth or corrugations 3. At its lower end, the three flat diverging surfaces are brought to a chisel-like point 4, and at the upper end of the spike they extend to the spike head 5 that projects at the front face of the spike for engagement with the foot flange of the rail. The intermediate of the three diverging flat surfaces of the spike extends straight upward to the head 5, but the outer diverging surfaces are preferably outwardly offset to increase the

strength and cross section of that portion of the spike, which, when the spike is applied, will project above the tie, or is driven but slightly into the tie.

In the best form of the spike, the channel in the back thereof is approximately V-shaped in cross section, and the shoulders of the ratchet-like teeth or corrugations extend from the inner angle of the channel to the flat back of the spike body. This reduces to a minimum the amount of metal required in the body of the spike, and furthermore, gives ratchet-like teeth or surfaces of the greatest holding efficiency.

Obviously, when the spike is driven, the long inclined surfaces of the ratchet-like teeth or corrugations press outward the grain of the wood of the tie, while, when the spike is to be withdrawn, the grain of the wood which is pressed outward and turned downward in driving the spike, must be cut by the abrupt angular edges of the said teeth, so that the spike must actually cut its way out of the tie when it is withdrawn. To further anchor the spike in the tie, it is preferably transversely narrowed for some distance below its head, so as to form shoulders 6.

A spike constructed as above described may be readily driven into a tie, but can be withdrawn from the tie only by very great force, and will not work upward or out of the tie by strains incident to traffic on the rails. When the spike is driven, the split grain or portion thereof, will be turned slightly downward by the ratchet-like corrugations 3, and will engage the said ratchet-like corrugations and securely hold the spike against withdrawal from the tie. Furthermore, the spike is structurally very strong, so that a spike thus constructed may be lighter, and consequently contain less metal, than a spike of the same strength constructed in the customary way. The spike may be drop forged, cast in steel or malleable iron, rolled, or made in any other suitable way. The saving effected by the reduced amount of metal required in the body of the spike, will more than compensate for any additional cost, if any, in the process of making the same. To sum up, a spike of given strength, on the plan above indicated, will require less metal and will have very greatly increased efficiency in resisting withdrawal

from the tie. From this it follows, that the spike may be used in softer wood than required when the ordinary spike is used.

What I claim is:

- 5 A spike having three flat and approximately smooth front surfaces, the two outer of which diverge rearward from the third surface, said spike having an approximately flat back in which is formed an approximately V-shaped channel provided with
10 ratchet like teeth or corrugations extending from the inner angle thereof to the outer surface of said spike body, said spike having at its upper end a head and a transversely

contracted neck, the intermediate flat front 15 surface of said spike body being widened at the said contracted neck to form a rail engaging surface, and the said spike having a head that projects from the back thereof over the three flat front surfaces of said 20 spike, substantially as described.

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

EDWARD J. BRICKER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
