(No Model.) 2 Sheets—Sheet 1.

J. NORTH.

SPIKE.

No. 303,944. Patented Aug. 19, 1884.

Fig. 1.

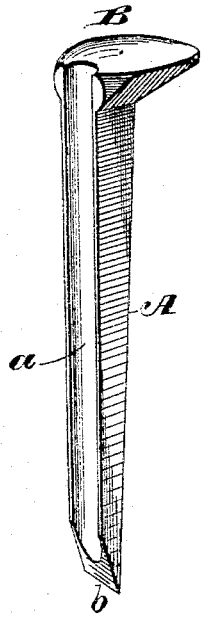


Fig. 2.

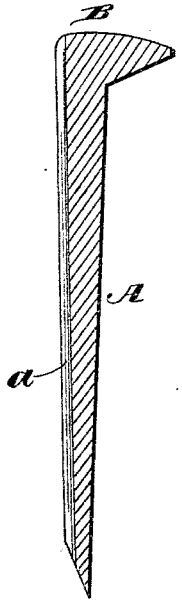


Fig. 3.

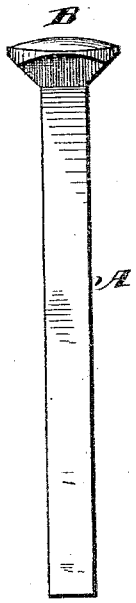
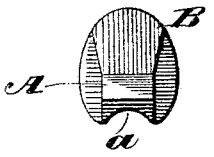


Fig. 4.



Witnesses
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George W. Rea

Inventor:
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By James L. Norris.
Atty.

(No Model.) 2 Sheets—Sheet 2.

J. NORTH.

SPIKE.

No. 303,944. Patented Aug. 19, 1884.

Fig. 5.

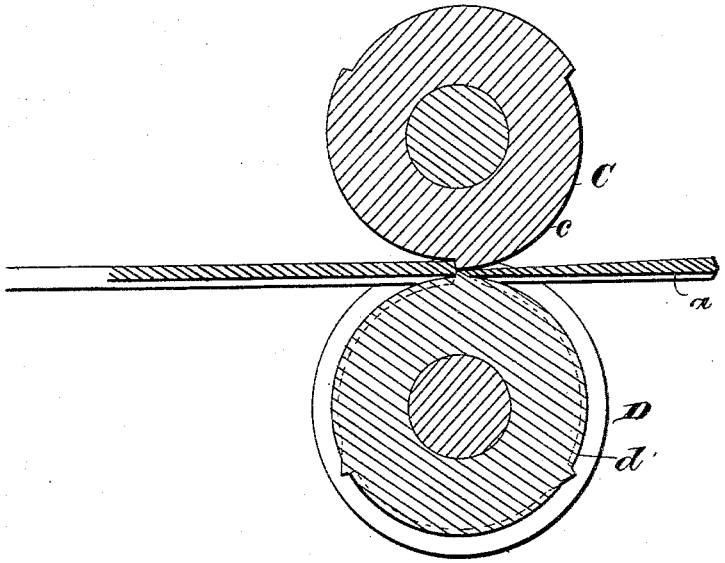
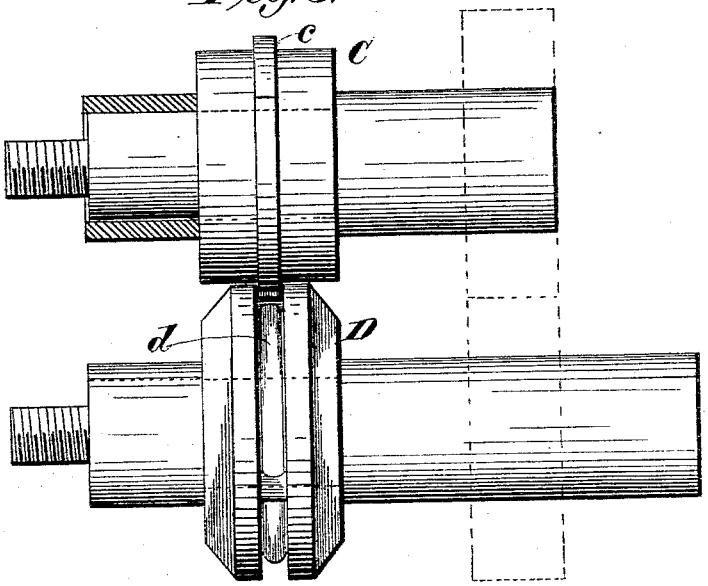


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN NORTH, OF MIDDLETOWN, CONNECTICUT.

SPIKE.

SPECIFICATION forming part of Letters Patent No. 303,944, dated August 19, 1884.

Application filed February 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN NORTH, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented new and useful Improvements in Spikes, of which the following is a specification.

This invention relates to that class of spikes commonly employed for fastening railroad-rails and provided with a grooved body; and it has for its object to provide such a configuration or formation of the spike as will enable the same to be manufactured more easily and cheaply than other grooved spikes heretofore made known, and to increase the penetrating and holding properties over other grooved spikes, and obtain other advantages hereinafter set forth.

The invention consists in the formation of a spike with a grooved body of a tapering or wedge-shaped form, whereby the wood of the sleeper or other object is caused to enter the groove of the spike, instead of being forced away from the same, and the spike is firmly and effectually held in position or prevented from becoming loosened by jars or vibrations, without, however, in the least interfering with the easy removal of the spike when a proper vertical lifting force is applied to the same.

It has heretofore been proposed to form spikes and bolts with grooved and ribbed bodies for increasing their holding properties, and wedge-shaped or tapering nails have also been used; but it has been found that none of the spikes heretofore proposed possess the requisites of a perfect article, which is that the spike should be made as light as possible, should penetrate most easily into the object upon which it is used, and should hold most tenaciously without splitting or forcing from the spike the wood of said object.

A spike constructed according to my invention is far superior to anything that has heretofore been devised, and requires a smaller quantity or weight of metal than any of the grooved spikes of a corresponding length that have heretofore been suggested.

In order to fully explain my invention, I make reference to the following description and to the accompanying drawings, in which—

Figure 1 is a perspective view of a grooved tapering spike made according to my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a front view thereof. Fig. 4 is a top view of the head of the spike. Fig. 5 is a sectional view of the rolls for cutting and tapering the spike-blanks, and Fig. 6 is a face view of said rolls.

The letter A designates the body of a finished spike, which is made of a tapering or wedge-shaped form, and is provided with a groove, *a*, in one of its widest faces—that is, in the back thereof; but preferably I only form the groove in the rear face, as is herein shown. This groove *a* extends from the point *b* throughout the entire length of the body of the spike and through the rear face of the hook or head B thereof, as is clearly shown in Figs. 1 and 2.

The process of manufacture of my grooved tapering spikes is to take a bar of metal which has previously been rolled, with a groove in one of its widest faces, and pass the same through a machine, involving the use of two rolls, C D, which have dies *c d* on their peripheries, that serve to roll a bar of a uniform thickness into sections or blanks having tapering bodies, as is indicated in Fig. 5. These sections or blanks are severed at proper intervals, and are presented to heading devices, which serve to upset the metal of the thickest end of the blank and form a hook or head, B, that is made solid in front, and has the groove *a* extending through the rear thereof, as is shown in Figs. 1 and 2.

A machine for making spikes as above described has been devised by me and forms the subject of a separate application for patent, and the rolls herein represented are included in said machine and form part thereof.

It will be manifest that a spike having a tapering grooved body will penetrate into the wood of a sleeper or other object more easily and hold more firmly than an ordinary flat-faced or a straight-bodied grooved spike, since it is evident that I have in the present construction combined the principle of the wedge-body with the grooved surface heretofore resorted to in a straight-bodied spike for increasing the holding properties thereof.

In a spike shaped as herein shown the extension of the groove into the head will cause the same to possess more strength at the junc-

tion of the head and body than if said groove terminated beneath said head or the solid neck portion; and, moreover, the wood of the sleeper or other object will, in the act of penetration of the spike, be caused to enter the groove therein, whereas in other spikes it is pressed away therefrom and is not intimately united thereto, as is the case in my invention.

It is obvious that the tapering grooved body possesses decided advantages over a plain-faced tapering body, and that I have in my formation of spike followed rational principles which tend to the production of an article that is far superior, stronger, lighter, and more easily manufactured than other known spikes.

Where a spike is provided with a groove extending longitudinally from the point but terminating at a distance from the heel or head, as heretofore, it will, when driven into the wood, break down and splinter that part of the wood which has previously filled the groove, and hence the head or heel end of the spike is not substantially supported and held, as in my construction, where the wood entering the groove is left entirely unbroken, unsplintered, and not depressed. Besides, in many places it is desirable that the wood be not splintered and thrust in around the head of the spike, which is accomplished by my structure, but is impossible in the former construction of spike.

I do not wish to be understood as broadly claiming a grooved spike, as such has long been known; but

What I do claim as my invention is—

1. A spike uniformly tapering from point to head and formed with a groove extending continuously from end to end of the spike, for the purposes set forth.

2. A spike having a tapering or wedge-shaped body and a groove extending throughout the entire length of said body and along the rear of the head thereof, substantially as herein set forth.

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

JOHN NORTH.

Witnesses:
JAMES L. NORRIS,
JOS. L. COOMBS.