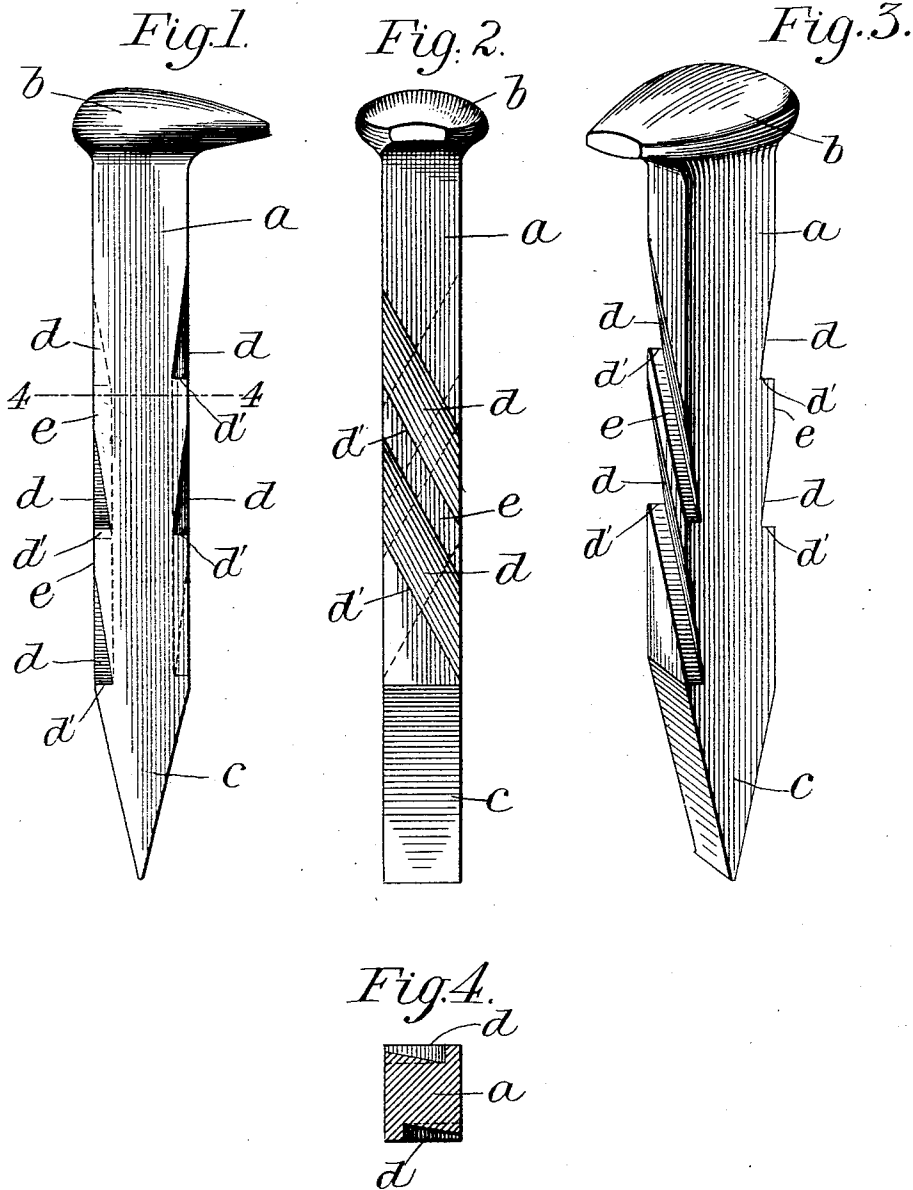


(No Model.)

F. S. HARDESTY.
SPIKE.

No. 580,044.

Patented Apr. 6, 1897.



Witnesses:
William W. Wright, Jr.
A. W. Perkins.

Inventor:
Frederick S. Hardesty,
by Lemuel Goldborough,
Attys.

UNITED STATES PATENT OFFICE.

FREDERICK SAWYER HARDESTY, OF WASHINGTON, DISTRICT OF COLUMBIA.

SPIKE.

SPECIFICATION forming part of Letters Patent No. 580,044, dated April 6, 1897.

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To all whom it may concern:

Be it known that I, FREDERICK SAWYER HARDESTY, of the city of Washington, in the District of Columbia, have invented a new and useful Improvement in Spikes, of which the following is a clear, full, and exact description.

My invention relates to certain new and useful improvements in driving and holding spikes for a variety of purposes, principal among which is the construction of railway road-beds, wherein it finds its greatest utility.

The object of the improvement is to provide a spike that, while it may be driven into the wood with the facility of an ordinary spike, will when driven home take such hold on the fibers of the wood as to prevent the same from working loose by reason of the hammering and jarring of the rails, the warping of the ties, or other forces tending to loosen or withdraw the same. Attempts have heretofore been made to accomplish this general object, but, so far as I am aware, they have all proven futile, and principally, I believe, because they have either rendered the straight driving of the spike more uncertain and difficult or have relied upon projections from the surface of the spike that unnecessarily broke down the fiber of the wood and made a larger hole than the body of the spike required.

I accomplish the objects of the invention by the construction hereinafter described, and illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of a railroad-spike embodying my invention. Fig. 2 is an inner side view of the same. Fig. 3 is a perspective of the same from a different point of view from Fig. 1; and Fig. 4 is a cross-sectional view of the spike on the line 4 4, Fig. 1.

Referring to the views, *a* denotes the body of the spike, which is square or rectangular in cross-section and has flat sides.

b is the head, offset from the inner face of the spike, as usual, to overhang the foot of the rail, and *c* is the point.

As thus far described the spike does not differ from the railroad-spikes of ordinary construction, and as this form has practically

become a standard by adoption one object I have had in view has been to preserve this form and construction in my improvement.

The letters *d d* indicate notches that are cut into the body of the spike with a long taper, as clearly shown in Figs. 1 and 2. There may be any number of these notches, depending largely upon the length of the spike. For an ordinary spike I find two on a face to give the best results. As shown in all the figures, these notches are arranged on the front and rear faces of the spike only, and the object of this arrangement is to enable the longitudinal fibers of the wood, after they have been severed by the point of the spike and deflected downwardly by the inclines leading from the point as the spike is driven in, to spring back into normal position above the shoulders at the base of the notches, as will be readily understood by those skilled in the art.

The notches taper inwardly from the upper or head end of the spike downwardly, and at the bottom form square or flat shoulders *d'*, that face upwardly. As will be clear from Figs. 1 and 4, the notches, and consequently the shoulders *d'* formed thereby, are inclined to the length of the spike. The angle of inclination of these notches is not a limiting feature of my invention, but I prefer to have it about as shown in Fig. 4.

As best shown in Figs. 1 and 4, the notches are so spaced apart that a flat uncut part *e* of the surface of the spike is left between them. This is an important feature, especially when taken in connection with the inclination of the notches, for, as will be noted from Figs. 3 and 4, I am thereby enabled to preserve practically an unbroken surface for the spike, as the inclination of the notches is such that the ends of the intermediate surface *e* meet the uncut flat surfaces above the upper and below the lower notches. This arrangement is of importance in driving the spike, as it enables it to be driven straight in without that tendency to lateral deflection that is apparent in many other spikes.

As shown in Fig. 1, the shoulders *d'* on one face of the spike incline in one direction and those on the opposite face incline in the other direction. Of course it is immaterial in which

direction the shoulders on one face incline, but it is essential that those on the other face incline in the opposite direction, whatever that may be. It is further to be noted that
 5 the inclined shoulders on opposite faces cross each other about midway of their length, and I preferably arrange them so that the upper ends of any two opposite shoulders shall be
 10 and the shoulders on one face shall occupy substantially the same length of the spike as those on the opposite face.

The construction of my newly-invented spike being as thus described, a characteristic of the improvement is that after the spike
 15 is driven home any force, whether accidental or otherwise, tending to loosen or withdraw it is resisted by the action of the oppositely-inclined shoulders on the front and rear faces,
 20 which shoulders constitute in effect wedges, one tending to throw the spike in one direction and the other tending to throw it in the opposite direction, and the two together preventing it from being thrown in either direction
 25 and cooperating to hold it in a truly vertical position.

Having thus described my invention, what I claim as new, and desire to secure, is--

1. A driving-spike for railway road-beds
 30 and like purposes, said spike being square or rectangular in cross-section, with flat sides, and the inner and outer sides being provided with incut, tapering, inclined notches, forming square shoulders facing upwardly, the
 35 shoulders on one side inclining in a reverse direction to those on the other; whereby, when the spike is driven home, the oppositely-inclined shoulders take into the fibers of the

wood and hold the spike against withdrawal or loosening by a double wedge action. 40

2. A driving-spike for railway road-beds and like purposes, said spike being square or rectangular in cross-section, with flat sides, and the inner and outer sides being provided with incut, tapering, inclined notches, forming square shoulders facing upwardly, the
 15 shoulders on one side inclining in a reverse direction to those on the other, and crossing each other about midway of their length.

3. A driving-spike for railway road-beds and like purposes, said spike being square or rectangular in cross-section, with flat sides, and the inner and outer sides being provided with tapering, inclined notches cut into the surface of the spike with an intervening space
 55 between that is flush with said surface, said notches forming square shoulders facing upwardly in opposite directions, the shoulders on one side inclining in reverse direction to those on the other, and crossing each other
 60 about midway of their length.

4. A driving-spike for railway road-beds and like purposes, said spike being square or rectangular in cross-section, with flat sides, and the inner and outer sides being provided
 65 with incut, tapering, inclined notches, forming shoulders facing upwardly, the shoulders on one side inclining in a reverse direction to those on the other, and having their upper surfaces flat and at right angles to the length
 70 of the spike, and their outer edges being flush with the plain unnotched portion of the spike.

FREDERICK SAWYER HARDESTY.

Witnesses:

S. P. KNUT,

REESE H. VOORHEES.