No. 630,673. Patented Aug. 8, 1899.

I. L. EDWARDS.

SPIKE.

(Application filed Aug. 20, 1898.)

(No Model.)

Fig. 1.

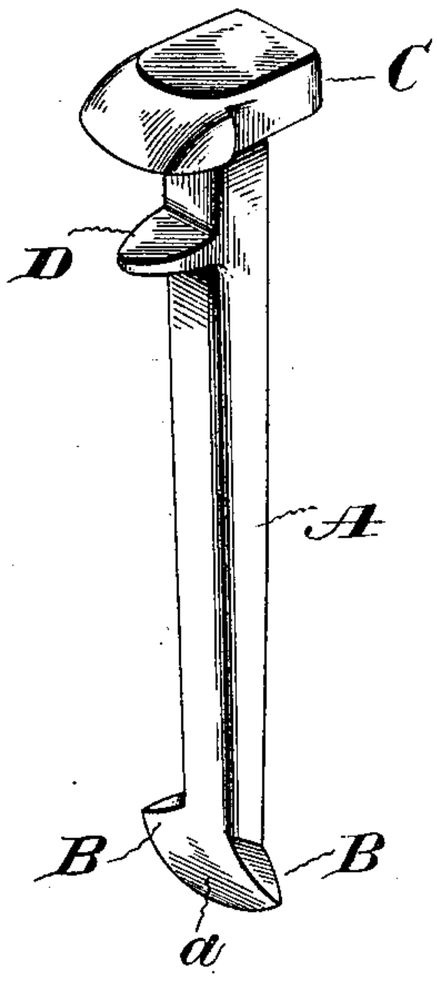


Fig. 2.

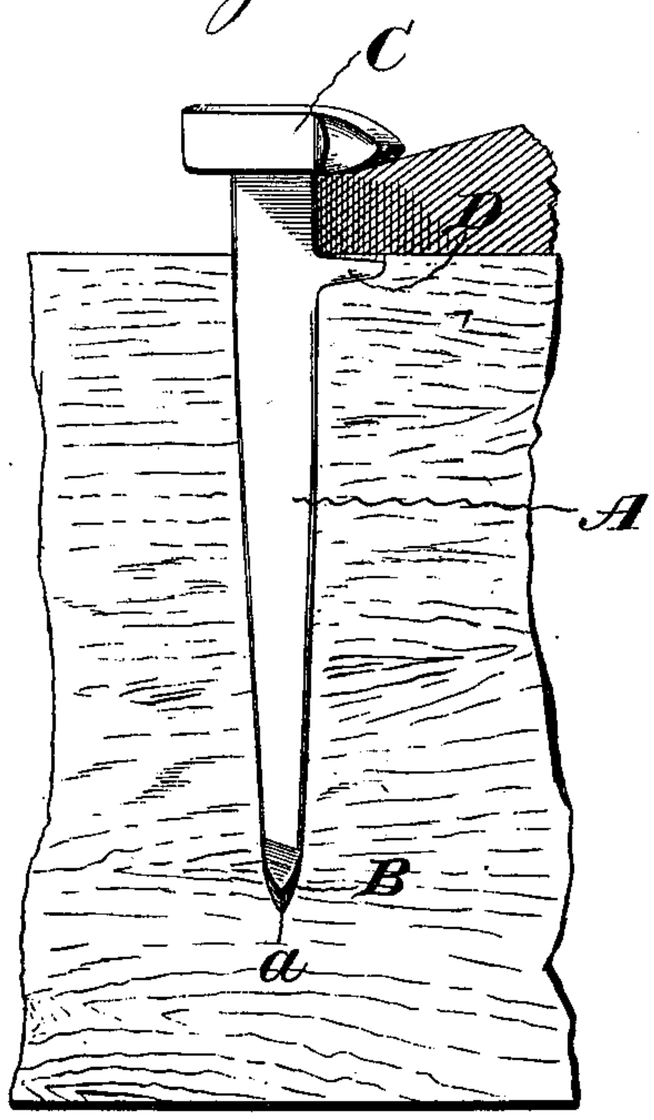
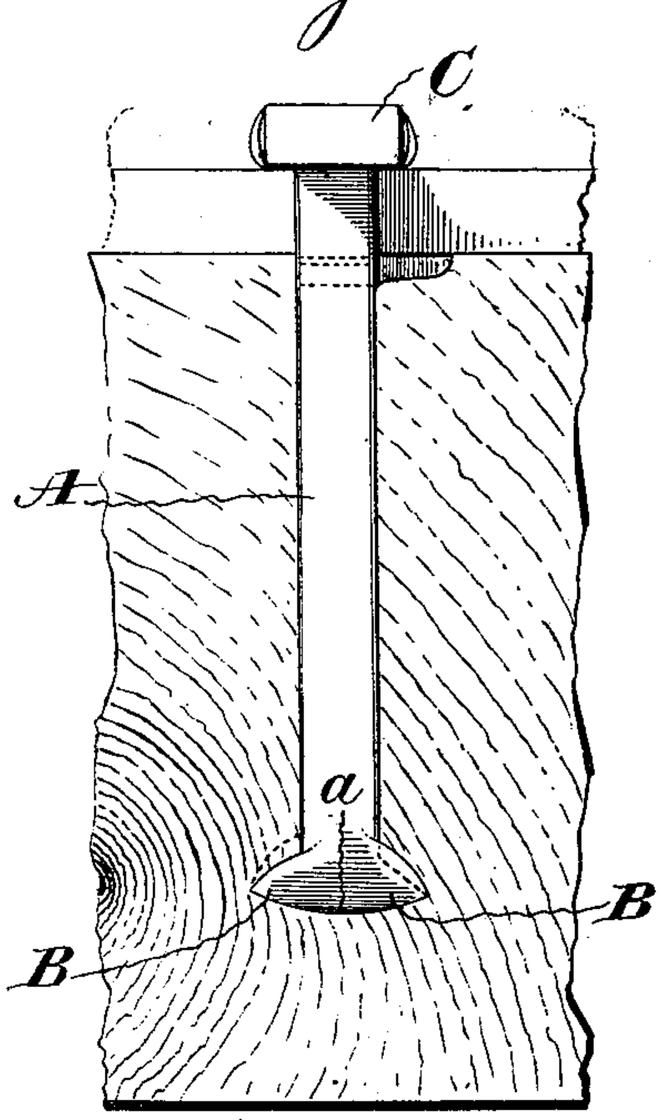


Fig. 3.



Witnesses:
Jas. E. Hutchinson.
Frank P. Prindle.

Inventor:
Isaac L. Edwards, by
Prindle and Russell, his Attys

UNITED STATES PATENT OFFICE.

ISAAC L. EDWARDS, OF AURORA, ILLINOIS.

SPIKE.

SPECIFICATION forming part of Letters Patent No. 630,673, dated August 8, 1899.

Application filed August 20, 1898. Serial No. 689,101. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. EDWARDS, of Aurora, in the county of Kane, and in the State of Illinois, have invented certain new and useful Improvements in Spikes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my spike; and Figs. 2 and 3 are views of the same in side elevation, shown as applied to a cross-tie.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide a construction of spike that may be easily driven, will not unnecessarily rupture or break the fibers of the wood, and will be firmly and securely held from accidental dislodgment; and to these ends said invention consists in the spike constructed substantially as hereinafter specified.

As my spike has been designed more particularly for securing railroad-rails to cross-ties, its construction and use will be described in such connection; but it is to be understood, of course, that in so describing it I impose no restriction upon myself as to the use of the invention.

In the carrying of my invention into practice I construct the spike with a body or shank A, that is square or substantially square at its upper end and has two opposite sides parallel and two that are inclined inward or converge toward each other from the upper to the lower end, at which they meet in a sharp cutting edge *a*. At its lower end the shank is widened or extended laterally, so that on each of its parallel sides is a lug or projection B, the upper side of which inclines downwardly and outwardly, so that the form of the lower end of the spike resembles that of a fish-tail. Besides having the inclination described the upper side of each lug B inclines in a direction from one inclined side of the spike-shank to the other inclined side thereof. The cutting edge *a*, which extends from the point of one lug B to the point of the other, is not straight, but is curved convexly. The corners of the shank from a point a short distance below the head C down to the lugs B and B are rounded, as shown. The head C is substantially of usual form and has the under surface of the side that overhangs one of the inclined sides of the shank beveled upwardly and outwardly to engage the flange of the rail. Below such beveled part of the head a distance slightly greater than the thickness of the rail-flange there is a lug or spur D, whose upper side is flat, while its under side is convexly rounded and which lug or spur is tapering or pointed in form. The lug or spur projects in a direction crosswise of or at right angles to the direction of the lugs B and B.

In using my spike it is driven into the tie with the fish-tail point placed parallel with the longitudinal lines of the grain of the wood. When driven so far that the lug or spur D is carried into the surface of the tie, so that the flat top of said spur is beneath the under side of the rail E, a wrench or other suitable tool is applied to the head C and the spike revolved on its longitudinal axis through a quarter of a circle. This rotation turns the lugs B and B out of alinement with the vertical cuts they make in the tie in being driven into it and crosswise of instead of parallel with the longitudinal lines of the grain. It also places the lug or spur D beneath and the beveled under side of the head C over the flange of the rail E. By reason of the beveling of the upper sides of the lugs B and B the turning of the spike results in a downward pull upon the spike with a screw-like action, and because of the rounding of the corners of the shank obstruction to the turning of the shank is reduced and undue rupture or tearing of the fibers of the wood is avoided. It is obviously impossible for the spike to move longitudinally upward after it has been turned, as described, both because of the opposition of the lugs B and B to such movement and the engagement of the lug or spur D with the under side of the rail E. Yet when it is desired to remove the spike it can be readily and easily done by rotating it to disengage the lug or spur D from the rail and to place the lugs B and B in alinement with the vertical passages cut by them when driven into the tie and then lifting the spike. The same hole in the tie can be repeatedly used without any impairment of the firmness or security with which the spike is held.

It is apparent that as the entering end or

point of the spike is extended equally on opposite sides of the shank and as the spur D does not enter the wood until the spike is driven nearly home that the spike will be driven straight with no tendency to deviate and without undue resistance and rupture of the fibers of the wood.

Having thus described my invention, what I claim is—

1. A spike having its entering end provided on opposite sides with similar lugs or projections, with inclined or beveled upper surfaces, the inclinations of the two surfaces being opposite, and each inclination being in a direction crosswise of the direction in which the lug projects from the spike, substantially as and for the purpose shown.

2. A spike having a tapering or wedge form and terminating in a cutting edge, and provided at the entering end on opposite sides, with similar projections, the upper surface of each projection being inclined downward and outward, and also inclined in a direction crosswise of a line passing through the two projections, substantially as and for the purpose described.

3. A spike comprising a headed shank or body having a single projection on the same side of the shank as that on which the rail-engaging portion of the head projects and in position to be embedded in the surface of the wood, and having a sharp entering end with similar projections on opposite sides, the surface of the shank between said single projection and those at the entering end being smooth, and the direction in which the single projection extends, being crosswise of the direction in which the two projections at the entering end extend, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of August, 1898.

ISAAC L. EDWARDS.

Witnesses:
E. T. PRINDLE,
F. E. PAXTON.