Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.
To all whom it may concern:

Be it known that I, ELWIN RUTHERFORD MINER, a citizen of the United States, and a resident of the borough of Manhattan, city and State of New York, have invented a new and useful Improvement in Spikes for Railways, of which the following is a specification.

My invention relates to spikes or nails, as used for instance in fastening rails or the like on their sleepers.

The numerous kinds of nails hitherto known and used for these purposes have the disadvantage that the surface of the nail bearing endwise against the grain will force and bend these grain-ends in the direction the spike is driven to an undue extent, which impairs the resistance of the spike against extraction considerably.

It is the purpose of the present invention to provide a spike or nail having a shape which will lessen considerably the above mentioned deformation of the grain-ends.

I have found by practical tests that the resistance of the spike against extraction is hereby increased about fifty per cent. over other nails of the same size and for the same purpose.

The accompanying drawing shows distinctly the features of my invention in several figures, of which Figures 1 and 2 are two perspective views of the spike. Fig. 3 is a front view of the spike point showing one of the sides, bearing endwise against the grain in plan view. Figs. 4, 5 and 6 are cross-sections of the spike body at different heights indicated by the corresponding section lines.

In Fig. 1 the surface side 1 which may be called the rear face of the four cornered spike body is channeled from edge to edge, starting from the point 2 upwards, so that the channeling is deepest near the point 2/1, while it disappears gradually towards the head 3 where the face represents a flat surface as shown in the three cross sections, Figs. 3, 4 and 5. This channeled face is intended to face the grain of the wood, in which the spike is driven, endwise, causing thereby the ends of the grain to be bent less in the driving direction than it would be the case if this rear face of the spike would be flat and thus causing the structure of the wood to remain more solid.

As stated already above, it has been proven by practical tests that thus the resistance of the spike against extraction may increase fifty per cent, over the same spike, having flat faces. While the channeling of only the rear face facing the grain endwise has given already satisfactory results, the opposite or front face, facing the rail may be also channel shaped, as shown in the cross section, Figs. 4 and 5. The essential point of the channeling, however, is that same has to extend across the whole face to both edges, and that it gradually disappears towards the head as shown in the drawings, in order to obtain the desired result. Furthermore, the end of the spike is provided with two edges, 60 and 70 6 and 7, Fig. 3, formed by having the flat sides 5 and 8 of the spike intended to face the grain sidewise, raised up and shaped into edges 6 and 7, tapering towards the point 2, as shown in Figs. 1, 2 and 3. These edges act when the spike is driven, as cutting edges crosswise to the grain, thereby gradually making room for the thicker part of the body, while the sharp edges, 9, 10 and 11, 12 are forcing their way like a chisel gradually endwise into the grain, because, owing to the channeling from the point 2 upwards, the two sides forming the edges can be made to intersect at a comparatively small angle.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A four cornered spike, adapted to be driven into wood, having the rear and front face channeled from the spike endt upward, said channeling having its greatest depth near the spike end and gradually flattening out into a flat surface near the spike head.

2. A four cornered spike, adapted to be driven into wood, having the rear and front face channeled across the whole width of the face from the spike end upward, said channeling having its greatest depth near the spike end and gradually flattening out into a flat surface near the spike head.

ELWIN RUTHERFORD MINER.

Witnesses:

H. ALFRED JANKE,
WM. P. HAMMOND.