D. SERVIS.

Railroad-Spike.

No. 205,914. Patented July 9, 1878.

Fig. 1.

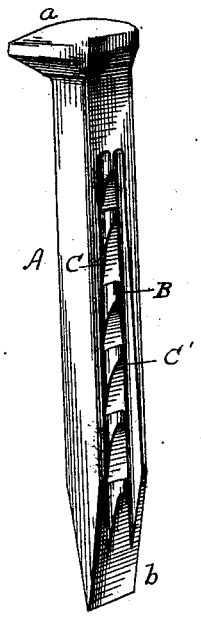


Fig. 2.

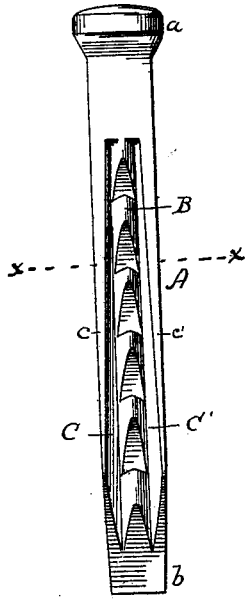
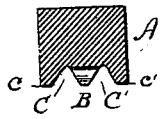


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID SERVIS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO CHARLES F. STURTEVANT, OF SAME PLACE.

IMPROVEMENT IN RAILROAD-SPIKES.

Specification forming part of Letters Patent No. **205,914**, dated July 9, 1878; application filed May 15, 1878.

To all whom it may concern:

Be it known that I, DAVID SERVIS, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Railroad-Spikes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is to provide a railroad-spike with means to prevent the same from working loose in the ties, of such a construction that the resistance of the wood will not be destroyed or the ends of the fiber crushed or broken by the driving or withdrawal of the spike, allowing the spike to be redriven in the same hole the second and third time with but a slightly-diminished adhesion.

My invention therein consists, mainly, in providing the spike with a ridge of upwardly-pointing notches or barbs, and on each side of this ridge of notches with a groove, which compresses the ends of the fiber against the notches to increase the holding power of the spike in the wood; second, in making such notches wider at their lower ends than at their upper termination, so that, as the spike is driven, the fiber will be compressed gradually; and, further, in the peculiar construction of the grooves and notches, the ridge of notches extending centrally down one side of the spike, from near the head of the same to near the point thereof, and being of angular shape, and the grooves, also of angular form, running down one on each side of the ridge of notches, and gradually widening toward the point of the spike, as fully hereinafter explained.

In the drawings, Figure 1 is a perspective view of a railroad-spike with my invention applied thereto; Fig. 2, an elevation of the back of the same; and Fig. 3, a cross-section on the line *x x* in Fig. 2, looking downwardly.

Like letters of reference denote corresponding parts in all three figures.

A represents the body of the spike, of any ordinary or convenient form, and *a* the head. These parts are shown of the most common form, the body being of general rectangular shape in cross-section, with a flattened point, *b*, and the head projecting principally on one side of the body; but my invention is applicable to spikes of other constructions, and designed for use for other purposes than railroad-spikes, as well as to bolts and nails. Preferably on the back of the spike is a ridge of notches or barbs, B, with points tending toward the head *a*, and extending centrally down such back from a point a short distance below the head, and terminating at the lower end of the spike, where it is beveled to form the point *b*. This ridge of notches is preferably of an inverted **V** shape, as shown in the drawings, and the top of the same is preferably about even with the edges of the spike.

On each side of the notches B the spike is grooved out to form two angular grooves, C C′, extending the same distance as the ridge of notches, and running out into the beveled point. These grooves are preferably of **V** shape, and are of tapering form, being smaller at the top than at the bottom, as may also be the ridge of notches.

The grooves C C′ are made so as not to destroy the general shape of the spike, having flanges *c c′* on their outer edges, which form the corners of the spike, these flanges, in accordance with the tapering shape of the grooves, being the widest at the upper ends of the grooves, and being beveled almost to an edge just above the point.

It is evident that the grooves and notches can be on one of the sides or on the face of the spike, and that they can be of curved instead of angular shape, so long as they act to compress the ends of the fiber.

In use, my spike is driven as usual, and, entering the wood, the ends of the fiber will be divided by the grooves, and be gradually compressed against the notched ridge till the maximum holding power is obtained. This compression is accomplished without breaking the fiber.

When the spike is being drawn, the flanges *c c′* protect the wood, holding the fiber that comes in contact with the notches firmly in place, giving support and strength to the resistance of the wood, and preventing the fiber from breaking and the wood from splitting.

After the spike is removed the hole nearly closes up, leaving the resistance of the wood

but slightly impaired, and allowing the spike to be redriven two or three times in the same hole, with but a slight diminution of its holding power.

In railroad-spikes the strain of the rail under the head *a* forces the notches into a position of the greatest possible resistance, while in drawing the spike from the back in the usual way the notches will be forced in a measure out of contact with the ends of the fiber.

I have found that the spike is practically immovable when the strain is brought to bear under the head, while a comparatively-slight leverage applied to the back will draw it from the wood without injury to the fiber. Any pressure or strain exerted by the rail only sets the barbs against the downwardly-pressed ends of the fiber and locks the spike. By lifting from the opposite side the points are relieved and the spike unlocked.

From the great holding power of this spike a smaller number of railroad-ties may be used, and most of the expense of redriving railroad-spikes can be saved.

Although I prefer to make the grooves C C′ of the widening form shown, still it is evident that they can be constructed of the same width throughout without departing from the spirit of my invention.

Having thus fully described my invention, and explained some of its advantages, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A spike provided with a ridge of upwardly-tending notches, and a groove on each side of the said notches, substantially as and for the purpose set forth.

2. A spike provided with a ridge of notches, and a groove on each side of such notches, said grooves widening gradually in a downward direction, substantally as and for the purpose set forth.

3. The body A of a spike, having head *a* and beveled point *b*, and provided with notches B and grooves C C′, constructed and arranged substantially as described and shown.

This specification signed and witnessed this 30th day of April, 1878.

DAVID SERVIS.

Witnesses:
C. F. STURTEVANT,
ALEX. N. LEWIS.