(No Model.)

# P. PETERSEN & H. A. CLOSSER.

## RAILROAD SPIKE.

No. 433,816. Patented Aug. 5, 1890.

*Fig 1.*

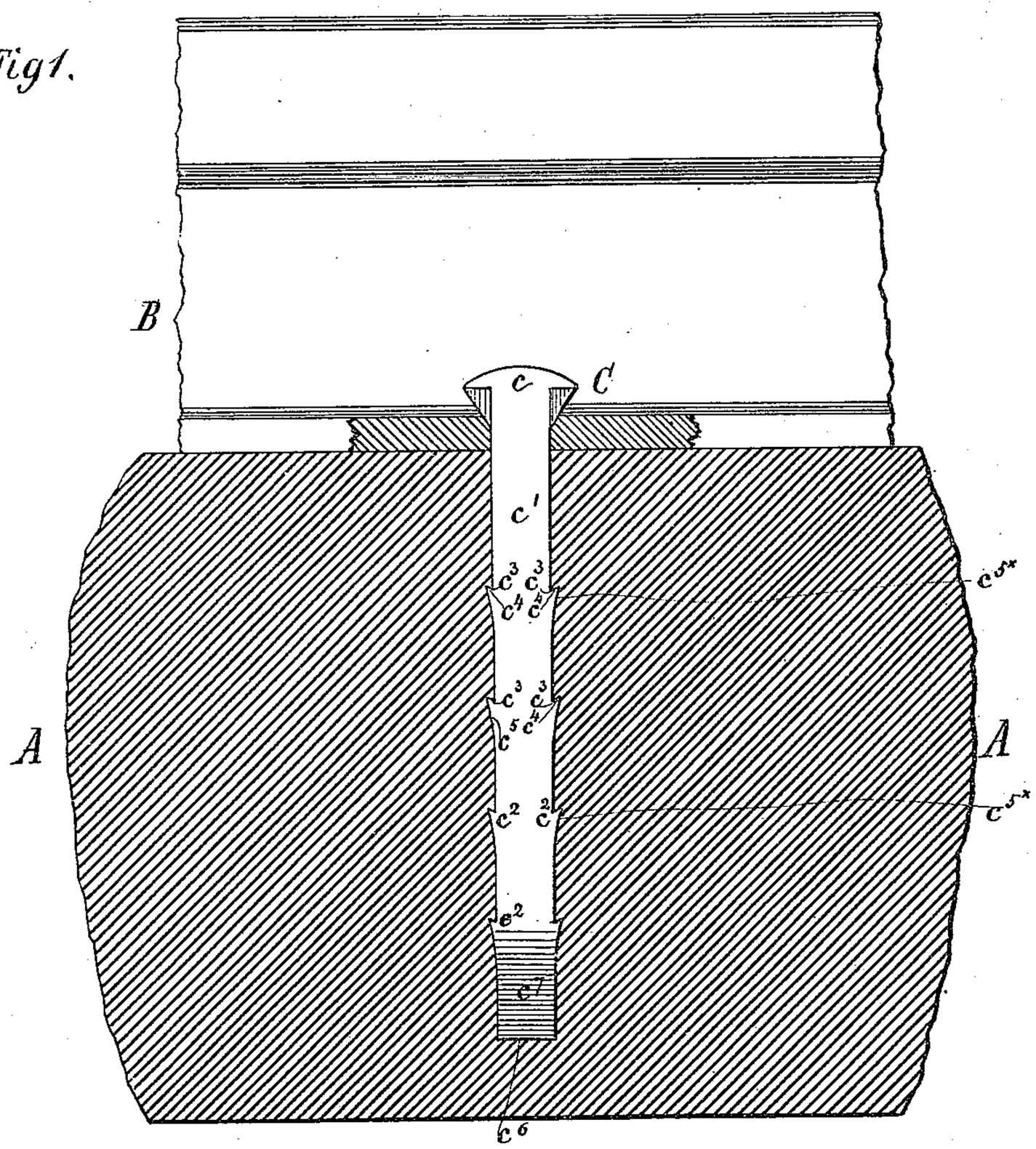
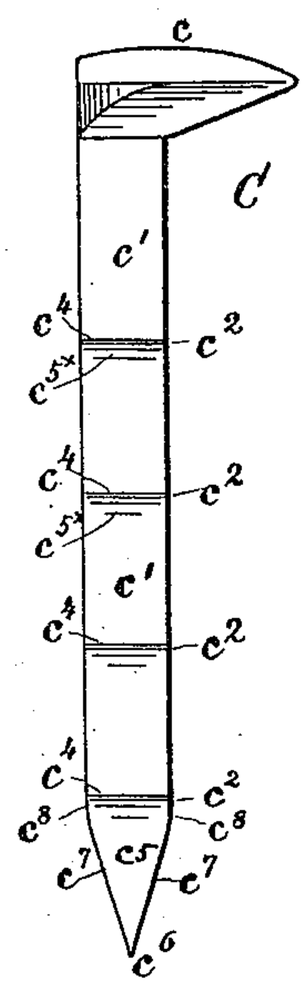



*Fig 2.*




*Witnesses.*
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# UNITED STATES PATENT OFFICE.

PETER PETERSEN AND HORACE A. CLOSSER, OF FAIRCHILD, WISCONSIN.

## RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 433,816, dated August 5, 1890.

Application filed June 2, 1890. Serial No. 354,014. (No model.)

*To all whom it may concern:*

Be it known that we, PETER PETERSEN and HORACE A. CLOSSER, citizens of the United States, residing at Fairchild, in the county of Eau Claire and State of Wisconsin, have invented certain new and useful Improvements in Railroad-Spikes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to that class of railroad-spikes which are provided with shoulders or beards in order to prevent the spike becoming loose in the sleeper and losing its hold on the rail; and it consists of a headed spike having its body portion of equal thickness throughout, said body portion being provided with retrorsely-inclined shoulders or beards and transverse knife-edged foot termination.

In the accompanying drawings, Figure 1 is a transverse section of a railroad-sleeper and an elevation of our spike embedded therein and holding the flanged foot portion of a rail, which latter is shown in section; and Fig. 2 is a side elevation of the same.

In the drawings, A represents a sleeper, B a rail, and C our improved spike. The spike C is formed with a head *c* of ordinary construction. The shank or body portion *c'* of the spike is of prismatical shape and is provided on its left and right sides with transverse triangular shoulders or beards $c^2$. These shoulders are arranged parallel with the head *c* and have inwardly-inclined top surfaces $c^3$ and terminate with acute edges $c^4$. The shoulders are so formed on the spike that the prismatical shape of the latter is maintained, and all indentations or depressions for facilitating the formation of said shoulders, which must of necessity weaken the spike, are avoided by our construction, and a spike of equal strength and stiffness as that of a plain spike, with the additional advantages of the retaining-shoulders, is produced. The outer slopes $c^{5\times}$ of the shoulders are preferably curved inwardly and are as short as the necessary strength will permit. This construction facilitates the shaping of the spike in its manufacture and reduces the frictional resistance of the spike while being driven into wood to a minimum. By inclining the surfaces $c^3$ downwardly toward the shank the wood fibers forced aside by the entering spike will, by reason of their elasticity, glide over the edges $c^4$ and close around the shank proper of the spike, so as to prevent any upward movement of the same, as the wood fibers cannot slide over the surfaces $c^3$ in order to let the edges $c^4$ pass by and up. In old constructions, where shoulders are provided with top surfaces $c^3$, standing at right or obtuse angles to the shank, it has been observed that the wood fibers yield outwardly and pass over said shoulders when the spikes are moved upwardly, either by the motion of the train passing over the rails or when the spike is being removed for any other purpose, while with the use of our spike any attempt to remove the same will cause the fibers of the wood to collect between the shoulders and shank and firmly hold the spike. It will also be observed that the shoulders or beards on our spike prevent the fibers of the wood slipping over the same, and in removing the spike the fibers will be shattered and make it very difficult to withdraw the spike. The resistance in withdrawing our spike is sufficient to require great effort to remove it from the sleeper. The foot termination $c^5$ of the spike stands transversely to the shoulders $c^2$ and is formed with a knife-edge $c^6$, and its tapered sides $c^7$ join the sides of the shank with an easy curvature $c^8$, thereby facilitating the penetration of the spike and avoiding the scraping and grinding of the severed ends of the fibers, which take place in spikes in which the curvature $c^8$ is not employed and where the tapered sides $c^7$ form corners with the shanks. The corners in the old constructions abrade the wood fibers and produce a very fine broken or ground mass of wood-fiber fragments, which settle around the shank of the spike and permit the spike to be quite readily withdrawn incidentally or otherwise.

Owing to the powerful and ready operation of the shoulders of the spike a comparatively small number of the same will suffice to render a spike very effective. By the transverse arrangement of the edge $c^6$ and shoulders $c^2$, when the spike is driven in the shoulders will be wedged between the sound un-

severed wood fibers and are thus most perfectly held, owing to the unyielding nature of the same.

What we claim as our invention is—

1. As a new article of manufacture, a railroad-spike having a beveled entering end $c^5$ $c^6$ $c^7$ at a right angle to the head, shoulders or beards $c^2$, extending entirely across two of its broad sides and arranged parallel with the head $c$ and at right angles to the entering end $c^5$ $c^6$ $c^7$, and the top surfaces $c^3$ of the said shoulders or beards forming sharp knife-edges outside of the line of the body of the spike, and the spike having a uniform width or thickness throughout its body on straight lines inside the shoulders or beards, substantially as described.

2. As a new article of manufacture, a railroad-spike having an equal thickness throughout its body portion and formed with a beveled entering end at a right angle to the head, and with shoulders or beards which are arranged at right angles to said end and parallel with the head, and are curved on their broad surfaces, inwardly and downwardly inclined on their upper surfaces, and project out beyond the body of the spike, substantially as described.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

PETER PETERSEN.
HORACE A. CLOSSER.

Witnesses:
WM. F. HOOD,
C. M. WILSON.