

(No Model.)

F. E. GRAU.  
RAILROAD SPIKE.

No. 534,558.

Patented Feb. 19, 1895.

Fig. 1.

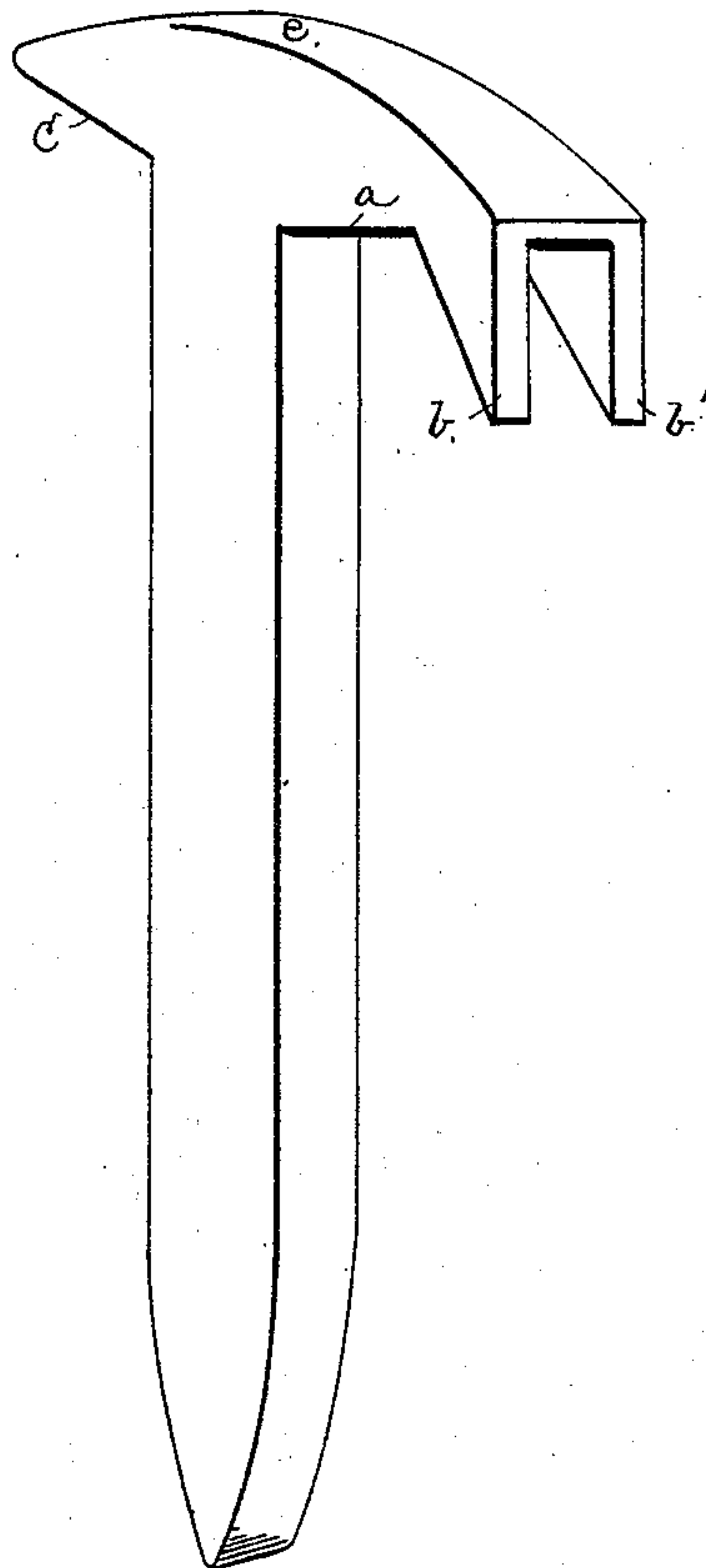
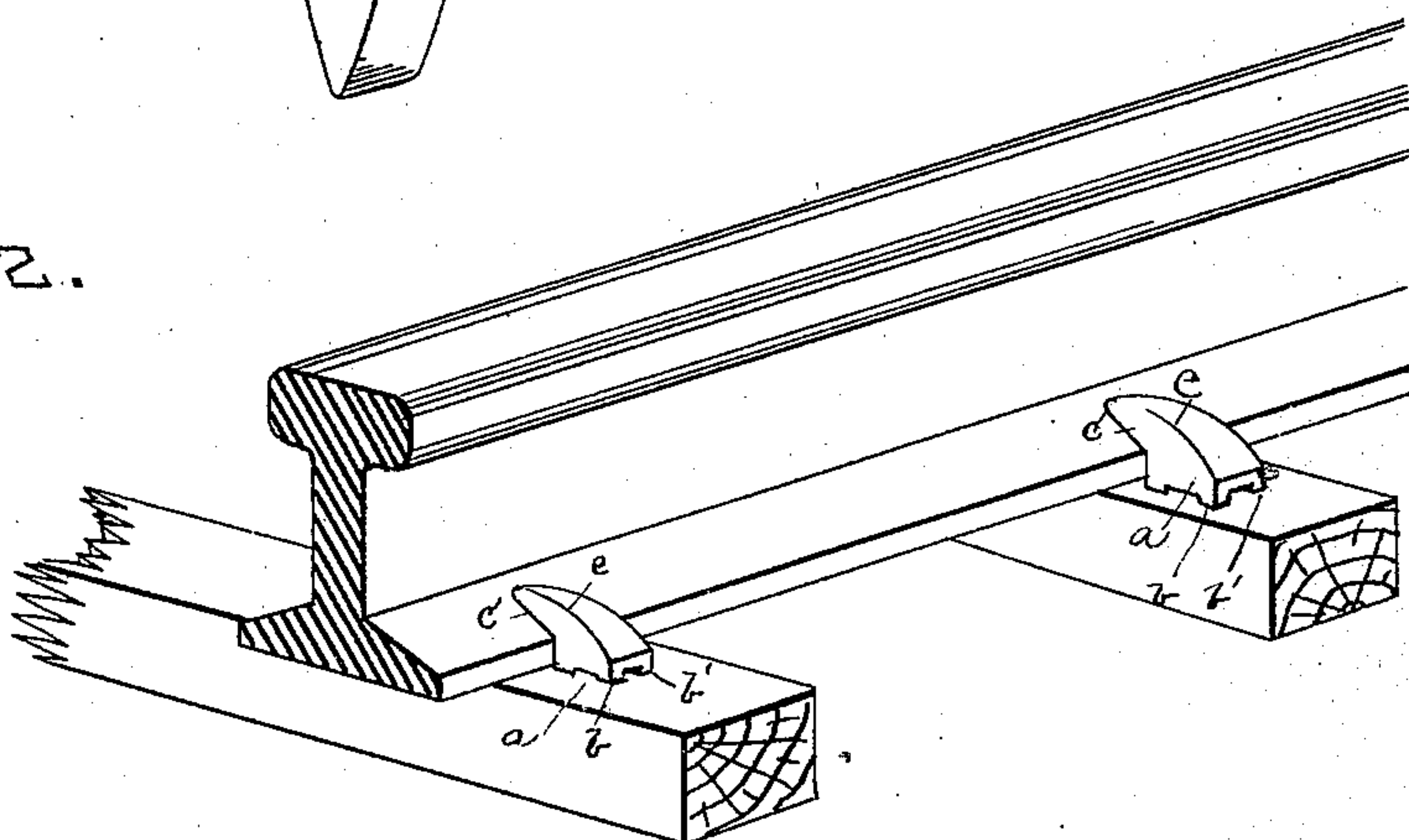


Fig. 2.



WITNESSES  
H. V. Jenkins  
C. F. Mallard.

INVENTOR  
Fredrick E. Grau,  
By Stoddart & Co.  
Attorneys.

# UNITED STATES PATENT OFFICE.

FREDRICK EZRA GRAU, OF CROSS FORK, PENNSYLVANIA.

## RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 534,558, dated February 19, 1895.

Application filed July 22, 1893. Renewed November 28, 1894. Serial No. 530,280. (No model.)

*To all whom it may concern:*

Be it known that I, FREDRICK EZRA GRAU, a citizen of the United States, residing at Cross Fork, in the county of Potter and State of Pennsylvania, have invented new and useful Improvements in Railroad-Rail Spikes, of which the following is a specification.

This invention relates to that class of spikes which are used in securing railroad-rails to cross-ties, or stringers; and it consists in providing a spike with a head having an inner and an outer projection the under surfaces of which are of different elevations and arranged at different angles, to bear upon the bottom flange of the rail, and upper surface of the cross-ties, as hereinafter more fully set forth.

It also consists in providing the outer projection of the spike-head with downwardly projecting side-spurs, which, when embedded in the tie, insures a perfect brace both for the spike and rail, as is hereinafter more fully explained.

Referring to the accompanying drawings, Figure 1 is a perspective view of my improved spike, and Fig. 2 a perspective view of a railroad-rail, as secured to cross-ties by my improved spikes.

My improvement can be applied to a spike of any form, but I preferably construct the spike with a rectangular shank, having a chisel-shaped point, as shown, at Fig. 1, and with the under-surface of the head projecting outwardly, at right-angles, as shown at *a* and

provided at its rear edge, with two downwardly projecting spurs *b, b'*, while at the opposite side of the spike the under surface of the head is inclined upward as at *c* so as to engage the bottom-flange of a railroad-rail, when the under surface *a*, shall be brought in contact with a cross-tie.

From the extremities of the spike-head, the lines curve upwardly to form a crown *e*, so as to insure greater strength to the spike.

An essential feature of this invention consists in the downwardly projecting side-spurs, or bifurcated end of the spike-head, for resisting diagonal as well as outward pressure.

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

As a new article of manufacture a railroad rail spike having a head provided with inner and outer projections, the inner projection arranged at an angle to engage the bottom flange of a railroad-rail and the outer projection provided with a downwardly projecting bifurcated lip, or side spurs, the head of the spike extending over said spurs and forming a connecting web, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDRICK EZRA GRAU.

Witnesses:

ROB. B. KNIGHT,  
N. BAUGHMAN.