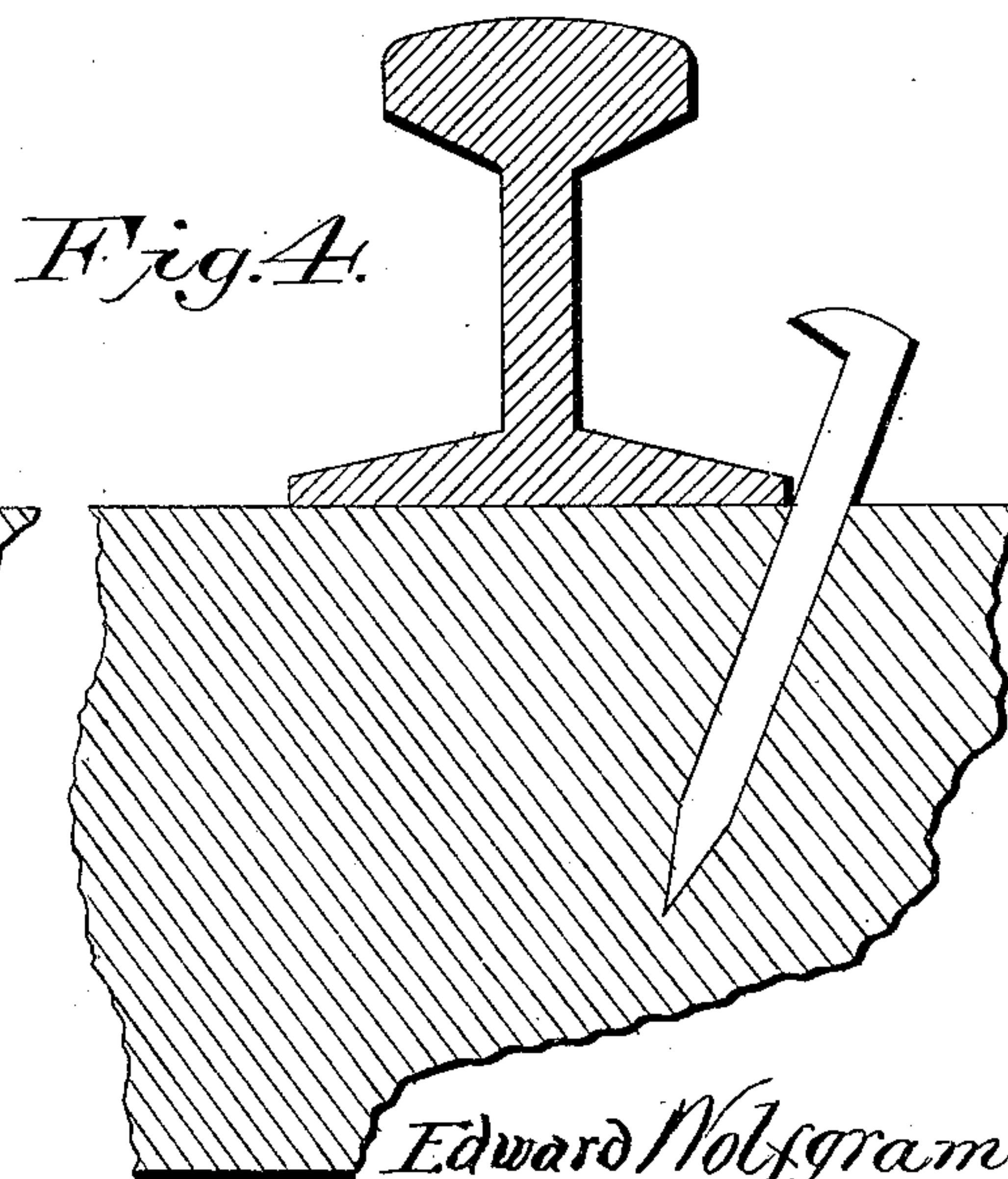
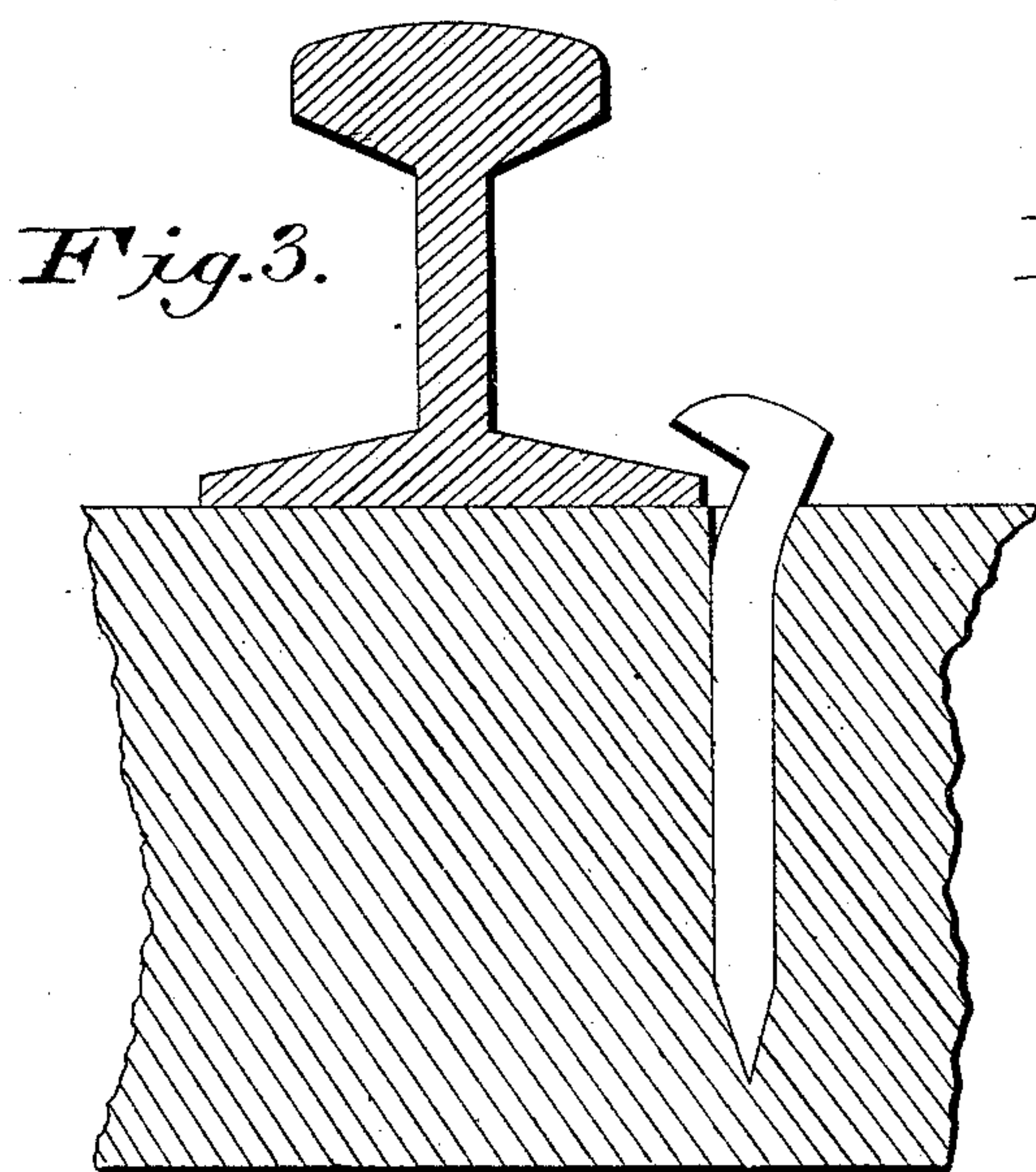
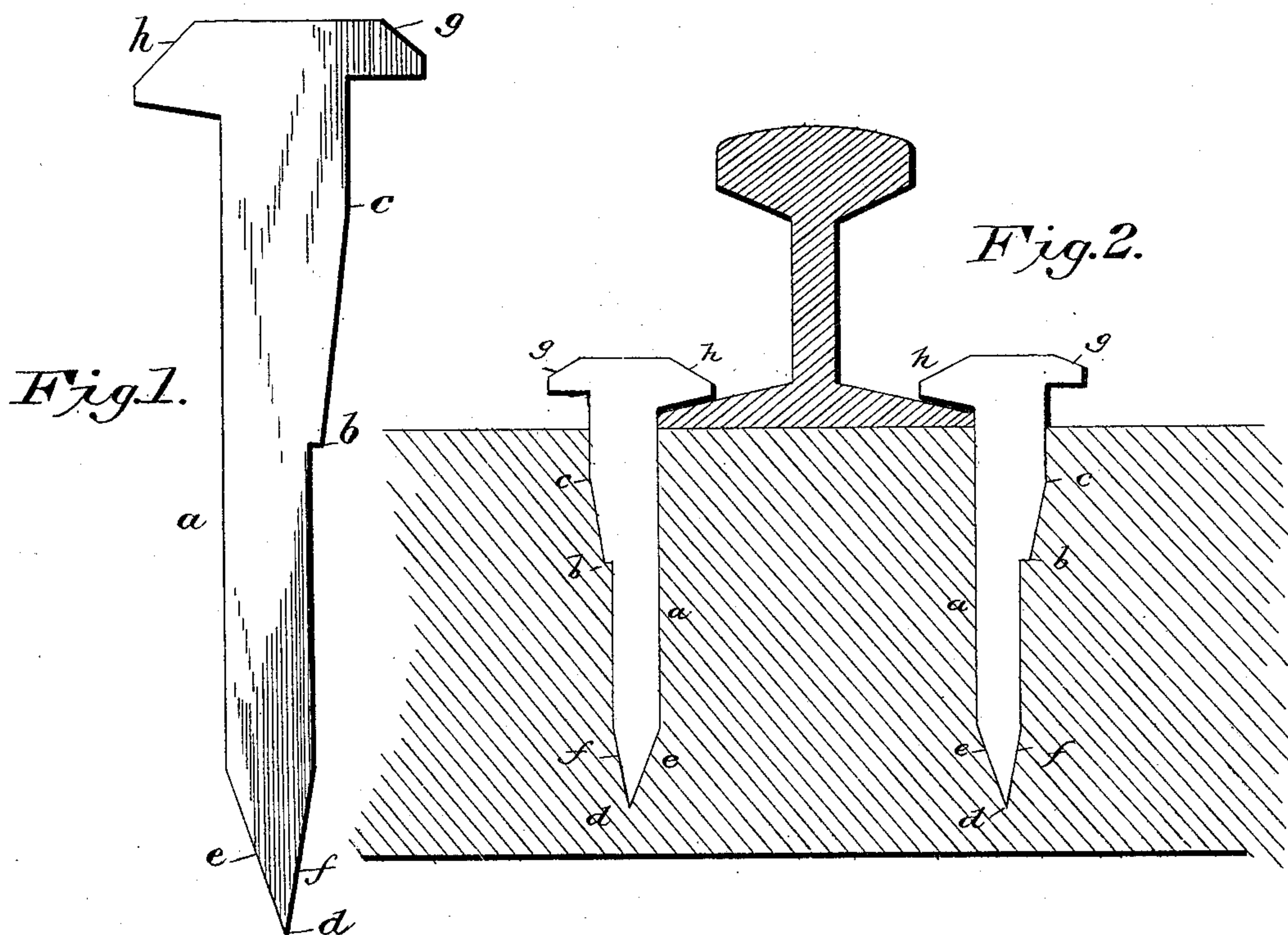


(No Model.)

E. WOLFGRAM.
RAILROAD SPIKE.

No. 432,351.

Patented July 15, 1890.



Edward Wolfgram.
Inventor

Witnesses
H. S. Elliott.
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UNITED STATES PATENT OFFICE.

EDWARD WOLFGRAM, OF PELICAN LAKE, WISCONSIN.

RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 432,351, dated July 15, 1890.

Application filed February 17, 1890. Serial No. 340,832. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WOLFGRAM, a citizen of the United States, residing at Pelican Lake, Forest county, Wisconsin, have
5 invented certain new and useful Improvements in Railroad-Spikes, of which the following is a specification.

My invention has reference to railroad-spikes; and it consists in the improvements
10 hereinafter described and set forth, whereby a durable, efficient, and inexpensive spike is provided that will overcome objections incident to the ordinary form of spike, and will at the same time possess advantages not possible in previous forms.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side view of a spike embodying my improvements. Fig. 2 is a sectional view of a rail and tie, showing the application of my improved spikes,
20 and Figs. 3 and 4 are similar views illustrating disadvantages connected with the old form of spikes.

In making my improved spike I provide
25 the side *a*, that is to lie next adjacent to the rail, with a vertical straight edge, while the opposite side is parallel from just above its point to about its center, at which point it projects to present an abrupt horizontal
30 shoulder *b*. From and above the shoulder *b* the side inclines outward and upward until it reaches the point designated by the reference-letter *c*, where it again becomes strictly vertical, and finally ends at the head. The
35 enlargement presented by the shouldered portion and inclined faces when the spike is driven into position will be on the side farthest from the rail, and hence it will act as a re-enforce to prevent the upper portion of
40 the spike from bending and breaking off, as illustrated in Fig. 3, where the ordinary spike is shown bent, as frequently occurs under the action of the rail-contact and the hammer that drives the spike into position. Another
45 advantage connected with the abrupt shoulder *b* consists in the fact that when the spike is driven into the tie the opening made therein is roughened on the side occupied by the shoulder, and hence will better serve to hold
50 the spike against any upward movement exerted by the vibration of the rails. I also form the end edge *d* so that it will be located to one side of the vertical center of the spike. Thus, as seen in Fig. 1, the body of the spike

has twice as much metal removed from the side
55 *e* as on the side *f*. Now, as shown in Fig. 2, when the spikes are driven into the tie with the points relatively located, as shown in said figure, the side *e* will be next adjacent to the
60 rail at the time of insertion, and as the spike is driven in the point tends to cause the spike to incline outwardly from the vertical plane of the rail, and hence counteracts the binding effect thereon of the rail-flange, which
65 frequently occasions the ordinary spike to incline and pass beneath the rail, as shown in Fig. 4, improperly setting the head and rendering the rail liable to be sprung therefrom by undue vibration of the rail; hence
70 the presence of the point to one side neutralizes the binding effect referred to and serves to keep the spike straight in the tie.

Again, referring to Figs. 1 and 2, it will be seen that the outer flange *g* of the head of my improved spike is not only higher than
75 the inner flange *h* of the same, but that the under face of the outer flange *g* is horizontal, while the under face of the inner flange is inclined. This arrangement secures the proper bearing of the flange *h* upon the rail-base, but
80 leaves at the opposite side sufficient room for the insertion beneath of the end of a claw-bar.

The improved spike described is not only valuable on account of the difficulties it overcomes, but can be made without any appreciable difference over the cost of the ordinary spikes.

I claim—

1. The improved spike herein described, having the head provided with flanges *g h*,
90 the lower face of the former being higher than that of the latter, together with a body provided at its outer side beneath the flange *g* with an enlargement, terminating at its lower end in a horizontal shoulder *b*, substantially as set forth.

2. The improved spike herein described, having the head and body, the latter being provided with an enlargement on one side and a point located at one side of its vertical
100 center, the latter being presented by removing more metal of the side opposite to that on which the enlargement is located, substantially as set forth.

EDW. WOLFGRAM.

Witnesses:

ALBERT PETERSON,
THEODOR KUEHN.