

(No Model.)

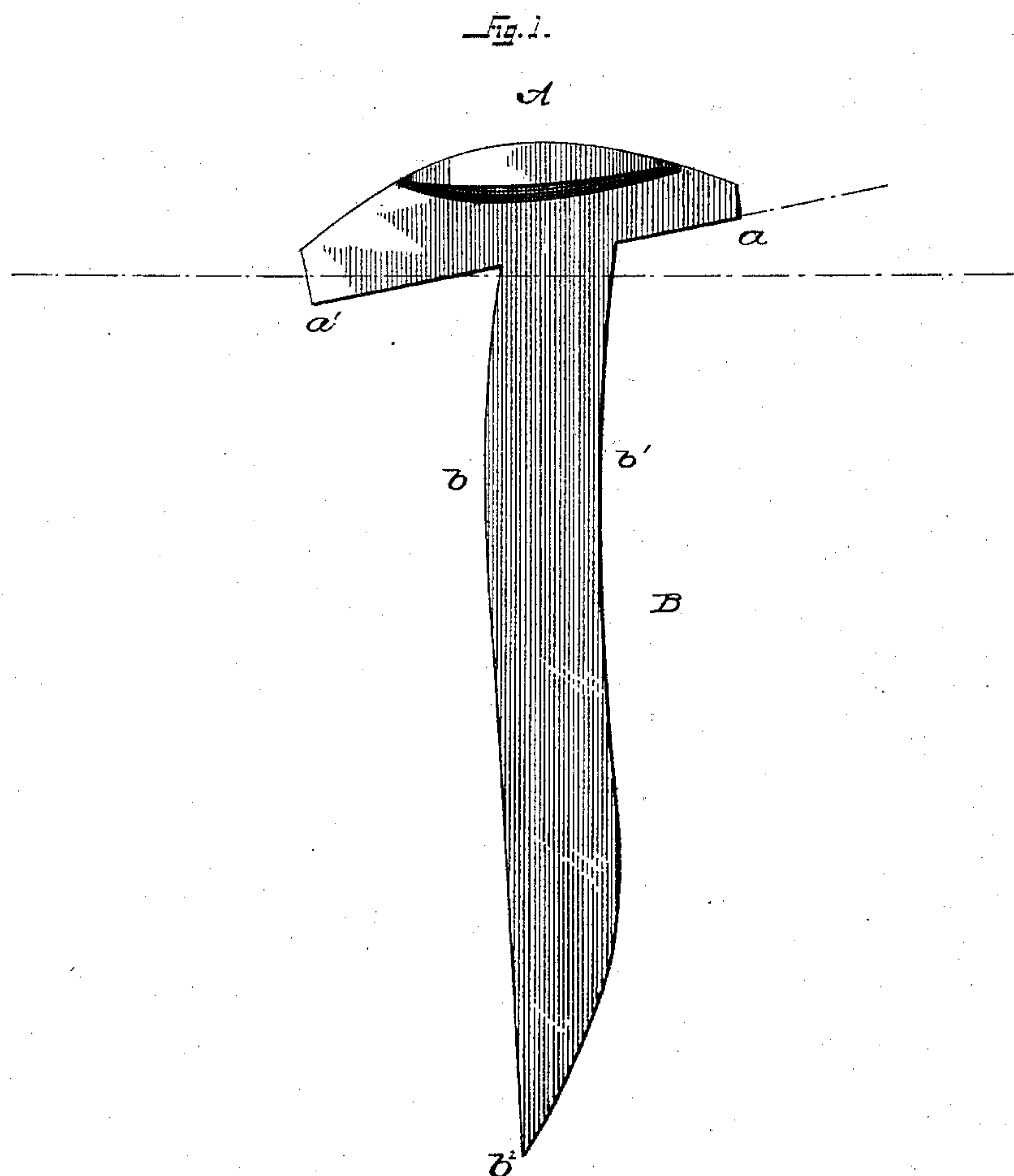
2 Sheets—Sheet 1.

J. M. FENNERTY.

RAILROAD SPIKE.

No. 371,185.

Patented Oct. 11, 1887.



Witnesses:

W. H. A. [Signature]
Wm. H. [Signature]

Inventor :

John M. Fennerty,

by

A. E. [Signature]
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

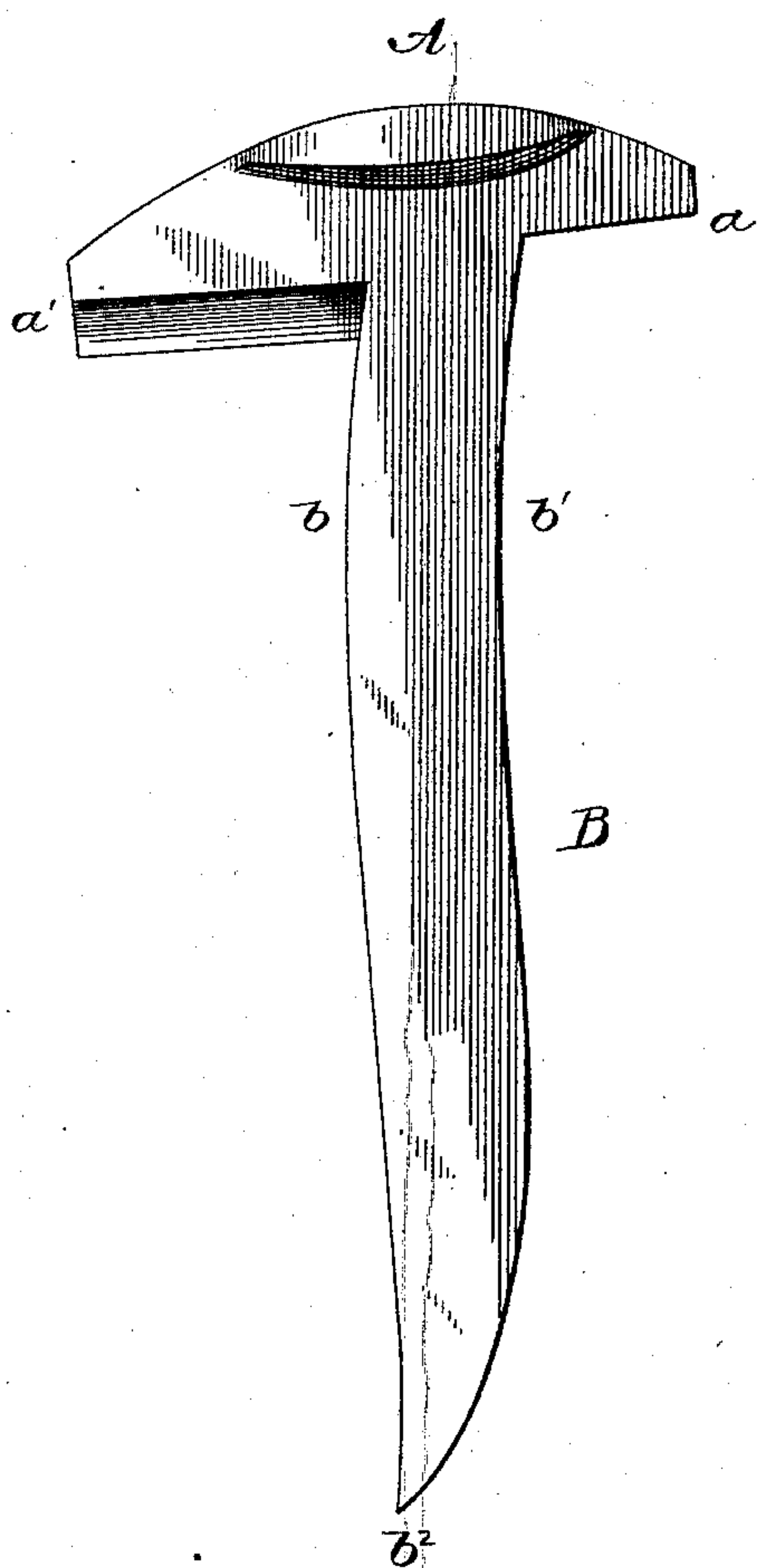
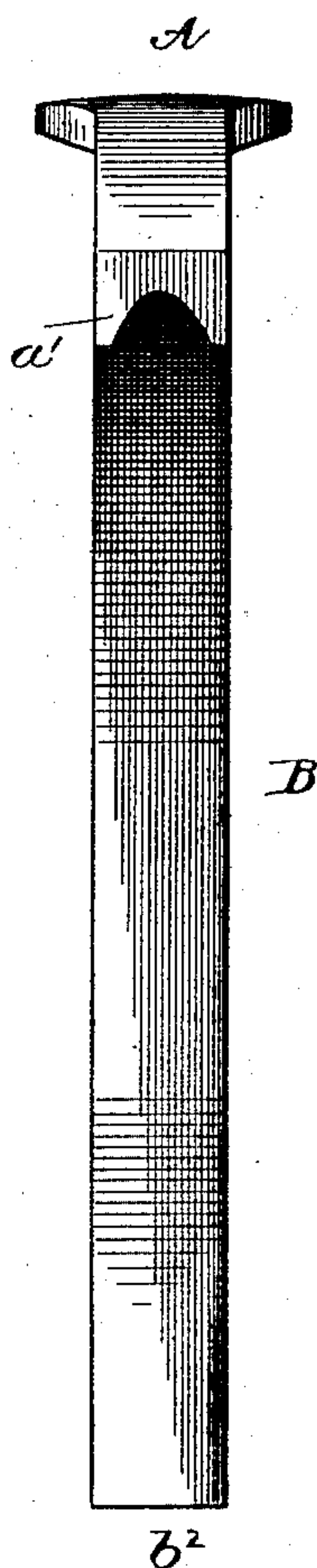


Fig. 3.



Witnesses:

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Inventor :

John M. Fennerty,
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UNITED STATES PATENT OFFICE.

JOHN M. FENNERTY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-TENTH TO RALPH WALSH, OF SAME PLACE.

RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 371,185, dated October 11, 1887.

Application filed January 3, 1887. Serial No. 223,216. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. FENNERTY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Railroad-Spikes; and I 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.

This invention relates to railroad-spikes.

The object is to produce a railroad-spike which shall be of proper configuration to hold a rail firmly in place, to give greater resistance to the lateral pressure and vertical vibratory motion thereof, and at the same time be simple and economic in construction.

The invention consists in a railroad-spike having an elongated head projecting from opposite sides of the body, stem, or shank, and with one portion higher underneath than the other, whereby one portion of the head may overlap the flange of a rail and the other be embedded in a tie or sleeper.

Furthermore, the invention consists in a railroad-spike having an elongated head projecting from opposite sides of the body, stem, or shank, with the under side of one portion higher than the other, and a body, stem, or shank constructed with a slight swell on one side and a corresponding depression or concavity on the other, whereby greater strength will be given to it at a part subjected to great strain.

Furthermore, the invention consists in a railroad-spike having an elongated head projecting from opposite sides of the body, stem, or shank, and with the under side of one portion higher than the other, the portion which is lower being provided with an edge or with edges in the direction of its length, whereby this portion may be more easily and firmly embedded in the tie or sleeper.

Finally, the invention consists in a railroad-spike having a body, stem, or shank constructed with a slight swell on one side and a corresponding depression or concavity on the other, and with an end or point having a swell on the side opposite to that of the swell of the body, stem, or shank, and a straight

edge or slight depression on the side opposite the concavity, whereby the spike in driving will always be directed snugly against the rail.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a side elevation of a spike, illustrating the generic features of the invention, and showing in dotted lines the flange of the rail and top of the tie or sleeper. Fig. 2 is a side elevation of a spike, showing one specific form under the genus. Fig. 3 is a front elevation of a spike, showing another specific form under the genus.

In practice it is found that railroad-spikes are loosened by the great pressure of the car-wheels on the rails outward, together with the vertical vibratory motion of the rails, occasioned by passing trains, the pressure and motion causing the space occupied by a spike to become gradually enlarged, and the enlargement not only lessening the necessary hold of the wood upon the spike and so loosening it directly, but permitting the entrance of water, which corrodes the spike and rots the wood, and so loosening it indirectly; furthermore, as spikes are ordinarily constructed, after they are driven into the tie or sleeper they have to be given a lateral blow to cause the head more firmly to take over the flange of the rail, and this lateral blow again enlarges the space occupied by the spike or its socket, with the attendant injurious results. These objectionable features have in some degree been obviated by the construction of a spike having an elongated head, a beveled shoulder, and a curved arm terminating in a chisel-edge, which is embedded in the sleeper and prevents the usual effect of the lateral pressure of the rails; but by the invention herein shown a spike is provided which will overcome these objections completely, and at the same time be more readily and quite as cheaply constructed.

In the drawings, A designates the head of the spike, and B the body, stem, or shank thereof. The head A is elongated, forming projections *a a'*, or portions extending from opposite sides of the shank, and these projections or portions of the head are of uneven

height below, the under side of one being higher than that of the other. The higher projection, *a*, is formed upon that side of the spike which will be the inner side in use, and when the spike is driven into the tie or sleeper to its full extent fits over the upper face of the flange of the rail and holds it firmly down in place. The lower projection, *a'*, is formed upon that side of the spike which will be the outer side in use, and with a flat or blunt outer end, and when the spike is driven into the tie or sleeper to its full extent becomes in part embedded in the tie or sleeper; the outer wall of the depression or countersink formed in the tie or sleeper serving as an abutment for the outer end of the head of the spike, which end is then in the nature of a shoulder. When the projection *a'* has been embedded, as described, the abutment or lateral support for the head prevents any displacement of the spike by outward pressure of the rail.

To facilitate embedding the lower projection or outer portion of the head, and to cause it more firmly to take into a tie or sleeper, its under surface is preferably provided with an edge or with edges in the direction of its length, as by forming such under surface in the shape of a wedge or of wedges, or by indenting or grooving it longitudinally. The head may furthermore be provided with overhanging ledges, centrally at its sides, to present a catch or hold for the claw-bar in its application to withdraw the spike; but if these be omitted, or should they be broken off, the bar may be inserted beneath the inner end of the outer portion of the head and there be effectively employed for the purpose.

The body, stem, or shank *B*, somewhat above its middle and on its outer side, or the side which in use will be farthest from the rail, is formed with a slight swell or outward curve, *b*, and on its inner side—the side which in use will be next to the rail—with a corresponding depression or inward curve, *b'*. This shape of the shank gives the spike greater strength at a part where it is subject to great strain. Below the curve *b* the outer side of the shank continues as a plane, flat, or straight surface, or with a slight concavity, terminating in the point *b²*, and below the curve *b'* the inner side of the shank continues a short distance as an inward curve or as a plane, flat, or straight surface, when it changes to a convex curve, likewise terminating in the point *b²*. By this configuration, when the spike is driven into the tie or sleeper, the point is turned outward,

and the inner side of the shank is kept firmly pressed against the flange of the rail, leaving no space between for play, the shape of the upper part of the shank also serving to this end. As the spike is driven direct into position, without any necessity of a lateral blow to cause the inner portion of the head to take firmly over the flange of the rail, there is no enlargement of the well or socket of the spike in the tie or sleeper to present an immediate cause of loosening of the spike, or to permit the entrance of water, which eventually corrodes the metal of the shank and rots the wood of the tie with which it remains in contact.

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

1. A railroad-spike having a stem or shank constructed with a single slight convexity near its top on the outside, or side which in use will be farthest from the rail, and with a corresponding depression or concavity on the other side—that is, on the side upon which the head takes over the web of the rail—whereby strain will be exerted from the web of the rail upon the shank as against the concave side of a bent spring, and some resiliency and greater strength are given to the shank at a part subject to great strain, substantially as described and shown.

2. A railroad-spike with an elongated head projecting from opposite sides of the shank, and with the under side of one portion higher than the other, the portion which is lower being provided with an edge or with edges in the direction of its length, whereby this portion may be more easily and firmly embedded in the tie or sleeper, substantially as specified.

3. A railroad-spike having a stem or shank constructed with a single slight convexity on one side and a corresponding depression or concavity on the other, and with an end or point having a convex curve on the opposite side to that of the convexity of the shank and a straight edge or slight depression on the side opposite the concavity, whereby the spike in driving will always be directed snugly against the rail, substantially as and for the purpose specified.

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

JOHN M. FENNERTY.

Witnesses:

JOHN A. GROW,
V. WRIGHT KINGSLEY.