

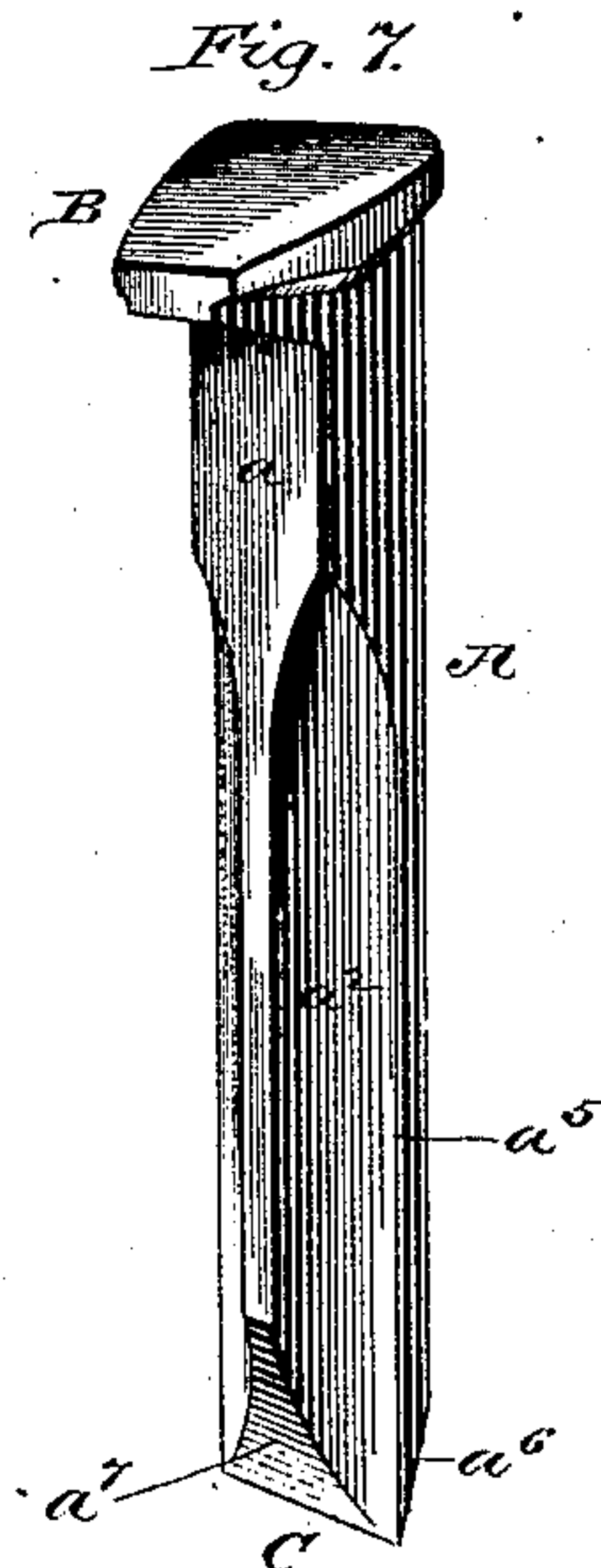
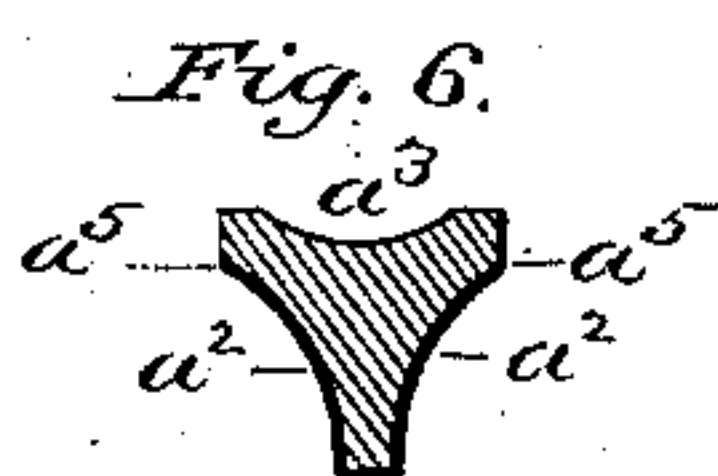
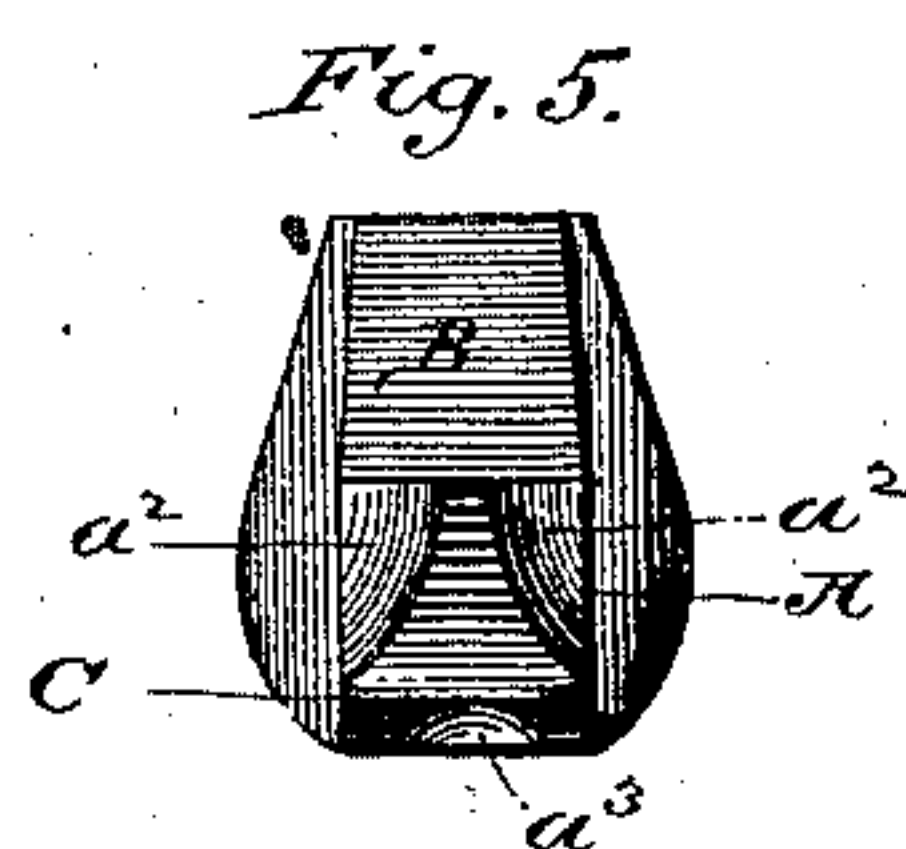
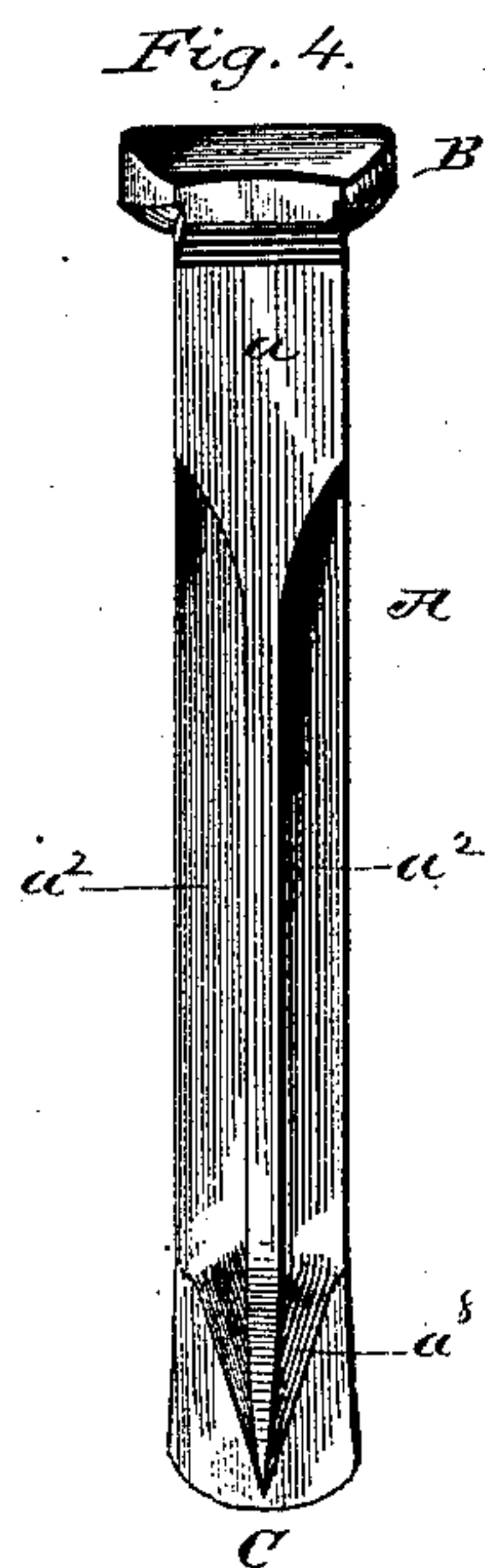
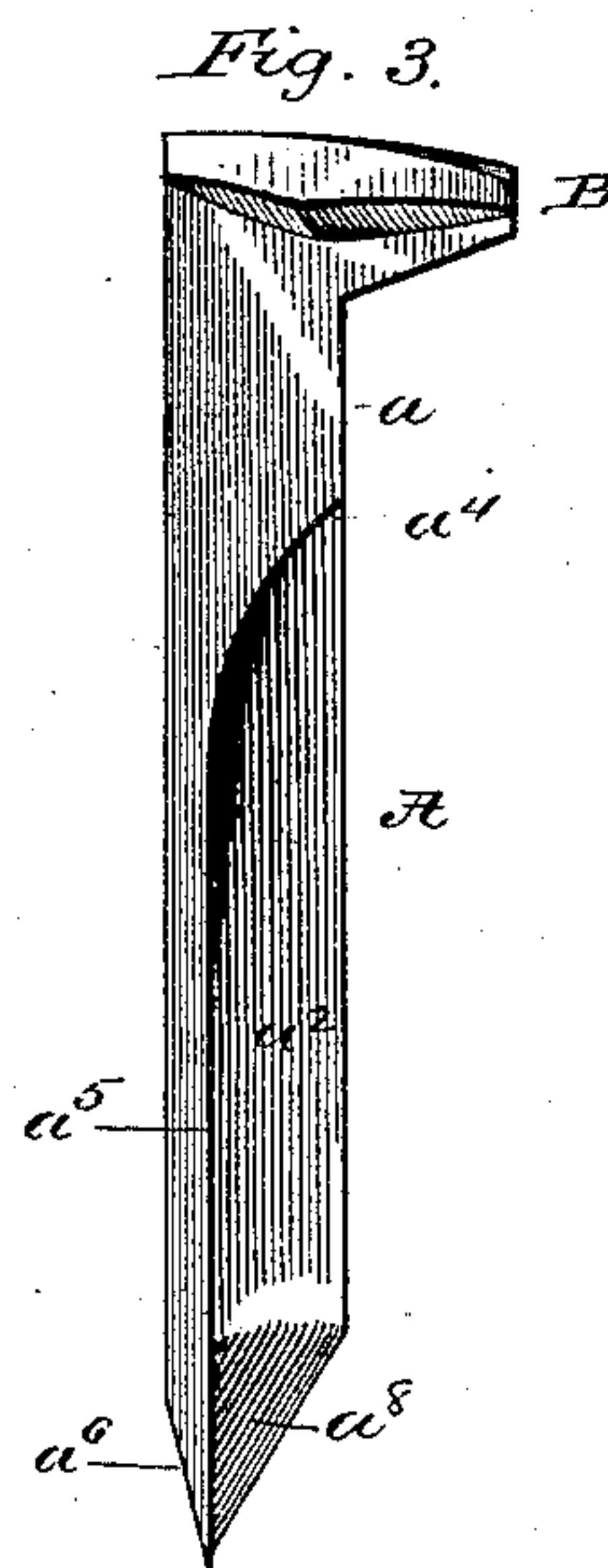
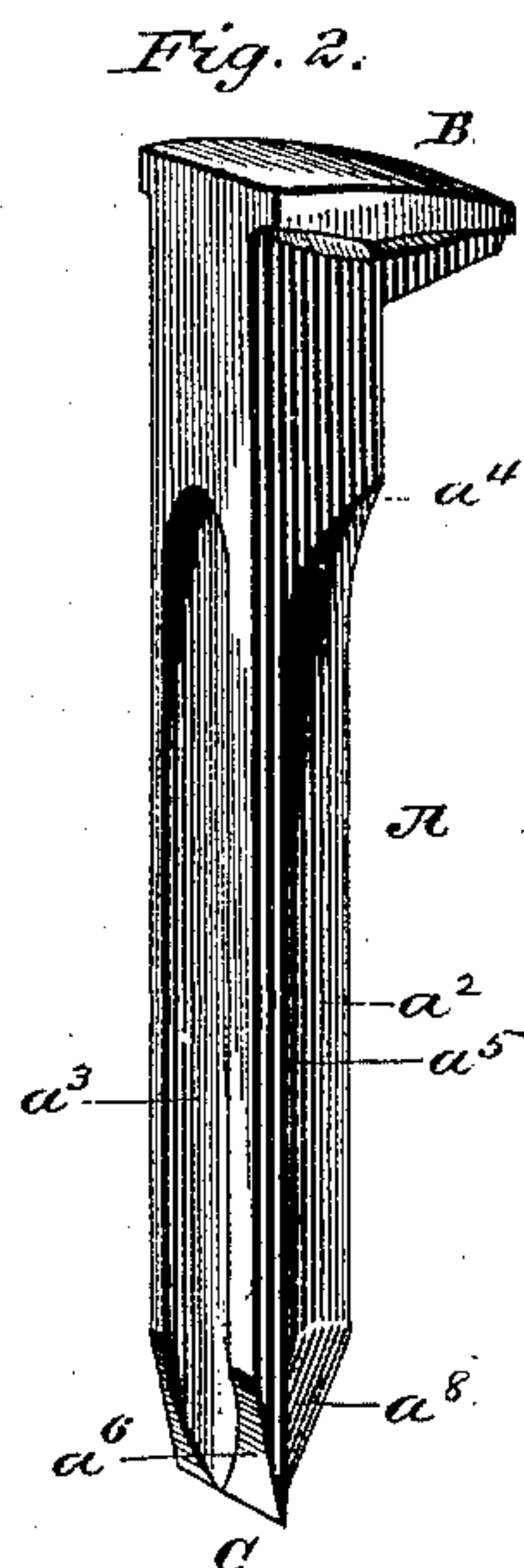
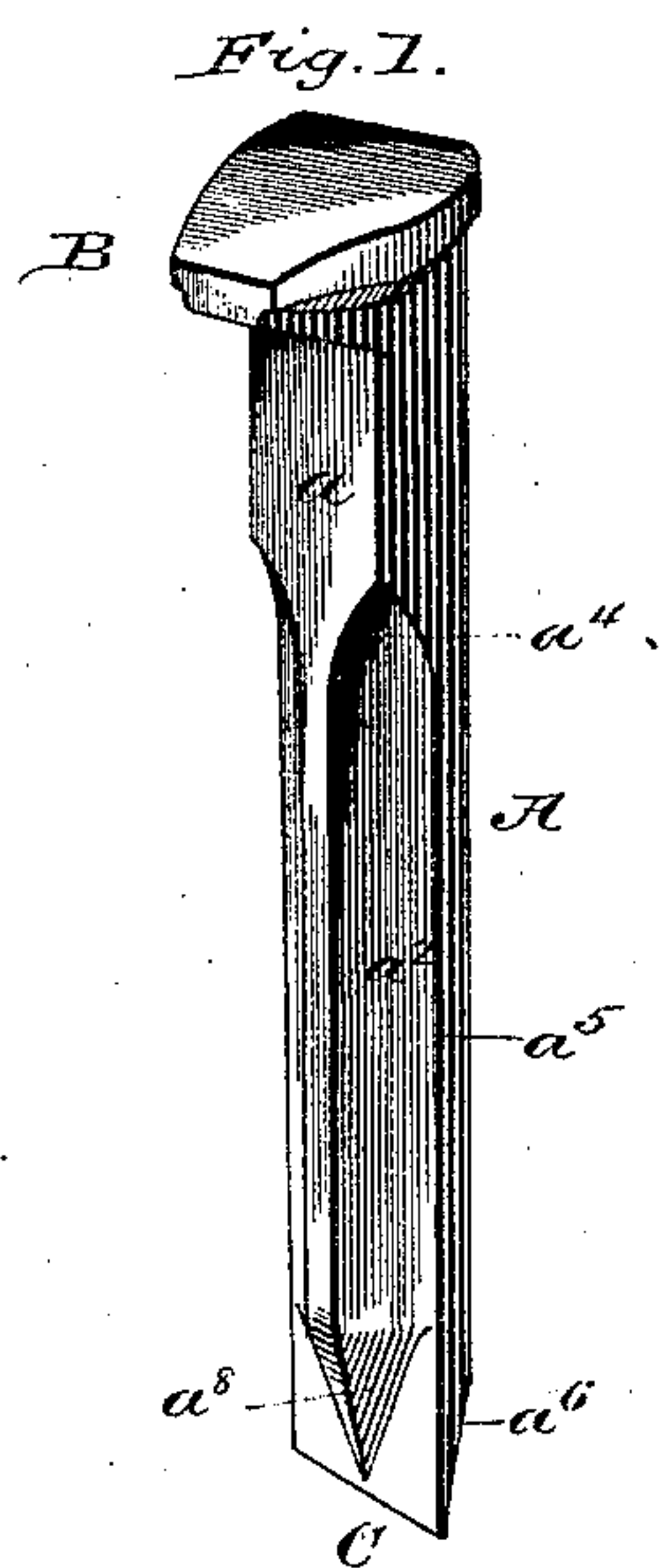
(No Model.)

J. P. PERKINS.

RAILROAD SPIKE.

No. 303,663.

Patented Aug. 19, 1884.



Witnesses:

Jno. W. Stockett,

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Inventor.

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# UNITED STATES PATENT OFFICE.

JAMES P. PERKINS, OF CHICAGO, ILLINOIS.

## RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 303,663, dated August 19, 1884.

Application filed August 21, 1883. Renewed May 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. PERKINS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railroad-Spikes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a triangular or three-flanged form of railroad-spike in which the rear or outer face of the spike forms one face of the triangular part thereof, and in which the remaining faces of such triangular part converge or approach each other centrally on the opposite or inner side of the spike.

The invention is intended more particularly as an improvement upon the spike described in Letters Patent No. 236,511, granted to me January 11, 1881.

The improvement relates more especially to the construction of the sharpened end of this form of spike; and it consists in the form and location of the cutting-edge, substantially as hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the spike, showing its front or inner face. Fig. 2 is a perspective view of the spike, showing its rear or outer face. Fig. 3 is a side elevation. Fig. 4 is a front view showing more nearly the actual form of the point as made in practice. Fig. 5 is an end view with the point nearest the eye. Fig. 6 is a cross section of the triangular part of the spike. Fig. 7 is a perspective view showing a modification in the construction of the spike at the point.

A is the shank or body of the spike. B is its head, and C is its sharpened end or cutting-edge. For a greater portion of its length said shank A is substantially triangular in sectional form, the rear or outer face of said shank being the base of the triangle, and the opposite angle being in the median line of the front or inner face, or that adjacent to the rail when the spike is in use. The upper part of said inner face of the shank is preferably flat and of substantially the full width of the spike, as

shown at  $a'$ , in order that when driven home it may bear broadly against the rail and possess the utmost strength at the point of greatest strain. It is found in practice that both the driving and holding qualities of the spike are materially improved if the faces  $a^2 a^2 a^3$  of the triangular part of the shank are concaved or fluted, as shown in the drawings, and to avoid abrupt shoulders the two faces  $a^2$  curve gradually outward at their upper ends, as indicated at  $a^4$ . The concavity of the rear face,  $a^3$ , may, if desired, extend to the very top or head of the spike, or nearer to the top than shown in the drawings.

The above features are substantially the same as are shown in the former patent above cited. The improvement herein claimed has more especial reference to the cutting-edge G. As to such edge, it is found desirable, first, that it shall be, practically, the full width of the spike; and, second, that it should be so located that in driving the spike by fair or direct blows of the hammer, the spike will enter the tie straight or tend slightly to throw inward at the top as the head approaches the track-rail. To obtain this result in driving the spike of the triangular form of shank described, the cutting-edge should be very materially nearer to the plane of the rear face than to that of the front face, as herein shown, and not at or near the median plane of the spike, as shown in the above-mentioned prior patent. In order to make the cutting-edge, thus located near the rear face,  $a^3$ , of the full width of the spike, the lateral converging faces  $a^2 a^2$  of the triangular part of the spike are made to cut the parallel sides of the shank at a corresponding distance in front of the rear face or at  $a^5$ , as indicated in the drawings, so that the cutting-edge C of the spike is practically a continuation of the edges  $a^5$ , at which the lateral faces of the shank converge. In order, further, that said cutting-edge C may be practically straight or in the vertical plane of the edges  $a^5$ , as shown, the concavity of the rear face,  $a^3$ , is made of depth not greater than the distance of said edge from the plane of said rear face. Generally I prefer that said groove or concavity shall about equal such distance, so that the groove will emerge at or



very near the edge C, as indicated in Figs. 2 and 5. In locating the edge C in the position designated, the rear bevel,  $a^6$ , which leads to the edge, will usually be flat or in a single plane, as shown in the figures which reveal this feature. The front bevel,  $a^7$ , may also be in a single plane, as shown in Fig. 7. I prefer, however, to incline the three faces of the inner flange to or toward the edge C in part-

10 pyramidal form, as shown more plainly at  $a^8$  in Figs. 1, 3, and 4. The latter construction has the advantage of wedging apart the fibers of the tie that are disturbed by the central inner flange, or projecting vertical edge of the

15 spike, instead of crushing them downward, as is done in some degree in driving the spike formed as shown in Fig. 7.

In making the spike by swaging machinery the theoretically accurate form of the spike-

20 point in all but Fig. 4 of the drawings is not readily attainable, but the said point generally assumes the form indicated in said Fig. 4; or, in other words, said point is usually made somewhat broader than the width of the shank

25 above it, and is curved or rounded upward at its corners. This is not, however, a departure from the invention, or in any practical sense a disadvantage either to the driving or holding qualities of the spike. Nor will a slight deviation of the edge C from the plane of the edges

30  $a^5$  in either direction, or a groove,  $a^3$ , of a little greater relative depth than shown, be a material departure from my invention, the main feature of which is in the triangular

35 spike having the central inner vertical edge or flange, the edge C of substantially the full width of the spike and located near the rear face, whereby it operates in driving practically as set forth.

40 I claim as my invention—

1. In a spike having a sectionally-triangular shank, of which the inclined sides converge toward the inner face of said shank, the cutting-edge C, located near and parallel with the rear or outer face of the spike, and of substantially the full width of the spike, substantially as described. 45

2. In a spike having a sectionally-triangular shank, the converging faces  $a^2$   $a^2$ , constructed to cut the sides of the spike in front 50 of the rear face, and the cutting-edge C, constructed substantially in the plane in which the sides and the said converging faces of the spike meet, as set forth.

3. In a spike having a sectionally-triangular shank, the converging faces  $a^2$   $a^2$ , constructed to cut the parallel sides of the shank at  $a^5$  anterior to but near the rear face,  $a^3$ , the edge C, located in the plane of the edges  $a^5$ , and the groove in the face  $a^3$ , constructed of 60 depth not greater than the distance of the edge C from the plane of the rear face of the shank, substantially as described.

4. In a spike having a sectionally-triangular shank, the converging faces  $a^2$   $a^2$ , constructed to cut the sides of the shank at  $a^5$  anterior to and near the plane of the rear face of said shank, the edge C, located in the plane of the edges  $a^5$ , and the groove in the face  $a^3$ , constructed with its bottom in the plane of 70 the edge C, substantially as described and shown.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES P. PERKINS.

Witnesses:

M. E. DAYTON,  
PETER J. ELLERT.