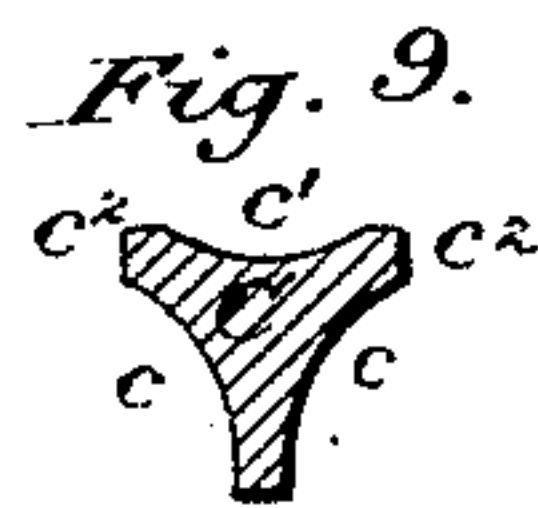
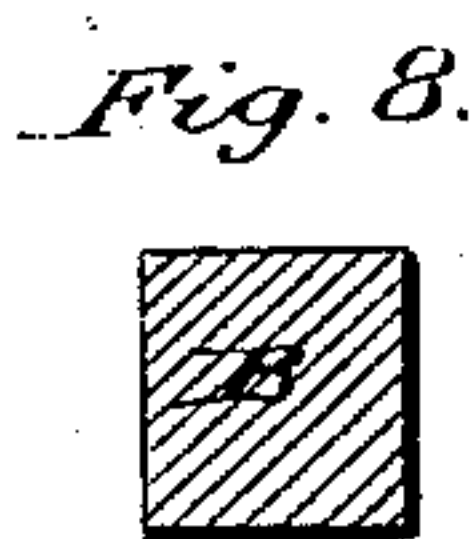
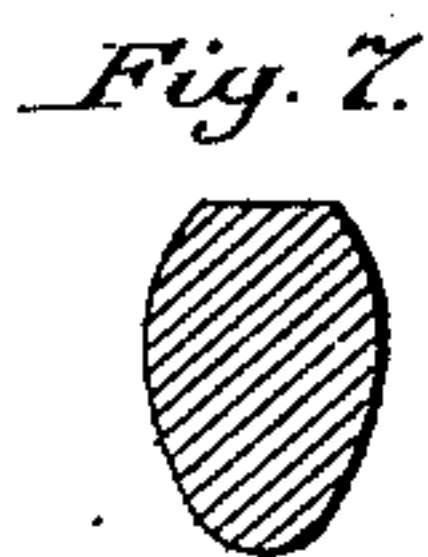
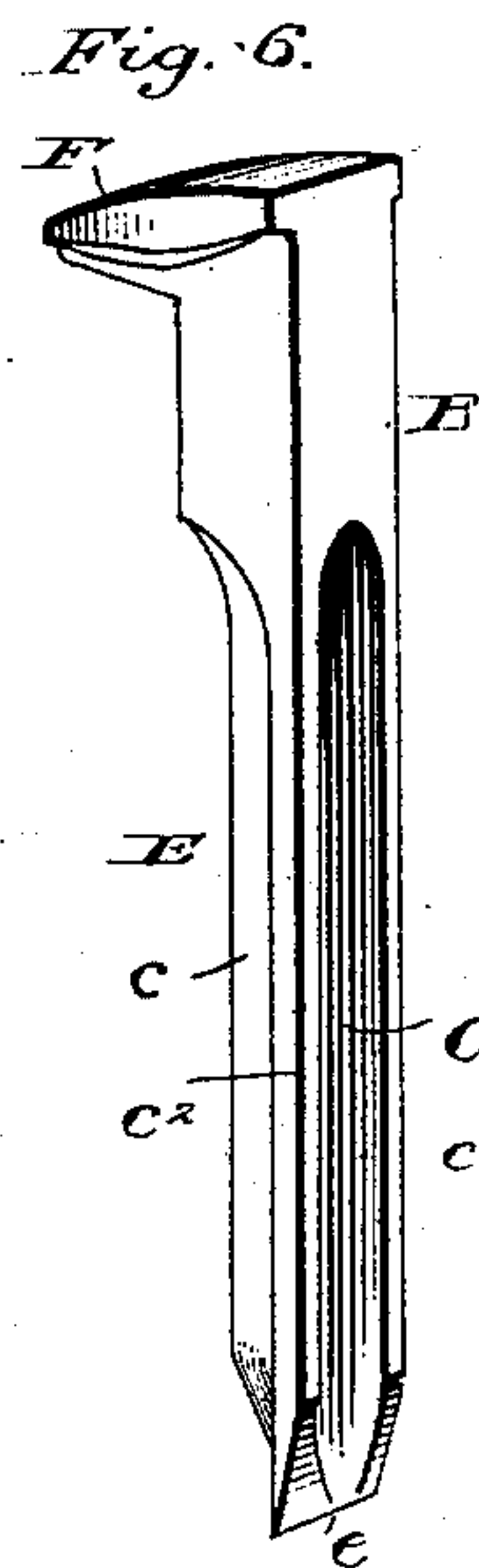
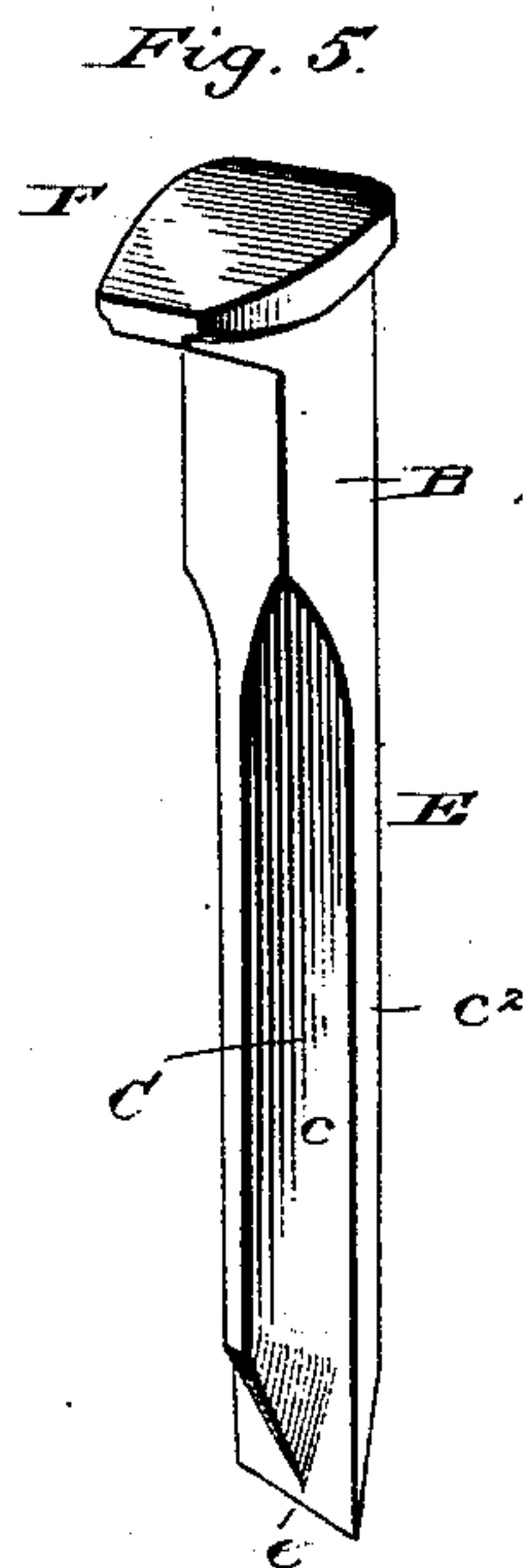
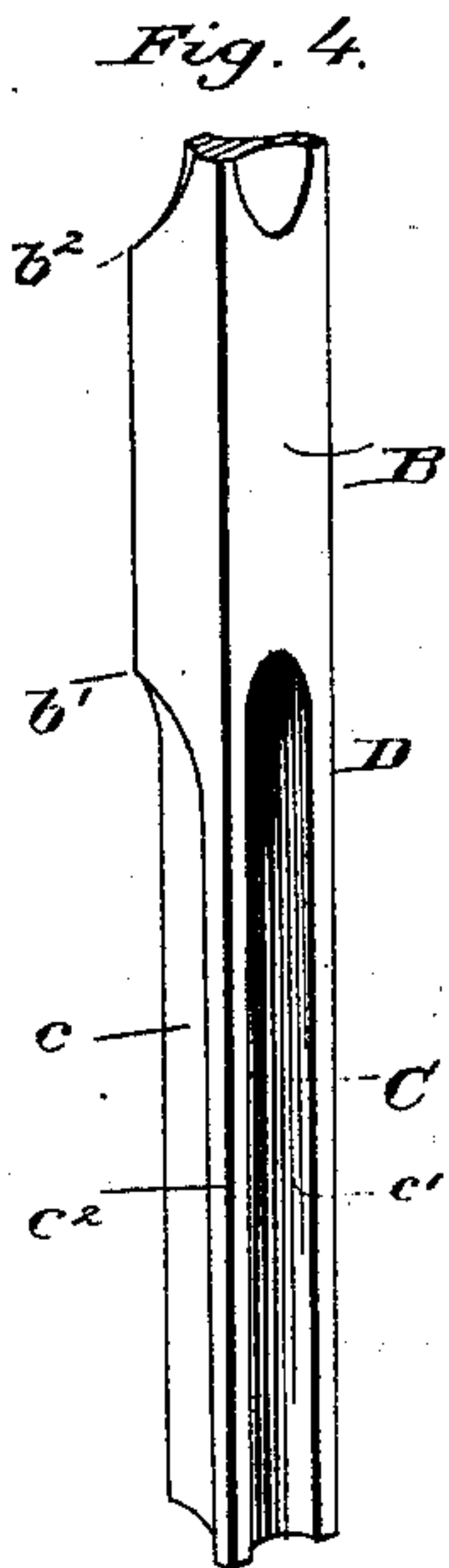
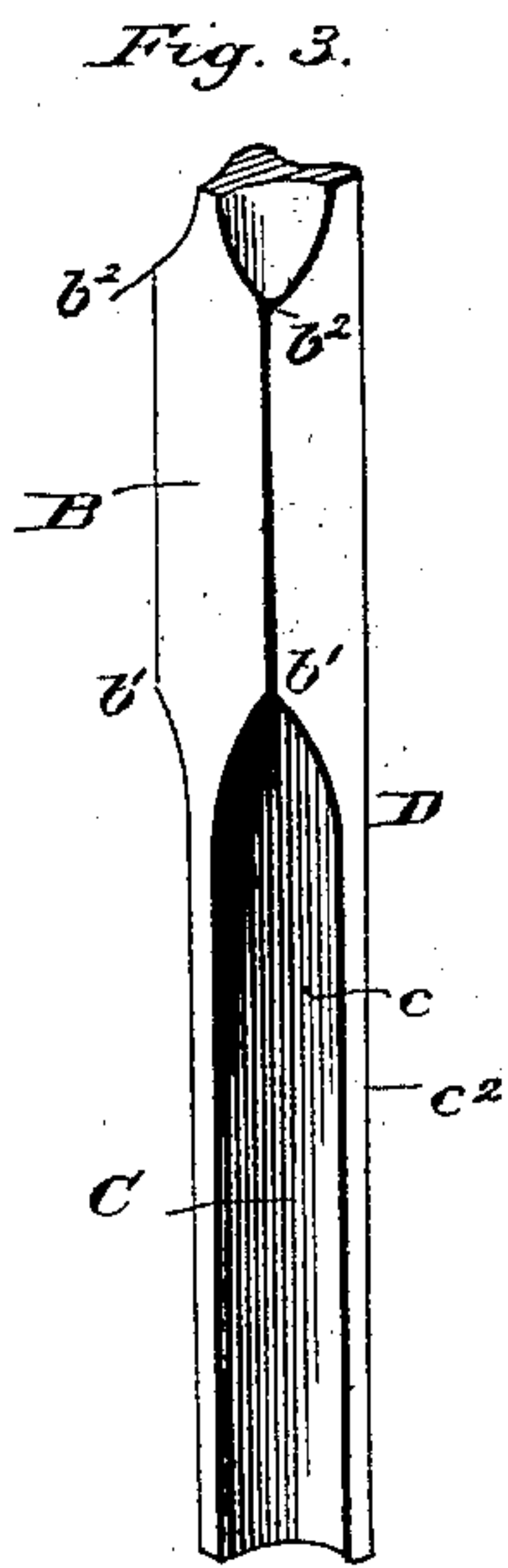
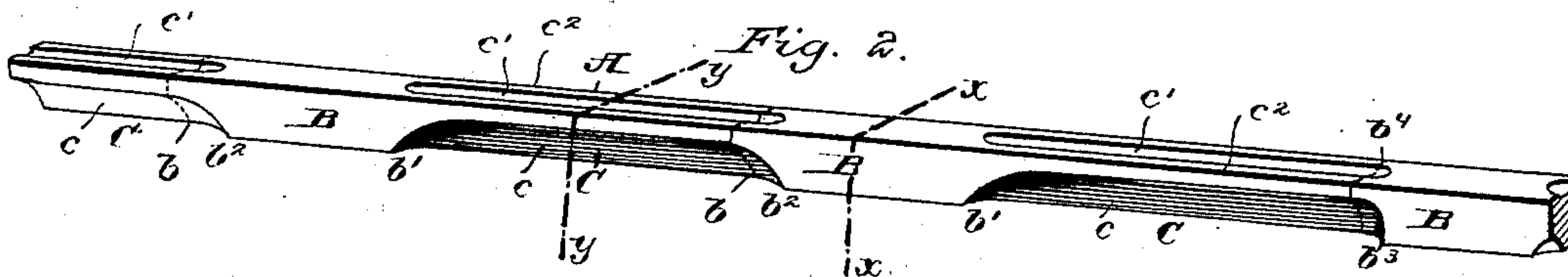
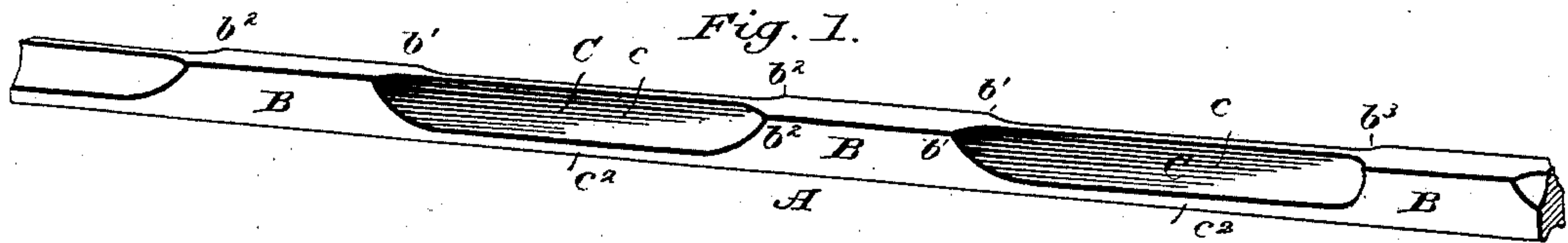


(No Model.)

J. P. PERKINS.  
ROLLED BAR FOR SPIKE BLANKS.

No 303,748.

Patented Aug. 19, 1884.



Witnesses.  
Jas. H. Stockell.  
C. C. Pool.

Inventor:  
James P. Perkins  
by *W. E. Dayton*  
Attorney.



# UNITED STATES PATENT OFFICE.

JAMES P. PERKINS, OF CHICAGO, ILLINOIS.

## ROLLED BAR FOR SPIKE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 303,748, dated August 19, 1884.

Application filed October 26, 1883. (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  
5 Improvements in Rolled Bars for Spike-Blanks; 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  
10 marked thereon, which form a part of this specification.

This invention relates to the manufacture of that class of triangular railroad-spikes which are generally triangular in cross-section and  
15 have a square upper portion adjacent to their heads.

It relates more particularly to an improved construction in rolled blanks or bars for forming a spike of the general character above  
20 mentioned; and it consists in the matters hereinafter described, and pointed out in the claims.

The rolled bar above referred to is more especially intended for the manufacture of a triangular spike having a rectangular portion  
25 adjacent to the head thereof, and in which the rear or outer face of the spike forms one face of the triangular part thereof, and the other two faces of said triangular part converge or  
30 approach each other centrally on the opposite or inner face, or that adjacent to the rail when the spike is driven, such spike being similar to one described in Letters Patent No. 236,511, granted to me January 11, 1881; but such bar  
35 may be used in making any form of spike having rectangular and triangular portions, as first above mentioned.

In the accompanying drawings, Figure 1 is a perspective view illustrating the form of a  
40 rolled bar embodying my invention previous to its being cut into lengths to form blanks from which the spikes are made, showing the side of the bar which is to form the inner face of the spike. Fig. 2 is a perspective view of the same, showing the side which is to form  
45 the outer face of the spike. Fig. 3 is a perspective view of a section cut from the bar shown in Figs. 1 and 2, to form a blank for a single spike, such view showing the side which  
50 is to form the inner face of the spike. Fig. 4

is a perspective view of the same parts, showing the side which is to form the outer face of the spike. Figs. 5 and 6 are perspective views of a spike completed. Fig. 7 is a transverse section of a bar before it is rolled. Fig. 8 is  
55 a transverse section of the bar shown in Fig. 2, taken upon line *xx* of said figure. Fig. 9 is a transverse section of the bar shown in Fig. 2, taken upon line *yy* of said figure.

As shown in Figs. 1 and 2, A is a blank or  
60 bar from which the spikes are to be formed, said bar having, as shown in said figures, square portions B, alternating with portions C, which are of general triangular form in cross-section, the combined length of the tri-  
65 angular part C and the square part B being substantially equal to that of a finished spike. In the manufacture of finished spikes from a bar prepared in the manner described, said  
bar is cut at or near the meeting points of the  
70 parts B and C, as indicated by the dotted lines *b* in Fig. 2, so as to form separate blanks D, as illustrated in Figs. 3 and 4, from each of which a spike is formed.

The bar A is preferably given the form de-  
75 scribed by being passed between grooved rollers constructed to give the desired form both to the square and triangular portions thereof. In the usual process of manufacture the bars are formed from a rod having in cross-section  
80 the general form of an egg-oval, as illustrated in Fig. 7, the grooves in the rollers used in forming the bars being generally rectangular in form, and provided at suitable intervals with "fillets" adapted to give the required  
85 shape to the triangular portions of the bar. The cross-sectional area of the bar before rolling is preferably the same or slightly less than the cross-sectional area of the square portion  
90 of the rolled bar, and the reduction in cross-sectional area of the bar in its triangular portion causes the elongation of the bar in such portions during its passage through the rolls. In case, however, the bar before rolling has a  
95 less cross-sectional area than the squared portions of the finished bar, a portion of the surplus metal in the triangular portions will in this operation be carried forward, so as to make the said square portions of full size.

By rolling the bars A in the manner de-  
100



scribed, such bars may be produced with little expense, and by cutting such bar into suitable lengths a number of blanks are obtained, each of which is of the exact form of the finished spike in its main or principal portion, and which only requires the formation of a head and point thereon in order to make a completed spike.

The bar illustrated in the drawings is intended to be made into spikes generally similar to that shown and described in the patent above referred to, and also to that illustrated in Figs. 5 and 6 of the drawings, and for this purpose the faces  $c c c'$  of the triangular portions C of the bar are formed with concaved or fluted faces in a manner corresponding with the form of the corresponding faces of the spike, which faces in the drawings are indicated by the same letters of reference. The square portions B of the bar A and the triangular portions C thereof are preferably connected by curved surfaces of the proper shape to give the desired form to the corresponding surfaces of the finished spike. This construction is illustrated in the drawings, in which the faces  $c$  of the spike are curved outwardly at their ends adjacent to the head of the spike, and the corresponding parts of the bar A are formed in a similar manner, as indicated at  $b'$ , Figs. 1, 2, 3, and 4.

The curved surfaces joining the square and triangular portions of the bar may be alike at both ends of the triangular portion, as indicated at  $b'$  and  $b''$  in Figs. 1 and 2, and in dividing the bar A to form the blanks said bars are preferably severed at the point at which the curved surfaces join the straight or parallel portions of the bar in the triangular portions thereof, as indicated by the dotted lines  $b$ , above referred to, so that the lower and upper ends of the severed blanks D present the appearance illustrated in Figs. 3 and 4. The form above described is used merely for convenience, however, and the form of the bar may change abruptly at the points at which the bar is severed in forming blanks for separate spikes, as indicated at  $b^3$  at the right hand in Figs. 1 and 2, the point at which the bar is severed in forming single spike-blanks in such case being indicated by the dotted line  $b^4$  in Fig. 2. The more abrupt change of form in the bar at the juncture of the square and triangular parts thereof is usually preferred, for the reason that the blanks may be thereby severed close to the shoulders of the square parts, as indicated by the dotted line last referred to, and a comparatively small irregularly-curved portion of metal will remain upon the upper end of the spike-blank to be crushed down in forming the head thereon.

The heads and points of the spikes are finished by swaging machinery or in any other desired or preferred manner, the heads being formed from the upper end of the square portion, and the irregular part left thereon in severing the blanks, as indicated in Figs. 3

and 4. The points of the spike shown are preferably formed in a manner fully described in a pending application filed by me for patent upon an improvement upon the form of spike for which the patent first above mentioned was granted. The faces  $c$  of the triangular parts of the spike are preferably constructed to intersect the sides of the spike a short distance from the outer or front face thereof, so as to leave narrow faces or edges  $c^2$ , forming continuations of the sides of the square portion, and the bar A is formed in a similar manner. The cutting-edge  $e$  at the point of the spike is preferably made the full width thereof, and is in the same plane with and practically forms a continuation of the angle at the intersection of the faces  $c$  and  $c^2$ , the concave face  $c'$  of the spike being arranged to coincide at its deepest portion with the said edge at the point of the spike, as fully described in the application mentioned. Such point may be readily formed from the triangular end of the blank, an end having the general form described being readily formed by the action of suitable swaging-dies.

An important advantage of the bar for forming spike-blanks described is that the several features of construction in the triangular spike described, with the exception of the head and point, being perfectly formed upon said bar in the operation of rolling it, the necessity of separately forging or swaging each blank is avoided. The bar mentioned, by the operation described, may be continuously and rapidly produced, and said bar may be severed into spike-blanks which require comparatively little after finishing to convert them into completed spikes, so that spikes may be produced from said bar much more cheaply than by any process of manufacture heretofore used.

I claim as my invention—

1. A rolled bar from which to form spike-blanks, consisting of alternating rectangular and triangular portions, substantially as described, and for the purposes set forth.

2. A rolled bar consisting of alternating rectangular and triangular portions, and in which one face of the triangular portions is in the same plane with one of the faces of the rectangular portions, substantially as described.

3. A bar for spike-blanks, having alternating rectangular and triangular portions, the triangular portions being joined to the rectangular portions by curved faces, substantially as described, and for the purposes set forth.

4. A bar for spike-blanks, having alternating rectangular portions B and triangular portions C, the latter having two concaved faces,  $c$ , the remaining face  $c'$  being located in the same plane with one face of the rectangular portion, substantially as described.

5. A bar for spike-blanks, having alternating rectangular and triangular portions B and



C, one face of each triangular portion being  
in the same plane with a face of the rectan-  
gular portions, and all of the faces of the tri-  
angular parts being concaved transversely of  
5 the bar, substantially as described, and for the  
purposes set forth.

In testimony that I claim the foregoing as

my invention I affix my signature in presence  
of two witnesses.

JAMES P. PERKINS.

Witnesses:

C. CLARENCE POOLE,  
PETER J. ELLERT.