

N. BARRY, JR.
 BUTTON CUTTING TOOL.
 APPLICATION FILED APR. 18, 1908.

916,407.

Patented Mar. 30, 1909.

Fig. 1.

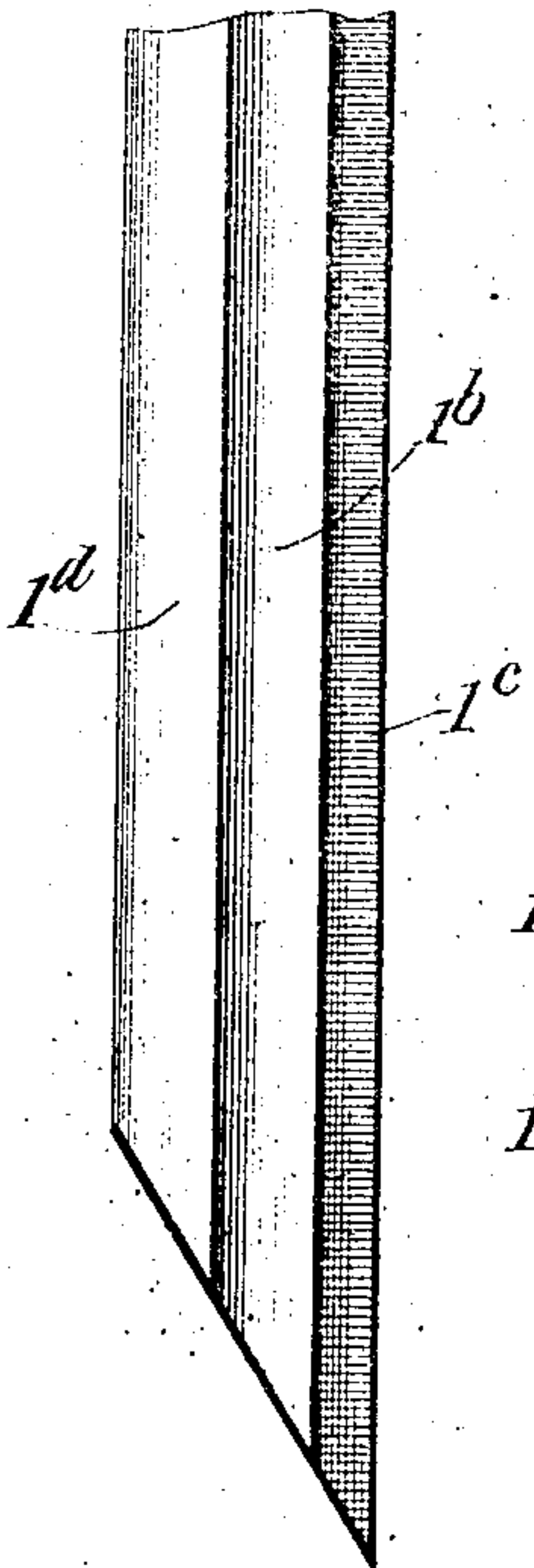


Fig. 2.

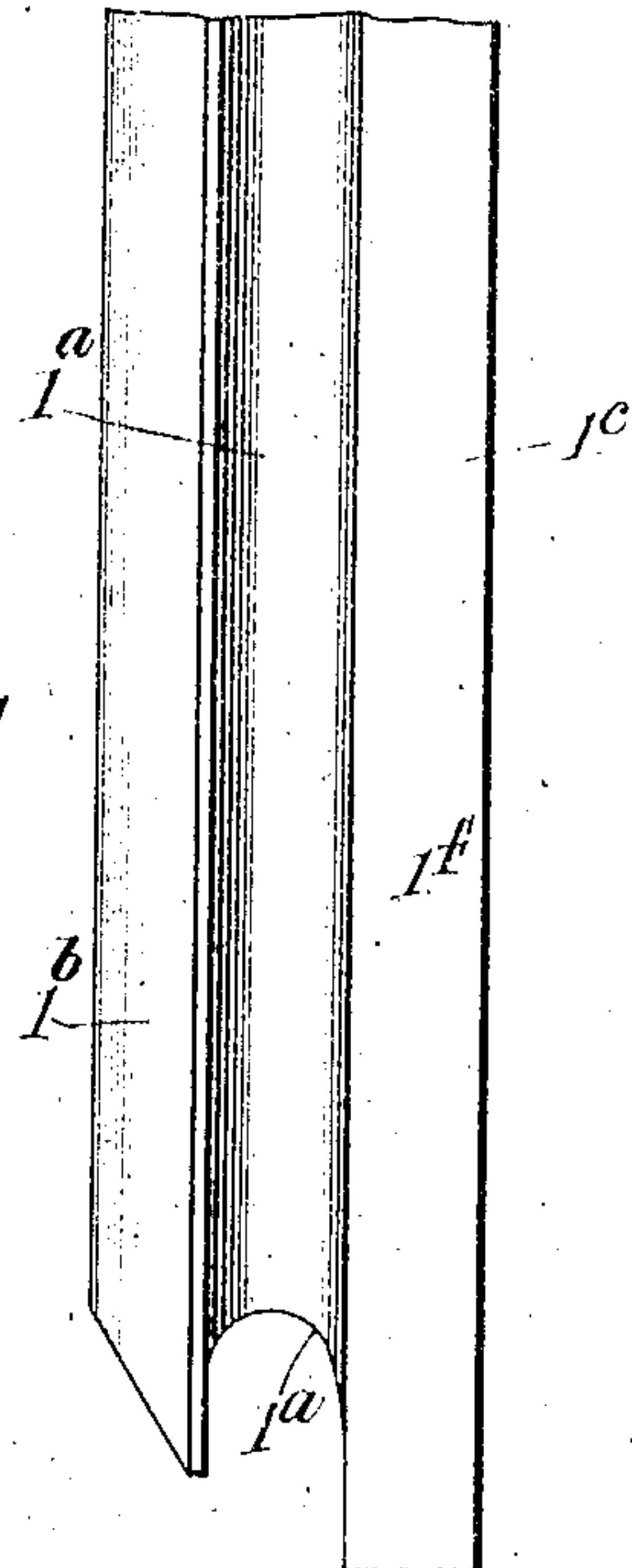


Fig. 3.

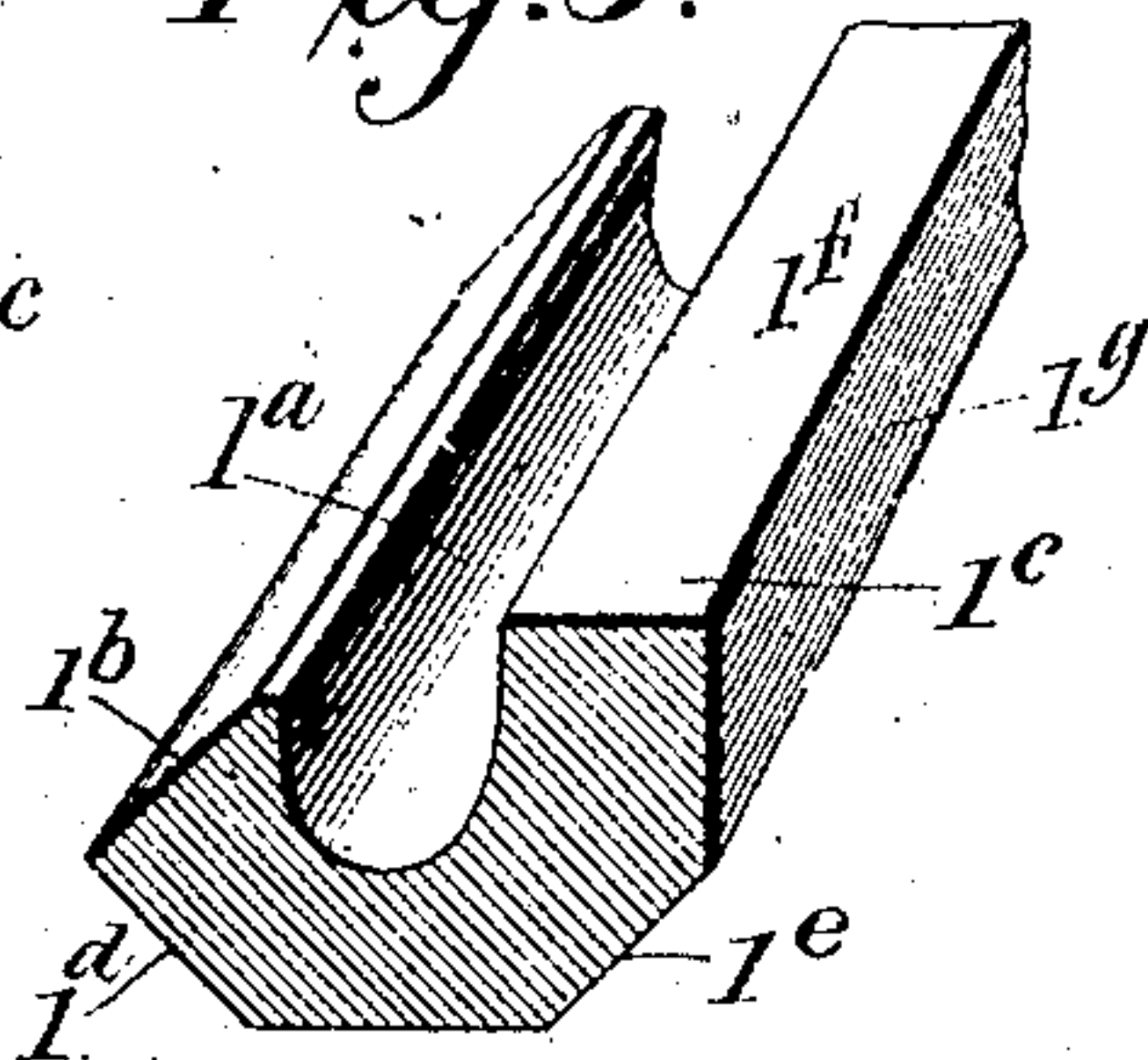


Fig. 4.

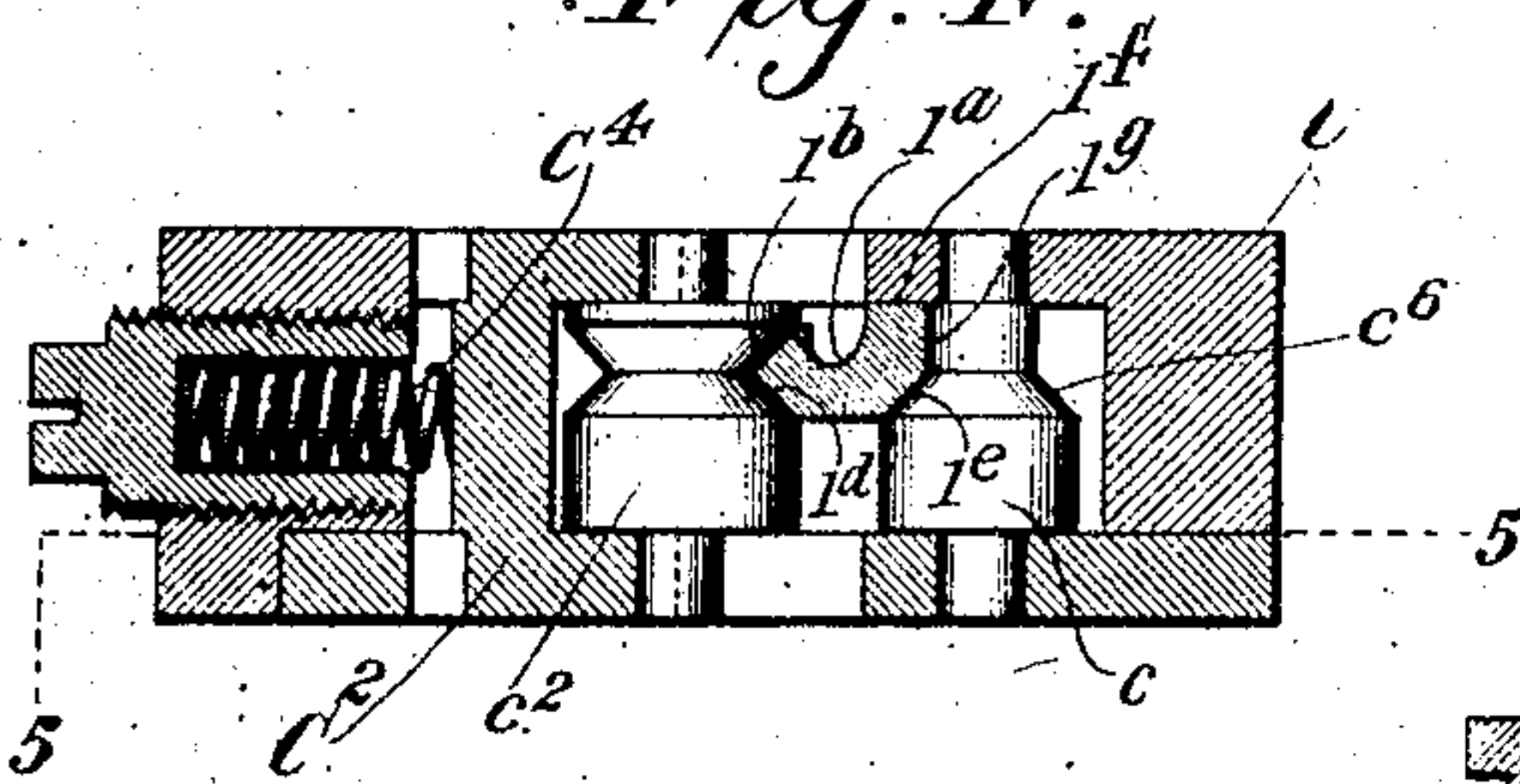
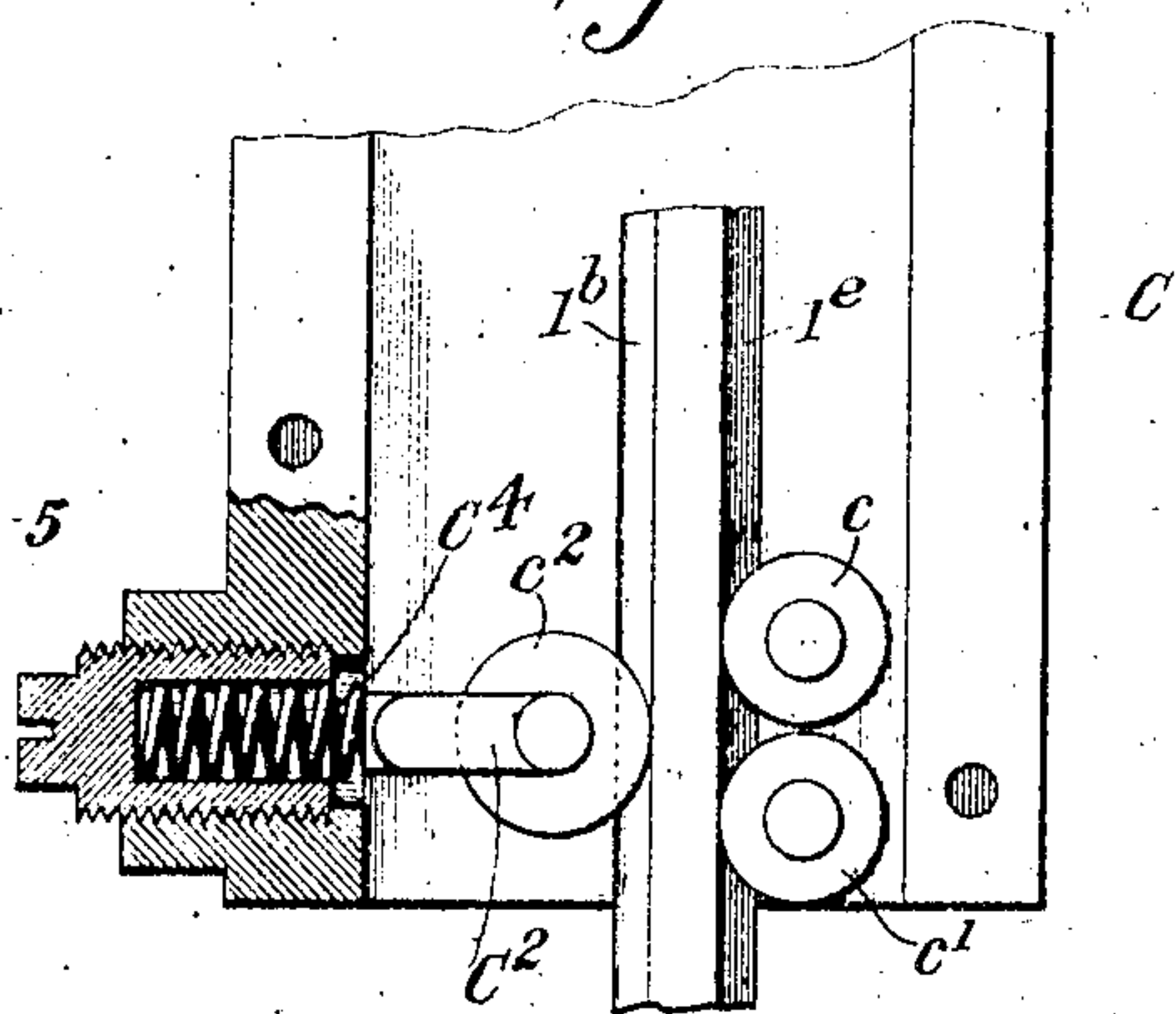


Fig. 5.



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UNITED STATES PATENT OFFICE.

NICHOLAS BARRY, JR., OF MUSCATINE, IOWA.

BUTTON-CUTTING TOOL.

No. 916,407.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed April 18, 1908. Serial No. 427,792.

To all whom it may concern:

Be it known that I, NICHOLAS BARRY, Jr., of Muscatine, in the county of Muscatine and State of Iowa, have invented certain
5 new and useful Improvements in Button-Cutting Tools; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form
10 part of this specification.

This invention is an improvement in tool-stocks and has especial reference to the manufacture of tools for cutting buttons, and particularly the tools used in machines
15 for facing and centering buttons made from shell, wherein it is of the greatest importance that the tool shall always operate exactly and uniformly upon the blanks, so as to produce buttons of uniform finish.

20 The invention is especially adapted for use in connection with the automatic button finishing machines shown in my Patent #643,587, dated February 13, 1900; and in the tool-holders shown in my Patent
25 #863,497, dated August 13, 1907, but is of course applicable to other machines, and for other purposes, in the arts, where an accurate, working tool is desired. In such button finishing machines it is essential that the
30 tool be held positively and accurately, in such manner that it cannot have any lateral or torsional deflection; also that the tool be kept uniformly sharp, for which purpose the tools are customarily subjected to the
35 action of a grinder, after each operation; third, that the tool be fed up to working position as it is ground or wears, so that the blanks upon which the tool operates will be cut to uniform size and shape by such
40 tool.

The primary objects of the present invention therefore are to produce a tool-stock from which tools of varied working face can be easily made, and any of which will
45 fit the holder, so that tools of varied shapes can be interchangeably held in the holder; second, whereby all surplus metal will be removed from the tool, so that there will be less stock to grind in sharpening the tool,
50 and consequently the grinding wheel or disk will not glaze nearly so quickly, and the sharpening operations will be facilitated; and, thirdly, whereby the tool can be posi-

tively held against twist or lateral deflection while in use. 55

The invention therefore consists in the novel tool-stock and tool as set forth in the claims, and hereinafter described and illustrated in the accompanying drawings forming part of this specification, in which— 60

Figure 1 is an edge view, and Fig. 2 is a front view of a piece of the tool-stock. Fig. 3 is an enlarged cross-section thereof. Fig. 4 is a transverse section of the tool and tool-holder; and Fig. 5 is a detail section on line
5—5, Fig. 4, with part broken away to show slide C² in section. 65

The tool-stock is preferably made of rolled bar-steel; and for button-finishing tools, this stock is made oblong in cross-
70 section, having a longitudinal groove 1^a in its front face, near one edge, so that when the end of the tool is ground on a bevel, as indicated in Fig. 1, the wider part or side 1^c will cut out the center of the face of the
75 blank, and the grooved part 1^a will form a bead around the edge of the face of the blank. By varying the position and shape of groove 1^a, the contour of the face of the finished blanks can be varied. The two
80 rear corners of the stock at the rear side thereof opposite the groove, are cut away or beveled longitudinally, as at 1^a, 1^e; and the front corner of the stock adjacent the outer, or shallowest, edge of groove 1^a, is
85 also beveled as at 1^b, so that instead of the stock being rectangular in cross-section, it becomes obtusely polygonal, and the beveled portions 1^b, 1^a, 1^e, and the two straight faces 1^f and 1^g, (Fig. 4) form bearing faces
90 against which the tool holding devices contact.

As shown in Figs. 4 and 5, the tool holding devices comprise, preferably, three grooved rolls *c*, *c'*, *c''*; the rolls *c*, *c'* being arranged one
95 above the other at one side of the tool-stock, and the roll *c''* being preferably arranged at the opposite side of the tool, intermediate rolls *c*, *c'*. Roll *c''* is preferably mounted in an adjustable slide C² pressed forcibly to-
100 ward rolls *c*, *c'*, by means of a spring C⁴. The construction of the tool-holder is more particularly set forth in my Patent #863,497 above referred to. It will be seen that the rolls *c*, *c'*, are shouldered as at *c''* so as to
105 engage the beveled face 1^e of the tool, and

also the straight face 1^s thereof; while the straight face 1^t of the tool bears against the side of the casing C in which the rolls *c*, *c'*, are journaled. The roll *c*² has a V-shaped groove, the sides of which engage the opposed beveled edges or faces 1^b, 1^a, of the tool, see Fig. 4.

By reference to Figs. 3 and 4 it will be seen that the tool has five faces bearing against the holding devices, and these are so located that it is impossible for the tool to turn or twist in the holder, and it will be held rigidly as regards lateral or torsional movement or deflection, while at the same time it can be readily moved or fed forward endwise through or between the holding rolls, as set forth in my aforesaid patent.

By reason of the removal of the metal at the corners thus forming the faces 1^b, 1^c, 1^a, and the groove 1², considerably less metal will have to be ground in order to keep the tool sharp, than would be ground if the corners were square. Also that there will be less heating of the metal, in grinding it; and at the same time ample metal is left in the stock for the operative parts of the tool. Further by removing the corners of the tool and providing it with bevel bearing faces 1^a, 1^c, 1^b, at what would otherwise be right-angled corners, I obtain three additional bearing surfaces for the tool, which enables it to be held securely in operative position; the stock having seven bearing faces as against four in the ordinary stock; and the bevel faces 1^a, 1^c afford broad bearings for the tool against the holder at points where the most strain is naturally exerted; and the beveled surfaces of the tool are in the most advantageous position to resist the torsional and twisting strains imparted to the tool by reason of the broad cutting edge 1^e being located principally to one side of the axis of the tool.

Having described my invention what I

claim as new and desire to secure by Letters Patent is:

1. A button cutting tool comprising a bar having a plane surface on its front face, on one side, and on its back, said side plane surface being substantially at right angles to the front and rear plane surfaces; and the two rear corners of said bar being also beveled to form longitudinal bearing surfaces each at an angle to the adjacent plane surfaces; said bar also having one of its front corners beveled to form a third longitudinal bearing surface at an angle to the front face, for the purpose and substantially as described.

2. A tool for facing buttons, comprising a metal bar having a longitudinal groove in its front face, and having its two rear corners beveled to form longitudinal bearing surfaces inclined to its rear face, and also having one front corner adjacent the groove beveled to form a third longitudinal bearing surface inclined to the front face, substantially as and for the purpose set forth.

3. The herein described tool for cutting buttons comprising a bar approximately oblong in cross section, and having its front, rear and one side provided with plane surfaces, and having a longitudinal groove in its front face and also having its two rear corners beveled to form longitudinal bearing surfaces at an angle to the plane surfaces, and also having one of its front corners beveled to form a third longitudinal bearing surface at an angle to the front side of the tool, for the purpose and substantially as described.

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

NICHOLAS BARRY, JR.

Witnesses:

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