

R. G. WOODWARD.
 TRIMMING MECHANISM FOR SEWING MACHINES.
 APPLICATION FILED APR. 7, 1904. RENEWED MAY 17, 1910.

976,023.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

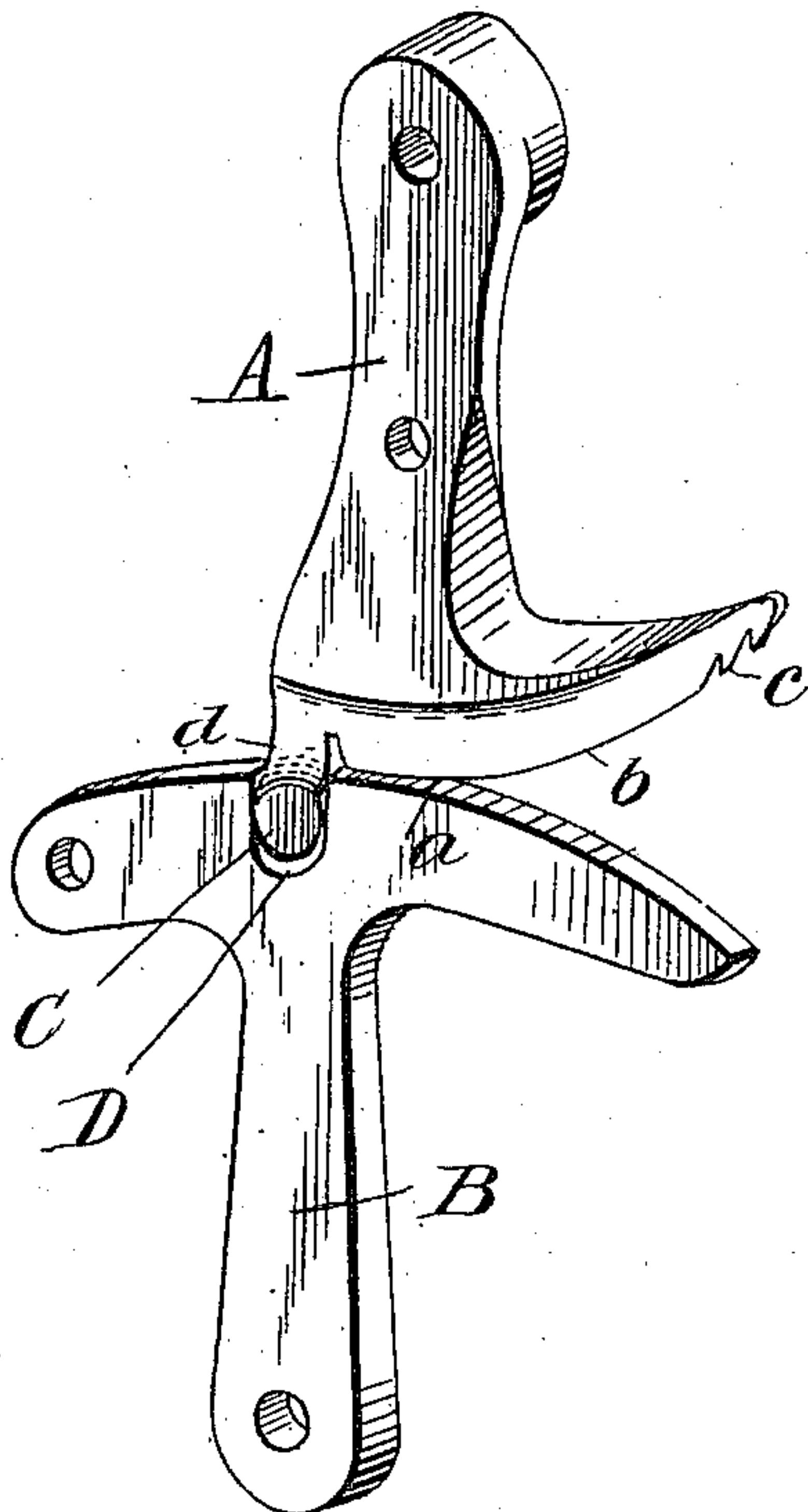


Fig. 5.

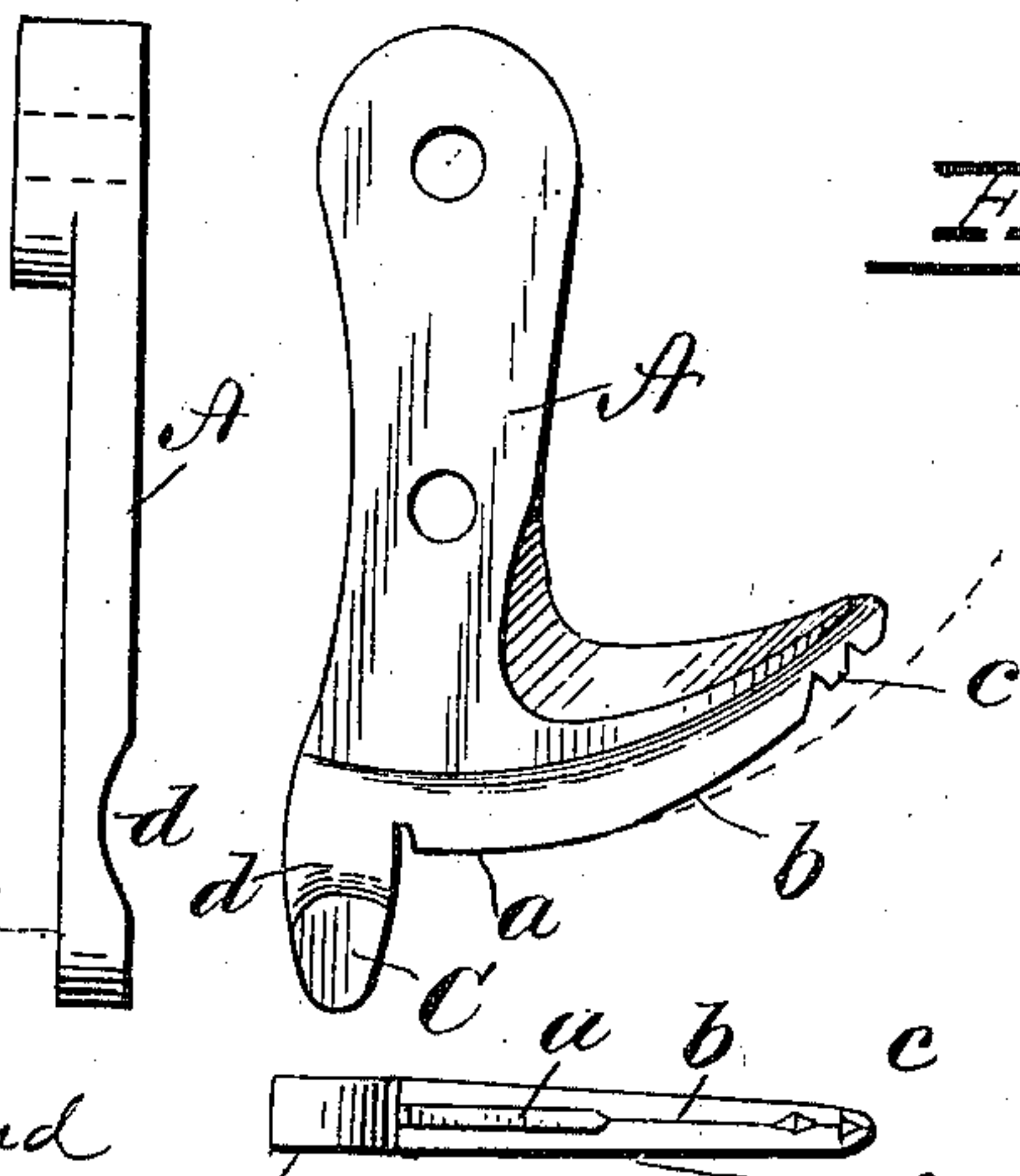


Fig. 7.

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2 SHEETS—SHEET 2.

Fig. 4.

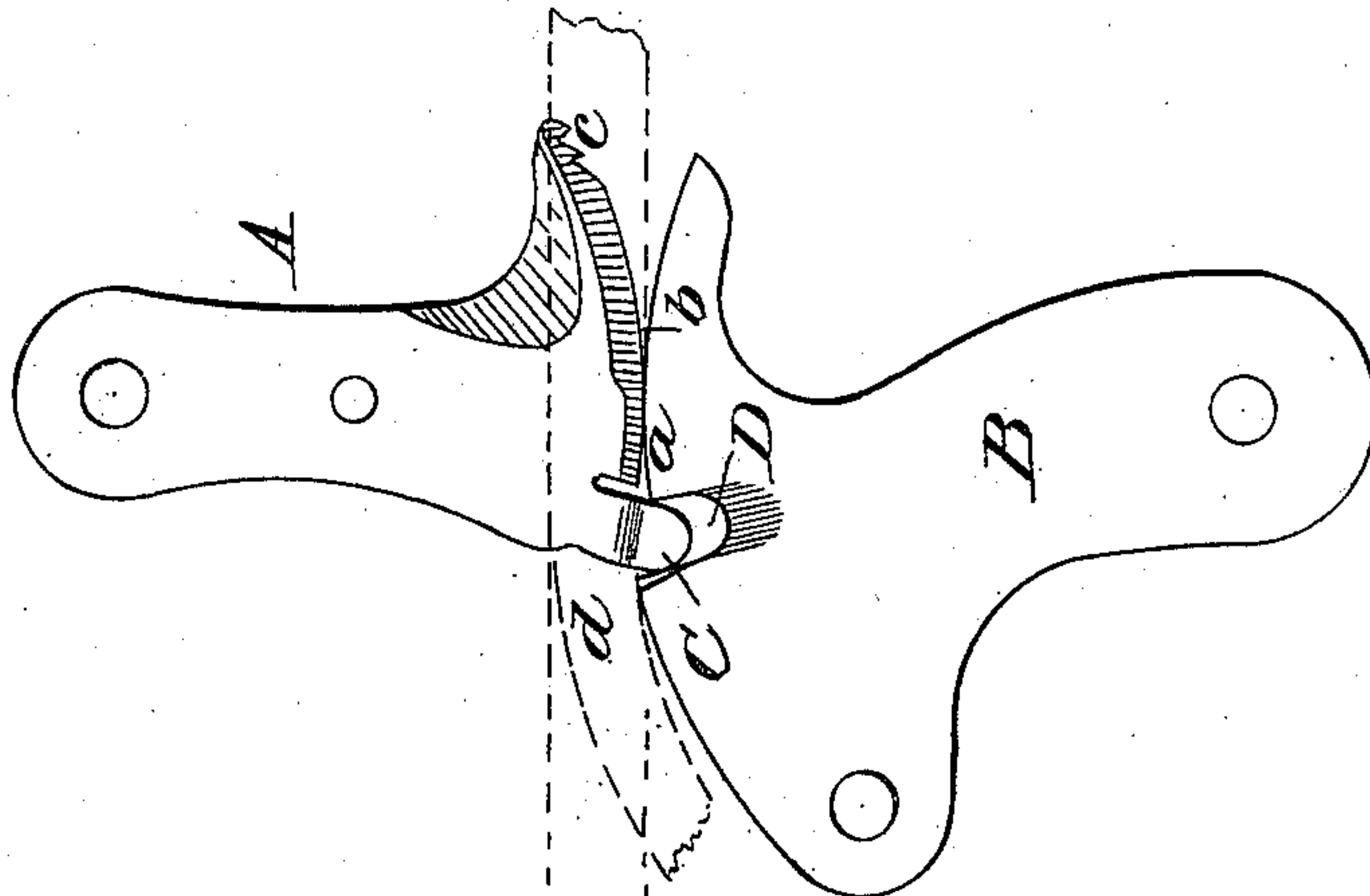


Fig. 3.

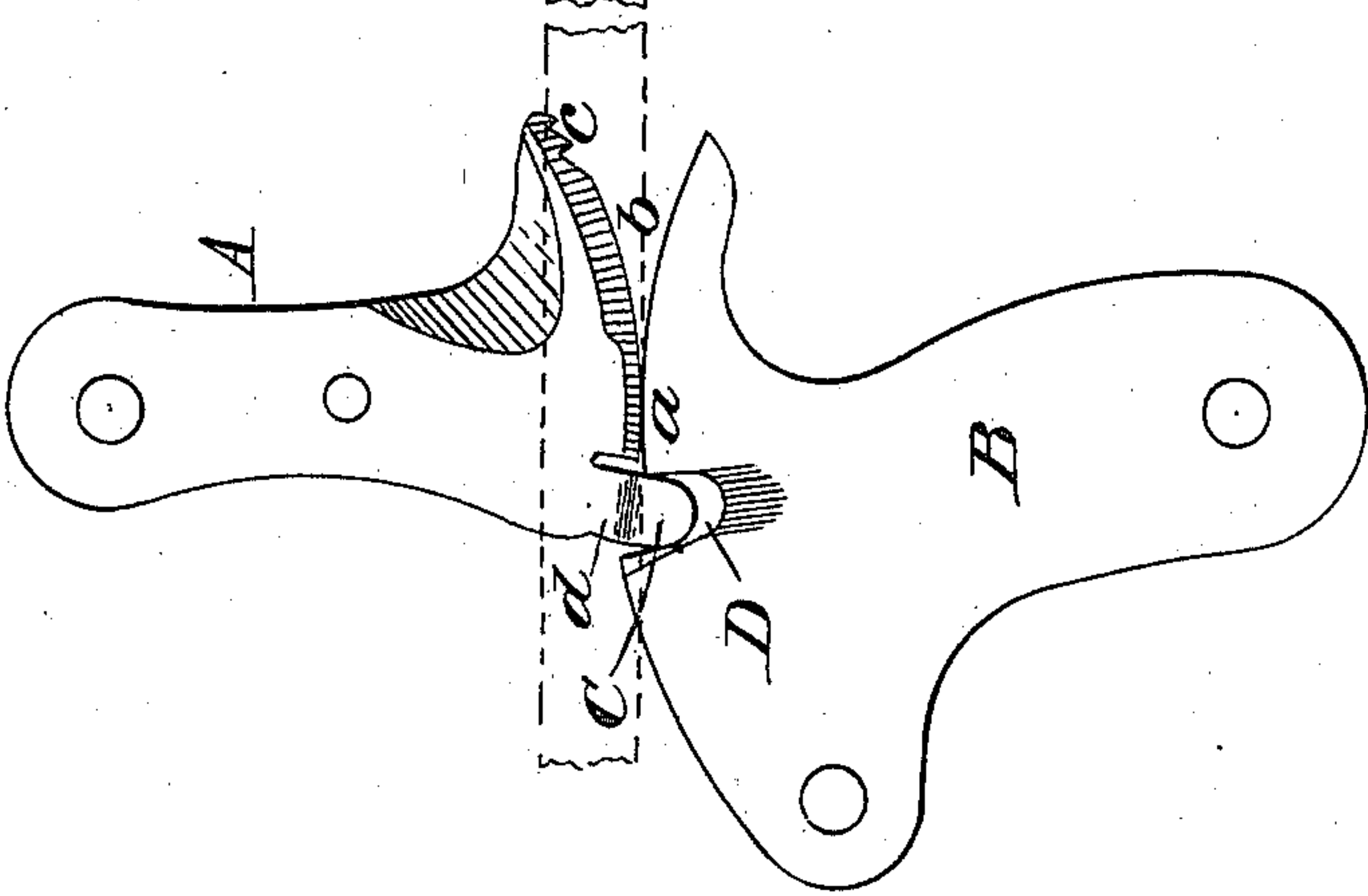
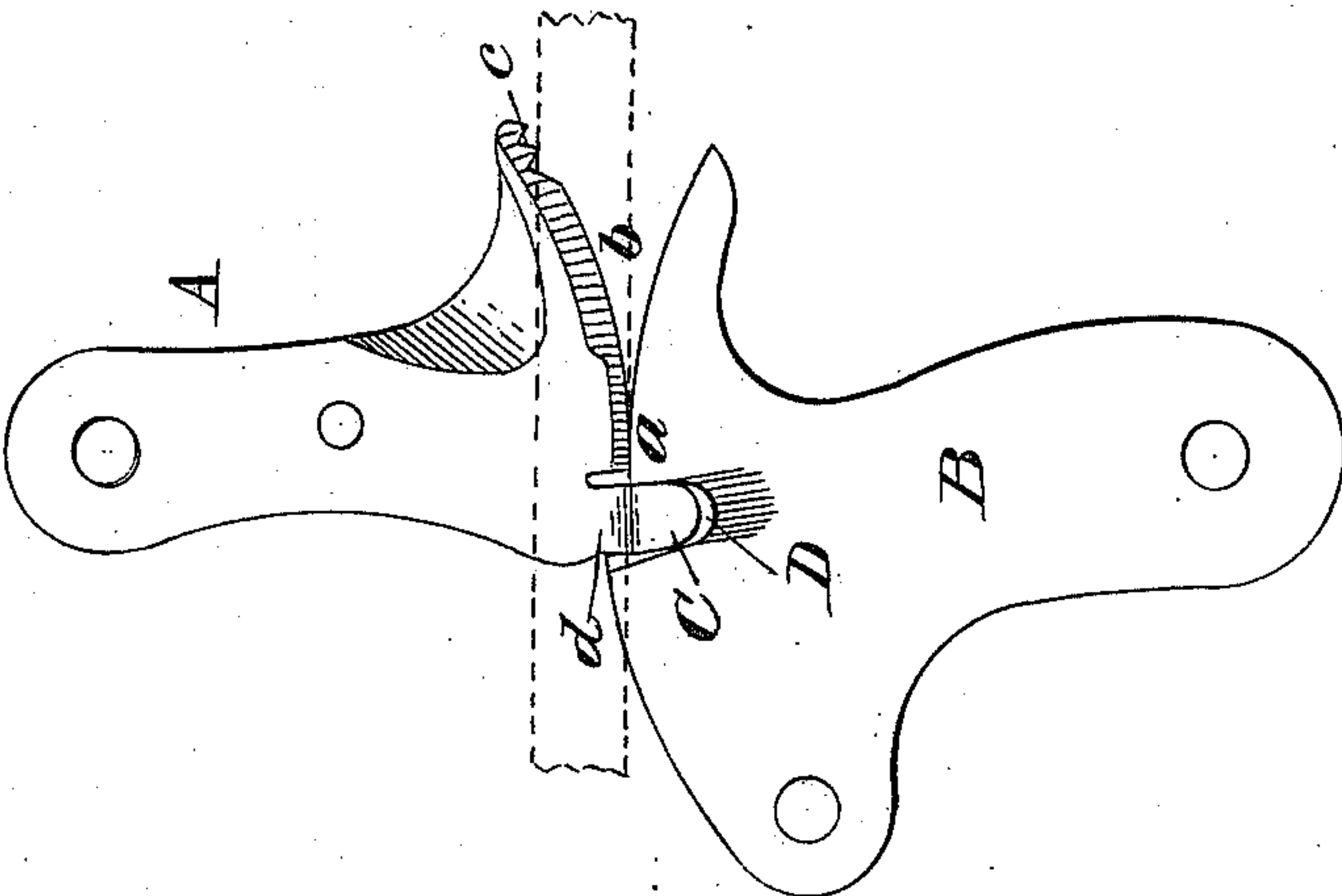


Fig. 2.



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TRIMMING MECHANISM FOR SEWING-MACHINES.

976,023.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUSSEL G. WOODWARD, a citizen of the United States, residing at Waukegan, in the county of Lake, State of Illinois, have invented certain new and useful Improvements in Trimming Mechanism for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

My invention relates to an improvement in trimming devices and particularly to a trimming mechanism for sewing machines. The particular style of trimming mechanism for which the present invention has been designed, is that known as the Dewees trimmer, manufactured by the Union Special Sewing Machine Company. Such a trimmer is illustrated in the patents granted John W. Dewees, October 31st, 1882, and December 23rd, 1884, numbered respectively 266,783 and 309,699, in which upper and lower toggles or knives rock one upon the other and sever the fabric by abrasion, as distinguished from a knife or shear cut. It will be understood that while the present invention is particularly applicable to a trimmer of this character, I do not wish to be limited to such application in all respects.

Referring more particularly to the use of a trimmer of the Dewees type, it has been found in practice, when the trimmer has been set to cut an ordinary weight or thickness of fabric, that should an extra thickness, such as a heavier piece of fabric, or a seam pass therethrough, it requires a greater amount of pressure between the upper and lower toggles, which soon destroys the toggle, as it is very difficult to temper them so they will withstand the heavier pressure and not be too soft, when used upon light weights. When the heavy pressure is maintained, the toggle is liable to chip out or wear a groove in the surface of the lower toggle if it be softer than the upper one.

To remedy defects existing in this, as well as other trimmers, where rotary or oscillating surface cuts against another, I have in brief made two features of improvement, one consisting in providing ahead of the trimming surface a toothed surface for aiding the fabric forward to the place where the severing action takes place; second, in

providing ahead of the severing surface, and in a plane above it a partial severing surface, to reduce the thickness of the material at the point where it is to be cut, to such an amount that it can be readily severed by the regular cutting surface under ordinary pressure.

Still another feature, consists in the addition to the trimmer having the preliminary partial cutting surface and the final severing surface in rear thereof, of the feeding teeth as set forth in the first feature mentioned.

As a further feature the heel of the severing device, in rear of the severing surface is cut away on the side, or beveled off to permit the thick fabric to pass by the heel of the cutter, without striking said heel, and having its passage obstructed.

The invention, therefore, consists in the features above enumerated as relating broadly to improvements in trimming attachments, and it also consists in the application of such improvements to trimmers in which the coöperating severing surfaces roll or rock one on the other, both being formed on arcs of circles, and also to the above features when especially applied to trimmers of the type, where the cutting or severing is accomplished by an abrading action; all of which features, as well as others will be hereinafter described and referred to in the appended claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the two toggles or knives. Figs. 2, 3 and 4 are side views of the same illustrating the fabric in different positions, with respect thereto, and Fig. 5 is a detail view of the upper toggle. Fig. 6 is a bottom plan view of the upper toggle; and Fig. 7 is a rear edge view of the same.

In these drawings, A represents the upper toggle, knife or jaw of my improved trimming device, and B the lower jaw upon which the upper jaw A works, and between which and the said upper jaw the fabric to be operated upon, passes and is severed. As the mode of attachment and operation of the jaws, toggle or knives is well known in the art, I do not deem it necessary to show more than the jaws, toggle or knives, as my present invention is confined to the construction and operation of these alone. The

upper toggle, knife or jaw A has as usual the spur C, engaging the recess D in the lower jaw.

The upper toggle, knife or jaw which is herein illustrated as an embodiment of my invention, is provided with the abrading surface *a* in front of the heel or spur C, and is formed upon the arc of a circle, and co-operates with the lower toggle periphery to sever the fabric, by abrasion. In front of this severing surface *a*, is a sharp or knife edge surface *b*, which is disposed relative to the abrading surface *a*, so that in the oscillation of the toggle, this surface *b* does not come in contact with the face of the lower toggle, but only with the top side of the fabric, and if the latter is thick enough, it will cut into it to a certain extent, thus leaving the final severing to be performed by the surface *a*, acting on the face of the lower toggle; the effect being that the toggles may be set to cut the usual thickness of goods under ordinary proper pressure, and if heavy goods are to be cut, the surface *b* will do the preliminary severing, or cut a furrow in the goods, leaving a thickness to be severed by the surface *a* of only the ordinary thickness. The advantages of this have already been pointed out in the statement of invention.

As a further improvement, I have provided on the upper toggle, in advance of the sharp surface *b*, a toothed surface *c* placed there, to engage the fabric and help feed it forward. Of course, this is especially useful in case heavy or thick fabric are to be severed and sewed on the machine.

As another improvement, I have cut away or ground out the heel or spur C upon one side, as shown at *d*, to allow the piece of fabric previously cut, to pass by without striking against the heel or spur.

It will be understood that I do not wish to be limited to any of the details of construction set forth and illustrated herein, as various minor modifications and changes may be made without departing from the spirit of the invention.

Figs. 2, 3 and 4 illustrate the action of the upper toggle upon the different portions of fabric, while the same is passing through the trimmer; Fig. 2 illustrating alone the feeding action of the part *c*; Fig. 3 the same, and the partial severing action of the surface *b*, and Fig. 4, both these actions, with the final abrasion, and guiding of the fabric past the heel or spur C.

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

1. A trimming device, including upper and lower coöperating members, one of said members having a surface so disposed relative to the other member as to partially sever the material, and a surface so disposed

relative to the other member and acting subsequently to said first named surface as to completely separate the material; substantially as described.

2. A trimming device, including upper and lower coöperating members, one of said members having a sharp cutting surface so disposed relative to the other member as to partially sever the material, and an abrading surface in rear of the sharp cutting surface for completely severing said material; substantially as described.

3. A trimming device, including upper and lower coöperating members, one of said members having a surface so disposed relative to the other member as to partially sever the material, and a relatively blunt surface so disposed with respect to the other member and acting subsequently thereto, as to completely separate the material; substantially as described.

4. A trimming device including upper and lower coöperating members one of said members having a surface so disposed relative to the other member as to partially sever the material and a surface so disposed relative to the other member and acting subsequently to said first named surface as to completely separate the material, said severing surface being in advance of said separating surface, and closely adjacent thereto, whereby said surfaces may act simultaneously upon the material; substantially as described.

5. A trimming device including upper and lower coöperating members, one of said members having a sharp cutting surface so disposed relative to the other member as to partially sever the material and an abrading surface in rear of the sharp cutting surface for completely severing said material, said sharp cutting surface and said abrading surface being located closely adjacent to each other, whereby said surfaces may act simultaneously upon the material; substantially as described.

6. A trimming device including an upper and lower coöperating members, one of said members having a sharp cutting surface so disposed relative to the other member as to partially sever the material and an abrading surface in rear of the sharp cutting surface for completely severing said material and a feeding surface in advance of said severing surfaces; substantially as described.

7. A trimming device including upper and lower oscillating members, one of said members having a surface for partially severing the material and a surface in rear thereof for completely severing said material the surface for partly severing the material being located nearer to the center of the oscillating member carrying said surface than the surface for completely severing said material; substantially as described.

8. A trimming device including upper and lower oscillating members, one of said members having a sharp severing surface and an abrading surface, said sharp severing surface being nearer to the center of the oscillating member carrying the same than the abrading surface; substantially as described.

9. A trimming device including upper and lower oscillating members, one of said members having a sharp severing surface and an abrading surface, said sharp severing surface being nearer to the center of the oscillating member carrying the same than the abrading surface, and a feeding surface formed on said oscillating member in advance of said severing surfaces; substantially as described.

10. A trimming device including upper and lower oscillating members, one of said members having a sharp cutting surface formed on the arc of a circle having a center between said surface and the center of oscillation of said member, an operating surface formed on an arc having a center substantially at the center of oscillation of said member; substantially as described.

11. A trimming device including upper and lower oscillating members, one of said members having a sharp cutting surface formed on the arc of a circle having a center between said surface and the center of oscillation of said member and an operating surface formed on an arc having a center substantially at the center of oscillation of said member and a feeding surface formed

on said member in advance of said severing surfaces; substantially as described.

12. In a trimming device for sewing machines having a lower device or member, the vibrating upper device having a surface cooperating with a lower device, to sever the material between them by abrasion, and having also a knife edge surface in advance of the abrading surface and having a toothed edge in advance of the knife edge surface; substantially as described.

13. In a trimming device for sewing machines having a lower device or member the vibrating upper device having a surface cooperating with a lower device to sever the material between them by abrasion, said upper device being provided with a cut away side portion in rear of the abrading surface; substantially as described.

14. In a trimming device for sewing machines having a lower device or member, the vibrating upper device having a surface cooperating with a lower device, to sever the material between them by abrasion, and having also a knife edge surface in advance of the abrading surface, and having a toothed edge in advance of the knife edge surface, and having its rear portion cut away on the side in rear of the abrading surface; substantially as described.

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

RUSSEL G. WOODWARD.

Witnesses:

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W. S. NORTH.