

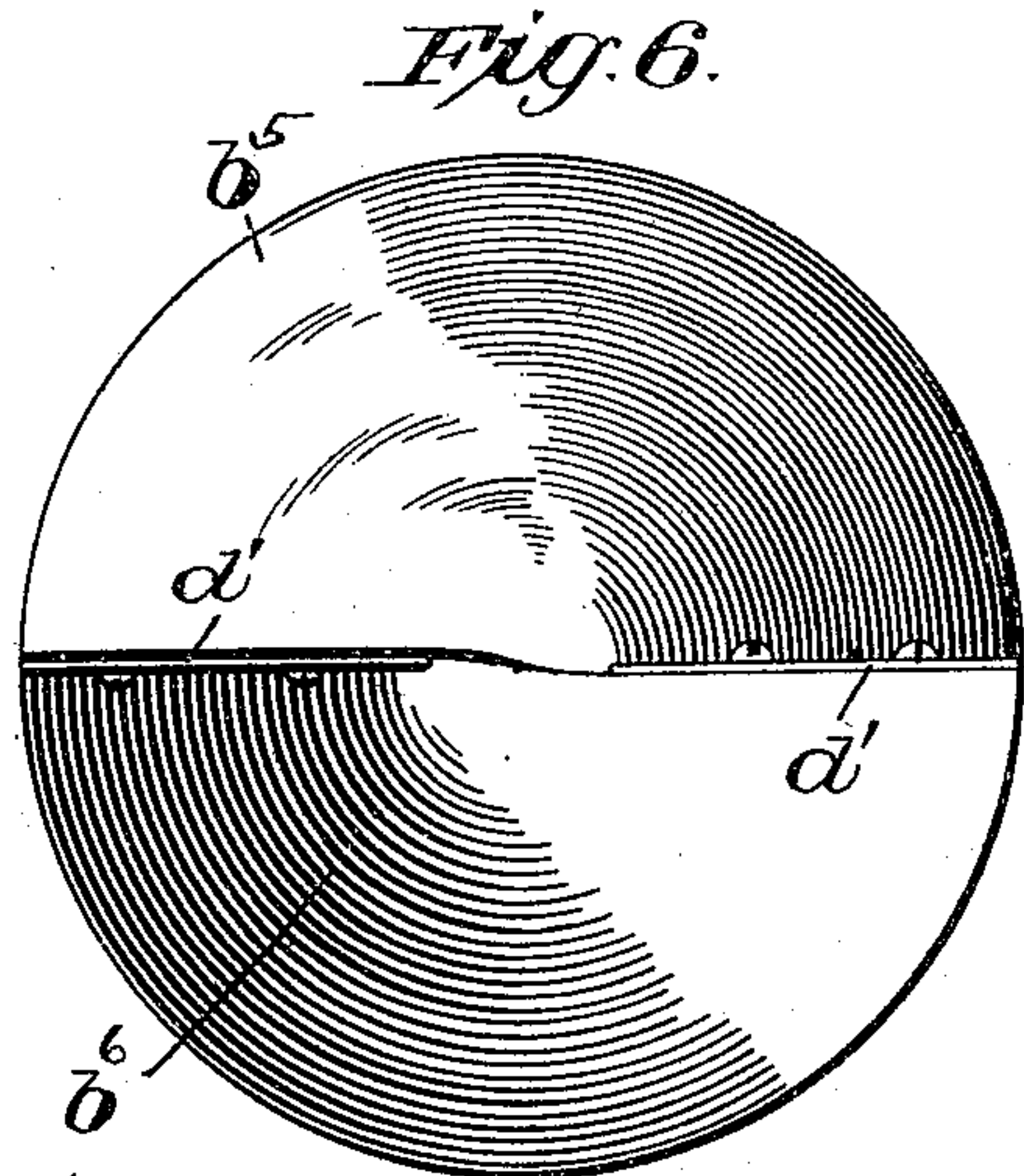
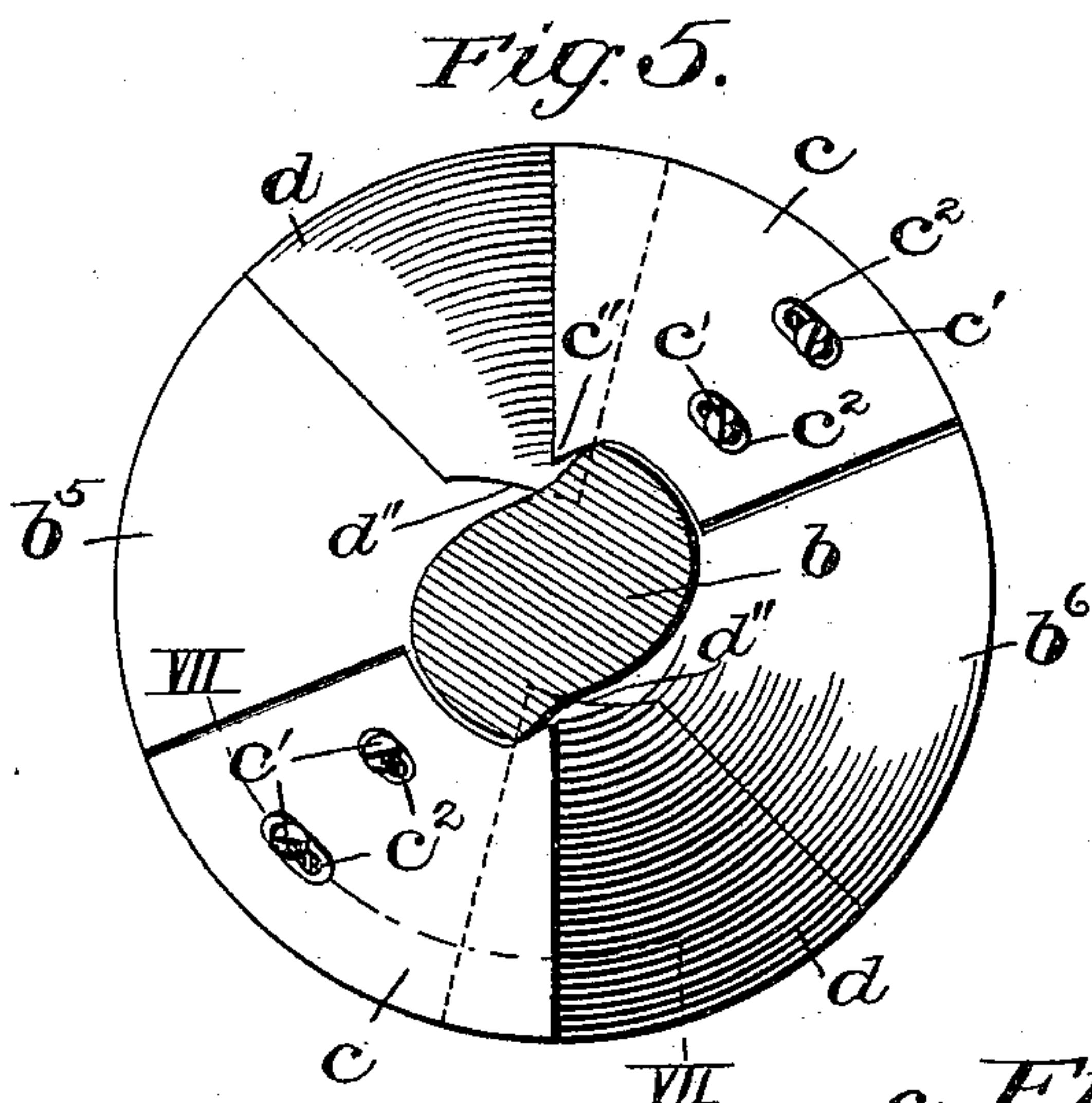
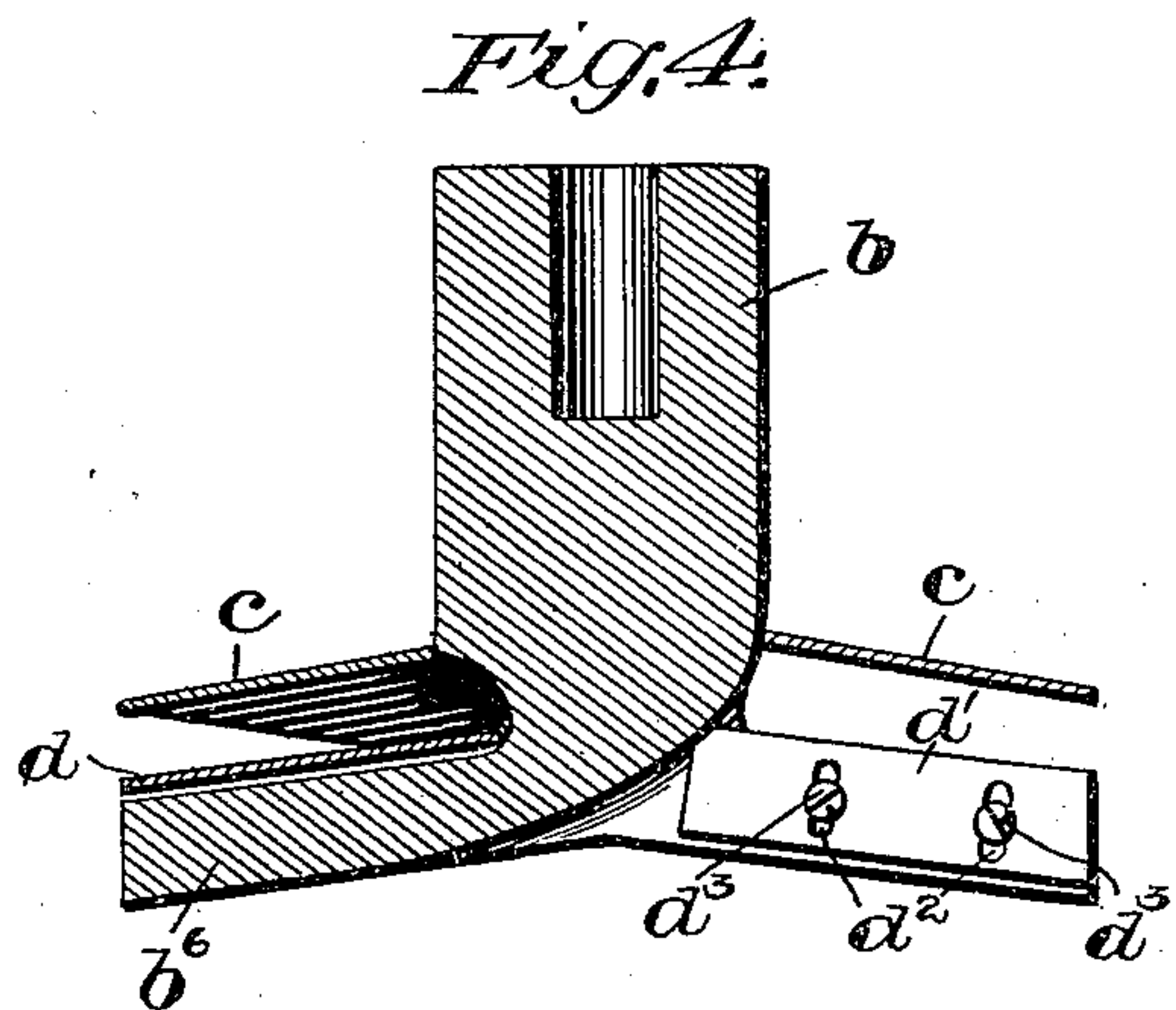
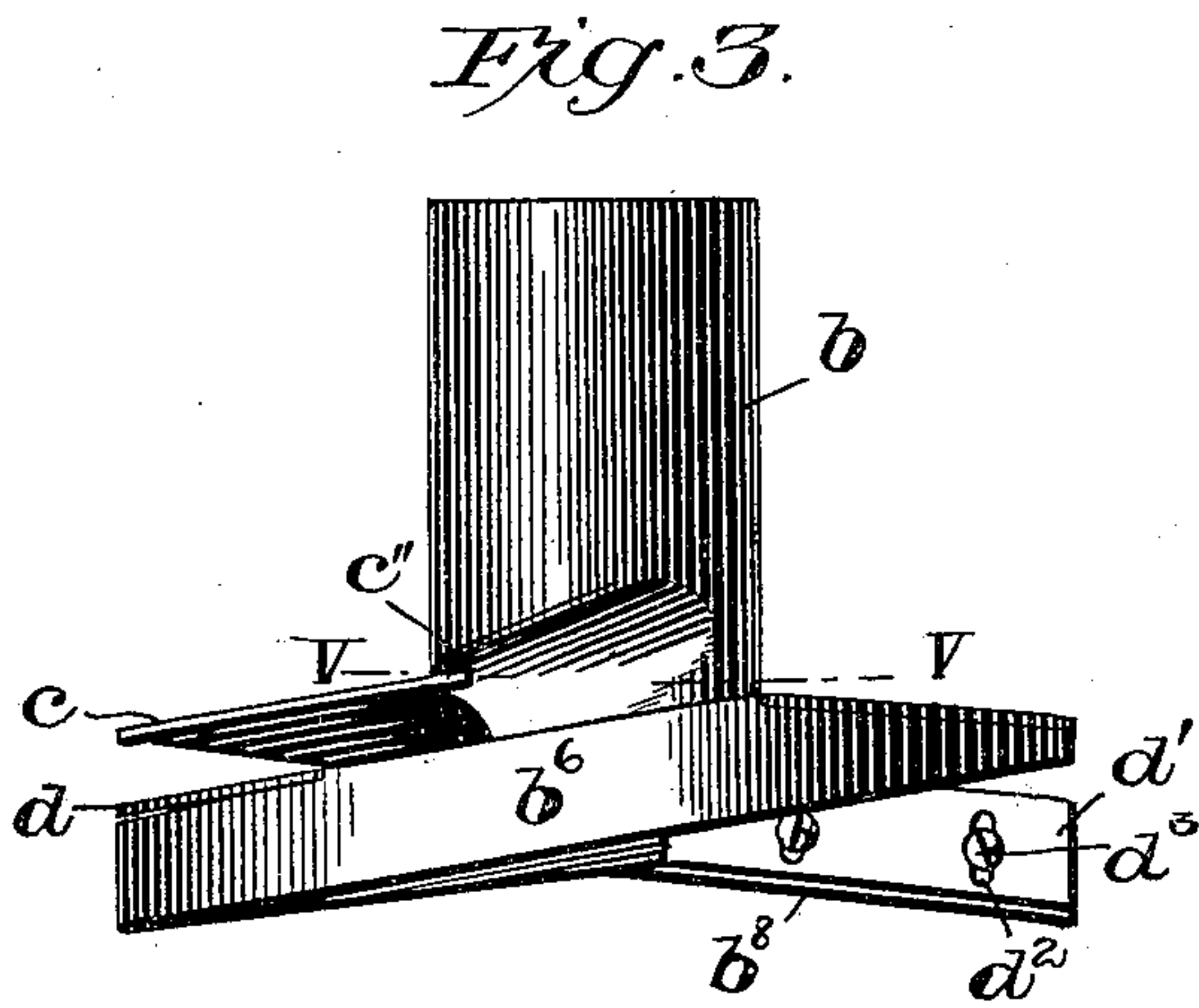
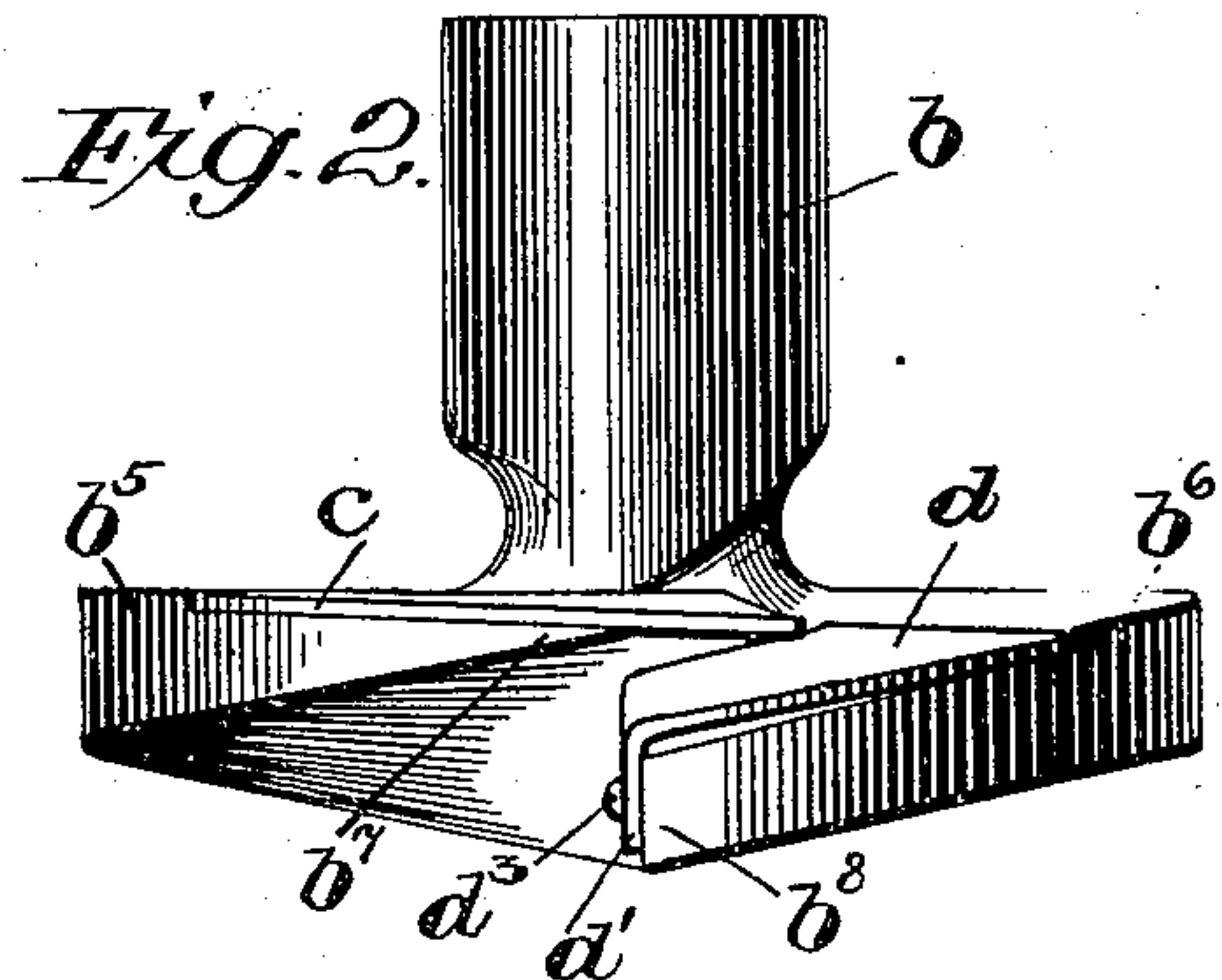
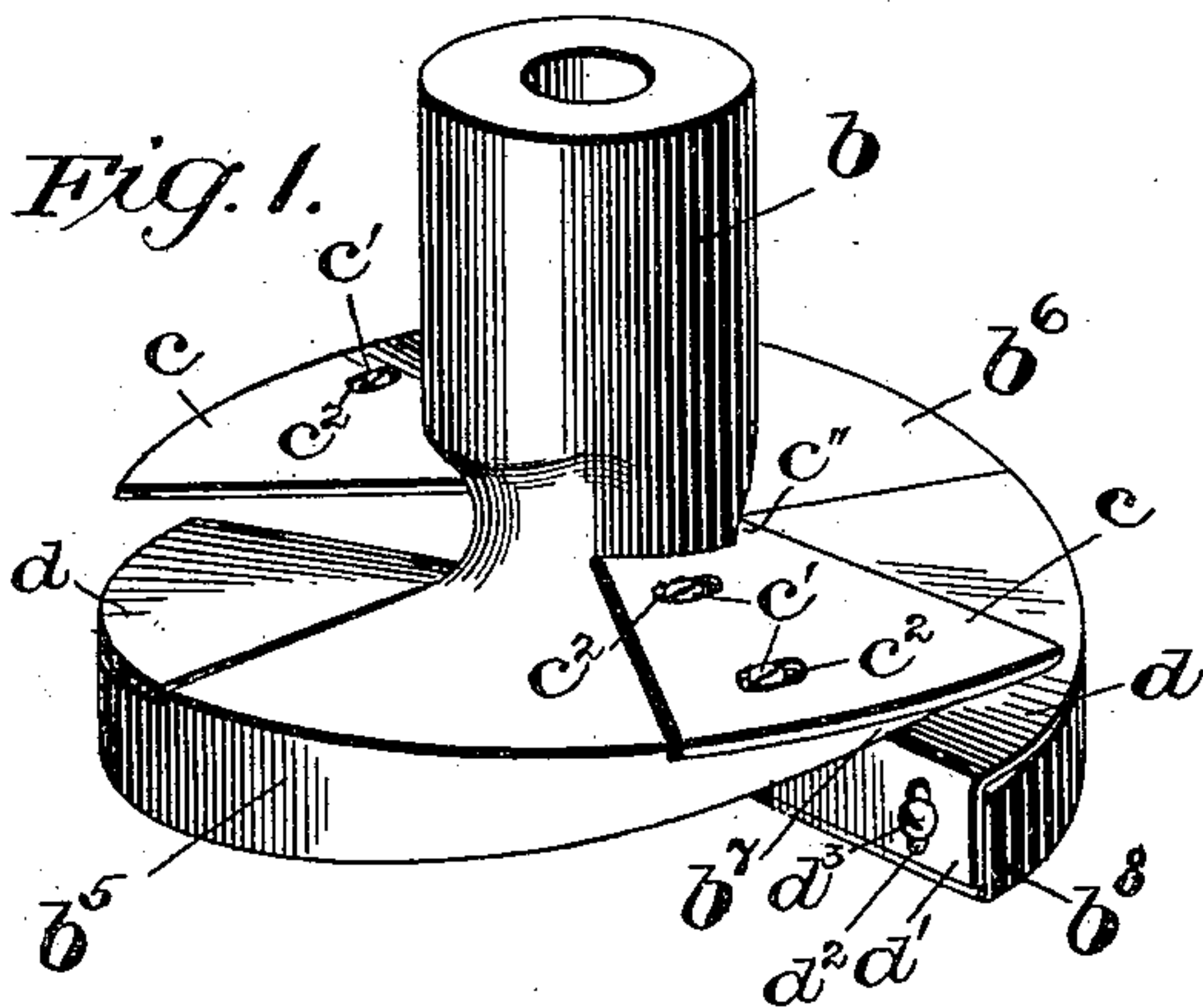
No. 617,749.

Patented Jan. 17, 1899.

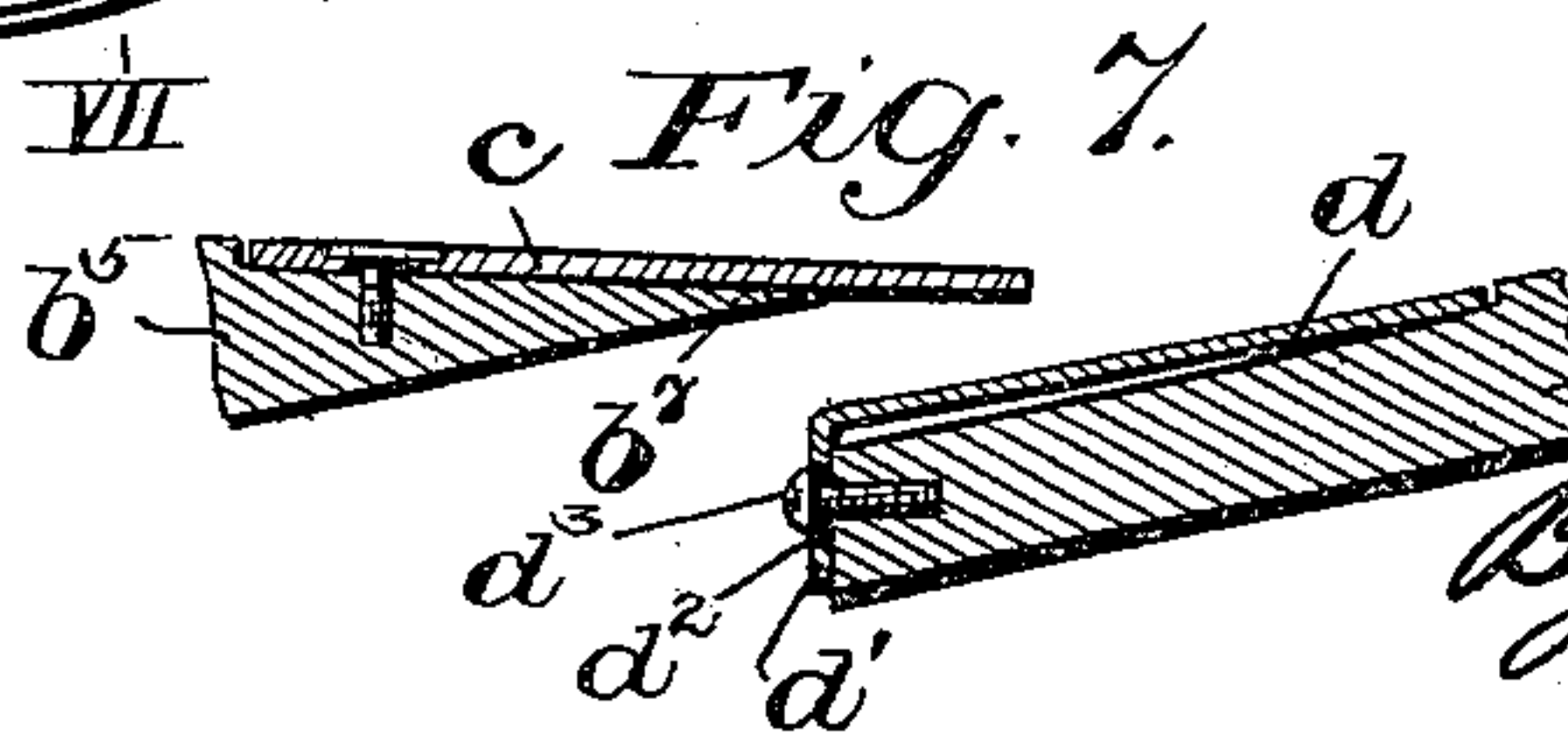
J. KOELNER.  
PACKING AUGER.

(Application filed Sept. 30, 1898.)

(No Model.)



Witnesses  
Jos. C. Stack.  
Chas. E. Riordan



Inventor

John Koelner  
By Julian C. Davis  
Atty



# UNITED STATES PATENT OFFICE.

JOHN KOELNER, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE BALLARD & BALLARD COMPANY, OF SAME PLACE.

## PACKING-AUGER.

SPECIFICATION forming part of Letters Patent No. 617,749, dated January 17, 1899.

Application filed September 30, 1898. Serial No. 692,286. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KOELNER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Packing-Augers; 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 packing-augers of the type illustrated and described in Patent No. 591,259, granted to me October 5, 1897, and may be considered as an improvement upon the same.

The packing-auger which is the subject of said patent is characterized by a peculiar formation whereby certain objections theretofore existing to the use of augers in packing grain products are overcome—viz., lack of uniformity of pressure from the circumference to the center of the auger, an excessive packing of the central part of the material, and injury to the same by the heat generated. The patented device effectively obviates these objections; but it is found that the operation of the auger on different grades or kinds of material produces different results in packing, and as it is a desideratum to secure uniformity in the weight of each package the present invention has for its object to provide means for adjusting the auger according to the grade or kind of material under treatment, so that each package shall weigh the same regardless of differences in grade or kind of material. This is accomplished by regulating the feed resulting from the auger's action by an adjustment of the opening between the blade ends, where one overlies the other, so that more or less material can be taken in by rotation of the auger.

Essential elements of the invention are recited in the appended claims, and in the drawings, which accompany and form part of this specification, a preferred form of embodiment of the invention is illustrated in detail, and hereinafter a specific description of the same is given.

Of the said drawings, Figure 1 represents the auger in perspective. Figs. 2 and 3 represent the same in side elevation, these views

being taken at right angles to each other. Fig. 4 is an axial section of the auger. Fig. 5 is a top plan view with the stem in cross-section. Fig. 6 is a bottom plan view, and Fig. 7 is a fragmentary sectional view taken substantially on line VII VII of Fig. 5.

In general form the auger here shown corresponds closely with that illustrated in Figs. 4, 5, and 6 of the drawings of my former patent above referred to, there being a socketed shank  $b$  and a pair of substantially semicircular spiral blades  $b^5$  and  $b^6$ , each having a tapered toe  $b^7$  and squared heel  $b^8$  and the heel of one blade underlying the toe of the other blade, leaving a space between for the entrance of the material. It is the amount or depth of opening between these blade ends that I propose to regulate by my present invention, and to this end I have devised the following-described construction: The upper surface of each blade throughout its width and for a distance back of the toe is cut down sufficiently to accommodate a segmental plate  $c$  and have the same flush with and practically a continuation of the upper blade-surface, said plate extending beyond the toe of the blade and toward the sloping upper surface of the heel portion of the other blade, as best seen in Fig. 7. Said plate is fastened to the blade by means of screws  $c'$ , entered through longitudinal slots  $c^2$  in the plate, which permit of adjustment of the plate toward or from the said surface of the heel portion of the other blade and a consequent regulation of the amount or depth of opening between such surface and the edge of the plate.

In furtherance of the object of the invention the upper surface of each blade throughout its width for a distance from the heel is cut down to accommodate a segmental plate  $d$ , so that the same shall be flush with such surface, and the plate is formed with a flange  $d'$  to take over and lie against the squared end surface of the heel. In this flange vertical slots  $d^2$  are formed, and the plate is secured in place by screws  $d^3$ , entered through said slots. It will be seen that the slots permit adjustment of the plate toward and away from the upper surface of the blade, and hence regulation of the area or depth of the opening between heel and toe of the blades in ad-



dition to the facilities provided by the plates *c* and their securing means.

Of course it is desirable to have the plates *d* in close contact at all times with the surface of the blades immediately adjacent to the shoulders occasioned by the recessing of the blades to accommodate the plates, and hence the latter are made of resilient material, and the normal angle at the flanged end of each plate is more acute than the angle formed by the squared end of the blade and the upper blade-surface, so that the plate bears with a spring-pressure against the latter at all times and will not rise above the aforesaid shoulder under any adjustment.

The several adjusting-plates are preferably formed at their inner edges to closely engage the undercut portions of the shank, as shown at *c''* and *d''* in Fig. 5, so as to avoid niches in which the material might become clogged.

It will be readily recognized that the above-described construction is well calculated to fulfil the object primarily stated. However, it is to be understood that the invention is capable of embodiment in other forms than that here shown, and therefore the claims which follow are not restricted to the particular construction I have chosen to illustrate and specifically describe.

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

1. In a packing-auger, a blade end attachment adjustable to vary the amount of opening between the blade ends, together with means for fixing the attachment at different adjustments.

2. A packing-auger having blade ends one overlying the other between which the material is taken in, and a plate adjustable to vary the area of opening between the blade ends together with means for fixing said plate at different adjustments.

3. A packing-auger having blade ends one overlying the other and their upper surfaces in divergent planes, and a longitudinally-ad-

justable plate on one of such surfaces for varying the amount of opening between the blade ends by the position of the edge of the plate relative to the opposed blade-surface.

4. A packing-auger having blade ends, one overlying the other with correspondingly-sloping confronting surfaces, and a plate on one of such surfaces and adjustable toward and from the same to vary the amount of opening between the blade ends.

5. A packing-auger having blade ends one overlying the other with correspondingly-sloping confronting surfaces and the upper blade end having an upper surface inclined toward the upper surface of the lower blade end, together with a longitudinally-adjustable plate on the said upper surface of the upper blade end and a plate on the upper surface of the lower blade end adjustable toward and from the latter.

6. A packing-auger having blade ends one overlying the other and the lower one having a squared end face, together with a plate on the upper surface of the lower blade end having a flange taking over the end face of the latter and slotted; and one or more screws fastening the plate in place through its slotted flange.

7. A packing-auger having blade ends one overlying the other and the lower end having a squared end face, together with a resilient plate on the upper surface of the lower blade end having a flange taking over the end face of the latter and slotted, the normal angle of the plate being more acute than the angle formed by the squared blade end and the upper surface adjacent thereto; and one or more screws fastening the plate in place through its slotted flange.

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

JOHN KOELNER.

Witnesses:  
WM. E. CASTLE,  
F. E. HAYES.