

(No Model.)

2 Sheets—Sheet 1.

A. S. BAKER.  
MILLSTONE DRESS.

No. 330,665.

Patented Nov. 17, 1885.

Fig. 1.

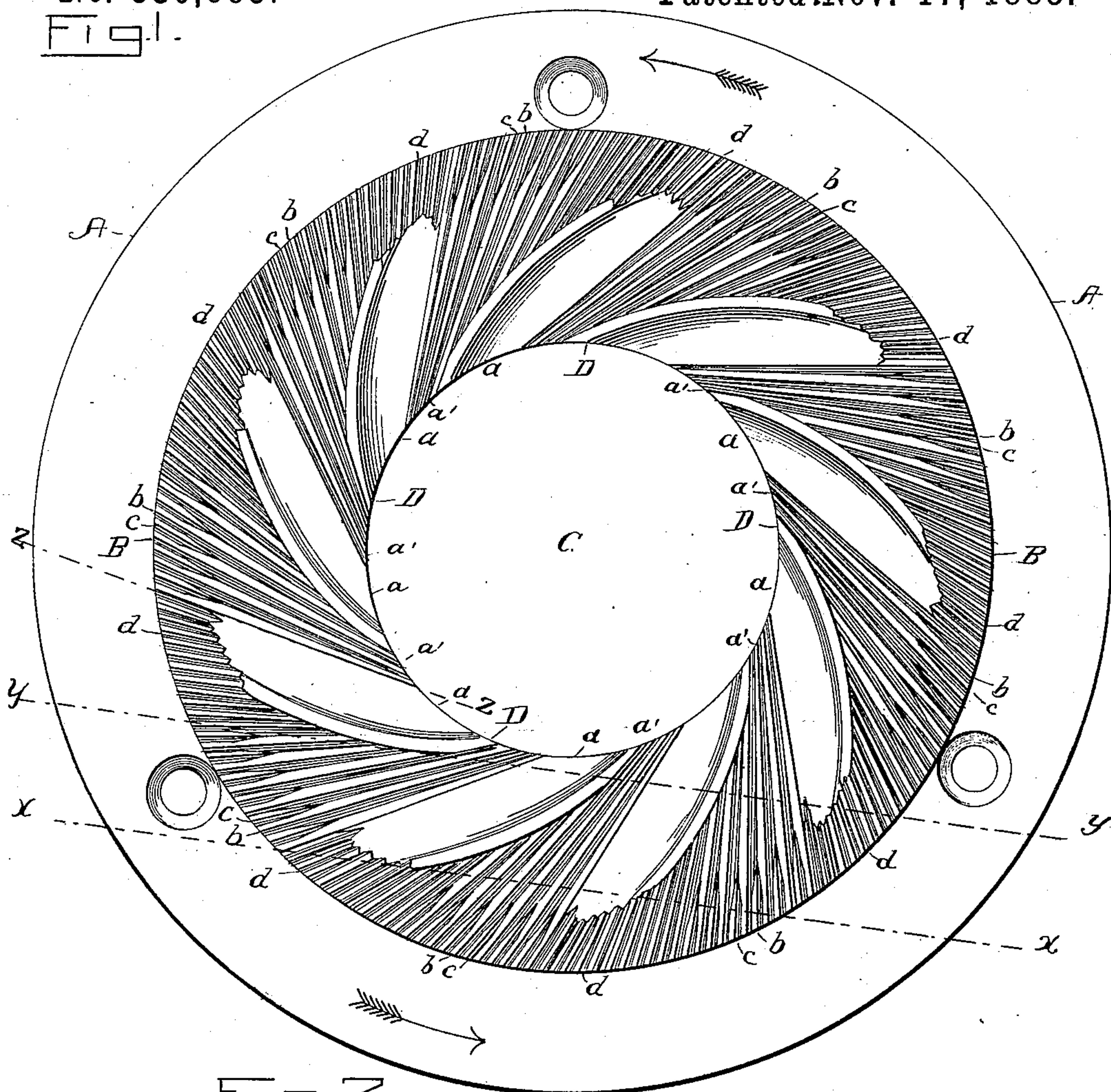
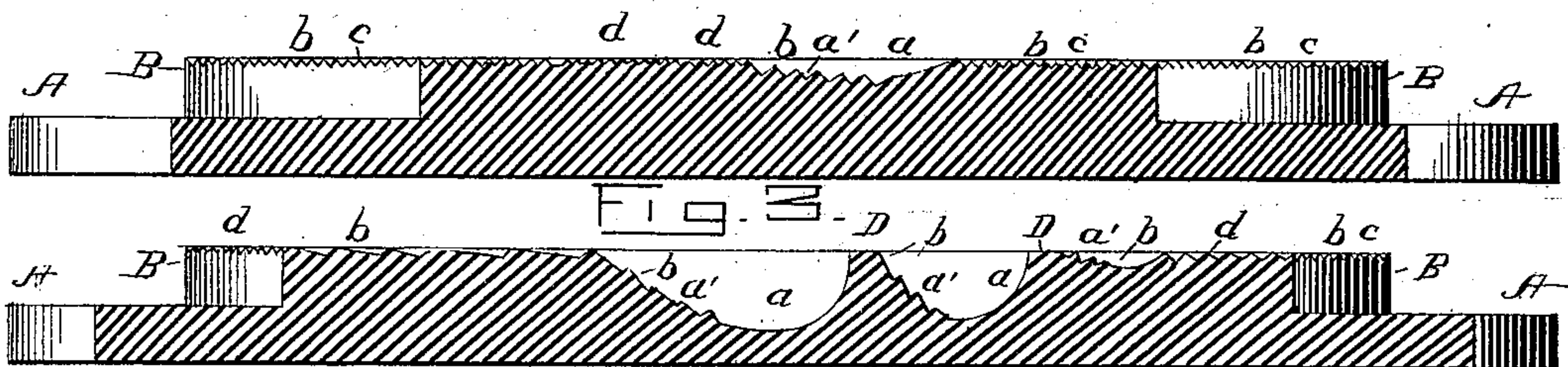


Fig. 2.



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Jno. C. Schroeder.

Allen S. Baker INVENTOR:  
by Geo. W. Lyster  
Ketty



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Fig. 4.

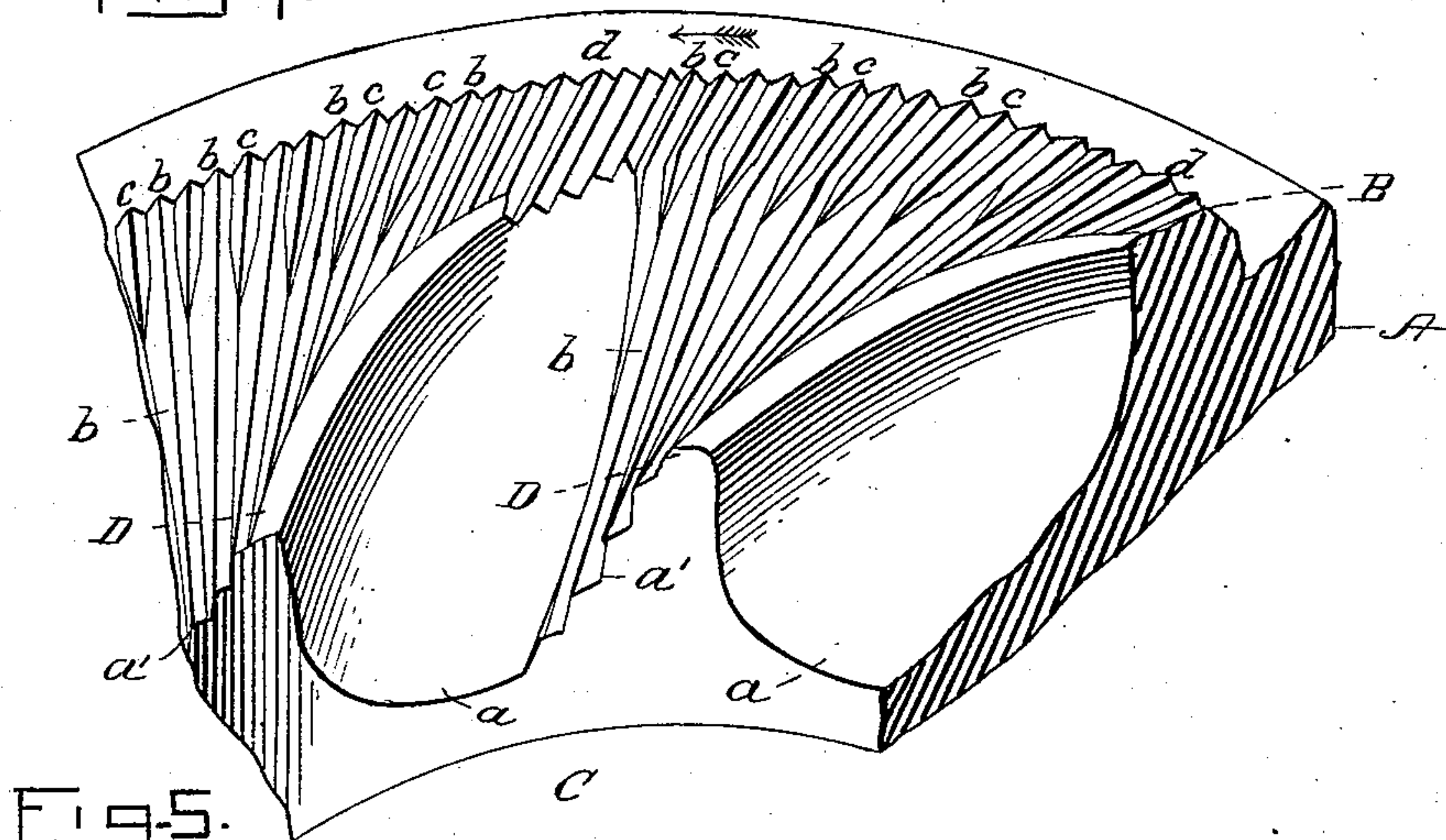


Fig. 5.

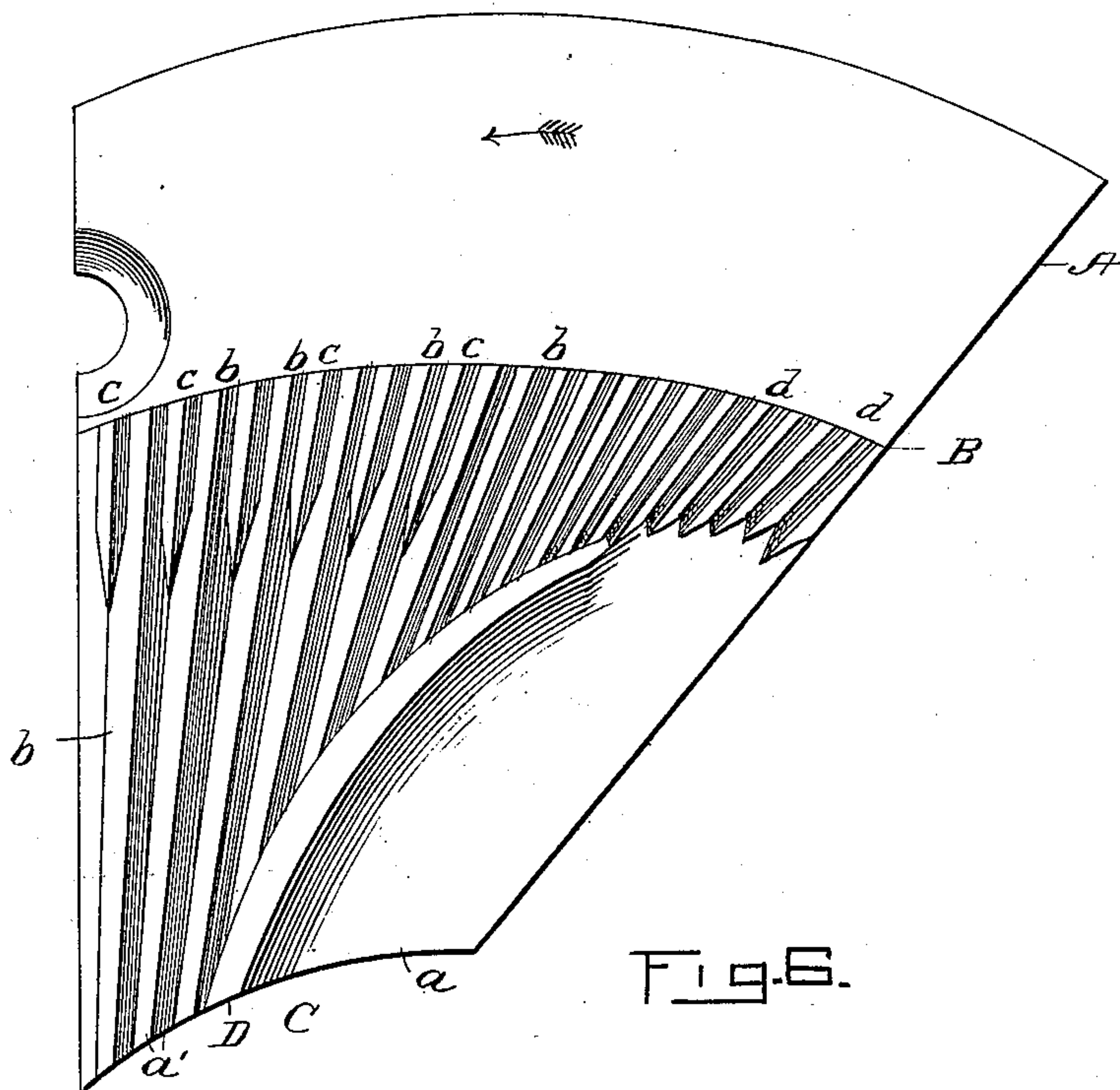
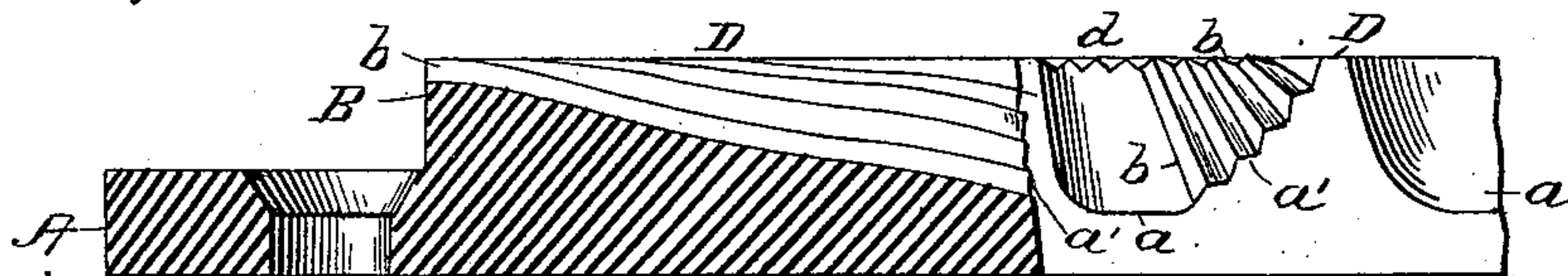


Fig. 6.



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# UNITED STATES PATENT OFFICE.

ALLEN S. BAKER, OF EVANSVILLE, WISCONSIN.

## MILLSTONE-DRESS.

SPECIFICATION forming part of Letters Patent No. 330,665, dated November 17, 1885.

Application filed March 25, 1885. Serial No. 160,103. (No model.)

*To all whom it may concern:*

Be it known that I, ALLEN S. BAKER, of Evansville, in the county of Rock and State of Wisconsin, have invented a new and useful  
5 Improvement in Millstone-Dress; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 My invention relates to an improvement in millstone-dress, also applicable to grinding-plates, whereby a soft fine meal can be produced very rapidly with but little wear upon the grinding-surfaces, and consequently at  
15 small expense for re-dressing, &c.

The novelty of my improvement consists in the construction and arrangement of the grinding-surfaces or teeth, so that the grain may be reduced largely by attrition of its own particles with each other with little wear of the grinding-surfaces; and these surfaces are so arranged and constructed that when the feed is cut off and the revolution continuous no injury will result to the grinding-teeth, as will  
20 be more fully hereinafter set forth and claimed.

For a more perfect understanding of the details of construction and arrangement of the teeth forming the grinding-surfaces of my improved burrs or plates, attention is invited to  
25 the accompanying drawings, wherein—

Figure 1 illustrates the same in plan view, and Figs. 2 and 3 cross-sections of the same on lines *xx* and *yy*. Fig. 4 is a detail in perspective of two of the feeding-teeth and the adjoining smaller teeth; Fig. 5 a detail in plan of one of the feeding-teeth and the adjoining smaller teeth; and Fig. 6, a section on the line  
30 *zz* of Fig. 1, looking toward the serrated front of one of the feeding-teeth.

40 A A denote the burrs or plates, which are of the well-known annular form, arranged as usual in a horizontal plane, one stationary and the other rotary. These burrs or plates are each of like construction, and have grinding-faces B, upon which the feeding and grinding teeth, hereinafter described, are formed, and the usual central opening or eye, C. Each of the faces B is provided with a series of curved tangential feeding-teeth, D, extending out-  
45 wardly from the edge of the eye C nearly to the skirt of the face B. These teeth are flat

on top, with their tops arranged in the same horizontal plane, and have backs preferably made inclined or concave, and sloping and widening gradually toward the eye C, as shown  
55 at *a*. The fronts *a'* of these teeth are made inclined or concave, and are serrated to form smaller teeth, *b*, which extend in direct lines sloping downwardly, and with slight downward curves from the skirt to the fronts *a'*,  
60 converging so that they touch said teeth D from the extreme outer ends of the same to the inner ends of the same, a portion of these teeth *b* terminating at the eye C. These teeth *b* gradually increase in size toward the skirt,  
65 where they are of uniform size. Between each two of these teeth *b* is another tooth, *c*, of the same size at the skirt as the teeth *b*, extending a short distance toward the eye upon the same horizontal plane as the teeth *b*, and then ta-  
70 pering gradually downwardly to the bottoms of the recesses between the teeth *b*. Other short teeth, *d*, cover the skirt from the outer ends of the teeth D as far as the next series of teeth *b*. Thus at the skirt there is a continu-  
75 ous series of the teeth *b*, *c*, and *d*, all in the same horizontal plane for a short distance from the periphery, and from that point toward the eye a portion of the teeth *b* preserve the same horizontal plane until they touch the  
80 fronts *a'* of the teeth D, while the remainder of the teeth *b* and all of the teeth *c* slope toward the eye, with the effect of a spiral curve, as opposed to the somewhat similar smooth curved backs *a* of the teeth D. In each in-  
85 stance the curved back *a* with smooth surfaces extends to and meets the toothed portion of the front of the next tooth D.

The operation and the advantages resulting from such a construction are as follows: Ow-  
90 ing to the direction and slope of the feeding-teeth D, the grain entering the eye of the burrs or plates is thrown outwardly by the curved feeding-teeth D, and by centrifugal force between the constantly-narrowing concave and  
95 sloping fronts of the feeding-teeth, and across the teeth *b* and into contact with the grain being similarly treated in the opposite burr, being thus partially reduced and thrown into the finer skirt-teeth, where the reduction is  
100 completed.

The reduction of the grain, it will be seen,



is largely accomplished by attrition or contact of the particles of grain with each other, thus producing a soft or crushed meal, in place of a chopped or granulated meal commonly produced in the use of metal plates. The flat tops of the teeth D are so arranged that their horizontal plane is a very little higher than the horizontal plane of the skirt, and the actual contact of the burrs or plates, when running empty, is upon these tops, thus preventing excessive wear upon any part of the skirt—an objection common to nearly all other burrs or plates now in use.

Thus it will be seen from this construction that the burrs, after much use, will show no perceptible wear, and consequently will be more durable and less expensive, besides grinding more finely and rapidly than the ordinary burrs or plates.

What I claim, and desire to secure by Letters Patent, is—

1. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end arranged a little higher than the horizontal plane of the skirt, substantially as and for the purposes set forth.

2. A grinding burr or plate with curved tangential feeding-teeth having one side smooth and the other serrated in direct lines from the eye to the skirt, substantially as described.

3. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end, and serrated, inclined, or concave fronts, substantially as described.

4. A grinding burr or plate with curved tangential feeding-teeth having contact-surfaces from end to end, and straight tangential teeth on their fronts, substantially as described.

5. A grinding burr or plate with curved tangential feeding-teeth having straight tangential teeth extending in direct lines, sloping downwardly, and with slight downward curves from the skirt to the fronts of said teeth, substantially as described and shown.

6. A grinding burr or plate with curved tangential feeding-teeth, combined with a series of straight tangential teeth extending from their fronts to the skirt, and a series of intermediate fine teeth having tapering and sloping inner ends, substantially as described and shown.

7. A grinding burr or plate having an annular series of curved tangential feeding-teeth with contact-surfaces from end to end, and with inclined or concave fronts having a series of straight tangential teeth extending in direct lines to the skirt, where they combine with a series of intermediate fine teeth, substantially as described and shown.

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

ALLEN S. BAKER.

Witnesses:

R. M. ANTES,  
J. H. HOSKINS.