C. N. McLAUGHLIN.

DISK PLATE DRESS.

APPLICATION FILED APR. 17, 1909.

Patented Sept. 21, 1909.

934,457.

2 SHEETS—SHEET 1.

Fig. 1.

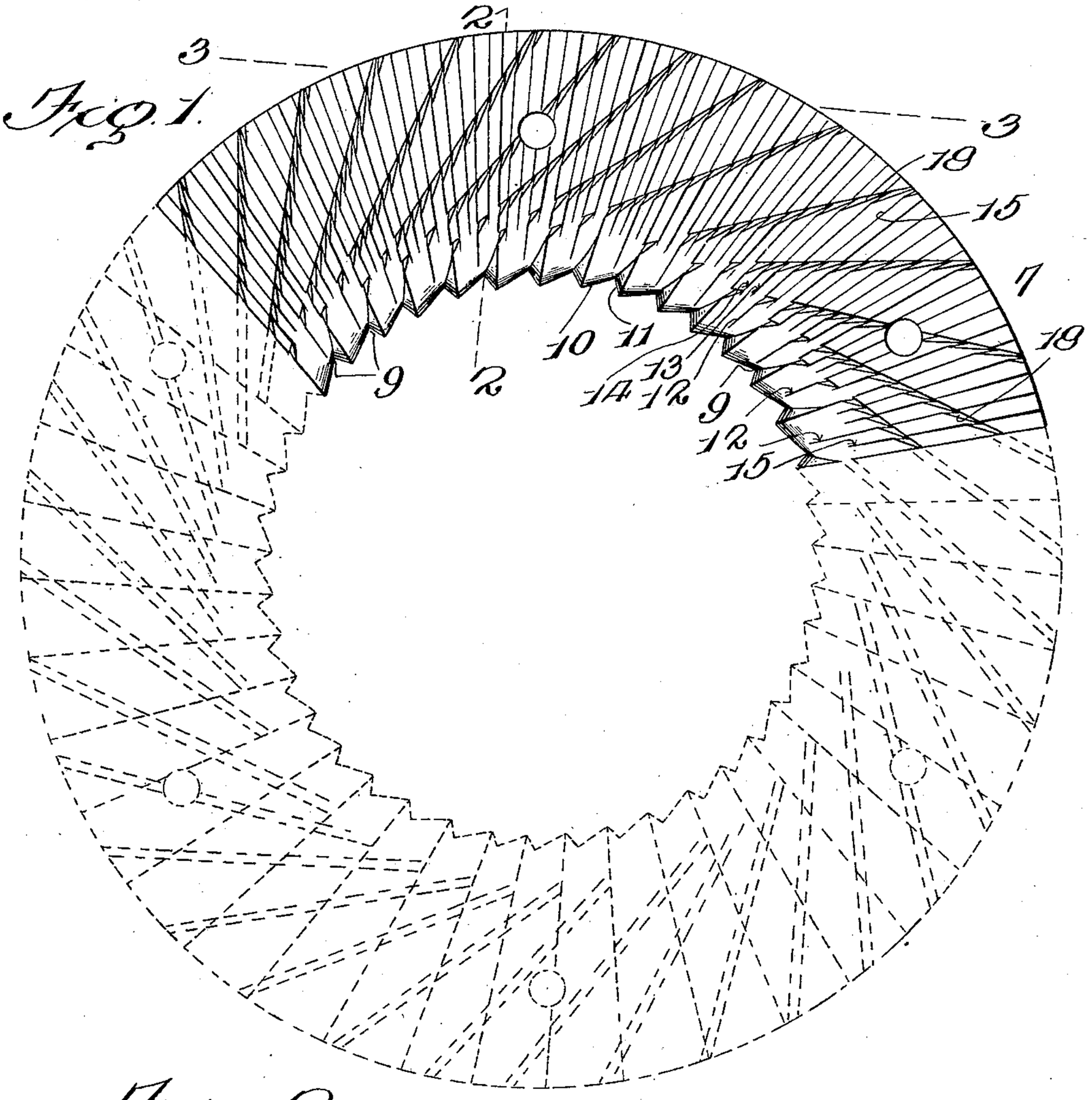


Fig. 2.

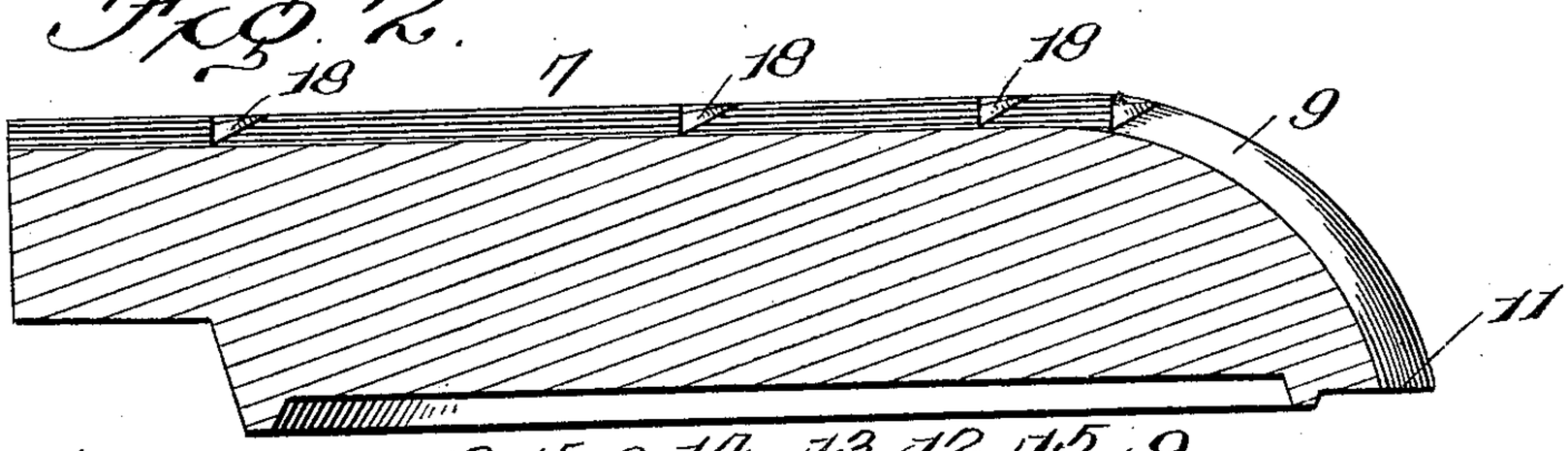
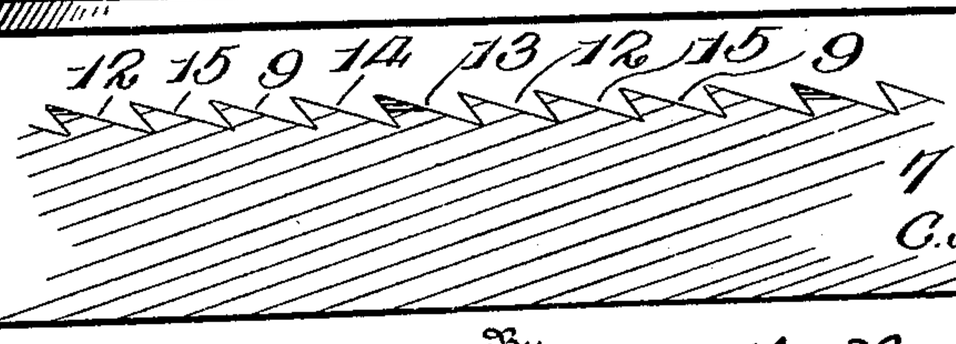


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

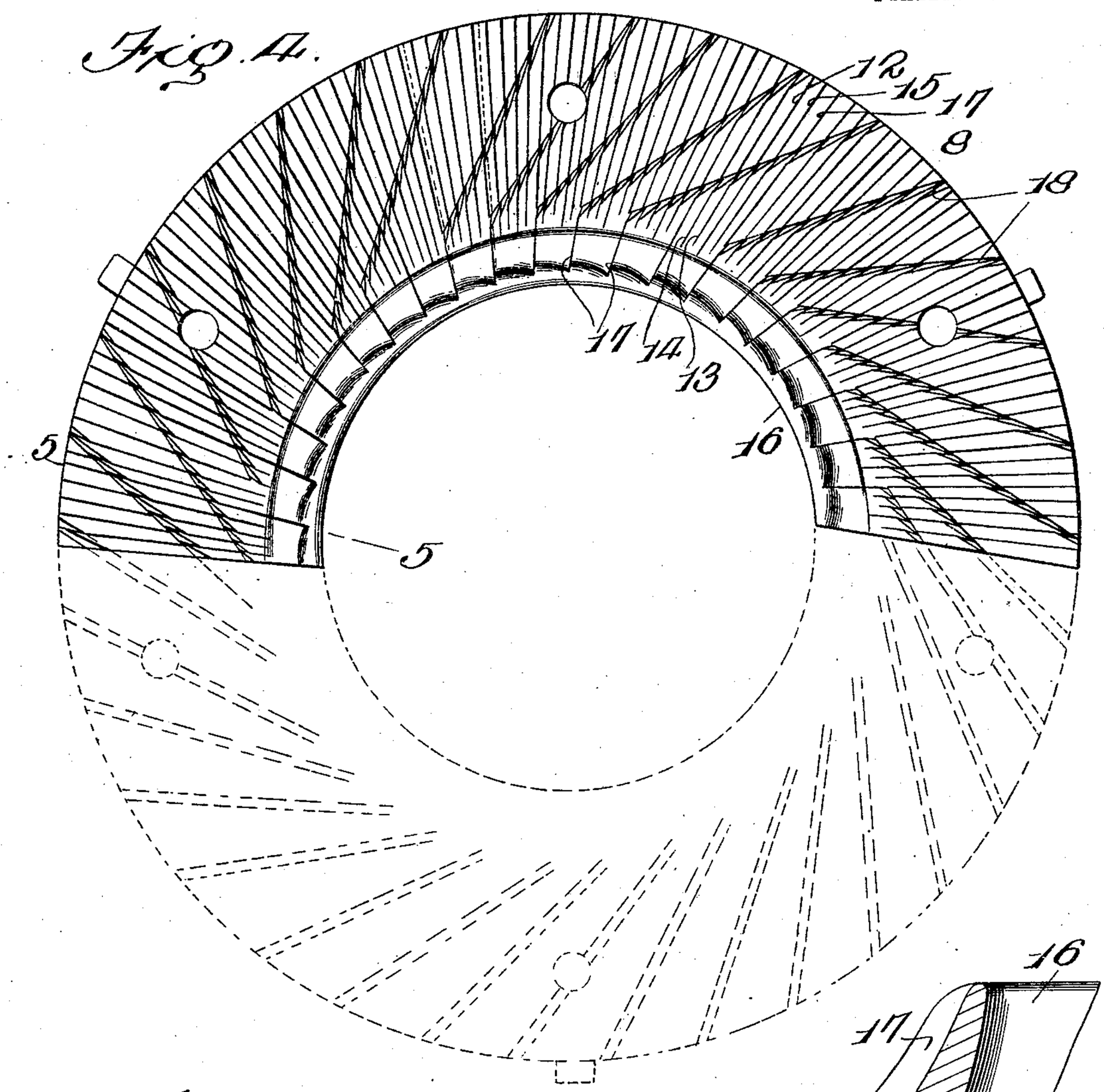


Fig. 5.

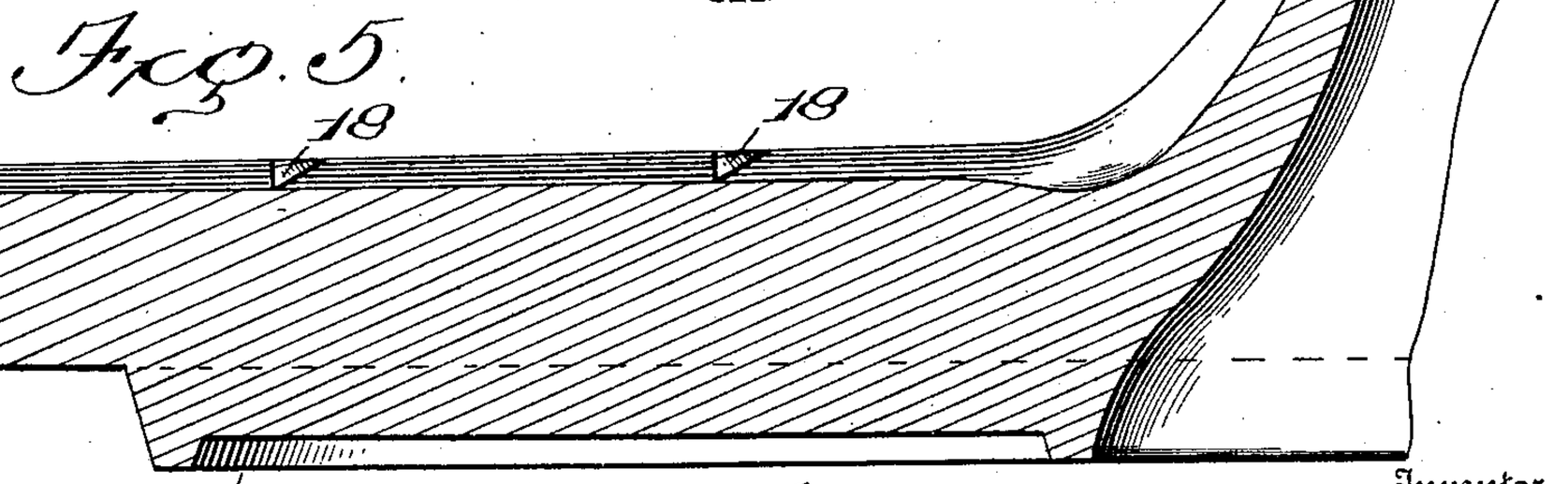
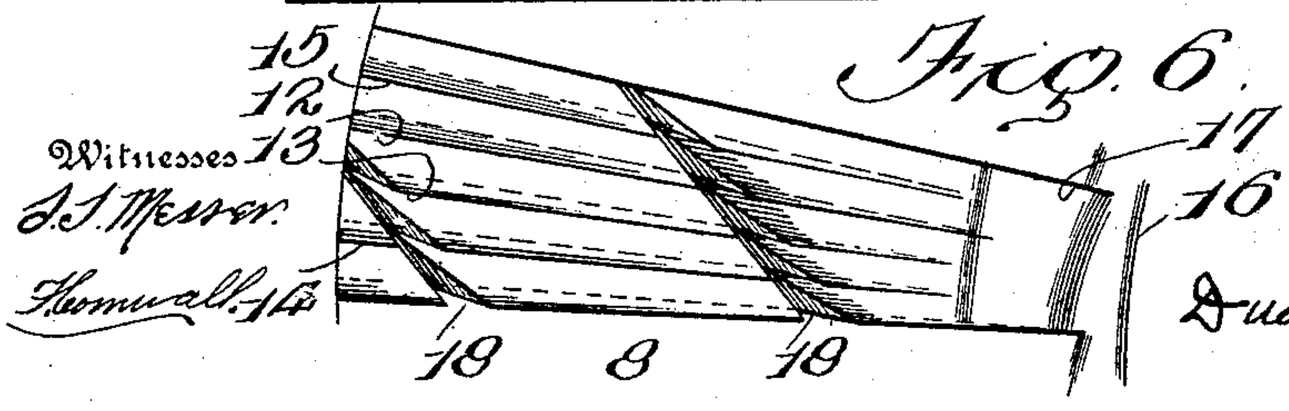


Fig. 6.



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UNITED STATES PATENT OFFICE.

CUNNINGHAM N. McLAUGHLIN, OF WINONA, MINNESOTA.

DISK-PLATE DRESS.

934,457. Specification of Letters Patent. **Patented Sept. 21, 1909.**

Application filed April 17, 1909. Serial No. 490,583.

To all whom it may concern:

Be it known that I, CUNNINGHAM N. McLAUGHLIN, a citizen of the United States, residing at Winona, in the county of Winona and State of Minnesota, have invented certain new and useful Improvements in Disk-Plate Dress, of which the following is a specification.

My invention relates to certain new and useful improvements in the dress of grinding mill plates or disks and the object of my invention is to so improve the dress plates of the character shown in the patent to Ames 382,747, May 15, 1888 that the plates will be better adapted to the work they are designed to perform than those heretofore known or used.

One object of my invention is to produce a dress which will enable cotton seed or the like to be hulled without crushing the seed itself in any material amount whereby a very much higher grade product is obtained than where practically all the seed is crushed as is the ordinary practice at the present time.

Another object of my invention is to produce a mill dress in which the cutting teeth will remain sharp, and one in which the tramming of the disks or plates is a very simple operation due to the fact that before the disks are used they may be ground perfectly true which insures the sharp cutting edges on the teeth and renders simple the adjusting of the plates so that their operating faces are parallel to each other.

With these and other objects in view my invention consists in certain constructions, combinations and arrangements of parts the preferred form of which will be first described in connection with the accompanying drawings and then the invention particularly pointed out in the appended claims.

Referring to the drawings wherein the same part is designated by the same reference numeral wherever it occurs—Figure 1 is a face view of one of a pair of plates, with a portion of the face shown in dotted lines; Fig. 2 is an enlarged sectional view taken on line 2—2 of Fig. 1; Fig. 3 is an enlarged sectional view taken on line 3—3 of Fig. 1; Fig. 4 is a face view of the other plate of the pair with a portion of the plate merely indicated by dotted lines; Fig. 5 is an enlarged sectional view taken on line 5—5 of Fig. 4 and Fig. 6 is an enlarged detail view of a portion of the face of the plate shown in Fig. 4.

7 and 8 are a pair of disks which are adapted to be used in any ordinary type of grinding or hulling machines, and these disks may be arranged either horizontally or vertically, and either of them may be stationary, or they both may be revolved as the construction of the particular type of machine in which they are used may require.

For the sake of clearness in the description of my invention and without limiting its scope, it will be assumed that the disk 7 is the stationary disk and the disk 8 the one to be revolved.

In the form of my invention shown the disk 7 has deep cuts or grooves 9 formed in its inner edge which surrounds the usual central opening of the disk. This inner edge is curved from the front face of the disk to the back, as is best shown in Fig. 2. It will be noted that one side 10 of each of the cuts is longer than the opposite side 11 and also that these sides of each groove form an obtuse angle at the bottom of the grooves on the curve of the disk.

12 are a second series of grooves which extend from the outer periphery of the disk to the inner curved edge and extend a short distance over this edge, as best shown in Fig. 1. The sides of these lower grooves form an acute angle at the bottom of the grooves, as shown in Fig. 3, and one of the sides undercuts the adjacent lands so that one of the sides is wider than the other one. Located on one side of each of the cuts or grooves 12 are a pair of grooves 13, 14. These grooves extend from the periphery of the disk toward the center but not to the rounded inner edge of the disk with the groove 14 slightly longer than the groove 13. Located on the other side of each of the grooves 12 and between each of these grooves and the adjacent groove 9 is a groove 15 similar to the groove 14 and of substantially the same length. Each of the grooves 13, 14 and 15 is formed with one of the sides wider than the other and one of the sides undercut as best shown in Fig. 3, with the two sides of each groove forming an acute angle with each other.

The plate 8 is formed with a central neck 16 which projects as a flange from the inner edge of the plate around the opening. This

neck is of a size to project into the opening in the plate 7. On the neck 16 are cut a series of grooves 17 similar to the grooves 9 in the plate 7. The face of the plate 8 is also provided with the same dress as the plate 7.

18 are grooves cut in the faces of the plates tangentially to a circle of substantially the size of the central opening and coinciding therewith. The grooves 9, 12, 13 and 15 are furthermore cut tangentially to a small circle of about $\frac{1}{4}$ the radius of the circle to which the grooves 18 are tangent.

It will be further noted that the grooves all increase slightly in width and depth from their inner to their outer ends. It will also be apparent that by the undercut form of all the grooves that the face of the plate may be ground and effect the shaping of the plates. A further advantage of being able to grind the faces of the plates is that they may be ground so that the cutting edges all lie in exactly the same plane and consequently when the plates have been trammed the cutting surfaces of the two plates will lie parallel to each other, causing the plates to grind or hull much better than is possible with plates constructed as at present.

I realize that considerable variation is possible in the details of construction and arrangement of parts without departing from the spirit of my invention, and I therefore do not intend to limit myself to the specific form shown and described.

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

1. A disk or plate for hulling or grinding machines having grooves extending from the central portion of the disk to the periphery thereof, said grooves forming lands between them, said grooves undercutting said lands on one side whereby the cutting edges on said lands may be sharpened by grinding the face of said disk and the acute cutting angle preserved.

2. A disk or plate for hulling or grinding machines having a central opening, a series of grooves extending from said central opening to the periphery of the disk, a second series of grooves extending from a circle without the central opening to the periphery, a third series of grooves extending from a circle without said first mentioned circle to the periphery of the disk, said grooves being arranged in series around the face of the disk, all of said grooves undercutting the lands formed between them on one side of said lands whereby the cutting edges on said lands may be sharpened by grinding the face of said disk and the acute cutting angle preserved.

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

CUNNINGHAM N. McLAUGHLIN.

Witnesses:

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