

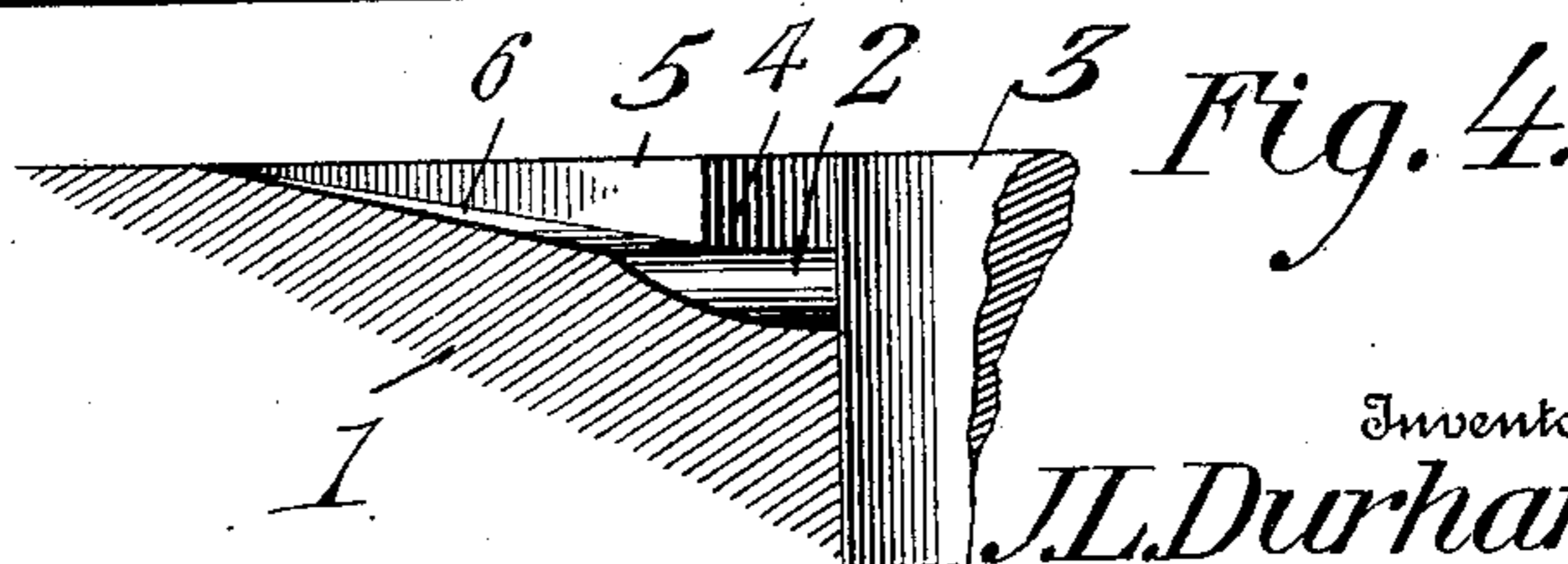
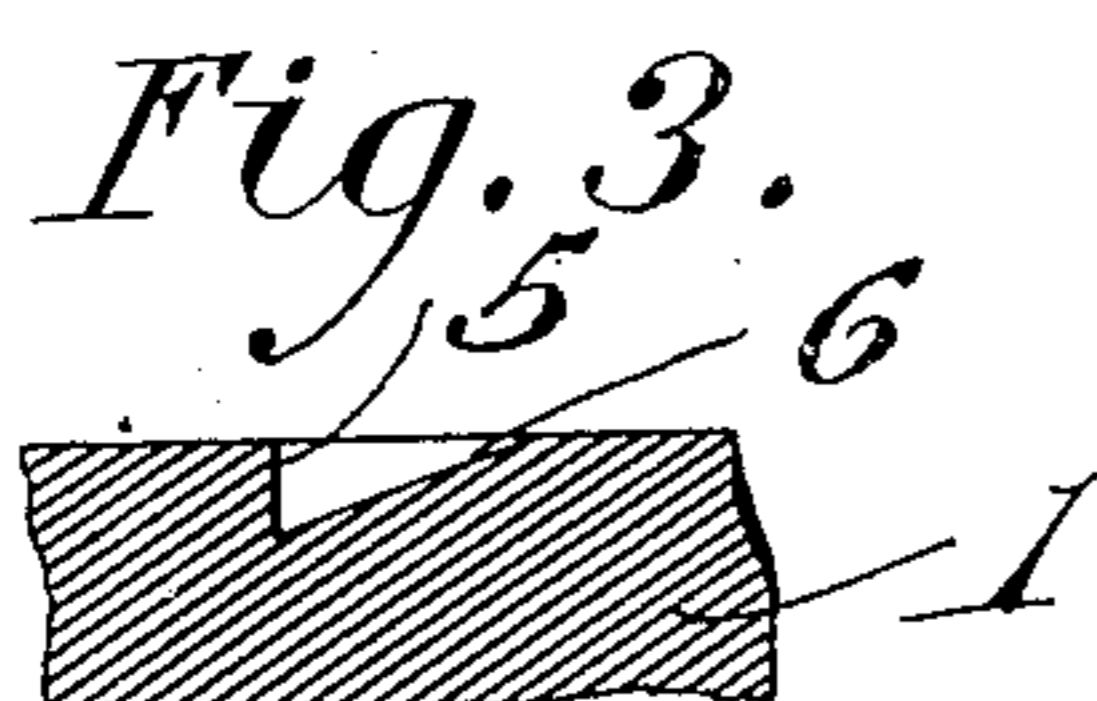
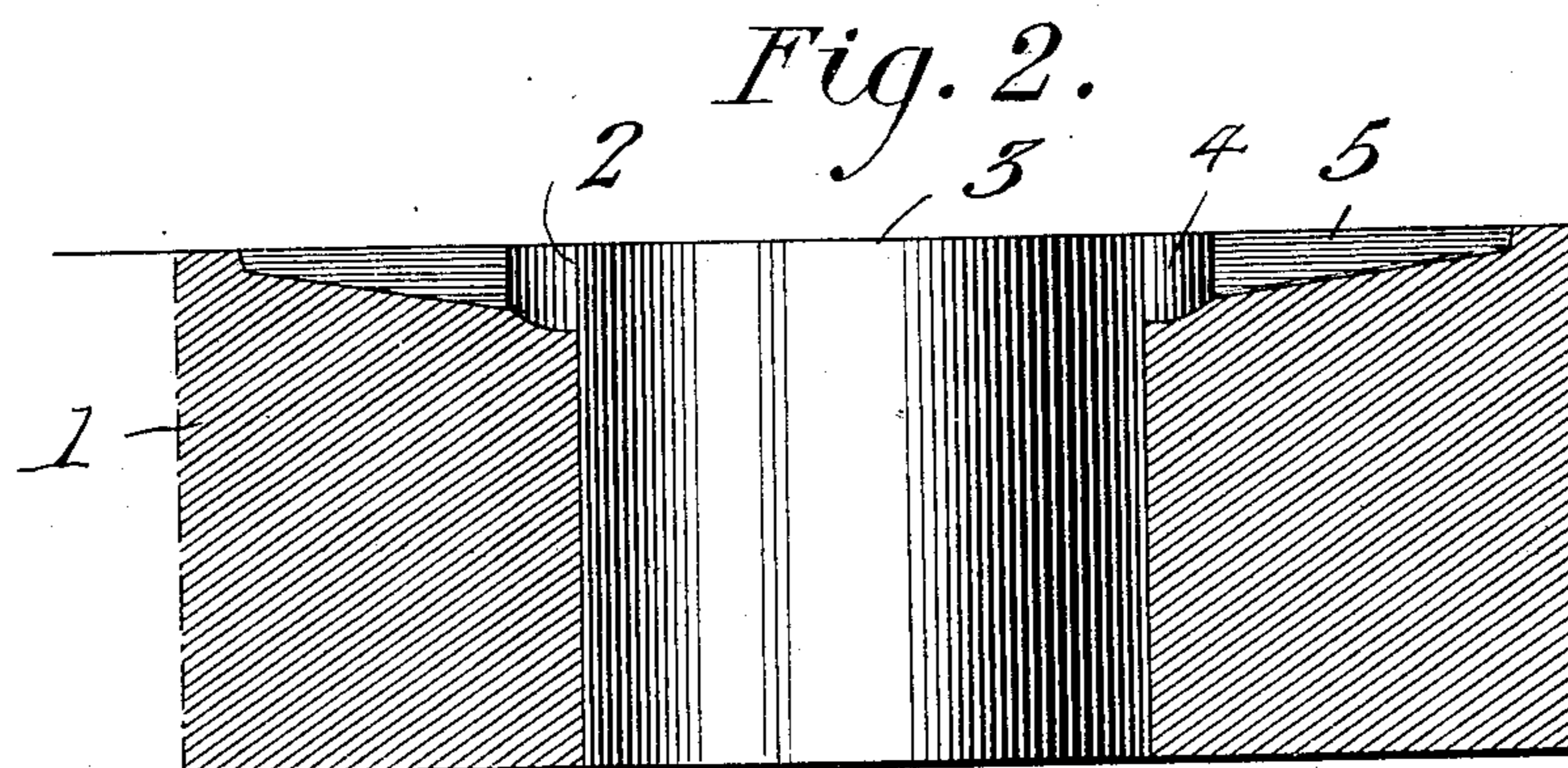
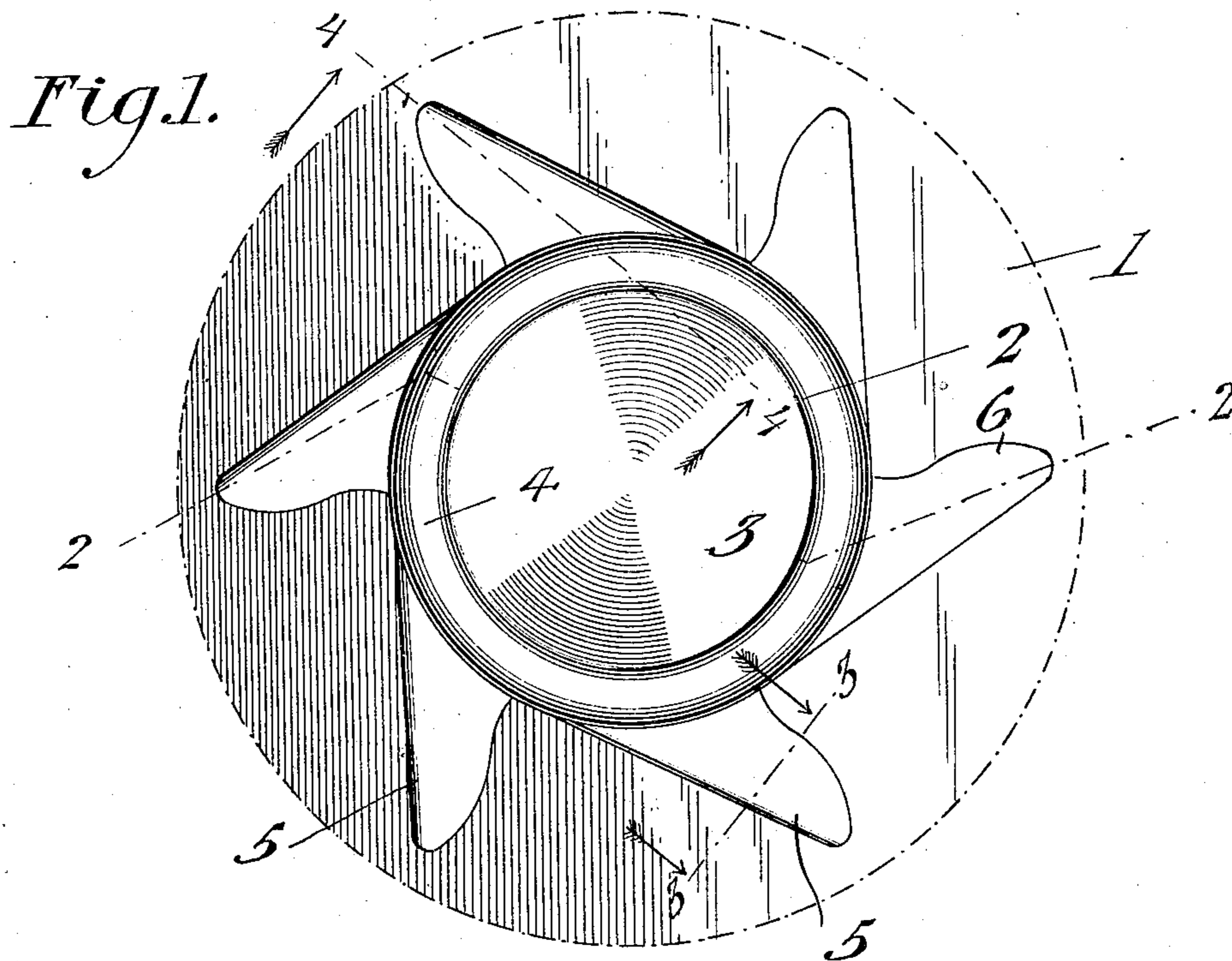
No. 891,050.

PATENTED JUNE 16, 1908.

J. L. DURHAM.
MILLSTONE.

APPLICATION FILED DEC. 4, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

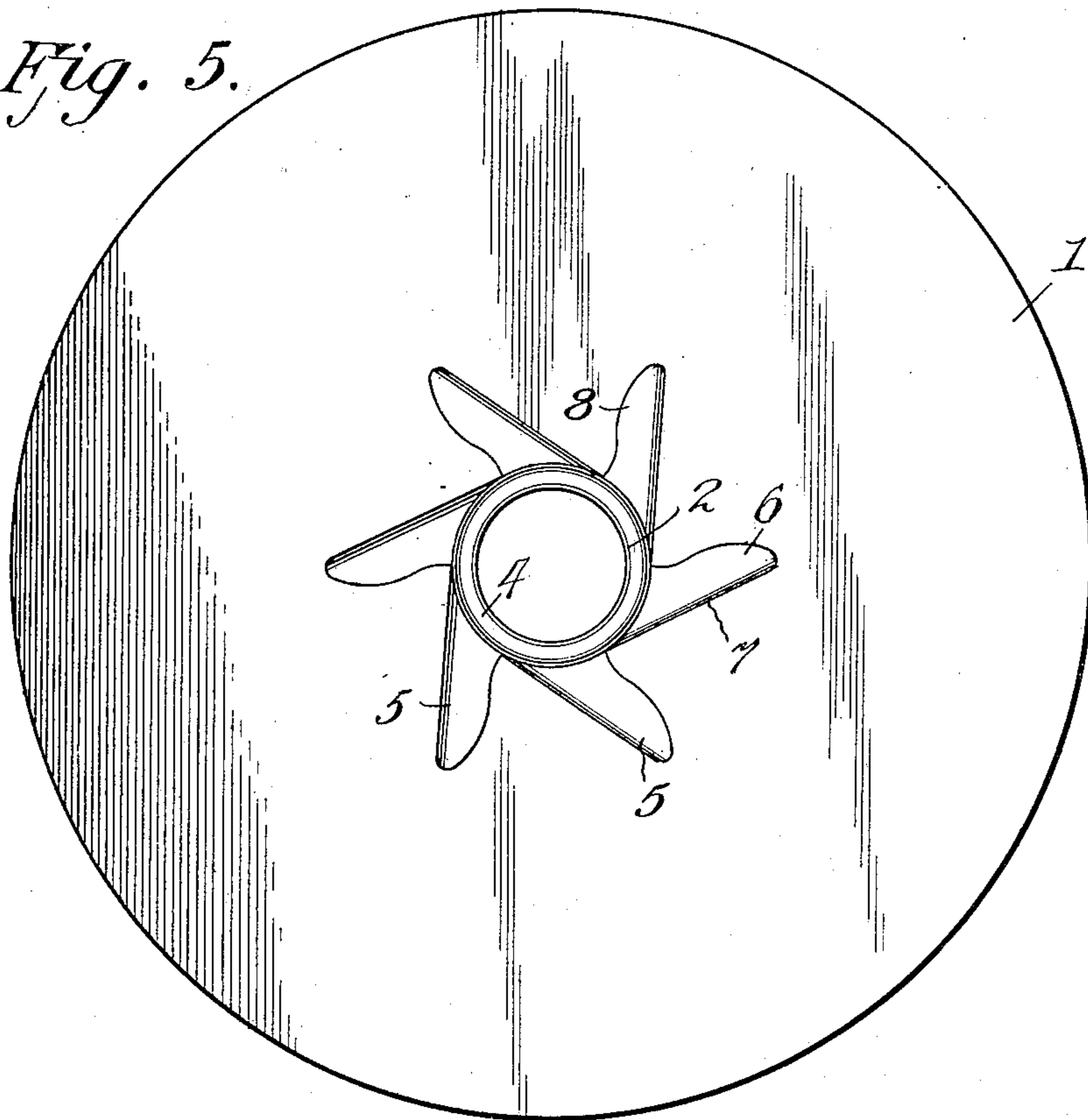
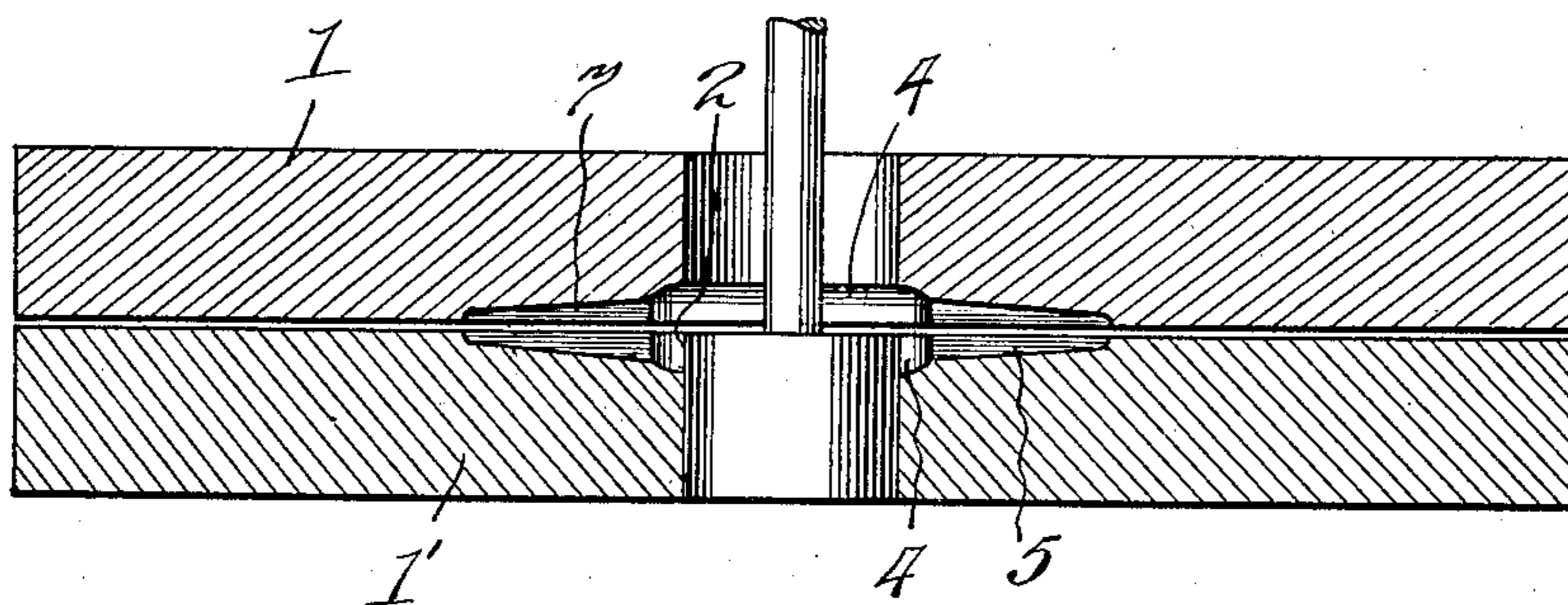


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN L. DURHAM, OF SANCO, TEXAS.

MILLSTONE.

No. 891,050.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed December 4, 1905. Serial No. 290,261.

To all whom it may concern:

Be it known that I, JOHN L. DURHAM, a citizen of the United States, residing at Sanco, in the county of Coke and State of Texas, have invented new and useful Improvements in Millstones, of which the following is a specification.

This invention relates to millstones; and it has for its object to provide an improved millstone dress which shall be conducive to the best results in assuring a thorough grinding of the grain; in securing a uniform grade of product; and in increasing the capacity of the stones for work.

With these and other ends in view which shall readily appear as the nature of the invention is better understood, the same consists in the improved millstone dress which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a portion of the upper stone dressed in accordance with the invention; only that portion of the stone being shown which is closely adjacent to the eye, the stone being shown in inverted position so as to expose the working face. Fig. 2 is a sectional view taken on the plane indicated by the line 2—2 in Fig. 1, and the stone being shown in inverted position. Fig. 3 is a sectional view taken on the plane indicated by the line 3—3 in Fig. 1. Fig. 4 is a sectional view taken on the plane indicated by the line 4—4 in Fig. 1. Fig. 5 is a plan of a bed stone dressed in accordance with the invention. Fig. 6 is a vertical sectional view showing the bed stone and the upper stone assembled in running position.

Corresponding parts in the several figures are denoted by like characters of reference.

The two millstones which are designated as the upper stone 1 and the bed stone 1' are dressed precisely alike, and the description of one will apply to both. Each of the stones is provided with an annular groove or channel 4 which, in the upper stone is formed immediately adjacent to the eye 2; the said groove or channel being formed in a corresponding location in the lower stone, as will be clearly seen by reference to Fig. 6.

In accordance with the invention there is formed in the working face of each stone a plurality of feed ducts 5, preferably tangential to the annular groove or channel 4, and comprising grooves or channels that are approximately V-shaped in cross-section, as

best seen in Fig. 3. These grooves, which constitute the feed grooves, are of an extreme length approximately equal to, but not exceeding the diameter of the eye, and said grooves are at their inner ends of an extreme depth which is less than that of the annular groove or channel 4, while at their outer extremities they merge with the face of the stone; the bottoms 6 of said grooves being inclined and dying or shallowing into the general plane of the grinding surface, as will be clearly seen in Fig. 4. The edges or walls, 7, of the grooves or ducts 5 are formed at approximately right angles to the working face of the stone while, owing to the cross-sectional V-shape of said ducts their rear edges merge with the face of the stone; said rear edges being preferably rearwardly concaved as will be seen at 8, so that the bottoms of the ducts will merge very gradually into the working face of the stone. These ducts in connection with the annular channels 4 constitute the entire millstone dress; and the usual feed ducts which extend nearly or quite to the peripheral edges of millstones as ordinarily dressed, are entirely omitted.

When the stones, dressed in accordance with the invention, are assembled, as shown in Fig. 6, grain fed through the eye of the stone will pass into the space formed by the annular channels 4, said space constituting a receptacle from which the grain, by the centrifugal action set up by the rotation of one of the stones, is discharged between the working faces of the stones, being subjected to a gradual reduction process between the bottoms 6 of said feed ducts which, as stated, merge with the working faces of the stones. The ducts 5 being of an extreme length is only approximately equal to but not exceeding the diameter of the eye, and the latter, which is selected as a unit of measure for the purpose of establishing the proportionate dimensions of the ducts with relation to the stones being usually of a diameter not exceeding one-twelfth of the total diameter of the stone, it follows that a relatively very small or minimum proportion of the entire working faces each of which lies in one general plane, of the stones is furrowed by these ducts, or leading furrows, and that the grain, after preliminary reduction by the shearing action between the inclined bottoms of the ducts on the opposing faces, will be immediately subjected to the action of the extended working faces, which occupy a

relatively very large proportion of the total faces of the stones. I have found by practical demonstration that, by this construction of the millstone dress, a much more uniform product is secured than where larger proportions of the faces of the stones are grooved or furrowed; the material may be ground without objectionable heating of the product; and the speed of the operation is largely increased.

Having thus fully described the invention, what I claim as new is:—

1. A millstone having a grinding face comprising a general surface lying in a single plane, and a dress consisting essentially of an annular depression or feed groove in its central region having exits in the form of leading or feeding furrows extending tangentially from said groove in a direction inclining backward from the direction of rotation, and of a length not greater than the diameter of the annular groove; said furrows having inclined bottoms shallowing out-

wardly and rearwardly into the general plane or face of the stone, substantially as specified. 25

2. The combination of a pair of millstones each having a grinding surface lying in one general plane, a central annular depression or feeding groove, and feeding furrows leading therefrom and tangential thereto, having a length no greater than the diameter of said annular groove and dying rearwardly into the general plane of the surface whereby the grain as it is fed outwardly receives a shearing or preliminary grinding action from the two sets of grooves, and a maximum proportion is secured of coacting grinding surfaces each lying in one general plane, substantially as specified. 30 35

In testimony whereof, I affix my signature in presence of two witnesses. 40

JOHN L. DURHAM.

Witnesses:

JAMES CLEPPER,
LEWIS PAYNE.