

E. S. HOWLAND.

Improvement in Grinding-Plates.

No. 130,719.

Patented Aug. 20, 1872.

Fig. 1

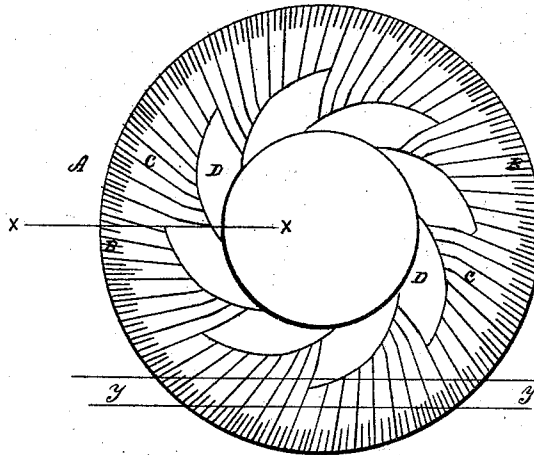


Fig. 2



Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

EDMUND S. HOWLAND, OF BATAVIA, ILLINOIS.

IMPROVEMENT IN GRINDING-PLATES.

Specification forming part of Letters Patent No. **130,719**, dated August 20, 1872.

SPECIFICATION.

To whom it may concern:

Be it known that I, EDMUND S. HOWLAND, of Batavia, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Grinding-Plates, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part hereof, and in which—

Figure 1 represents a top view of my improved plates; Fig. 2, vertical section of the same in the plane of the line *x x*; and Fig. 3, a vertical section of the same in the plane of the lower line *y y*, and viewed only to the upper line *y y*.

Like letters of reference indicate like parts.

My invention relates to a class of metallic grinding-plates made in the form of annular disks, and provided with grinding-ridges at or near their peripheries, and with drift-ridges for feeding the grain to the grinding-surface. An objectionable feature in plates of this class, as now constructed, is that the grain is not evenly distributed to the grinding-surface. The object of my invention is to remove this defect, and otherwise improve the operation of the disks; and to that end it consists in a novel construction and arrangement of the drift-ridges.

In the drawing, A represents a disk of the class referred to. B is the grinding-surface formed by a series of short low ridges, arranged in the manner shown, and near enough together to sufficiently grind the grain that is fed to them. C C are extended grinding-ridges, serving also as drift-ridges. Each alternate ridge C C as it approaches the inner edge of the disk declines more rapidly than the remaining ridges C C. D D are also drift-ridges, to which the ridges C C extend. The drift-ridges D D project vertically or nearly so, from the inner edge of the disk to a height nearly equal to the central part of the disk; from thence they extend outward and partly around the disk in a curved line, and to or nearly to its central part, intersecting several of the ridges C C. The outer face of the ridges D D is vertical or nearly so, and their inner face is curvilinear, and sweeps upward and outward from the inner edge of the disk, and terminates in the top of the ridge and in

the ridges C C. The inner upper end of the ridges D D is rounded off, and is somewhat lower than the upper outer end. The ridges all lie across the working-face of the disk in such a manner as to be intersected by a vertical plane passing through the axis or center of the disk's circumference. The ridges B and C decline gradually in a line slightly curved as they recede from the outer edge of the disk, and they recede therefrom in straight converging lines. One face of the ridges B and C is vertical or nearly so, and their other face declines until it intersects the vertical face of the next succeeding ridge, and this line of intersection is less curved than the top of the ridge. The vertical faces of all the ridges are arranged to catch the grain as the disk is turned in the operation of grinding.

It will be observed from the foregoing description, that when the grain is fed to the disk while the latter is revolving rapidly, it will be carried to the grinding-surface by centrifugal force and without clogging. The construction and arrangement of the ridges or drifts D D are such that the grain will be evenly distributed to all the drifts C C, and by the latter to the grinding-ridges. The curved vertical faces of the ridges D D prevent the grain from clogging as it passes through the disk and the ridges or drifts C C, by being alternately high and low, also facilitate the distribution of the grain in equal quantities to all parts of the grinding-surface. But I do not intend to confine myself to the ridges C C when alternately high and low, as the operation of the disk is improved when they are of the same height, owing to the construction and arrangement of the ridges D D. Two disks, A, are employed in the usual manner.

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

The disk A provided with the drifts D D, constructed and arranged substantially as shown and described, and with the drifts C C and grinding-ridges B B, substantially as and for the purpose specified.

The foregoing specification signed by me this 11th day of June, A. D. 1872.

EDMUND S. HOWLAND.

Witnesses:

N. C. GRIDLEY,
F. H. BROWN.