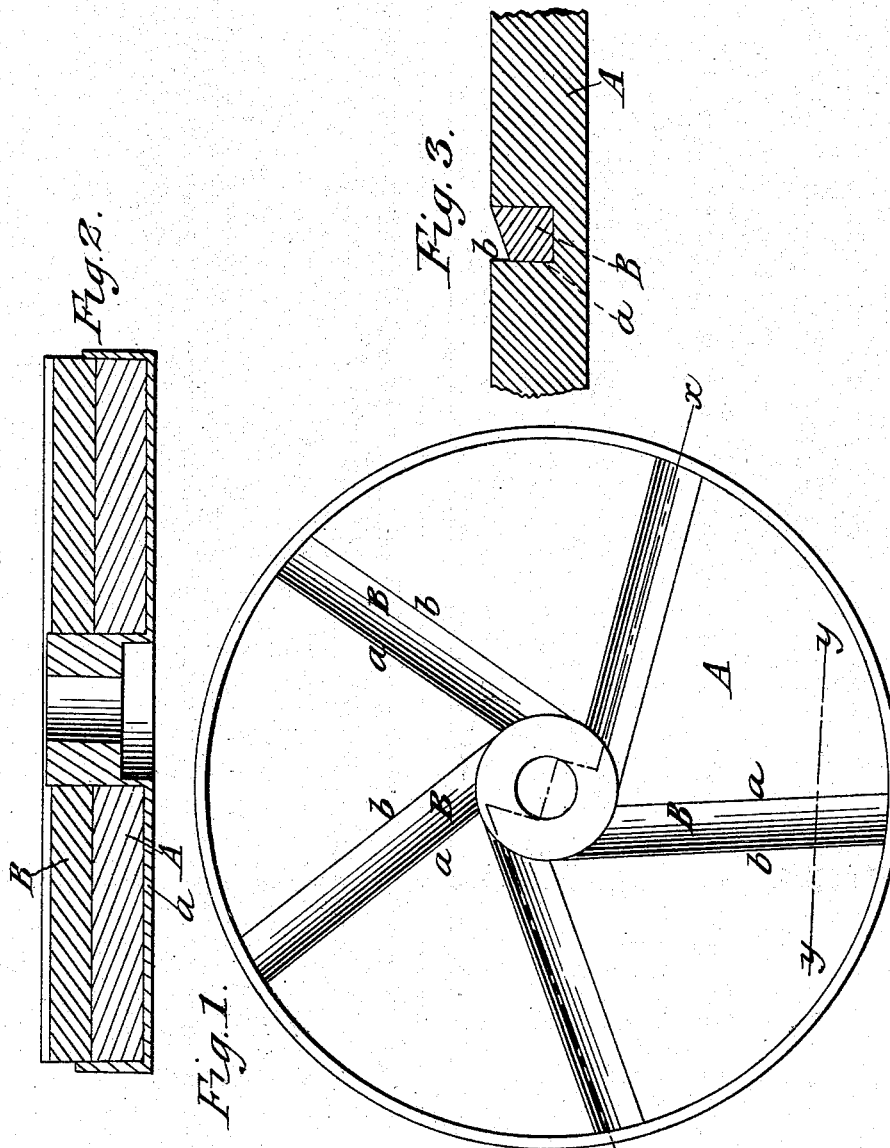


E. HARRISON.
Grinding Mill.

No. 54,535.

Patented May 8, 1866.



Witnesses:

J. W. Blount
E. J. [unclear]

Inventor:

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UNITED STATES PATENT OFFICE.

EDWARD HARRISON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. 54,535, dated May 8, 1866.

To all whom it may concern:

Be it known that I, EDWARD HARRISON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Millstones and other Grinding-Surfaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a face view of a millstone provided with my invention. Fig. 2, a section of the same, taken in the line *x x*, Fig. 1. Fig. 3, a section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

Millstones, metal grinding-plates, and the generality of all grinding-surfaces are provided with furrows of greater or less dimensions to perform two important functions—to wit, crushing or breaking the substance to be ground by the action of the edges of the furrows on one stone or plate passing over the edges of those on the other stone or plate, and to serve as channels to admit of the free passage of the substance through or between the stones. In order to perform good work it is essential that these furrows, especially the “master” or main furrows, be kept “open”—that is to say, sufficiently deep and angular at their cutting or abrading edges; and in millstones this is effected by frequent picking, the furrows, under the wear of the stones, getting shallow at very short intervals. When, however, the furrows of metal grinding-plates become shallow in consequence of wear, there has hitherto been no remedy but to cast the plates aside and substitute new ones in their place.

My invention is designed to obviate the necessity of the frequent picking of millstones, and also to admit of metal plates being kept in proper working order an indefinite period; and to this end it consists in having the stones or plates formed with grooves or channels in places where the furrows are required, and inserting in said grooves or channels a filling composed of a material softer than the grinding stone or plate, so that the face of the filling will have a tendency to wear equally as fast as the face of the stone or plate, and therefore cause the furrows to remain of a suitable depth.

A represents a millstone in which grooves

or channels *a* are cut or made, corresponding in position to the ordinary master or main furrows. (See Fig. 1.) These grooves or channels are of rectangular form, and they may be of any suitable depth and of a width corresponding to the width of the furrows.

B represents a filling, which may be of hard wood, cement, or any suitable material, and softer than the stone A. The faces of the filling B are inclined in a transverse direction, as shown clearly in Fig. 3, corresponding to the bottoms of the ordinary furrows, the elevated sides of the filling being flush with the face of the stone and the depressed sides some distance below, leaving a cutting or abrading edge, *b*, at one side of the grooves or channels.

From this description it will be seen that the furrows will be kept open under the wear of the stone, as the softness of the filling will cause it to wear equally as fast as the face of the stone, although, on account of being depressed or sunken out, subjected to as much friction as the face of the stone, still its softness will cause it to be abraded equally as fast.

The above description will answer for or apply to metal grinding-plates. The filling may be kept in the grooves or channels by friction only, or other means may be employed.

A modification of the improvement may be made by using a hard filling and arranging the same with set-screws or other equivalent means, so that it may be depressed in the grooves or channels from time to time, as the face of the stone or plate wears. Thus the labor and time of picking or opening the furrows of millstones will be avoided and metal-grinding-plates made to last an indefinite period of time.

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

Providing the faces or grinding-surfaces of millstones, metal plates, &c., with grooves or channels corresponding in position to the furrows required for said surfaces, and having the grooves or channels provided with a filling composed of a material softer than the stone or plate.

EDWARD HARRISON.

Witnesses:

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