D. HESS

Grinding Mill.

No. 201,784. Patented March 26, 1878.

Fig. 1.

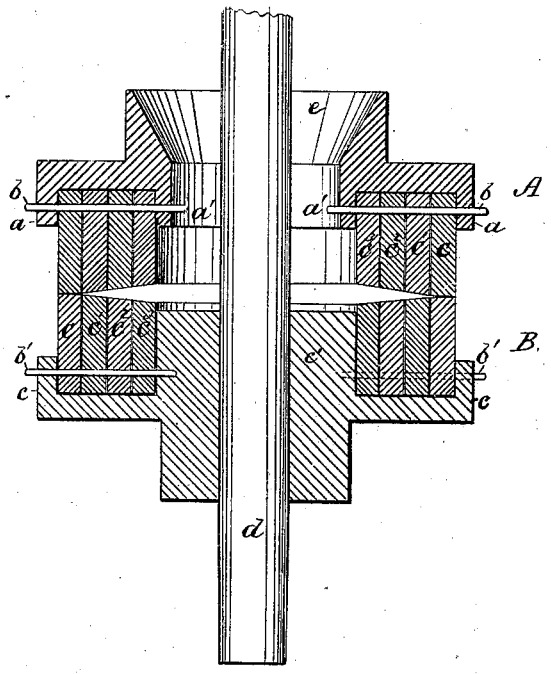


Fig. 2.

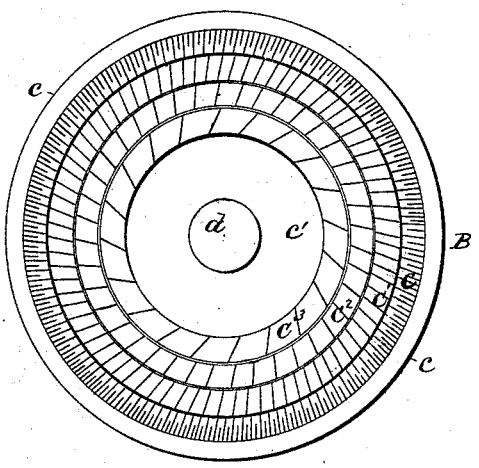
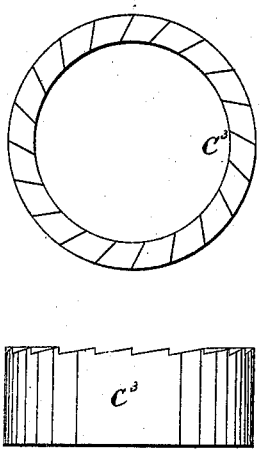


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL HESS, OF EVANSVILLE, INDIANA.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **201,784**, dated March 26, 1878; application filed October 17, 1877.

To all whom it may concern:

Be it known that I, DANIEL HESS, of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and Improved Grinding-Mill; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a vertical section of the two burrs arranged in working position. Fig. 2 is a face view of one of the burrs, showing the teeth of the saws. Fig. 3 are detail views of one of the cylindrical saws removed.

The invention relates to certain improvements upon that form of mill in which small metallic burrs are used. It has a more direct reference to that peculiar species in which a series of concentric toothed rings form the burr; and it consists in constructing the burr of a series of concentric cylindrical saws combined with a flange-disk, and secured therein by pins passing through the flanges of the disk and the plain end of the cylindrical saw, whereby the saws may not only be separately sharpened by filing, but may be worn down indefinitely without interfering with the attachment of the saws, and without the necessity of renewing the burrs, the said improvements adapting the mill to use for grinding grain, either for table use or for cattle-feed, in such localities as are at a distance from larger mills or facilities for repairing the burrs, such as the plantations of the Southern States, &c.

In the drawing, A represents the upper burr, which is fixed and stationary, while B represents the lower revolving burr or "runner." Both these burrs are constructed alike, of a series of concentric cylindrical steel saws, C C^1 C^2 C^3, having teeth arranged after the manner of a crown-wheel. The size of the teeth vary from the largest, next to the eye, to the smallest, at the skirt, the largest of which operate first upon the whole grains, and the finest of which finish the grinding. To accommodate the reception of the grain and its transmission throughout the grinding-surfaces, the saws are made of a little less height at the center than at the skirt, giving to the face of the burrs a somewhat concave shape, and the teeth of the inner saws have also a little more draft than those near the skirt.

In arranging the saws to form the upper burr, they are seated between the flanges *a a'* of a metallic disk, and secured therein by means of pins *b b*, which are driven through holes in the flanges and saws made for this purpose; and in fixing the saws to form the lower burr, they are arranged between the flange *c* of the lower disk and a central boss, *c'*, and are similarly fastened by pins *b' b'*. The lower one of the burrs, it will be seen, is fixed to a spindle, *d*, through which motion is transmitted to the same, while the upper one is provided with a flaring central hopper, *e*, to conduct the grain to the grinding-faces.

In constructing my mills I may make the burrs of any size which may be desired; but for the purposes for which it is mainly intended I make them from four to six inches in diameter, which latter size will grind from eight to ten bushels of grain per hour.

In defining more clearly my invention, I would state that I do not claim, broadly, a series of toothed rings, but only a series of concentric cylindrical saws about one-quarter of an inch in thickness, (more or less,) combined with a flanged disk, and secured by pins or bolts passing through the flanges and the plain end of the cylindrical saw.

The distinctive merits of this arrangement are as follows: The formation of the saws in cylindrical shape not only gives an indefinite amount of metal to be worn down by filing, thus imparting great durability to the burr to meet the requirements of its special use, but said cylindrical form affords also a means of attachment, which attachment is not reached or affected by the wear incident to the filing, and whereby the saws are always rigidly held in place and a uniformly-serrated face always preserved for the burr, irrespective of wear.

Having thus described my invention, what I claim as new is—

A series of concentric cylindrical saws, C C^1 C^2 C^3, combined with a flanged disk, and secured therein by pins or bolts passing through the flanges of the disk and the plain end of the cylindrical saws, substantially as described.

DANIEL HESS.

Witnesses:
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