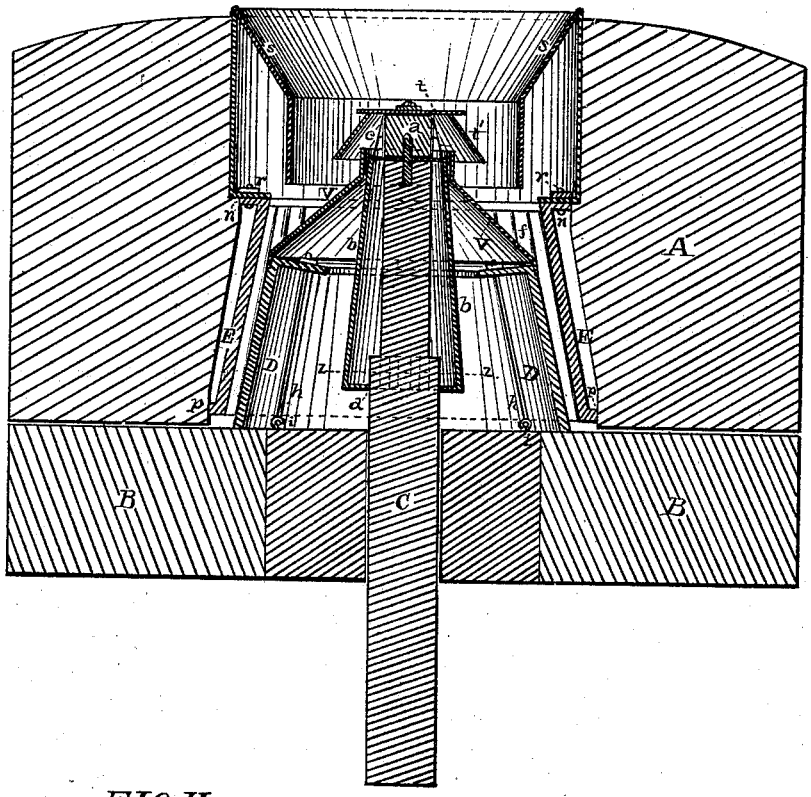
2 Sheets—Sheet 1.

J. W. PRICE.
Grinding-Mill.

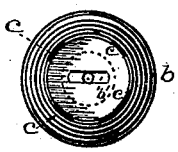
No. 203,645. **Patented May 14, 1878.**

—FIG. I.—



—FIG. II.—

—FIG. III.—



—WITNESSES:—

Chs E Lewis.

Jno R Shedden

—INVENTOR.—

James W. Price

By his Atty

Chas B. Mann

J. W. PRICE.
Grinding-Mill.

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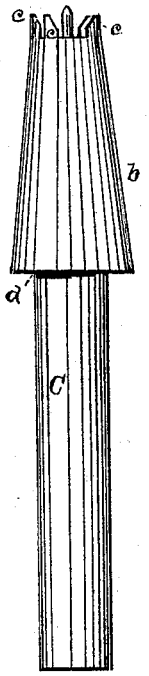
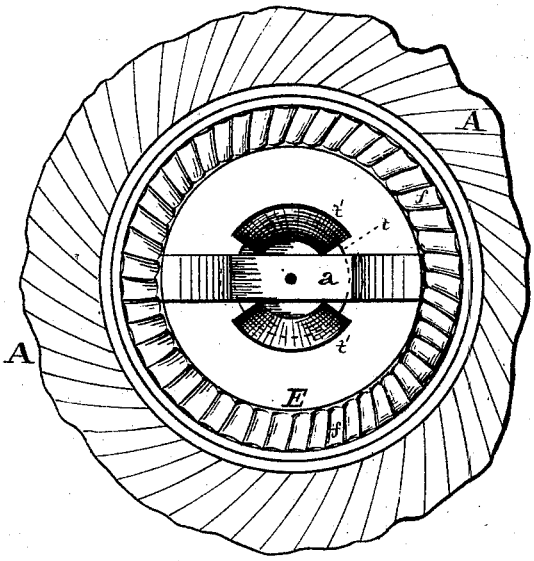
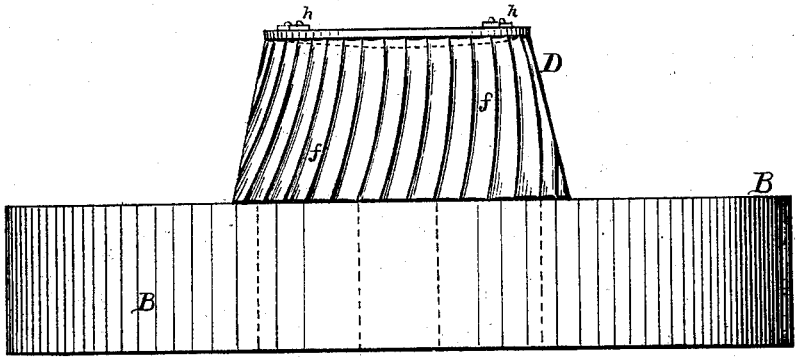
—FIG. IV.—



—FIG. V.—



—FIG. VI.—



—WITNESSES.—

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UNITED STATES PATENT OFFICE.

JAMES W. PRICE, OF MICHIGANTOWN, INDIANA.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **203,645**, dated May 14, 1878; application filed February 19, 1878.

To all whom it may concern:

Be it known that I, JAMES W. PRICE, of Michigantown, in the county of Clinton and State of Indiana, have invented a new and useful Improvement in Millstones, which is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a central vertical section; Fig. 2, a cross-section of driver and spindle through the line *z z* in Fig. 1. Fig. 3 is a top view of driver and spindle. Fig. 4 is a side view of same. Fig. 5 is a view of lower face of runner. Fig. 6 is an elevation of bed-stone and grinding-cone.

My invention relates to an improvement in the grinding parts of flour-mills, and will first be described in connection with the drawings, and then pointed out in the claims.

It is well known to millers that grain partially or coarsely ground by running the stones well apart, and the chop then passed through a second time, is reduced to an evenness or uniformity impossible to attain by once grinding. The importance of keeping the stones cool during the process of grinding, which is effected by running the upper stone high, is also well known to millers; but a desideratum is a mill-burr stone having suitable grinding or crushing devices in the eye, whereby the grinding may be effected and finished in one operation, and the stones run far enough apart to prevent heating.

Referring to the drawings, A represents the runner-stone; B, the bed-stone; C, the spindle, upon which the runner is balanced by the rynd or bridge *a*. The driver *b* is tubular shaped, and encircles the spindle. Its upper end is slotted, as shown in Fig. 3 at *b'*, to permit the passage of the spindle-point, and has four upwardly-projecting lugs, *c*, which embrace the bridge. Its lower end has inwardly-projecting knuckles or cogs *d*, that mesh with corresponding cogs on a collar, *e*, on the spindle. Thus arranged, the driver operates the runner-stone at the point of suspension.

D represents a grinding-cone, made of case-hardened iron, the corrugations *f* being arranged in a manner similar to those in the hand coffee-mills so common for family use. This cone is bolted to the bed-stone or to the bush by four bolts, *h*, engaging with hooks *i*.

E represents the eye-iron grinder set in the runner-burr, and is made in the same manner as the grinding-cone attached to the bed-stone, except that the corrugations or grinding-surface is on the inside.

n at the top and *p* at the bottom represent perpendicularly-turned faces, fitting in corresponding parts in the eye of the runner-stone. In the bottom face *p* of the iron eye-grinder two vertical grooves (not shown in the drawing) are formed, into which fit lugs, (not shown,) placed correspondingly in the eye of the stone. Thus provision is made to prevent the iron from turning and to permit its vertical adjustment.

An annular casing of iron is fitted in the eye of the stone from the upper side, and secured thereto, and has attached at the lower part a ledge projecting inwardly, to which the top outwardly-turned flange of the eye-grinder is adjusted by the set-screws or bolts *r*, whereby it may be raised or lowered to crush coarse or fine.

The letter S represents the funnel entering the eye of the burr. *t* is a plate, from which a hood, *t'*, depends, covering the rynd, spindle, and driver. *v* is a cap, its lower rim fitting closely on top of the cone D, while the top passes up under the hood, and is open to allow the driver to turn freely. This cap prevents the grain from passing in and around the driver and spindle.

In operation, the grain passes in at the funnel, and thence to the eye-grinder—that is, between the grinding-plates D E—and in passing down to the face of the stones it is crushed or cracked into a coarse chop, the face of the stones then rapidly finishing the grinding, leaving the chop in a cool condition, and more evenly ground than can be done by one grinding of the stones alone.

By my improvement, which I call the "eye-grinder," less power is required, the crushing of the grain being done near the center of the burr, where the power is most effective. The burrs will run longer without requiring dressing, the chop is not heated as in the usual mode of grinding, and is more evenly ground, and makes a fairer flour.

When worn, the grinding-cones can be replaced with but little cost.

I do not claim, broadly, a device for operating the runner-stone at the point of suspension, for I am aware such has been done before; nor do I claim the combination of grinding-cones with the bed and runner stones, but limit my claims as hereinafter set forth.

Having described my invention, I claim and desire to secure by Letters Patent—

1. The tubular-shaped driver *b*, having a slot, *b'*, in its upper end, and the upwardly-projecting lugs *c*, embracing the bridge, and its lower end provided with inwardly-projecting cogs *d*, which engage with the spindle, in combination with a runner-stone balanced on the spindle by a bridge, as shown and described.

2. The annular iron casing, provided at its lower part with an inwardly-projecting ledge, having set-screws *r*, and secured in the runner-stone from the upper side, in combination with the eye-grinder E, having at the top an outwardly-turned flange for adjustment by the set-screws, and the bottom face *p*, which fits in a corresponding part in the stone, as shown and described, and for the purpose specified.

3. In combination with the funnel and the grinding-cone, the plate *t*, depending hood *t'*, and cap *v*, arranged as shown and described.

JAMES W. PRICE.

Witnesses:
WILLIAM E. DOUGLASS,
JOSIAH L. BOYL.