

(No Model.)

2 Sheets—Sheet 1.

A. J. ROBINSON.
GRINDING MILL.

No. 470,601.

Patented Mar. 8, 1892.

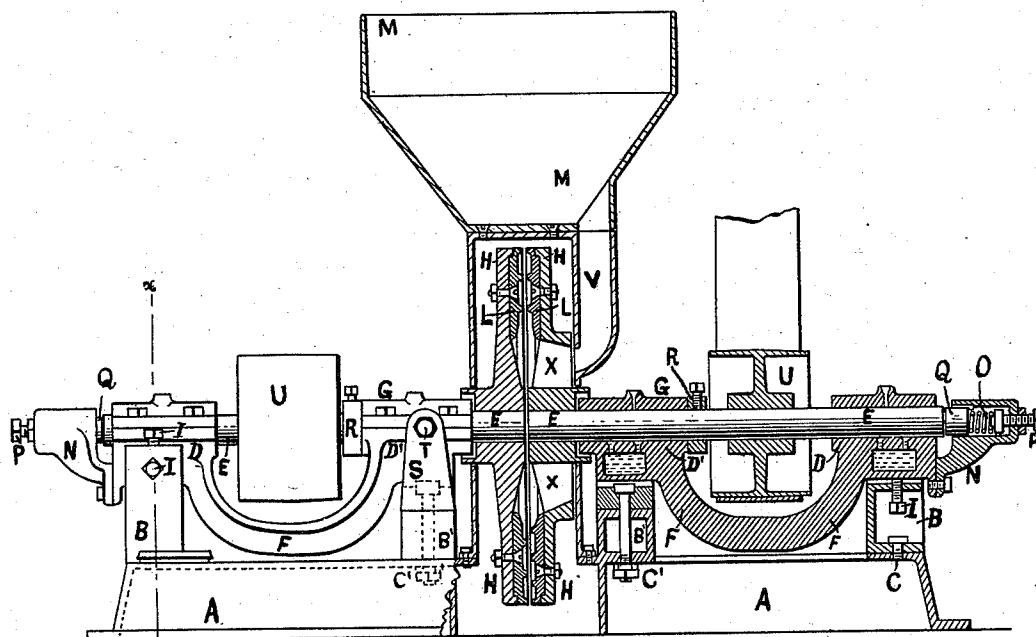


Fig. 1.

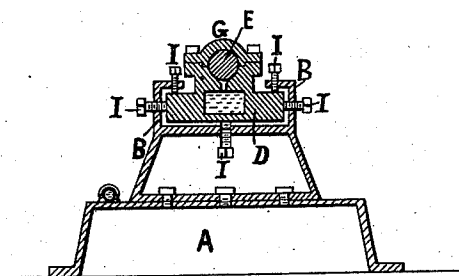


Fig. 2.

Witnesses
Thomas H. Hobday.

E. J. Emanuel

Inventor

Aaron J. Robinson,
 Sylvanus Walker,
 Attorneys

(No Model.)

2 Sheets—Sheet 2.

A. J. ROBINSON.
GRINDING MILL.

No. 470,601.

Patented Mar. 8, 1892.

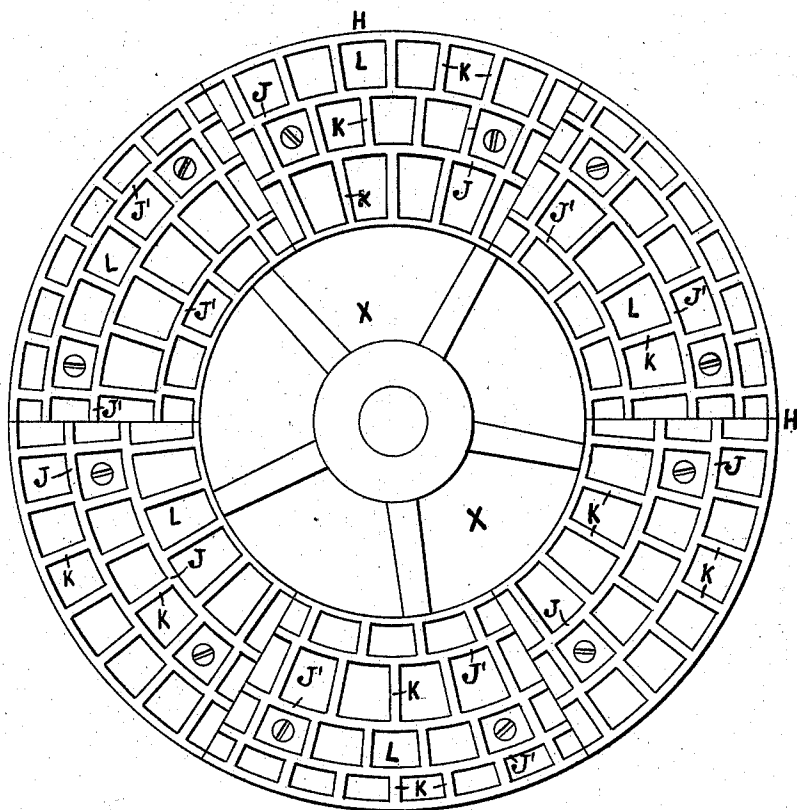


Fig. 3.



Fig. 4.

Witnesses:
Thomas W. Hobday
E. E. Emanuel

Inventor.
Aaron J. Robinson,
By Sylvanus Walker,
Attorney

UNITED STATES PATENT OFFICE.

AARON J. ROBINSON, OF FREMONT, NEW HAMPSHIRE.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 470,601, dated March 8, 1892.

Application filed June 2, 1891. Serial No. 394,881. (No model.)

To all whom it may concern:

Be it known that I, AARON J. ROBINSON, of Fremont, in the county of Rockingham and State of New Hampshire, have invented a new and useful Improvement in Grinding-Mills, of which the following is a specification.

The object of my invention is to insure the grinding-plates being kept in true planes, or the grinding-faces thereof parallel with each other, and of such form as to increase their grinding capacity over those of a similar construction heretofore employed and now in use for grinding corn and similar grain or other substance; and it consists in the construction, combination, and arrangement of the different parts of the mill, as hereinafter more fully described, and specifically set forth in the claims.

In the drawings hereto annexed, Figure 1 represents a vertical central longitudinal sectional elevation of a grinding-mill constructed in accordance with my invention. Fig. 2 represents a vertical transverse section of the journal-bearing and supporting-frame, taken at the point indicated by the lines *xx* in Fig. 1. Fig. 3 represents an elevation showing the face of one of the grinding-plates detached, drawn on an enlarged scale. Fig. 4 represents a section through one of the sections forming the disk of one of the grinding-plates, showing the form of the radial cutting or grinding ribs.

Reference being had to the drawings, which form a part of this specification, A represents the base or bed plate of the mill, which is constructed of cast-iron, forming a strong rigid foundation, upon which are mounted and firmly secured the supports B by bolts C in the usual manner, as shown.

Now in order that the two journal-bearings D D' of each journal or axle E of the grinding-plates may be rigidly held or kept in true horizontal line with each other, I connect or form the same rigidly together by means of a yoke-frame F, cast in a continuous piece with bearings D D' at each end portion thereof, as shown in Fig. 1. These bearings are each provided with the common caps G, provided with oil-holes, and the said bearings D D' with stuffing-boxes, as usual, or oil-chambers with wicks. To the inward ends of the said journals or axles E are secured the cir-

cular disks H, being keyed and rigidly held thereon in a very firm manner and provided with a series of section-plates L, secured in position thereon by screw-bolts or in any suitable manner, as desired, and are each provided with radial grinding-ribs K and circular feeding-ribs J, formed and arranged as hereinafter described. Now it will be evident that it is very essential that the grinding-plates shall be very nicely adjusted as respects their grinding-faces and that the same shall be kept exactly parallel and in true position with each other, in order that the opposite grinding-plates may have their faces brought close together when running at a high rate of speed without liability of coming in contact. I effect or produce this much-desired result by forming the journal-bearings D D' separate from the bed-plate A and supports B, and connect the same therewith adjustably by means of the several set-screw bolts I, as shown in Fig. 2.

To provide against injury to the faces of the grinding-plates in case a nail, piece of iron, or other hard foreign substance should be accidentally placed in the hopper M with the grain or material to be ground, I provide a bracket N at the outward end of the journal or axle E, containing a spiral spring O, adjusted by a suitable set-screw P and seated at its opposite end or having a bearing against the friction-plug Q, which contacts with the end of the said journal or axle E, which is provided with a collar R to prevent movement in the opposite direction longitudinally by contact with the end of the inward journal-bearing D', as shown. The said inward journal-bearings D' are secured to the vertical hangers or supports S, which are secured in position by the bolts C', by bolts T, the inward ends of which form pivots, which enter sockets or cavities formed in the opposite sides of the said bearings D', so that the opposite outward bearings D may be so adjusted by means of the said set-screws I, raising or lowering the same, as may be required, to bring the said axles or journals and grinding-plates into true lines with each other, as above described. The said axles or journals E are each provided with a suitable belt-pulley U, whereby the said grinding-plates may be rapidly revolved in opposite directions to grind

the grain or other material placed in the hopper M and passing downward through the vertical chute V and entering between the grinding-plates through the openings X, 5 formed near the hub in one of the said circular disks H, carrying the said grinding-plates L, which are formed of suitably-hardened or tempered steel, their radial grinding-ribs K having inwardly-beveled cutting-edges in 10 cross-section, as shown in Fig. 4, whereby the grinding is very much accelerated. The segmental feed-controlling ribs J, formed on the sections of the grinding-plates, do not coincide with the feed-ribs J' on the adjacent 15 grinding-plates, being in greater or less numbers on each alternate plate, as clearly shown in Fig. 3, which tends to prevent clogging or feeding too rapidly to obtain the best results.

It is important and essential that the successful operation of this class of grinding-mills is enhanced by setting up and retaining or keeping the bed-plate and the journals, shafts, or axles of the same perfectly true and level, which can be easily ascertained by applying thereon a spirit-level or providing one 25 therewith in any suitable manner desired.

Having thus described my invention, I claim—

1. In a grinding-mill, the combination, with 30 the shaft E, having section grinding-plates L, provided with inwardly-beveled grinding-ribs K, of the connecting yoke-frame F and jour-

nal-bearings D D', each formed in one continuous piece, supports B, having vertical and horizontal set-screws I, and the supports S, 35 having the pivot-bolts T, substantially as described.

2. The combination, with the shaft E, having grinding-plates L, of the connecting yoke-frame F and journal-bearings D D', adjust- 40 ably mounted within the supports B, having the vertical and horizontal adjusting set-screws I, and the supports S, having pivot-bolts T, whereby the said bearings may be kept in true line and the grinding-plates in position, 45 as described, as and for the purposes set forth.

3. The adjacent section grinding-plates L, having unequal segmental feed-ribs J and J', provided on each alternate plate extending 50 around the outward portion of the face of the disk, substantially as shown and described, as and for the purposes set forth.

4. In a grinding-mill, the combination of the connecting yoke-frame F and journal-bearings D D', formed in one continuous piece, 55 the journals E, and grinding-plates L, supports B, having adjusting set-screws I, and the supports S, having the pivot-bolts T, substantially as described.

AARON J. ROBINSON.

Witnesses:

SOPHRONIA A. FOLLETT,
IDA M. FOLLETT.