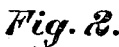
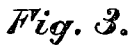
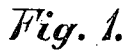


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ROLLER MILL.

No. 470,235.

Patented Mar. 8, 1892.



L. S. Davis.

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By his.

Edward G. Dewald

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UNITED STATES PATENT OFFICE.

EDWARD G. DEWALD, OF CINCINNATI, OHIO.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 470,235, dated March 8, 1892.

Application filed May 18, 1891. Serial No. 393,113. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. DEWALD, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Roller-Mills, of which the following is a specification.

My invention relates to roller grinding-mills. Its objects are to provide a convenient means for trammings the rolls, adjusting them to working position, and preventing injury to the rolls, and also to provide improved means to hold the movable roll to its working position with elastic pressure and readily throw it out of working-contact when desired.

With these objects in view my invention consists in the peculiar combination and arrangement of the several parts shown in the accompanying drawings, and particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is an end elevation of a double-roller mill provided with my improvements. Fig. 2 is a vertical transverse sectional view, upon a greatly-enlarged scale, through one pair of roll-bearings and their connections. Fig. 3 is a vertical sectional view taken in different plane through line *x x* of Fig. 2, looking to the right. Fig. 4 is a vertical section through line *y y* of Fig. 2, looking to the left.

Referring to the parts, A represents the outer casing of the machine. This is of ordinary construction and need not be specifically described.

Suitably mounted upon the ordinary framework of the machine or made a part of it, as desired, are roll-bearing supports B, one upon each end of the machine. Mounted upon these supporting-plates B are the bearings C for the fixed rolls C' and the bearings D for the movable roll D'. Both ends of the machine are precisely alike, so that a description of one set of roll-bearings and their connections will answer for all. The fixed roll-bearing C has a downwardly-projecting boss *c*, which enters the slot in support B. The lug is perforated to receive the journal-pin *c'*, which crosses the slot in the plate B. The base of

the bearing C rests upon the ends of two screws *b b*, upon which it is firmly held by the screw E, which passes freely through the base-plate B and is tapped into the base of bearing C. The under side of plate B has a concave depression around the screw-hole to fit the convex face of a washer *e*, which passes freely over the shank of the bolt. The bearing C is transversely perforated to pass the eyebolt F, which passes freely through this perforation into an open box formed in the bearing, and through a spiral spring G, one end of which rests against the bearing and the opposite end against a nut *f* upon the end of the bolt by which the tension of the spring is regulated. The movable roll-bearing D rests upon the support B and is held to it by a screw H, which passes through an elongated slot in the support B and is tapped into the bearing D. A large washer *h* is interposed between head of bolt H and the under side of the support B. The bolt is tightened up sufficiently to hold the bearing upon its seat, but not so tight as to prevent it from sliding to separate the rolls when desirable. The inner end of the bearing D is slotted to receive the eye *f'* of the bolt F and an eccentric I within it. The eccentric is keyed or splined upon a shaft J, which has its bearing in sides of the bearings D. Upon the outer end of this shaft is secured a lever *j*, by which the eccentric I is turned to separate the rolls or bring them to working position. The levers upon opposite ends of the machine are connected by rods *j'*, as shown in dotted line, Fig. 1, and the levers upon the same end of the machine may by suitable connections be coupled to move in unison.

In order to prevent the rolls from striking when they are brought to working position, I have provided a screw-bolt F with two nuts *f² f³*. The nut *f²* by coming in contact with the inner wall of the bearings C prevents the roll coming in actual contact and the jam-nut *f³* holds the adjustment. By this means the rolls may be adjusted to the desired position and each end may be adjusted independently of the other to compensate for any unevenness in the wear of the rolls. The plate B has upwardly-projecting flanges *b²*, which are perforated to freely pass the screw-

bolt K, which is tapped into the bearing D and secured against turning by a set-screw *k*. The outer end of the bolt K is screw-threaded and fitted with a hand wheel-nut *k'*, which is
 5 locked upon the bolt in the desired position by a jam-nut *k*². By this means the roll D' may be adjusted at either end, and the nut *k'* serves as an additional stop to prevent the rolls from coming in contact.

10 It will be seen from the foregoing that the movable rolls D' are adjustable horizontally to any desired position and that the fixed roll C may be readily adjusted both vertically and horizontally at either end independently
 15 of the opposite end, so that the rolls may be brought and kept in true working alignment and without danger of injury by rubbing contact with each other. The means I have shown for accomplishing these results are very
 20 simple and reliable and are the best known to me. There may, however, be many mere mechanical changes made in some of the parts without departing from the spirit and scope of my invention. Hence I do not limit myself
 25 to the precise details shown.

What I claim is—

1. The combination of the frame, the roll-bearing support B, the roll-bearings C D, mounted thereon, the spring-pressed eyebolt
 30 F, yieldingly connecting said bearings, the eccentric I in the eye of said bolt, the shaft J, and lever *j* for turning said eccentric for the purpose of separating the rolls or bringing them in working contact, substantially as
 35 shown and described.

2. The combination of the roll-bearing support B, the adjusting-screws *b b*, passing up through said support, the stationary roll-bearing C, having downwardly-extending perforated boss *c* projecting into a slot in said support, the pin *c*, pivotally connecting the bearing to its support at one end, the opposite end
 40 resting upon said adjusting-screws, and the

bolt F to hold the bearing when properly adjusted, substantially as shown and described. 45

3. The combination of the roll-bearing support B, the roll-bearing D, mounted to slide upon said support, the transversely-perforated roll-bearing C, the eyebolt F, eccentrically
 50 journaled in the movable support D and passing through the fixed bearing C, the spring G and nut *f* to draw the movable roll in the direction of the fixed roll, the nuts *f*² *f*³ to stop the rolls in working contact, the shaft J, journaled in the movable roll-bearing D, the
 55 eccentric I, fixed upon said shaft and passing through the eye *f'*, and the lever *j* to actuate said eccentric for the purpose of throwing the rolls apart, substantially as shown and described. 60

4. In a roller-mill, the combination, substantially as hereinbefore set forth, of the bearing-support B, the fixed roll C, pivoted in said support, the adjusting-screws *b b* for adjusting said roll the screw E for holding the
 65 adjustment, the roll-bearing D, mounted to slide upon its support, the bolt H and washer *h*, holding the bearing in sliding contact with its support, the shaft J, journaled in the bearing D, the lever *j*, the eccentric I, fixed upon
 70 said shaft, the bolt F, having an eye *f'* journaled upon said eccentric and passing through the fixed bearing C, the cap-nut *f* upon the end of said bolt, the spring G, coiled around said bolt between its nut and the bearing C,
 75 the nuts *f*² *f*³, the bolt K, secured in the bearing D and passing through flange *b*³ of the bearing-support, the wheel-nut *k'*, and jam-nut *k*² for adjusting the roll D' in relation to the fixed roll, substantially as shown and described. 80

EDWARD G. DEWALD.

Witnesses:

GEO. J. MURRAY,
 FRANK S. DAVIS.