

(No Model.)

2 Sheets—Sheet 1.

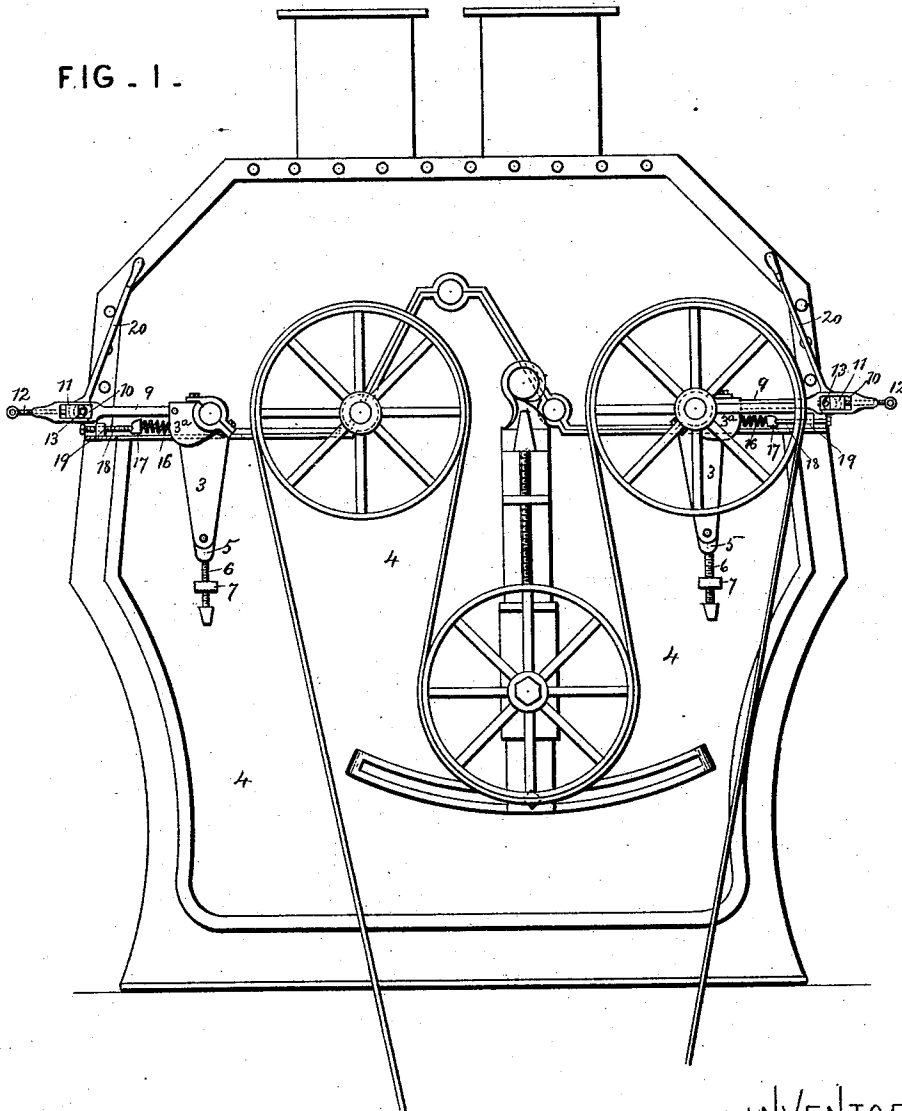
J. M. CASE.

ADJUSTING AND LEVELING DEVICE FOR ROLLER MILLS.

No. 297,916.

Patented Apr. 29, 1884.

FIG. 1.



ATTEST-
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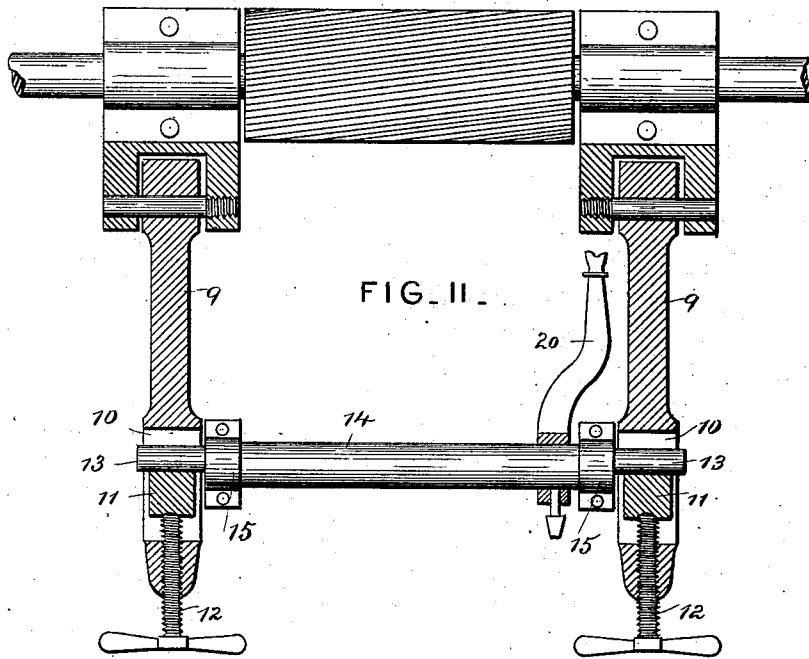


FIG. II.

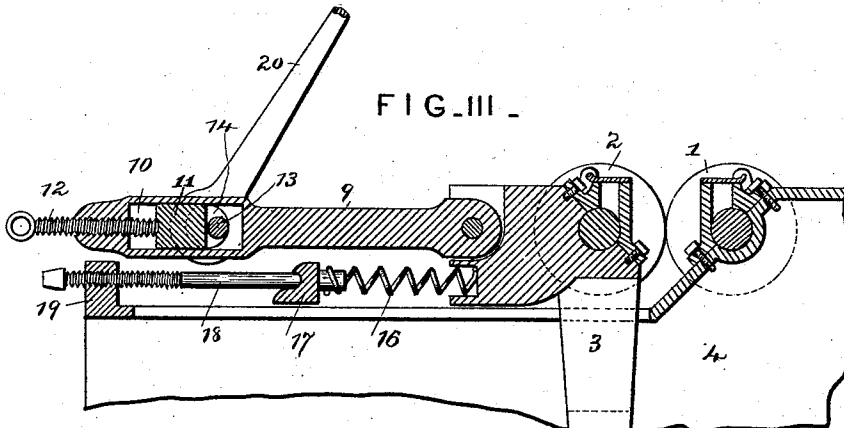


FIG. III.

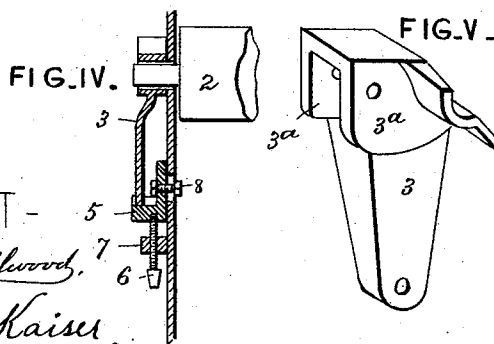


FIG. IV.

FIG. V.

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UNITED STATES PATENT OFFICE.

JOHN M. CASE, OF COLUMBUS, OHIO, ASSIGNOR TO THE CASE MANUFACTURING COMPANY, OF SAME PLACE.

ADJUSTING AND LEVELING DEVICE FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 297,916, dated April 29, 1884.

Application filed March 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. CASE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Adjusting and Leveling Devices for Roller-Mills, of which the following is a specification.

My invention relates to devices for leveling the rolls or adjusting them vertically, and adjusting their distance asunder to regulate the extent of the break and prevent their clashing together.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a side elevation of a four-roller mill with my invention applied. Fig. II is a horizontal section of the devices for regulating the distance asunder of the rolls and throwing them apart to prevent choking. Fig. III is a vertical sectional elevation of the mechanism for effecting both adjustments. Fig. IV is a vertical section of the mechanism for leveling the roll, the section being taken at right angles to the cutting-line of Fig. III. Fig. V is a perspective view of the lower section of the journal-box of the movable roll and its supporting-arm.

1 represents the stationary and 2 the movable roll, which latter has its bearings in the upper ends of rocking arms 3, which work near their upper ends within grooves formed in the flanges of the case 4, and fit at their lower extremities in concave seats in follower-blocks 5. The blocks 5 are adjusted vertically, as may be necessary to level the rolls, by screws 6, having bearings in lugs projecting outward from the case 4. The screws 6 are provided at their lower extremities with angular heads for the reception of a wrench for turning them. The follower-blocks are of L shape, and each one receives a bolt, 8, which works within a slot in the case, and receives on the inside thereof a nut, whereby said block may be securely locked in any position in which it may be set, thereby affording greater security against displacement of the rolls. The head

or upper portion of each of the arms 3, in which the journal-bearing is formed, may be of any suitable construction, but is preferably constructed, as represented in Fig. 5, with a pair of downwardly-projecting cheek-pieces, 3^a, between which is received the end of a link, 9, held by a pin or any other suitable means. One of these links is employed at each end of each movable roll. It is formed near its outer extremity with an opening, 10, within which works a follower-block, 11, which is operated by a hand-screw, 12. The follower-block 11 bears against an eccentric end, 13, on the end of a shaft, 14, which extends from side to side of the machine, and is held to the casing thereof by suitable boxes, 15. It will be seen that the shaft 14 constitutes a bearing for the screw 12 through the interposed follower-block 11, and that therefore, when the screw 12 is driven into the end of the link 9, the roll 2 will be drawn away from the roll 1. The rolls may thereby be set at the desired distance asunder, and are held in that position with a yielding pressure by a spring, 16, which bears at one end in a socket, or is otherwise held in contact with the journal-box. The other end of the spring is secured to a follower-block, 17, which is operated by a screw, 18, having its bearings in a lug, 19, on the case. These springs are designed to hold the rolls together with a pressure sufficient to effect the reduction of the material, while permitting them to separate in the event of the falling of any hard substance between them. The pressure may be regulated at will by the screw-followers 17 18.

It is often necessary in practice, whenever too great quantities of material drop down between the rolls, to throw them apart to allow the surplus material to pass through; otherwise it would clog the rolls and cause the belts to slip. For effecting this separation of the rolls I employ a lever, 20, secured to the shaft 14, which lever, when depressed, will cause the eccentric end 13, acting through the follower 11, screw 12, and link 9, to draw the roll 2 away from the roll 1. When it is returned to its normal position, the rolls will be returned to the precise position in which they were before such separation by the spring 16.

The subject-matter of this application was originally shown and described in my contemporaneous applications, No. 96,699 and No. 96,700, which were filed on the 31st day of May, 1883; but it does not appear in said applications in their finally-amended condition.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

10 1. In a leveling device for roller-mills, the combination, with arm 3, journal-box, and the casing having lug 7 and a guiding-slot in its flange, of block 5, clamp-bolt 8, and adjusting-screw 6, bearing in said lug, as and for the
15 purpose set forth.

2. In a roller-mill, the links 9, hand-screws 12, followers 11, shaft 14, provided with eccentric ends 13, and lever 20, in combination with suitable means for holding the rolls in grinding position with a yielding pressure, as
20 and for the purpose set forth.

3. The combination, with links 9, adjustable followers 11, and shaft 14, provided with eccentric ends 13, of the adjustable springs 16, as and for the purpose set forth.

JOHN M. CASE.

Witnesses:

HARRY E. KNIGHT,
L. M. HOPKINS.