(No Model.) 2 Sheets—Sheet 1.

J. M. CASE.

FEED BOX FOR ROLLER MILLS.

No. 297,764. Patented Apr. 29, 1884.

FIG. 1

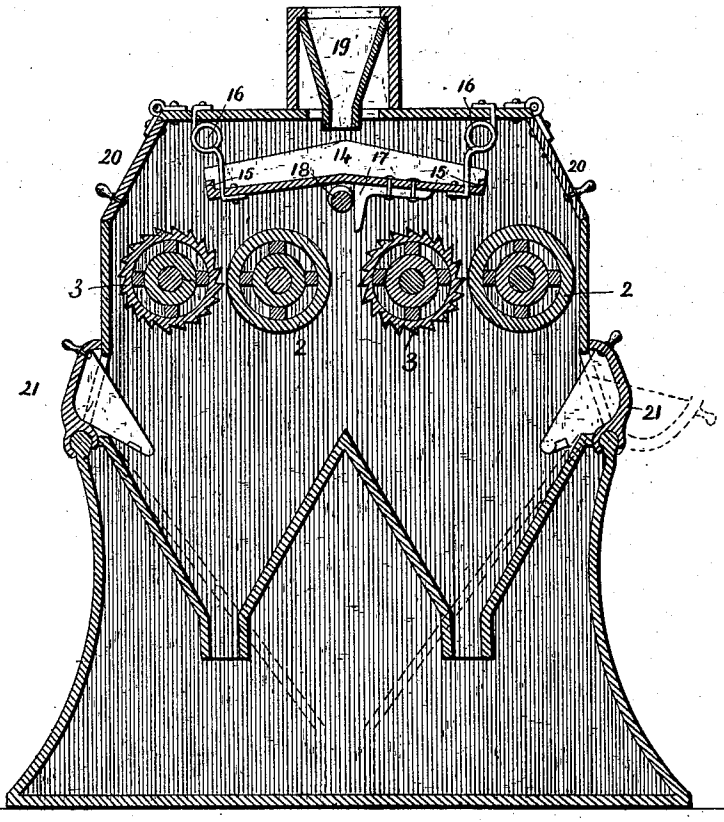
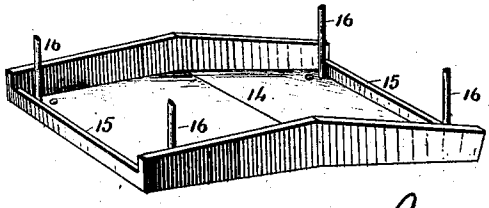


FIG. 2.



ATTEST

J. Henry Kaiser

Geo. T. Smallwood.

INVENTOR.

John M. Case

By Knight Bros

Attys

(No Model.) 2 Sheets—Sheet 2.

J. M. CASE.

FEED BOX FOR ROLLER MILLS.

No. 297,764. Patented Apr. 29, 1884.

FIG. 3.

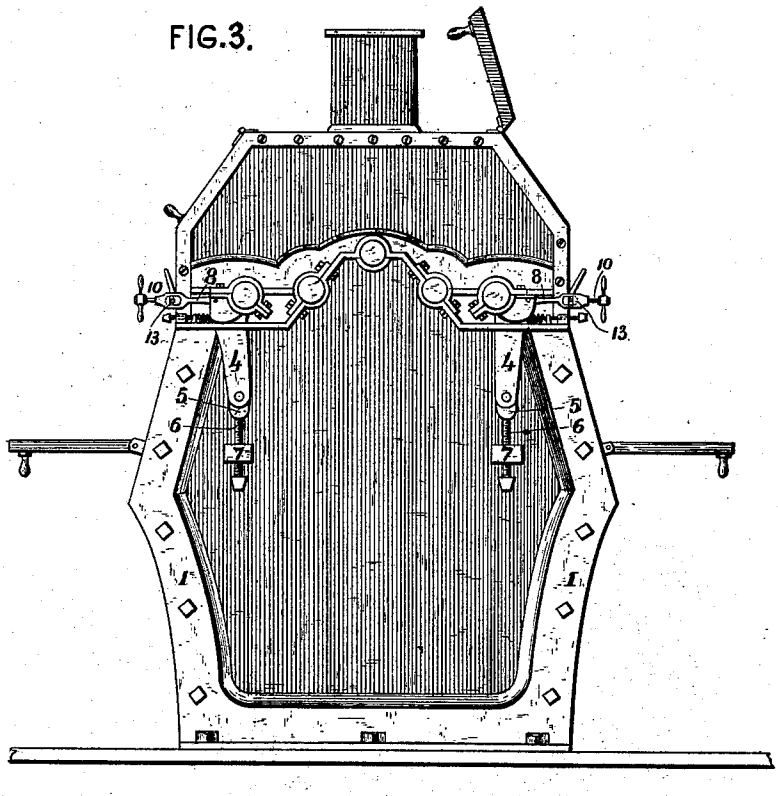


FIG. 5

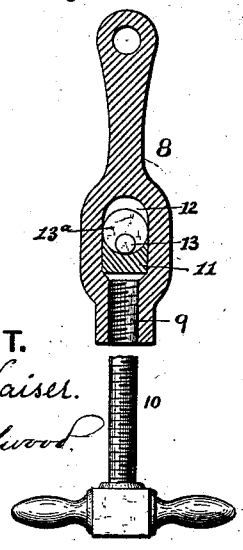
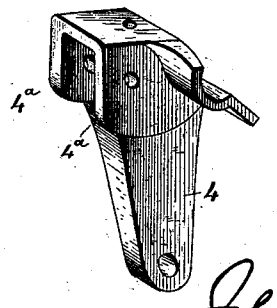


FIG. 4.



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UNITED STATES PATENT OFFICE.

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

FEED-BOX FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 297,764, dated April 29, 1884.

Application filed December 10, 1883. (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 Feed-Boxes for Roller-Mills, of which the following is a specification.

My invention relates to that class of mills in which one or more pairs of rolls are used for crushing the grain; and it consists of a feed-box suspended above the rolls by spring-hangers which are adapted by their own resilience to resist the action of an eccentric or cam and impart a counter movement to said box, as hereinafter described and claimed.

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

Figure 1 is a vertical section of a roller-mill with my improved box applied, the section being taken at right angles to the rolls. Fig. 2 is a perspective view of my improved feed-box removed. Fig. 3 is a side elevation of the complete machine, showing the means for adjusting the rolls. Fig. 4 is a perspective view of the lower section of the journal-box of the movable roll. Fig. 5 is a longitudinal section of the link for regulating the distance asunder of the rolls.

1 represents the side of the casing, which is cast at top with a flange in which are formed the lower parts of the bearings or boxes for the fixed rolls of the mill, and for the shaft employed for vibrating the feed-box.

2 3 and 2 3 are two pairs of rolls, the inner ones being the stationary rolls, having bearings in boxes partly cast in the case 1, the outer rolls being the adjustable or movable ones and having bearings in boxes formed on the upper ends of rocking supports 4. The arm of each support extends through an opening in the flange of the plate 1, and is fitted at its lower end in a concave seat in a block, 5, which is supported by a screw, 6, having bearings in a lug, 7, formed on the case. By this means the rolls may be leveled by simply adjusting the screw 6 up or down, as may be necessary. The lower part of each box 4 is formed with two flanges or cheeks, 4^a, between which the end of a link, 8, is secured by a pin. The other end of each of the links 8 is formed with a screw-threaded socket, 9, in which works a screw, 10, the end of which bears, through the medium of a follower-block, 11, in an opening, 12, in the link 8 against an eccentric lug, 13, on the end of a transverse shaft, 13^a, in the manner already described in my application No. 96,699, filed on the 31st of May, 1883. The pairs of rolls each comprise one smooth roll, 2, and one toothed, milled, or corrugated roll, 3, either of which may be used as the stationary or movable roll, as found desirable.

14 represents the feed-box, which is constructed of a floor sloping toward each side, and preferably provided with shallow bridges 15, over which the material is shaken. The box is suspended from the top of the machine by elastic straps or spring-hangers 16, which are preferably formed of steel springs, one end of each of which is fastened to a corner of the box, and the other coiled and attached to suitable fixed parts of the frame, the springs on the opposite sides of the box being coiled in opposite directions, so as to keep it normally in a central position. I prefer to employ coiled springs, as they possess many important advantages over straight ones, among which may be mentioned that, by reason of the greater length of the piece of metal employed, a coil-spring will allow a more uniform freedom of movement to the box and be less liable to snap than a straight one, all other things equal.

Attached to the bottom of the box is a lug, 17, against which works a revolving eccentric-shaft, 18, having its bearings cast in the apexes of the side plates, 1, as already described, and driven by a suitable pulley on the outside of the machine. This shaft runs through the machine parallel with the rolls, and serves to impart motion to the box 14, which is resisted by the spring-hangers 16. The material is fed to the box 14 from a hopper, 19, of any suitable construction, placed above it on the top of the machine.

It will be seen that by the use of a feeding

apparatus constructed as above described an equal and uniform quantity of material will be fed to each pair of rolls.

The case of the machine is provided with doors 20 and 21, for inspecting the feed and the product as they fall from the rolls, respectively.

I do not claim in this application the "lug 17," nor "bridges 15," nor "the combination of a duplex feed-box with two pairs of rolls," nor "means for imparting motion to the eccentric 18," for the reason that they are all claimed in my application No. 96,699, filed on the 31st of May, 1883.

The rocking support 4, which has the lower section of the journal-box for the movable roll formed thereon, is not claimed in this application; but the right is hereby reserved to claim it in a subsequent application.

I am aware that it is not new to employ flat springs to support sieves, &c., by endwise compression, and do not claim such as my invention.

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

1. The combination, in a roller-mill, of a feed-box, means for imparting motion thereto in one direction, and spring-hangers for suspending it and producing a counter movement, substantially as set forth.

2. In a roller-mill, the combination of a feed-box, coil-spring hangers for suspending said box, and means for imparting motion thereto, as set forth.

3. In a roller-mill, the combination, with a feed-box, of suitable springs coiled in opposite directions for suspending said box, and means for imparting motion thereto, as set forth.

4. In a roller-mill, the combination of a feed-box, a cam-shaft for imparting motion thereto in one direction, and spring-hangers for suspending said box and imparting a counter movement thereto, substantially as set forth.

JOHN M. CASE.

Witnesses:
OCTAVIUS KNIGHT,
L. M. HOPKINS.