

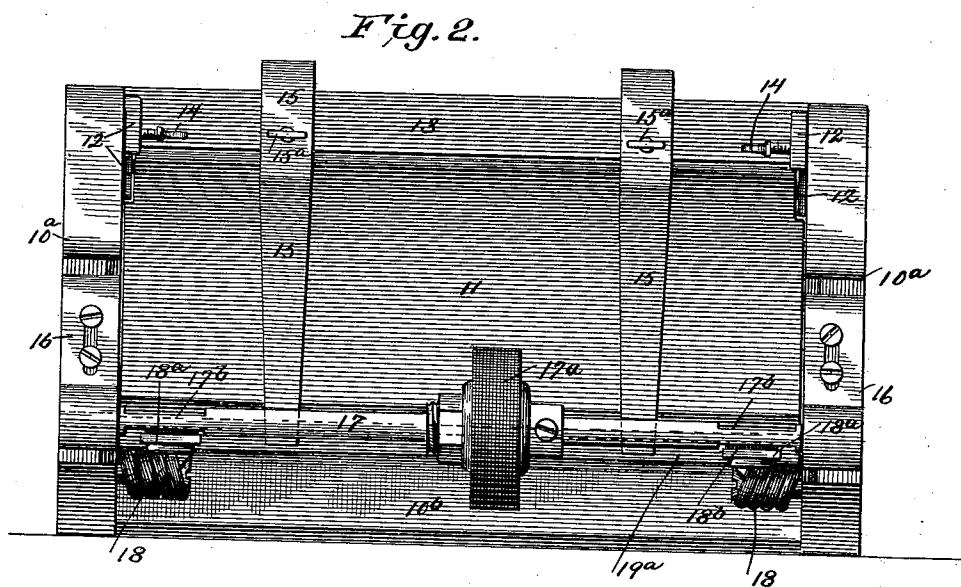
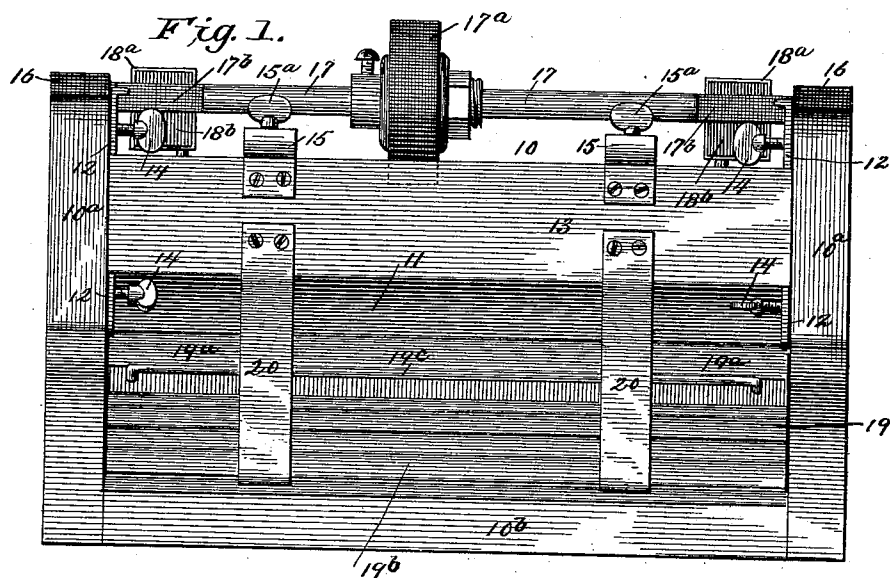
(No Model.)

2 Sheets—Sheet 1.

M. A. SWING.
FEED REGULATOR.

No. 484,064.

Patented Oct. 11, 1892.



WITNESSES:
Fred G. Dieterich
W. D. Blondel

INVENTOR:
Marcus A. Swing.
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ATTORNEYS

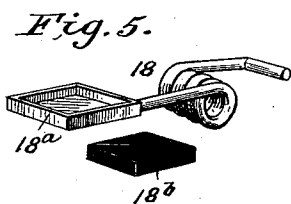
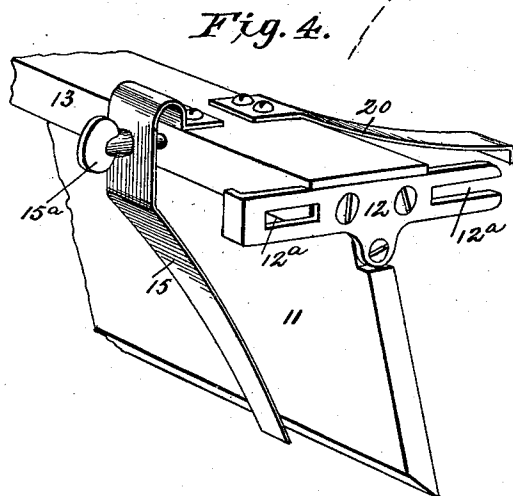
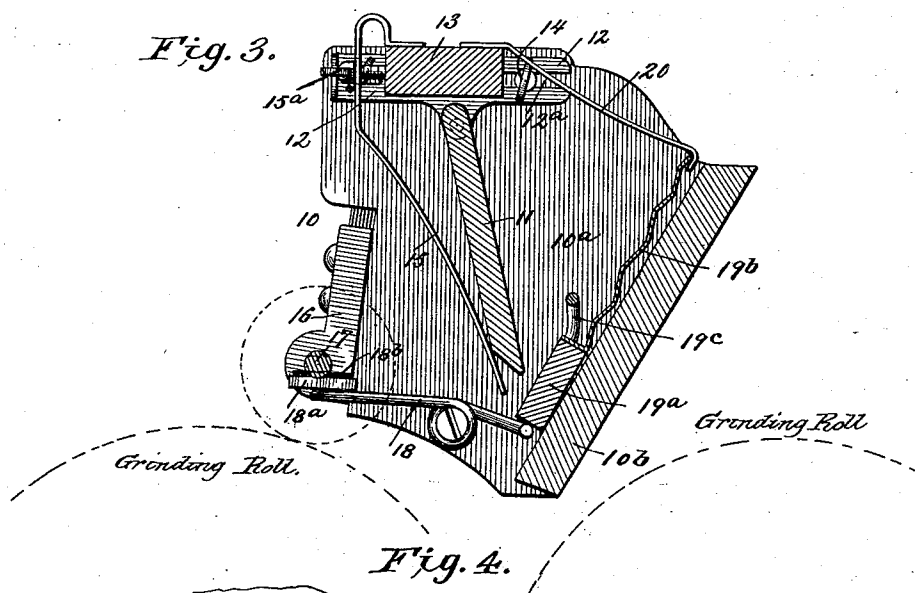
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UNITED STATES PATENT OFFICE.

MARCUS A. SWING, OF WASHINGTON, INDIANA.

FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 484,064, dated October 11, 1892.

Application filed May 16, 1891. Serial No. 393,058. (No model.)

To all whom it may concern:

Be it known that I, MARCUS A. SWING, residing at Washington, Daviess county, and State of Indiana, have invented a new and useful Improvement in Feed-Regulators, of which the following is a specification.

This invention relates generally to feed-regulators for flouring-mills, and more particularly to certain improvements upon Patent No. 416,968, granted to me December 10, 1889, the object of my present invention being to simplify the feeder described and shown in said patent, and also to provide a more efficient device which will entirely prevent any clogging or sticking of the grain, and one in which all the parts can be quickly and easily adjusted and removed.

With these objects in view my invention consists in certain details of construction and combinations of parts, as will be fully described hereinafter, and designated in the claims.

In the drawings forming a part of this specification, Figure 1 is a top plan view. Fig. 2 is a rear elevation. Fig. 3 is a transverse vertical section on line 3 3 of Fig. 1. Fig. 4 is a detail perspective. Fig. 5 is a detail view of one of the rocking arms.

In the practical embodiment of my invention I employ a hopper 10, consisting of the rigid end pieces 10^a, rigid side piece 10^b, and a pivoted fall board or gate 11, the said hopper being secured to the framework of the mill above the grinding-rolls in any suitable manner. The fall board or gate 11 is hinged at its upper end between bearing-plates 12, secured to opposite ends of the top bar 13, the said bar being secured between the upper corners of the end pieces of the hopper by means of set-screws 14, which pass through the longitudinal slots 12^a, produced in the bearing-plates 12, and enter the end pieces of the hopper. By means of the adjustable top bar the fall board or gate can be quickly and easily adjusted with reference to the rigid side piece, and, if desired, can be conveniently removed by removing the outer set of screws 14. Springs 15 are secured to the top bar 13, projecting inwardly and downwardly, and bear upon the lower portion of the pivoted fall board or gate to hold the same in proximity to the rigid side piece 10^b, said springs

being adjusted to vary the distance by means of thumb-screws 15^a, which pass through the springs and enter the top bar, as clearly shown. Adjustable bearings 16 are secured to the end pieces 10^a, near their lower ends, and in said bearings is journaled a shaft 17, said shaft having a rubber friction-roller 17^a adjustably mounted thereon, said roller being made adjustable upon the shaft to prevent the grinding-roll being worn in one particular place, and all wear can be taken up by adjusting the shaft. Near each end of said shaft are produced flat-faced reduced portions 17^b, the reduced portions at the same end of the shaft being produced at diametrically-opposite points, and the flat faces of the reduced portions upon the same side of the shaft lie in the same plane. Rocking arms 18, of spring-wire, are pivoted to the inner faces of the end pieces 10^a, near the lower ends of the same, the outer ends of said arms being provided with shoes 18^a, which rest beneath the reduced portions 17^b, said shoes being provided with leather blocks 18^b, which bear upon the shaft 17, and as they come alternately in contact with the plane and curved surfaces of the shaft, the arms are rocked up and down, as is obvious. The inner ends of the rocking arms support and operate a reciprocating feed-board, said feed-board consisting of a bar 19^a, which rests upon the inner ends of the rocking arms, a corrugated metal plate 19^b, attached to the bar and extending upward into the hopper, and a stirring-bail 19^c, attached to the upper end of the bar 19^a, which serves to agitate the grain or other material in the hopper, and the plate 19^b being corrugated longitudinally, and the corrugations having smooth surfaces, clogging and sticking of the grain is prevented. Springs 20 are attached to the top bar 13 and project downwardly toward the feed-board, the free ends of said springs being bent to fit behind the top of the corrugated plate 19^b, whereby the feed-board is held in proper position during operation.

In operation the rubber friction-roller is adjusted to bear upon any portion of one of the grinding-rolls, and as said roll revolves the shaft 17 is revolved, rocking the arms 18 in consequence of its mixtilinear surfaces contacting with the blocks and reciprocating the feed-board 19, whereby the grain or other ma-

terial within the hopper is fed between the bar 19^a and the fall board or gate 11. The top bar being adjustable, the fall board or gate can be adjusted simultaneously, and also the feed-board 19, as it is connected with the top bar by means of the springs 20. The adjustable springs 15 and the adjustable bearing 16 are also desirable and advantageous features of my invention, and by having the leather blocks 18^b within the shoes 18^a the wearing qualities of the rocking arms and the shaft-surfaces are greatly prolonged, and as these blocks can be quickly and conveniently renewed, a perfect and constant adjustment can always be had.

Having thus described my invention, what I claim is—

1. In a feed-regulator, the combination, with a hopper, of a reciprocating feed-board, rocking arms for operating said board, a revoluble shaft for operating said arms, a rubber friction-roller adjustably mounted upon said shaft, and a grinding-roll adapted to contact with and operate the friction-roller, substantially as shown and described.

2. In a feed-regulator, the combination, with a hopper, of a reciprocating feed-board, the rocking arms for reciprocating said board, a vertically-adjustable revoluble shaft for operating said arms, a friction-roller mounted upon said shaft, and a grinding-roll adapted to contact with said roller, substantially as and for the purpose described.

3. In a feed-regulator, the combination, with the corrugated feed-board, of the stirrer-bail arranged at the lower end of the same and

the rocking arms for reciprocating said board and stirrer-bail, substantially as shown and described.

4. In a feed-regulator, the combination, with a hopper, of a reciprocating feed-board, an adjustable top bar, and springs connected with the said bar and feed-board, substantially as shown and described.

5. In a feed-regulator, the combination, with a hopper, of the reciprocating feed-board composed of a lower bar, the corrugated plate, and the stirrer-bail, all arranged substantially as shown and described.

6. In a feed-regulator, the combination, with a hopper, of a reciprocating feed-board, an adjustable top bar, a pivoted fall board or gate, adjustable springs connected with the bar and bearing on the fall board or gate, and springs connecting the bar and reciprocating gate, substantially as shown and described.

7. In a feed-regulator, the combination, with a hopper, of a reciprocating feed-board, an adjustable top bar, a fall board or gate pivoted thereto, adjusting-springs attached to the top bar and bearing on the fall board or gate, springs connecting the top bar and feed-board, the spring-wire rocking arms, the shoes and blocks, the adjustable revoluble shaft having mixtilinear surfaces adapted to bear upon the said blocks, and the adjustable rubber friction-roller mounted on said shaft, all arranged substantially as shown and described.

MARCUS A. SWING.

Witnesses:

CHAS. S. RAGSDALE,
T. F. SPINK.