

W. M. JEWELL.

FEED MECHANISM FOR ROLLER MILLS.

No. 280,184.

Patented June 26, 1883.

Fig. 1.

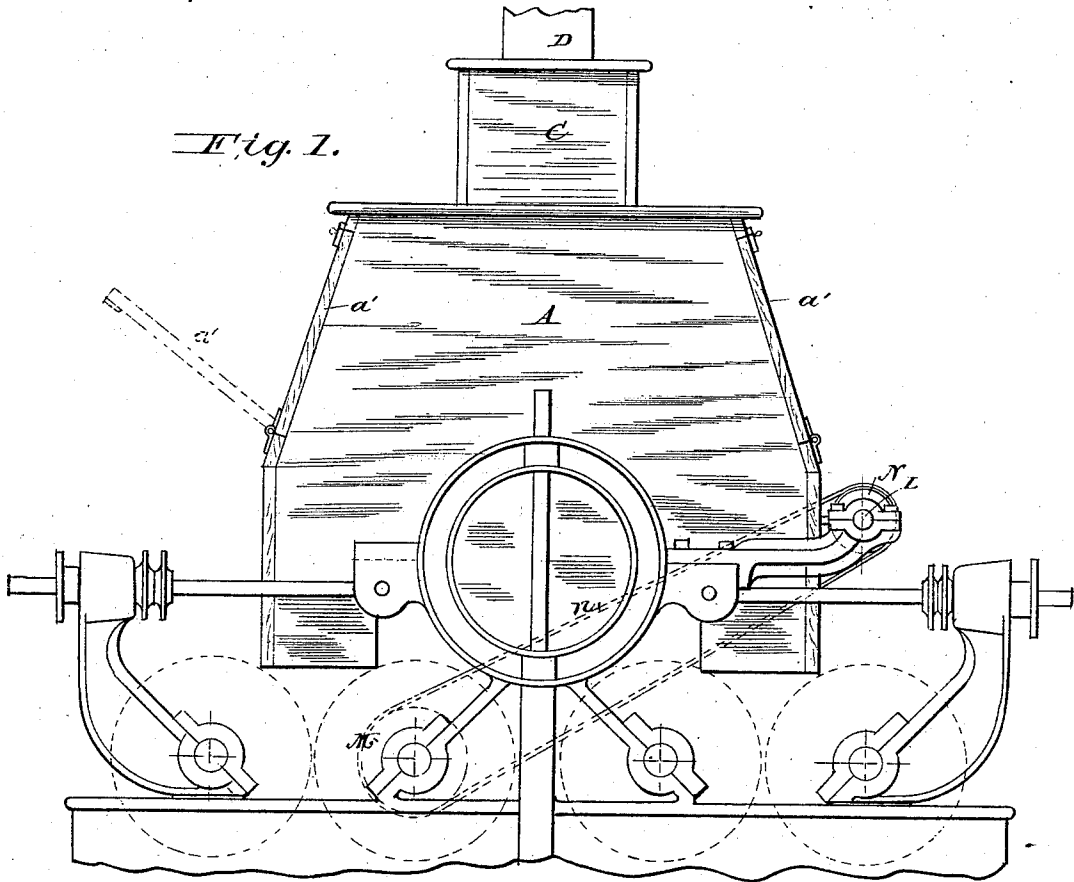
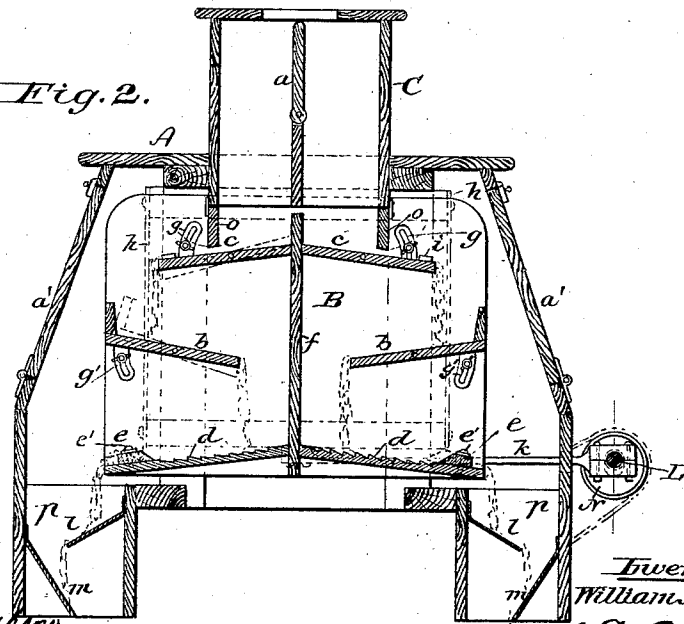


Fig. 2.



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Fig. 3.

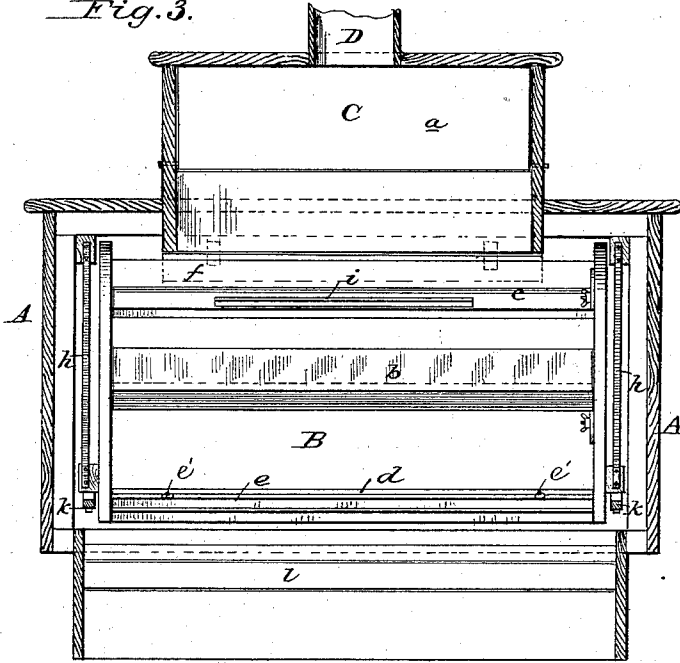
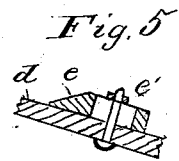
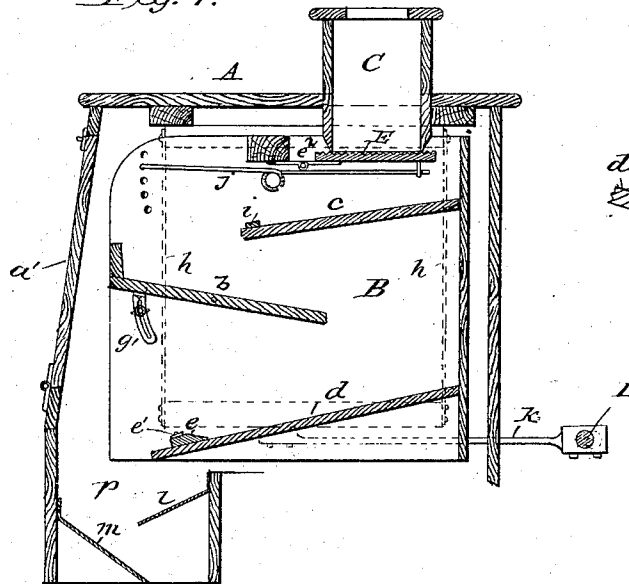


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM M. JEWELL, OF DENVER, COLORADO.

FEED MECHANISM FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 280,184, dated June 26, 1883.

Application filed April 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. JEWELL, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Feed Mechanism for Roller-Mills, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object the assurance of a steady and even feed and distribution of grain or middlings to the rollers of that class of grain-reduction mills of which the Gray patents are examples; and the invention consists, to this end, in the construction, combination, and arrangement of parts, as hereinafter specified and claimed.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of my feed applied to a Gray roller-mill, the rollers being indicated by dotted lines. Fig. 2 is a transverse section of the feed from left to right of Fig. 1. Fig. 3 is a longitudinal section of the feed. Fig. 4 is a transverse section of my feed for a single pair of rollers, and Fig. 5 is a sectional detail, enlarged, of the adjustable riffle.

A is the feed-case, and B the vibrating or shaking frame, suspended therein upon straps *h h*, of spring-steel.

C is the hopper, which, for a double machine, has a central partition, with a movable gate, *a*, to divide the incoming grain or middlings into two streams, and which gate may be thrown across one or the other of the mouths of the two compartments of the hopper to divert the grain or middlings to but a single pair of rollers, as may be desired, the normal position of this valve for a double machine using both pairs of rollers being indicated in Fig. 2.

D is the feed-spout.

The discharge end of the hopper is provided with movable gates *o*, to aid in directing and governing the discharge, and beneath the hopper, and in line with its partition, is a vertical partition, *f*, in the shaker, lengthwise thereof. Pivoted lengthwise of the shaker, and normally at opposite inclines from the bottom of the hopper, are shelves or chutes *c c*, their inclination being variable by thumb-nuts on bolts

and slotted segments *g g*, through which said bolts extend, the variation in the inclination being governed by the condition of the grain. These shelves have at their outer ends, longitudinally thereof, ridges or ribs *i*, to prevent centering of the grain thereon. The grain falls from shelves *c c* on shelves *b b* beneath, said shelves *b b* being pivoted, and also inclined, but in a reverse direction with relation to the shelves *c c*, and said shelves *b b* are similarly adjustable with bolts, thumb-nuts, and slotted segments *g' g'*. At the bottom of the shaker are placed the inclined riffles *d d*, the same being plates or boards having serrated surfaces. Adjustable riffles *e* are arranged at the outer ends of the riffle-boards *d d*. The adjustability of these riffles is secured by bolts *e'* passing from the riffle-board up through slots in the riffles, and provided with suitable retaining or cramping nuts and washers or like devices bearing upon the upper faces of the said riffles. The boards *d d* are inclined toward discharge-spouts *p p*. These spouts *p p* are provided with shelves *l m*, inclined at different angles from opposite walls of the spouts. The spouts *p p* open over the meeting faces of the subjacent pairs of reduction-rolls.

L is a shaft suitably supported upon the frame, and banded by belt *n* over pulley N to the shaft of one of the fast rollers M, and this shaft L is eccentrically connected by a pitman or link, *k*, with the shaker B, so as to impart thereto a shaking or vibratory motion, and thereby positively cause the descent of the grain or middlings from one shelf to another, through the series *c b d l m*, to the rollers. The riffle-shelves *d d* insure the breaking up of lumpy middlings.

Doors *a' a'* are provided in the feeder to gain access thereto.

In Fig. 4 I have shown my feed mechanism adapted to a machine having a single pair of rollers. In this feed I prefer to use, instead of gates *o*, a gate or bottom, E, hinged at *e'* to a cross-beam in the shaker, and supported and held normally closed by an adjustable spring, *j*, so that as the superincumbent grain or middlings overcomes the spring the bottom E drops and permits the descent of the material; but as this gate or bottom will form the subject-matter of a future application, its construction

and operation need not be herein further detailed. In this form of feed the shelf *c* may be fixed and the board *d* provided with only the movable riffle, as before described.

5 From the above description of my invention its operation is obvious and the advantage apparent.

What I claim is—

10 1. The combination, with the grain-reduction rollers, of a hopper, a series of deflecting distributing-shelves inclined in opposite directions from opposite sides of the machine, and means for imparting to said shelves a shaking or vibratory movement, substantially as
15 shown and described.

20 2. The case A and the frame B, suspended within the case A, and provided with a series of oppositely-inclined distributing-shelves, substantially as shown and described, combined
20 with a shaft, L, rod *k*, and operating mechanism to impart a vibratory or shaking motion to said frame, and the hopper and rollers of a roller-
mill.

25 3. The combination, substantially as shown and described, of the grain-reduction rollers, a hopper, a frame suspended beneath said hop-

per and over the rollers, means to shake or vibrate said frame, deflecting distributing-shelves inclined in opposite directions from opposite sides of said frame, and anti-centering ridges or ribs on said shelves. 30

4. The combination, substantially as shown and described, of the grain-reduction rollers, a hopper, a frame suspended between the two, means to shake or vibrate said frame, and inclined riffles *d*, provided with the adjustable
35 end riffles, *e*.

5. The combination, substantially as shown and described, of the grain-reduction rollers, a casing, a hopper, a frame suspended within
40 said casing, between the rollers and hopper, means to shake or vibrate said frame, shelves inclined in opposite directions from opposite sides of said frame, and discharge-spouts having deflecting-shelves inclined in opposite di-
45 rections from opposite sides thereof.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM MELLETT JEWELL.

Witnesses:

JOHN K. MULLEN,
DENNIS W. MULLEN.