(No Model.) 2 Sheets—Sheet 1.

N. W. HOLT.

FEED MECHANISM FOR ROLLER MILLS.

No. 265,081. Patented Sept. 26, 1882.

Fig. 1.

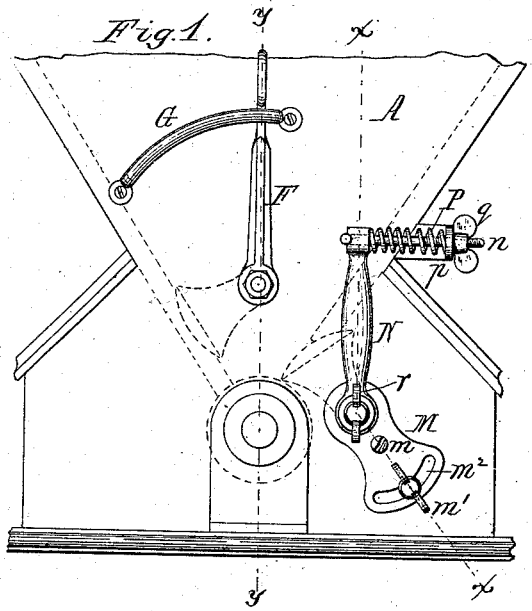


Fig. 2.

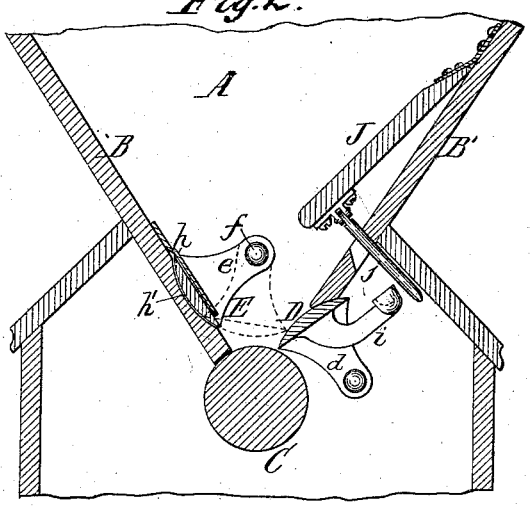


Fig. 3.

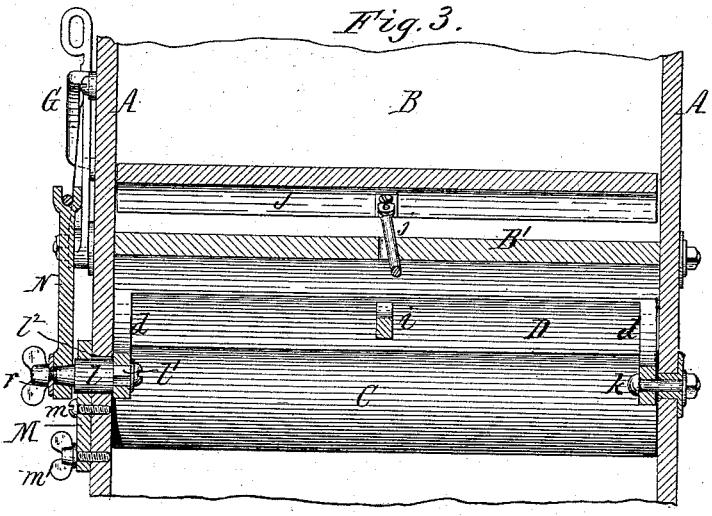
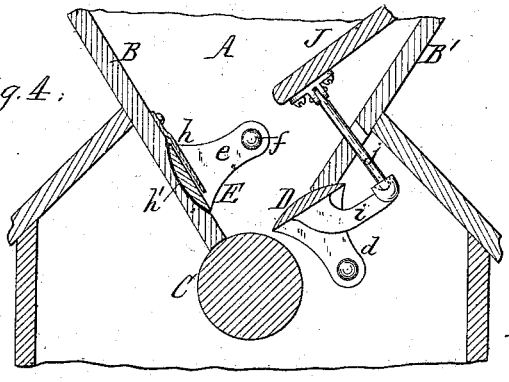


Fig. 4.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

N. W. HOLT.

FEED MECHANISM FOR ROLLER MILLS.

No. 265,081. Patented Sept. 26, 1882.

Fig. 5.

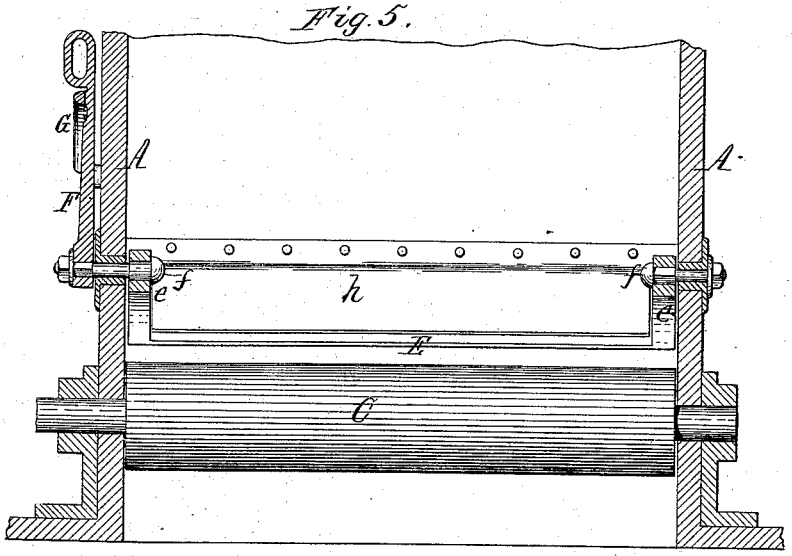


Fig. 6

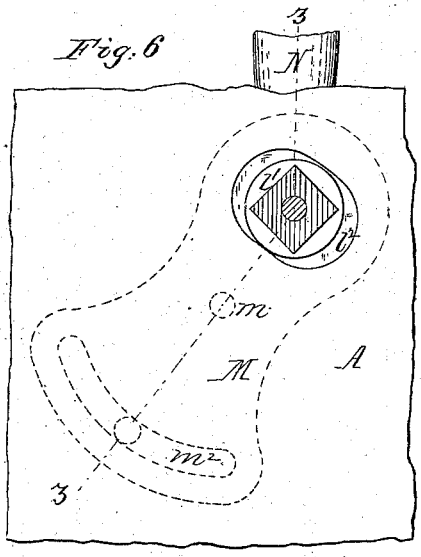
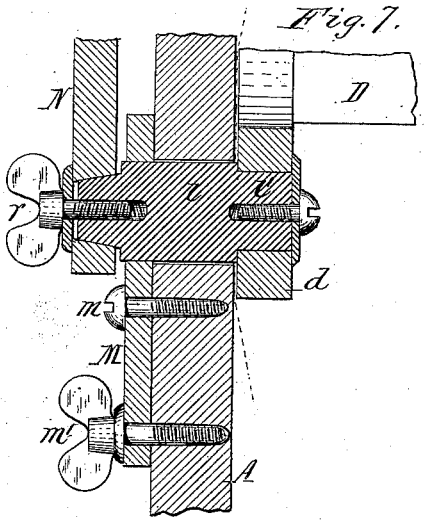


Fig. 7.



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UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 265,081, dated September 26, 1882.

Application filed January 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, NOAH W. HOLT, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Feed Mechanism for Roller-Mills, of which the following is a specification.

This invention relates to an improved feed mechanism for that class of roller-mills which are employed for the reduction of grain and similar substances; and it has for its object to facilitate the shutting off of the feed from the rollers and the adjustment of the feed-plates.

My invention consists of the improvements hereinafter described, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of a feed-hopper provided with my improvements. Fig. 2 is a vertical cross-section thereof, showing the automatic operating mechanism disconnected from the feed-plate. Fig. 3 is a vertical section in line *x x*, Fig. 1. Fig. 4 is a vertical cross-section, showing the automatic feed mechanism connected with the feed-plate. Fig. 5 is a vertical section in line *y y*, Fig. 1. Fig. 6 is a fragmentary inside view, on an enlarged scale, of that portion of the side wall of the feed-hopper to which the automatic feed-plate is pivoted. Fig. 7 is a vertical section in line *z z*, Fig. 6.

Like letters of reference refer to like parts in the several figures.

A A represent the vertical side walls, and B B′ the inclined transverse walls, of the feed-hopper of a roller-mill.

C represents the feed-roller, arranged under the discharge-orifice of each feed-hopper and running in contact with the lower edge of the inclined wall B.

D represents the automatic feed-plate, which obstructs the opening between the lower edge of the inclined wall B′ and the feed-roller.

E represents the cut-off plate, whereby the discharge-orifice of the feed-hopper is opened or closed at will without disturbing the adjustment of the automatic feed-plate D. The cut-off E consists of a plate or board of sufficient size to close the orifice of the feed-hopper when in a horizontal position, and arranged wholly within the feed-hopper, and provided at its ends with upwardly-projecting ears or arms *e*, which are pivoted to the side walls, A, of the hopper by horizontal pivot-bolts *f*. The latter project outwardly through the walls A and turn in bushings in said walls. One of the pivots *f* is provided outside of the hopper with a hand-lever, F, whereby the pivot can be turned, and the pivot is formed with a square shank fitting in a corresponding opening in the arm *e*, so that the plate E will follow the movements of the pivot.

G represents a guide-segment, which is secured to the outside of the hopper, and which bears against the outer side of the arm F. It is provided on its inner side with notches, which hold the arm F in any desired position. The lower side of the plate E is preferably curved concentric with the pivots *f*.

h represents an inclined plate, secured to the upper side of the inclined board B, and *h′* is a space or recess formed between the plates *h* and B, into which the cut-off plate E enters when the discharge-orifice of the feed-hopper is open. The upper inclined plate, *h*, relieves the cut-off plate E in this position from the weight of the grain contained in the hopper, and enables the operator to swing the plate easily downward when the discharge-orifice is desired to be closed. In its closed position the cut-off plate E rests with one edge against the automatic feed-plate D and with the other edge against the wall B, as indicated by dotted lines in Fig. 2. The cut-off plate E is easily moved into any desired position, and as no part of the plate projects through the walls of the feed-hopper there can be no leakage of the material contained in the latter. The automatic feed-plate D is arranged between the side walls, A, of the hopper, and provided at both ends with ears *d*, whereby the plate D is pivoted to the side walls, A.

i represents an arm secured to the under side of the plate D, and provided at its end with a depression or socket, in which rests loosely the end of the rod *j*, whereby the plate D is operated in a well-known manner from the hinged pressure-board J in the feed-hopper. The rod *j* is pivoted to the under side of the board J, so that the lower end of the rod can be swung out of its seat in the arm *i* when desired. The plate D is pivoted to one of the walls A by means of a bolt, *k*, which passes through the

adjacent ear *d* and turns in a bushing or bearing in the wall. The ear *d* at the opposite end of the plate is pivoted to the adjacent wall A by a pivot-bolt, *l*, which is secured to the ear by a square shank, *l'*, at the inner end of the bolt *l*, so that the ear and the plate D turn with the pivot. The latter is seated in an adjustable plate, M, applied to the outer side of the feed-hopper. As shown in the drawings, the plate M is pivoted to the side of the hopper by a bolt, *m*, and held in any desired position by a thumb-screw, *m'*, which passes through a curved slot, m^2, in the plate M and taps into the side wall of the hopper. Upon releasing the thumb-screw *m'* the plate M can be swung on its pivot *m*, so as to cause the pivot *l* of the plate D to approach the feed-roller C or recede therefrom, as may be desired. By this means the edge of the plate D, which is adjacent to the feed-roller, can be readily adjusted, if necessary, to render it parallel with the feed-roller. The wall A is provided with an elongated opening, l^2, through which the pivot *l* passes, and which permits of the requisite movement of the pivot *l*.

N represents an arm, which is detachably secured to the outer end of the pivot *l*; and *n* is a screw bolt or rod attached with one end to the free end of the arm N, and passing with its other end through a lug, *p*, secured to the feed-hopper.

P is a spiral spring, surrounding the bolt *n*, and bearing with its ends, respectively, against the free end of the arm N and the lug *p*.

q is a thumb-nut applied to the threaded end of the bolt *n* on the outer side of the lug *p*. As shown in the drawings, the arm N is secured to the pivot *l* by a thumb-screw, *r*, and the end of the pivot and the opening of the arm N through which the end of the pivot passes are made conical, so that by tightening the screw *r* the arm N is secured to the pivot, whereby the latter and the plate D are connected, and the plate D is operated by the arm N, while upon releasing the screw *r* the pivot *l* turns loosely in the arm N and is rendered independent of the same.

When it is desired to work up all the material as fast as it is delivered into the feed-hopper, the plate D is used as an automatic device, as represented in Fig. 4, and the arm N is disconnected from the pivot *l*. When it is desired to feed only a certain quantity of material to the rollers in a given time, the pressure-board J is disconnected from the arm *i*, as shown in Fig. 2, and the arm N is tightened upon the pivot *l* and the plate D adjusted by the screw-nut *q*. In this manner the plate D can be used either as an automatic feed-plate or as an ordinary adjustable feed-plate, as the nature of the work may require.

I claim as my invention—

1. The combination, with the feed-hopper, of the cut-off plate E, pivoted within the feed-hopper, feed-roller C, and automatic feed-plate D, substantially as set forth.

2. The combination, with the feed-plate D, of mechanism whereby the same can be automatically operated, mechanism whereby the plate D can be adjusted independent of the automatic mechanism, and means whereby either the automatic mechanism or the adjusting mechanism can be connected with the plate D, substantially as set forth.

3. The combination, with the feed-roller C, of the feed-plate D and mechanism whereby one of its pivots can be adjusted toward and from the feed-roller, substantially as set forth.

4. The combination, with the feed-hopper and the plate D, provided with pivots *k l*, of a pivoted plate, M, carrying the pivot *l*, and provided with a slot, m^2, and thumb-screw *m'*, substantially as set forth.

5. The combination, with the feed-hopper and the plate D, provided with pivot *l*, of the arm N, screw-bolt *n*, spring P, and lug *p*, substantially as set forth.

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Witnesses:
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