(No Model.)

W. KRUTZSCH.

ROLLER MILL.

No. 328,413. Patented Oct. 13, 1885.

Fig. 1.

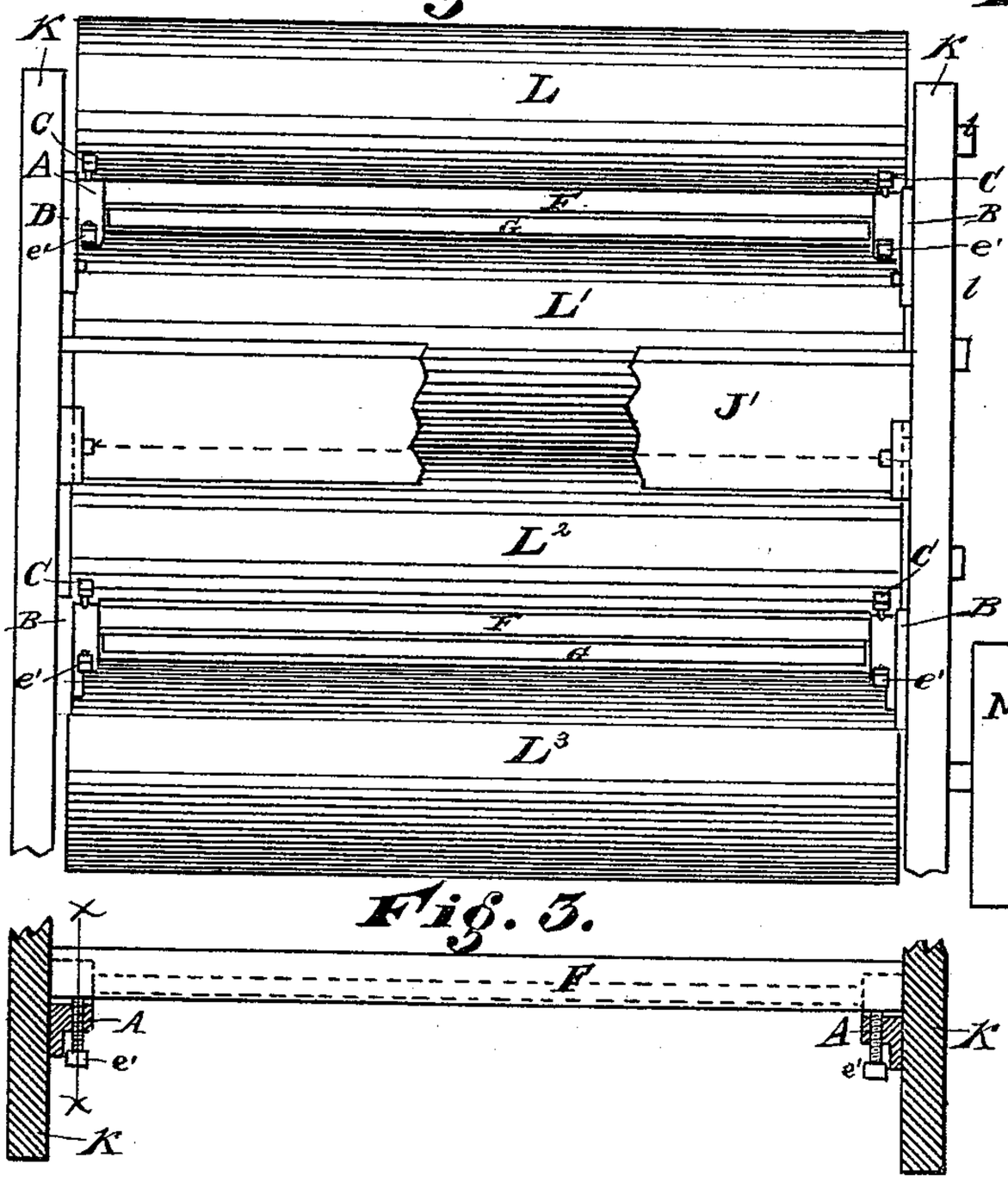


Fig. 2.

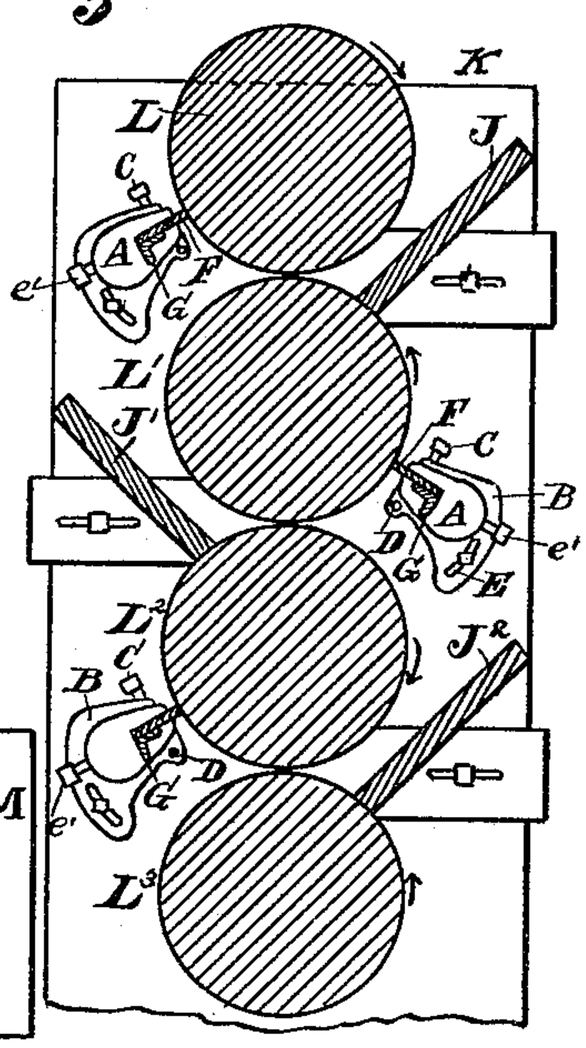


Fig. 3.

Fig. 4.

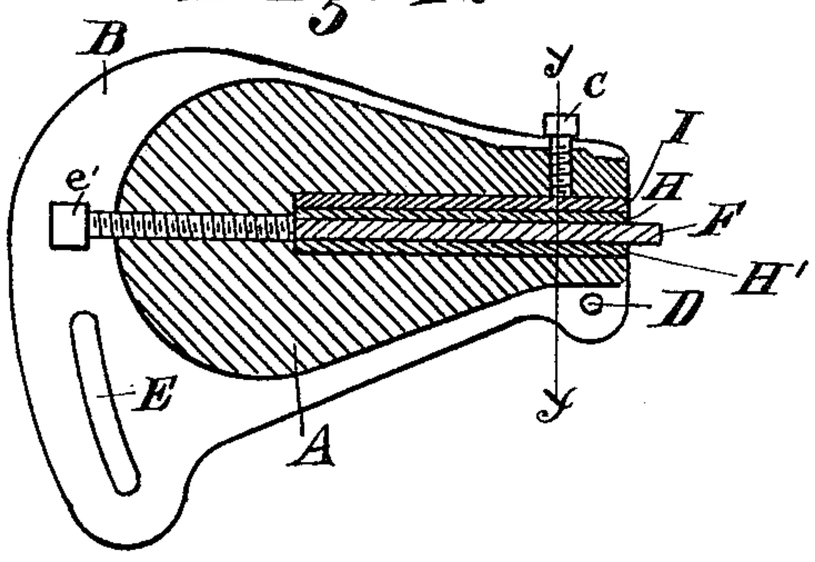
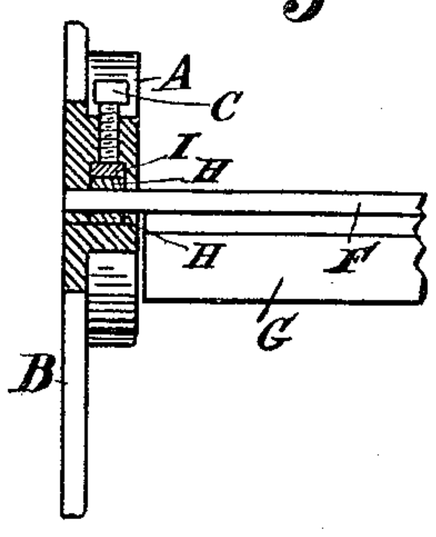


Fig. 5.



Attest

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UNITED STATES PATENT OFFICE.

WILLIAM KRUTZSCH, OF DAYTON, OHIO, ASSIGNOR TO THE BUCKEYE IRON AND BRASS WORKS, OF SAME PLACE.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 328,413, dated October 13, 1885.

Application filed July 1, 1885. Serial No. 170,376. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KRUTZSCH, a resident of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Roller-Mills, of which the following is a specification.

My invention relates to an improvement in roller-mills.

One of the objects of my invention is to provide suitable means for keeping the rolls clean by means of adjustable scrapers applied to the rolls.

Another object of my invention is to provide an adjustable scraper that may be instantly withdrawn from the face of the roll without changing the adjustment of the scraper in its stock A.

Other objects of my invention relate to the construction of the device, and will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation, partly in section, of my improvement; Fig. 2, a vertical cross-section of the same. Fig. 3 is a top plan view of the scraper and stocks. Fig. 4 is a vertical elevation on line *x x*, Fig. 3; Fig. 5, a section on line *y y*, Fig. 4.

K K represent the side posts of the frame of the mill.

L L′ L² L³ represent crushing-rollers, which are provided with iron or steel shafts *l*, that journal in the frame-posts K K.

M represents a driving-pulley mounted on the shaft of the lower roll, and according to the number of rolls employed, so there may be as many driving-pulleys by which the rolls are revolved. These pulleys are so proportioned that the rolls all revolve at equal speed, which is the ordinary way of driving them. These crushing-rollers and frame are of the ordinary construction and need not be described.

The rolls are arranged in a series, one vertically above the other, and the usual means may be employed for adjusting the rolls to or from each other, so as to regulate the fineness of the grinding.

In the operation the flax-seed or other material to be crushed is fed from a hopper on the inclined board J. The revolving rolls L L′ draw the seed between them and crush it. It then falls onto the inclined board J′, and is drawn between the rolls L′ L². From these it falls onto the inclined board J², and passes between the rolls L² L³, and so on until it has passed the entire series of rolls.

In order to prevent the crushed seed from adhering to the rolls and interfering with their rapid operation, I have provided scraper-stocks, which are secured to the frame-pieces by bolts, which pass through holes D formed in the front ends of flanges B of the stocks.

E E represent slots formed in the flanges B, for the purpose of receiving bolts for holding the ends of the stocks, said slots being concentric with the holes D, said construction allowing a pivotal adjustment of the stocks A B, so as to bring the scraper against the roll at any desired angle. A gain is provided on the boss A of each stock to receive the packing-strips and scraper-blade.

F represents the scraper-blade; H H′, packing-strips, made of leather, rubber, or other suitable material, which engage each side of the scraper-blade F.

I represents a follower strip of metal, resting upon the upper packing-strip, H; C, a set-screw tapping through the boss A of the stock, its point bearing upon the strip I. This screw forces the follower-strip I against the packing H, and the blade F against the strip H′, thus holding the scraper-blade, by the pressure of the strips H H′, firmly in position to prevent shocks, and yet without vibrations of the blade, owing to the cushioning of strips H H′. The blade F is further strengthened by an angle iron, G, riveted, preferably, upon the under side of the blade and projecting downward, as shown by Fig. 5 and dotted lines Fig. 4.

There are two stocks, A B, one right and the other left hand, each connected to the frame-pieces K K at either end of the rolls, so as to sustain the scraper at both ends.

It is necessary to keep the scraper adjusted close against the face of the roll, and this is done by the following instrumentalities: *e′* represents a set-screw tapping through the

boss A of the scraper-stock, its point resting against the edge of the scraper. The set-screw *e'* at either end may be adjusted to bring the edge of the scraper-blade F to bear against the face of the roll to which it is set opposite. These scraper-stocks are secured to the frame opposite the rolls in the manner shown in Fig. 2, and the scraper may be withdrawn from contact with each roll by loosening the bolts in radial slots E, and throwing the scrapers from contact with the rolls without disturbing the adjustment of screws C and *e'*.

What I claim is—

1. The combination of the scraper-stocks, the adjustable scraper-blade F, supported by said stocks, and the cushion-strips H H′ in said stocks, on opposite sides of said blade, substantially as described.

2. The combination of stocks A B, supported at opposite sides of the frame of a mill, an adjustable scraper, F, supported by said stocks, cushion-strips on opposite faces of the scraper, and the set-screws *e'*, tapping through the scraper-stocks to adjust the scraper forwardly, substantially as described.

3. The combination of the scraper-stocks A B, the scraper-blade F, supported thereby, the cushion-strips H H′, fitting on opposite sides of the scraper, the follower-strip I, and the set-screws C, for securing the said blade between the cushion-strips, substantially as described.

4. The combination of the scraper-stocks A B, the cushion-strips H H′, the follower-strip I, and the adjusting-screws C and *e'*, substantially as described.

5. The combination of the scraper-stocks A B, adjustable scraper-blade F, supported by said stocks, cushion-strips H H′ on opposite sides of said blade, and the strengthening-rib G, rigidly connected to said blade, substantially as described.

6. The combination, with stocks A B, the latter having bolt-holes D and slots E, concentric with said bolt-holes, of bolts passing through said slots and holes into the standards, an adjustable scraper-blade, F, supported by said stocks, cushion-strips H H′ on opposite sides said blade, set-screws C, for securing said blade in the stocks, and screws *e'*, for adjusting the blade, substantially as described.

In testimony whereof I have hereunto set my hand.

WILLIAM KRUTZSCH.

Witnesses:
JOHN L. H. FRANK,
GEORGE WHEATON.