

(No Model.)

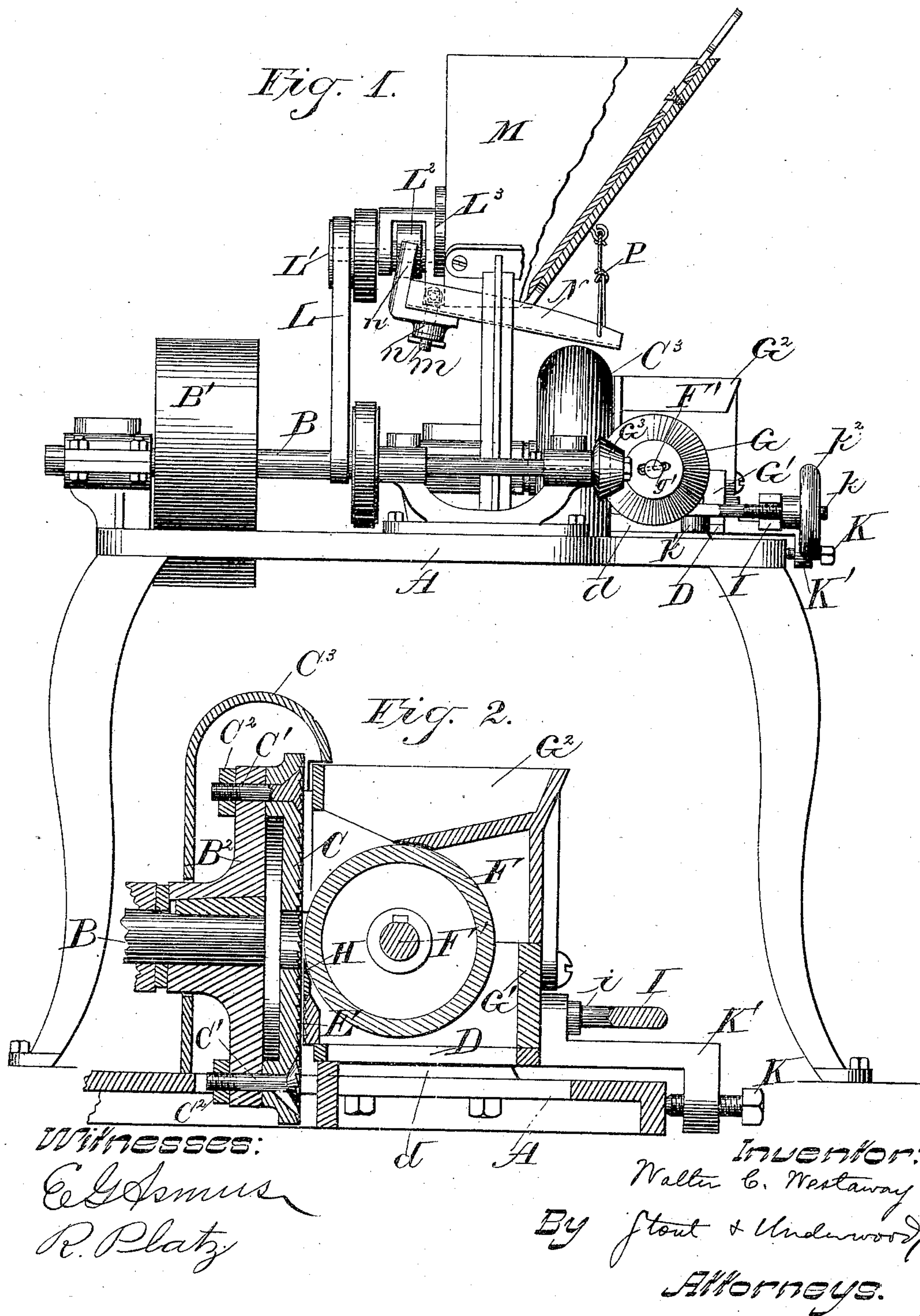
W. C. WESTAWAY.

3 Sheets—Sheet 1.

GRINDING MILL.

No. 309,326.

Patented Dec. 16, 1884.



(No Model.)

3 Sheets—Sheet 2.

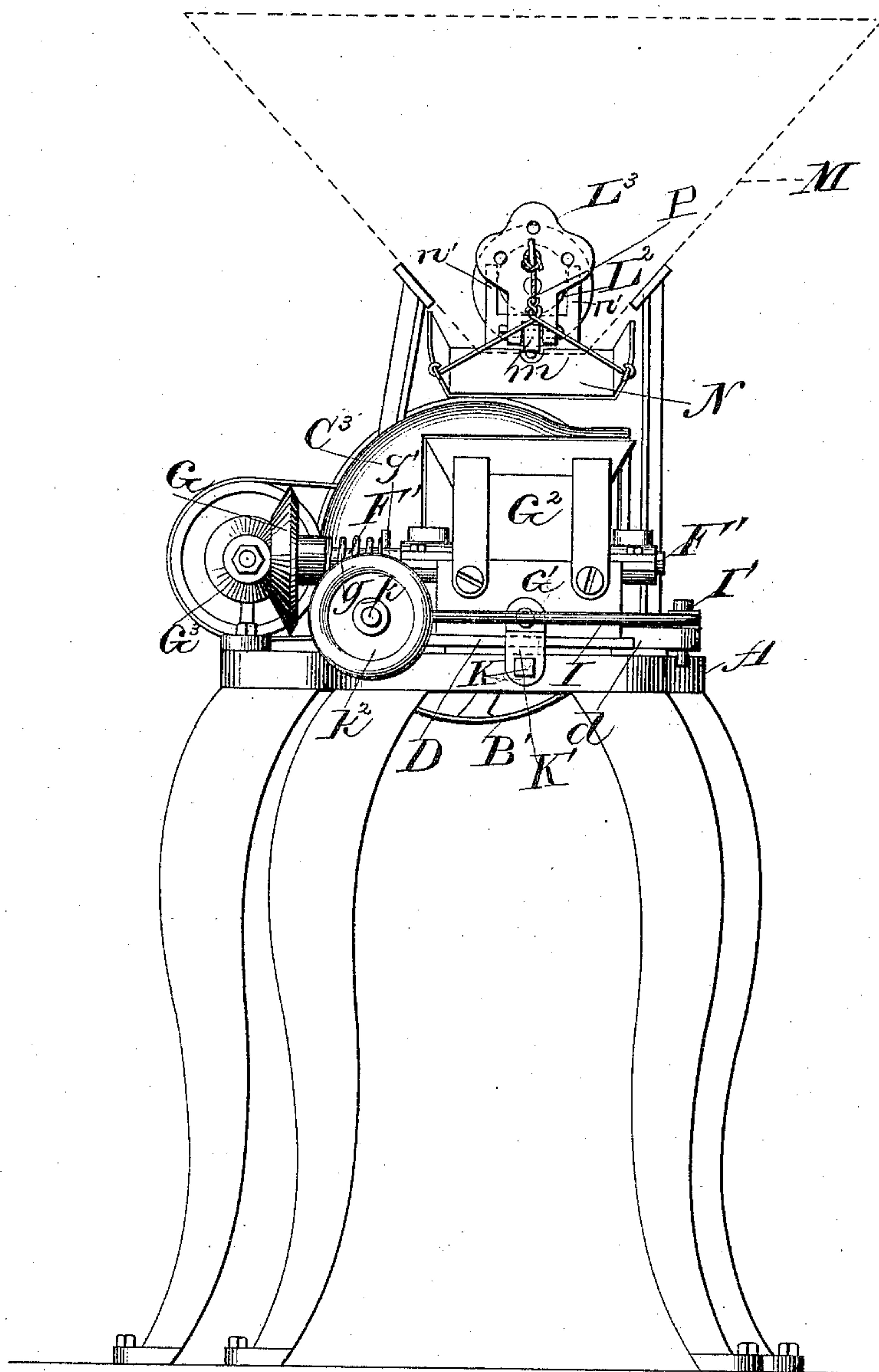
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Fig. 3.



Witnesses:

E. G. Ames
R. Platz

Inventor:

Walter C. Westaway

By J. C. Stout & H. C. Woodward
Attorneys.

(No Model.)

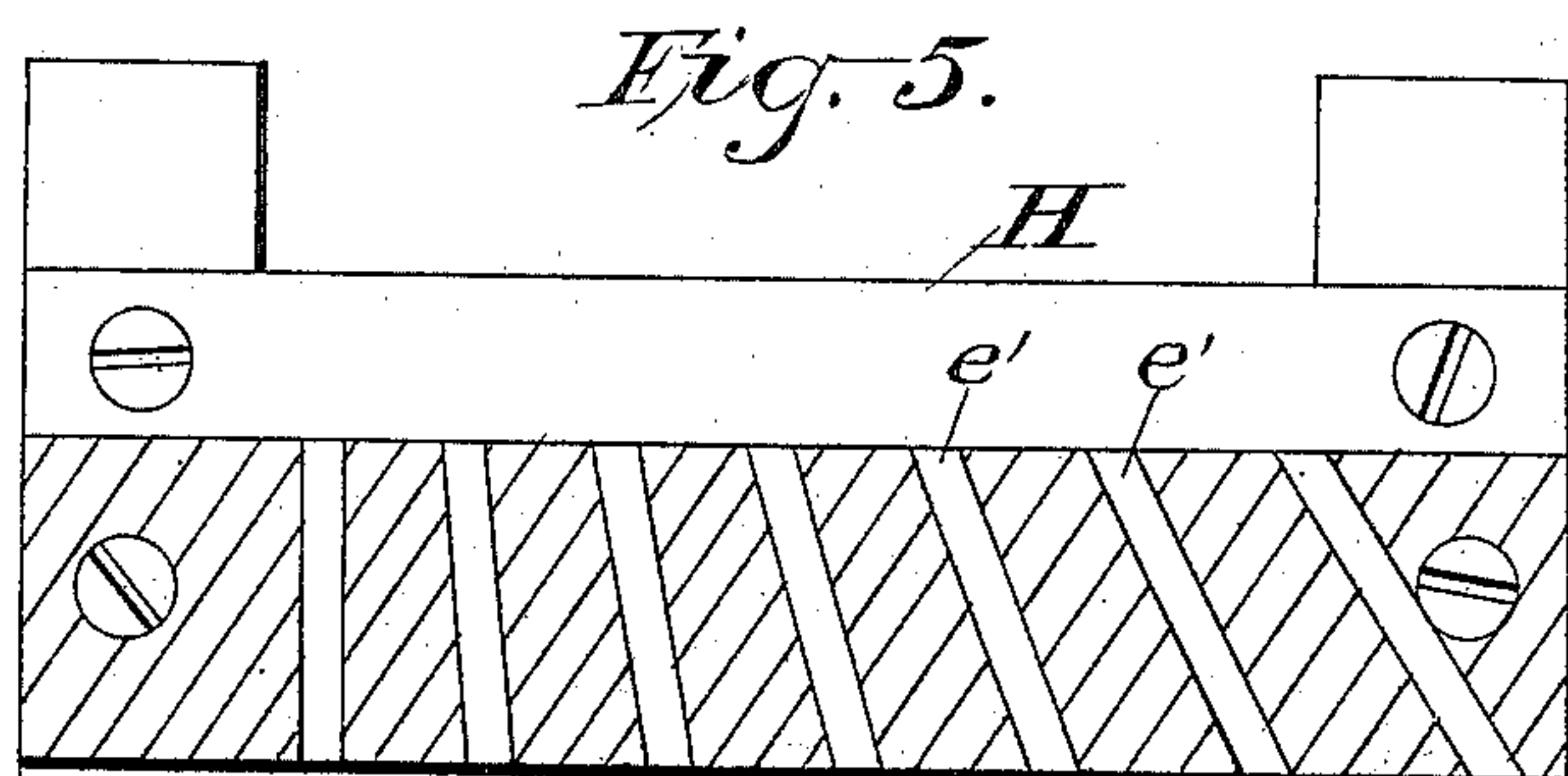
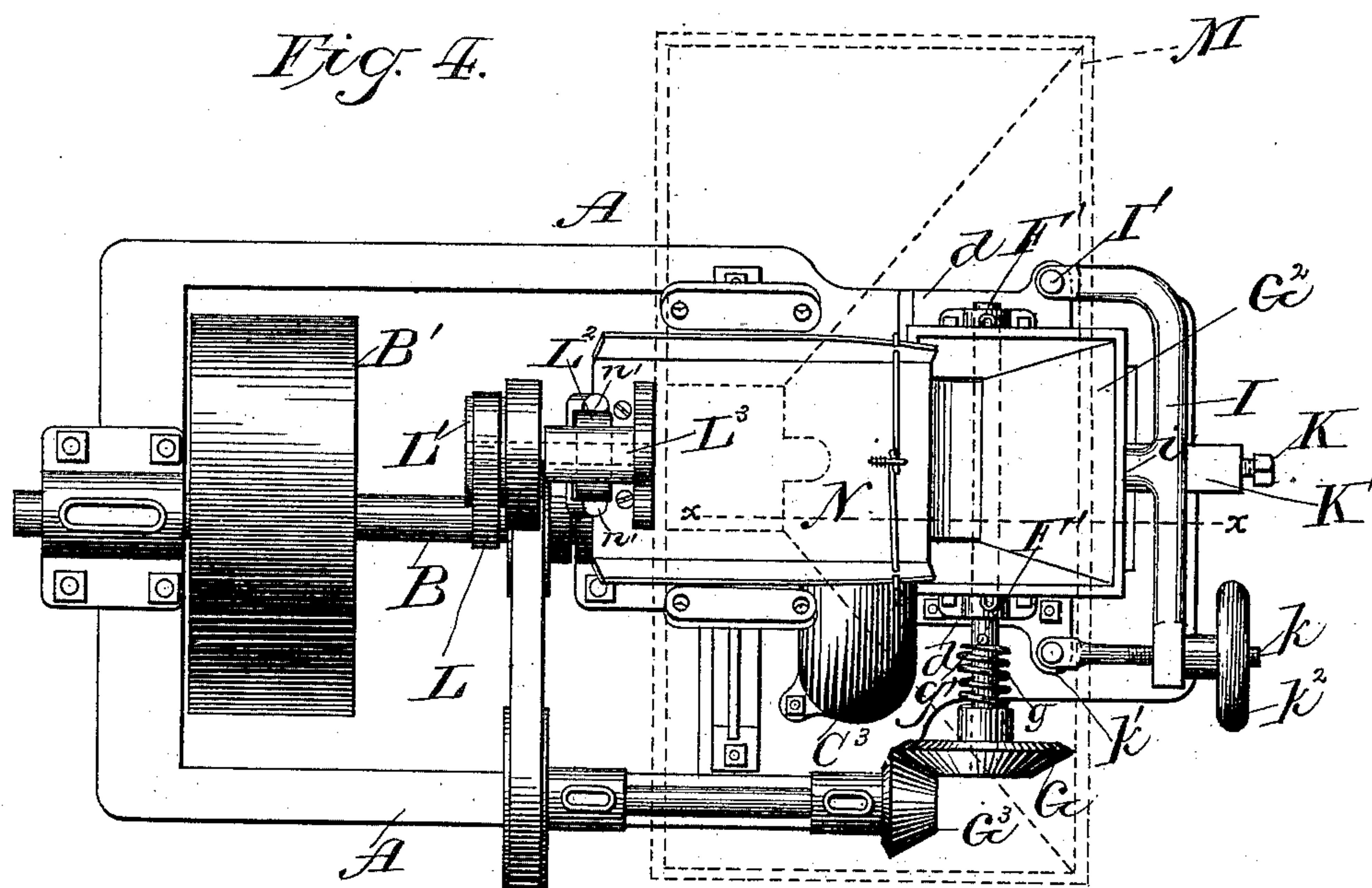
3 Sheets—Sheet 3.

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GRINDING MILL.

No. 309,326.

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Witnesses:

Edmund
R. Platz

Inventor:

Walter C. Westaway

By Stout & Underwood
Attorneys.

UNITED STATES PATENT OFFICE.

WALTER C. WESTAWAY, OF DELAVAN, WISCONSIN.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 309,326, dated December 16, 1884.

Application filed July 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, WALTER C. WESTAWAY, of Delavan, in the county of Walworth, and in the State of Wisconsin, have invented certain new and useful Improvements in Grinding-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to mills especially adapted for grinding feed, and will be fully described hereinafter and claimed.

In the drawings, Figure 1 is a side elevation of a grinding-mill embodying my invention, with a portion of the hopper broken away. Fig. 2 is a vertical section on line *xx* of Fig. 4. Fig. 3 is a front elevation. Fig. 4 is a plan view, and Fig. 5 a detached elevation of the grinding plate or knife.

A is a stand or table, upon which the grinding portion of my device rests.

B is the driving-shaft, which carries the driving-pulley B', and has keyed to it a disk, B², and to the face of this disk is secured a grinding-disk, C, by screw-bolts C' and nut C². This disk B² and plate C project through an opening in the table or frame, and are revolved by the shaft B, the two being partially inclosed by a hood, C³.

D is a slide that travels in ways *d*, that are fixed to the table, and this slide carries the grinding-plate E on the lower edge of its inner face, and also carries the shaft F', on which a roller, F, is keyed, as well as a friction bevel-wheel, G. The roller F is inclosed on three sides by a housing, G', and a superimposed hopper, G², from which hopper the grain or other stuff to be ground is guided onto the roller F. The upper edge of the plate E has resting upon it or formed with it a knife, H, which acts as a scraper to free the roller of the grain and guide it between the grinding-surfaces. While the face of the knife adjacent to the disk C is perfectly smooth and vertical, the grinding-plate proper is provided with file-teeth or ridges that are inclined from a vertical line, and these are crossed by vertical or oppositely-inclined grooves *e'*, which are much deeper than the grooves that form the file-edges, and serve both to admit the grain to the grinding-plate in position to be acted upon by the grinding-disk and to discharge the meal and prevent choking. The slide D is held up

in position to carry the roller and grinding-plate into close proximity to the grinding-disk by a lever, I, that is pivoted to the table by a rivet, I', and has a lug, *i*, on its face, that bears against a corresponding lug on the slide or face of hopper G'; but the nearness of the grinding-plate to the disk C is regulated by a set-bolt, K, that projects through a bracket-arm, K', of the housing and impinges against the edge of the table, as shown in Fig. 2. The pivot I' of the lever I is preferably made only strong enough to resist the pressure caused by the wedging of the grain between the roller and grinding-disk, but should be weak enough to break if a nail or any other hard foreign substance that would tend to injure the grinding-faces be carried between them; or the lever itself might be made to give and permit such substance to pass through without injury to the grinding-faces. The lever I has a horizontal opening through the end opposite the pivot, and a bolt, *k*, that is pivoted to a lug, *k'*, on the table, passes through this opening, and is screw-threaded to receive a set-nut, *k*², by screwing in which the lever I is clamped against the slide and is forced toward the grinding-disk as far as set-bolt K will permit it to go. The friction-wheel G has a slight longitudinal play on its shaft F', and is held out against a cone-wheel, G³, by a spring, *g*, that acts between its hub and a pin, *g'*, in shaft F', and the tension of the spring should be so regulated that it will only exert a sufficient pressure upon the cone G² to take enough power to revolve the roller F when only enough grain is being fed to enable the grinding parts to do their work without choking. Therefore, when the machine is clogged, the friction-gearing will slip and the feed-roll F will stop carrying grain to the disk until the machine has relieved itself. The shaft B furnishes the power through a belt, L, and a pulley, L', to turn the shaft of an eccentric, L², which shaft works in a bracket, L³, that is secured to the rear of the hopper M. A bolt, *m*, is pivoted to the lower end of one arm of bracket L³, and depends therefrom in position to pass through a bushing, *n*, in the rear part of an apron, N. The bushing *n* is made L-shaped in longitudinal section, and has two extensions, *n'* *n'*, that straddle the eccentric L² from below, and the apron is held upon the bolt *m* by a suitable

pin or key, as shown in Fig. 1. The proper inclination is given to the apron N by shortening or lengthening a front suspending-cord, P. When the parts are all properly adjusted, 5 the arms $n' n'$ will lie snugly against the eccentric, the slot formed by them conforming to the curve of the eccentric, and therefore as the eccentric turns it will alternately depress the rear end of apron N and flit it horizontally, thus giving it a motion peculiarly 10 adapted for distributing the material nicely from the hopper to the feed-roller.

Having thus described my invention, what I claim as new, and desire to secure by Letters 15 Patent, is—

1. The combination, with a horizontal arbor and a grinding-disk mounted thereon, of an opposing feed-roller, a stationary grinding-plate, and a clearing-knife, as set forth.
- 20 2. The combination, with a horizontal arbor and a grinding-disk mounted thereon, and the driving mechanism provided with friction gear-wheel G^3 , of the roller F and its shaft, and a friction-wheel adapted to yield in the

direction of the length of the shaft, substantially as and for the purpose set forth. 25

3. The combination of lever I and its connections with the supporting-frame, slide D, grinding-plate, the feed-roller, the slide-bracket, arm K' , and bolt k , substantially as set 30 forth.

4. The combination, with the supporting-frame and hopper M, having bracket L^3 , a shaft journaled in said bracket, and an eccentric, L^2 , 35 carried thereby, of the apron N, having bushing n , provided with extensions $n' n'$, and the adjustable suspending device P, substantially as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing I 40 have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WALTER C. WESTAWAY.

Witnesses:

STANLEY S. STOUT,
H. G. UNDERWOOD.