(No Model.) 2 Sheets—Sheet 1.

G. F. SCHMID.

FEED CUTTER.

No. 383,494. Patented May 29, 1888.

Fig. 1.

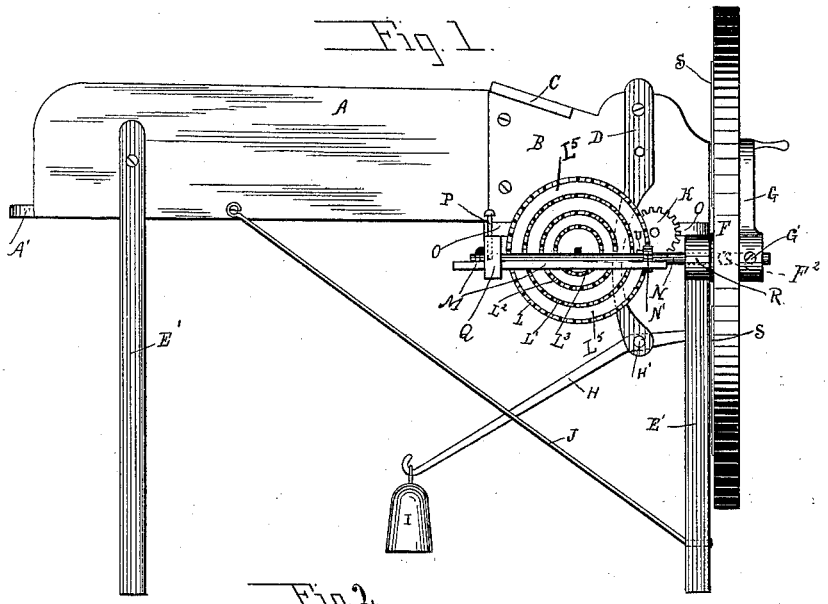


Fig. 2.

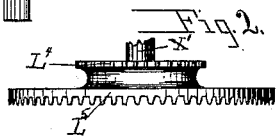


Fig. 3.

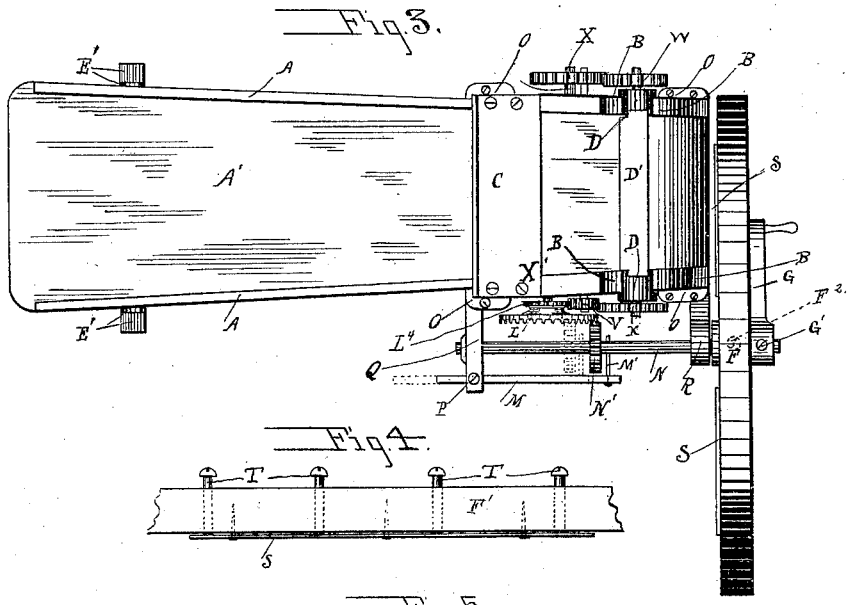
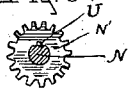


Fig. 4.

Fig. 5.



Witnesses,
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F. C. Hilligan.

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By L. Bingham.
His Attorney.

(No Model.) 2 Sheets—Sheet 2.

G. F. SCHMID.

FEED CUTTER.

No. 383,494. Patented May 29, 1888.

Fig. 6.

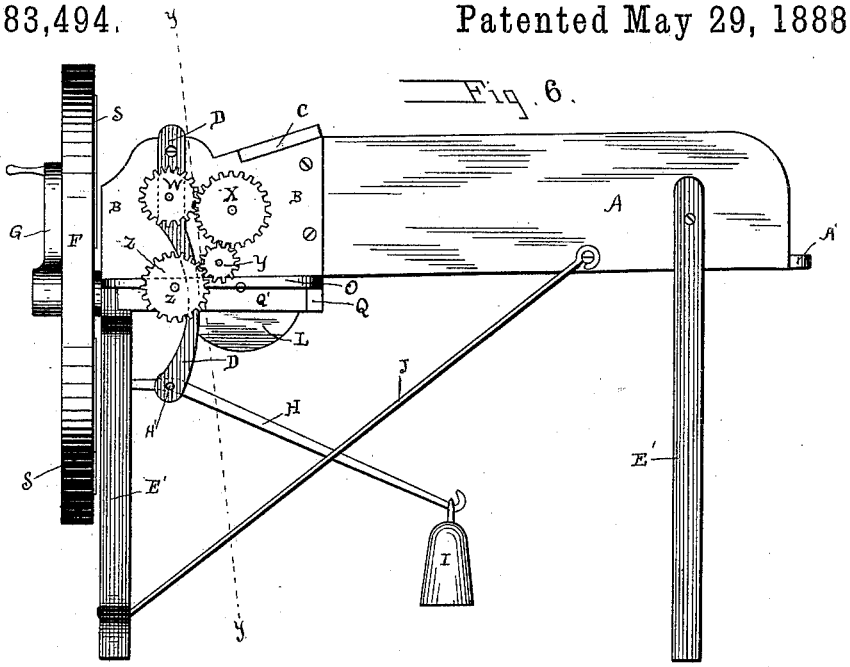


Fig. 7.

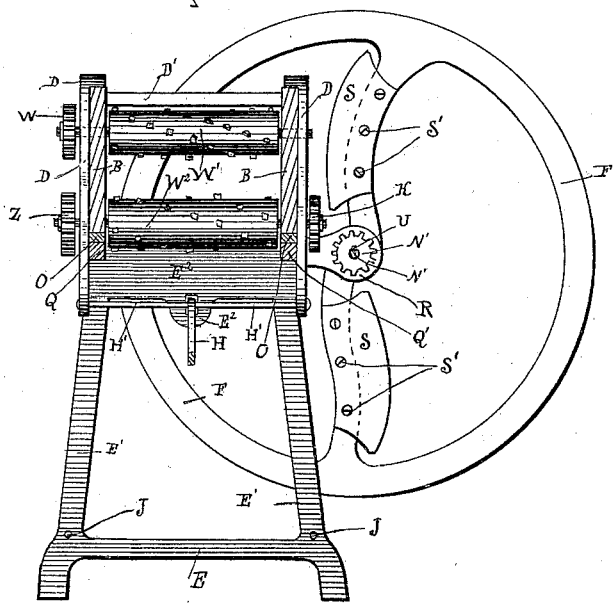
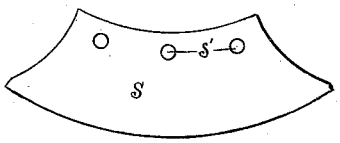


Fig. 8.



Witnesses.
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By L. Bingham.
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UNITED STATES PATENT OFFICE.

GOTTLOB F. SCHMID, OF BEARDSTOWN, ILLINOIS.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 383,494, dated May 29, 1888.

Application filed February 15, 1888. Serial No. 264,093. (No model.)

To all whom it may concern:

Be it known that I, GOTTLOB F. SCHMID, a citizen of the United States of America, residing at Beardstown, in the county of Cass and State of Illinois, have invented certain new and useful Improvements in Feed-Cutters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to feed-cutters; and its objects are, first, to provide readily for a variable cut of the feed; second, to provide for automatically raising the upper feed-roller to facilitate the passage of obstructions; third, to regulate the speed of the cutting-knives variably; fourth, to maintain the constant rigidity of the cutting-knives; fifth, to supply the feed to the knives constantly and uniformly; sixth, to insure such momentum in the knives that obstructions will not easily stop their motion, and, seventh, to attain these ends with structural simplicity and economy. I accomplish these ends by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a feed-cutter embodying my improvements. Fig. 2 is a plan view of the crown-wheel by which the variable speed of the cutters and the rollers is obtained. Fig. 3 is a plan view of my machine. Fig. 4 is a detached sectional view of one of the cutters, showing the manner of its attachment to the spokes of the fly-wheel. Fig. 5 represents the sliding pinion, which produces the variable speed of the cutters by meshing with different series of teeth in the crown-wheel shown in Fig. 2. Fig. 6 is a side elevation of the machine, taken from the opposite side of that illustrated in Fig. 1. Fig. 7 is a vertical section on the line *y y* of Fig. 6, and Fig. 8 represents a detached view of one of the cutters.

The same designations indicate corresponding parts in the several views.

Upon suitable legs, E′ E′, joined near the base by cross-stays E, is the feed-trough A′, having uprights A and a cover-board, C, to guide the feed to the toothed rollers W′ W″, the former of which is fixedly secured in the sliding standards D, which (actuated by the counterweight I, secured to the lever H, fulcrumed in the upright E′, and attached to the rod H′, whose ends are embedded in the standards) reciprocate in the slotted uprights B, joined to the uprights A, and the latter of which is rigidly held in the same uprights, B, in a lower plane. The upper roller, W′, is provided terminally on its shaft with a pinion, W, which normally meshes with the gear-wheel X, (until said roller rises, as described,) that derives its motion from the pinion Y. The pinion Y communicates with the gear-wheel Z, on whose shaft the roller W″ is mounted and whose rotation is imparted by the gear-wheel K. The wheel K in turn meshes with the pinion V, that is actuated by the pinion L^4, concentrically mounted on the shaft X′ with the crown-wheel L^5. The wheel L^5 has four concentric series of teeth, L L′ L″ L‴, to which the motion of the fly-wheel F, imparted by a crank, G, (operated manually or by steam or horse power,) held on the shaft N, is communicated by the pinion N′, adjustably maintained on the same shaft by the key-wedge U. A rod, M, held removably by screw P from the same bearing, Q, in which the inner end of the shaft N is mounted, has an arm, M′, projecting therefrom perpendicularly to keep the pinion N′ constantly in gear with the crown-wheel L. The bearing R serves to hold the other end of the shaft N.

J J are stays connecting the uprights E′ E′ to the trough-body A.

S S are the cutters, mounted on the spokes F′ of the fly-wheel F by screws S′, and maintained rigidly in position by the screws T, inserted from the other side slightly above the plane of the screws S′. The fly-wheel F is adjustable on the shaft N by a screw, F^2, similar to the screw G′ on the crank G, whereby the distance from the trough to the knives is varied, and hence cuts of different sizes result.

O are flanges to secure the trough-body to the legs E′.

It will be understood that the hay, straw, or feed is introduced to the trough A′ and passed under the guide-board C to the toothed rollers W′ W″, which are rotated, as shown on the drawings. Then it meets the rapidly-revolving knives S, attached to the fly-wheel F, and is cut off. Should there occur any obstruction preventing the passage of the feed through the rollers, the upper roller, W′, automatically

yields thereto by rising against the force or stress of the weight I, attached mediately to the sliding standards D, and the converse happens when the obstruction ceases.

Having thus fully described my improvements, what I claim, and desire to secure by Letters Patent of the United States, is—

In feed-cutters, the trough A′, having guiding-uprights A B, mounted on supports E E′ and maintained by braces J, in combination with the shaft N, rotated in bearings Q R, having a crank, G, on its outer end, the fly-wheel F, having curved knives S, held on one side by the screws S′ and pressed in on the other side by the screws T, the sliding pinion N′, adjustably keyed to said shaft, the rod M, having arm M′, the shaft X′, the crown-wheel L^5 thereon, having a concentric series of teeth to engage the pinion N′ in its different positions on the shaft N and a parallel pinion, L^4, mounted on the said shaft X′, the meshing gears V K, operating the pinions Y X, which in turn mesh with the gear-wheels Z W, which respectively operate the rigid feed-roller W″ and the yielding roller W′, the sliding standards D, the rod H′, the lever H, and the weight I, for the purpose fully shown and described.

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

GOTTLOB F. SCHMID.

Witnesses:
IRA CROW,
GEORGE VOLKMAR.