W. Hutchins,

Straw Cutter.

No. 109822. Patented Dec. 6. 1870.

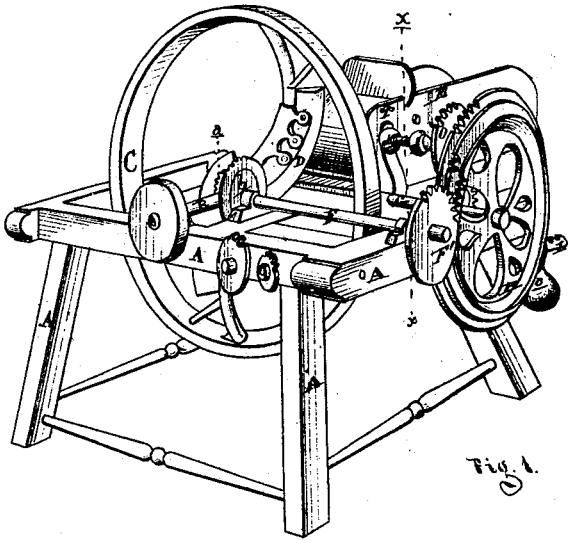

Fig. 1.

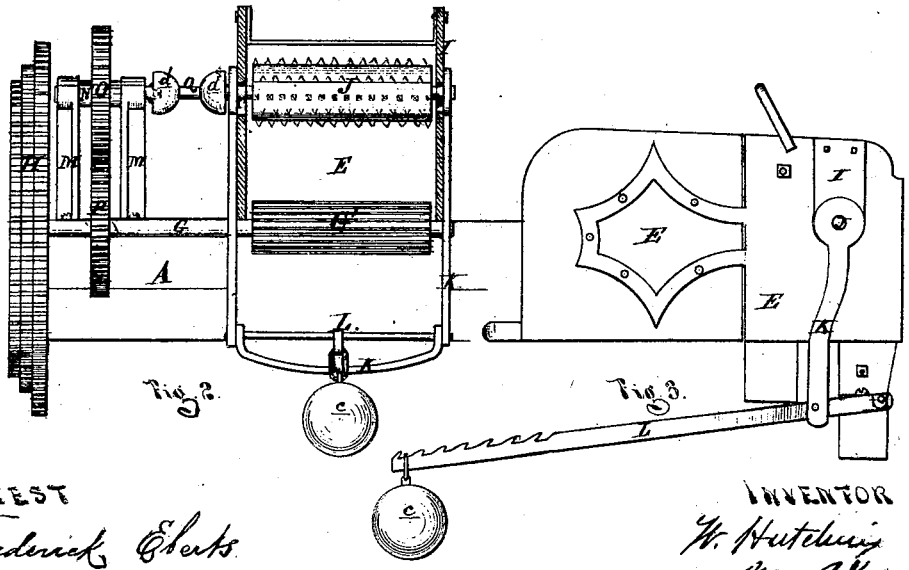

Fig. 2. Fig. 3.

ATTEST

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WILLIAM HUTCHINS, OF PAW PAW, MICHIGAN, ASSIGNOR TO HIMSELF AND GEORGE G. HUTCHINS, OF SAME PLACE.

Letters Patent No. 109,822, dated December 6, 1870.

IMPROVEMENT IN FEED-CUTTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, WILLIAM HUTCHINS, of Paw Paw, in the county of Van Buren and State of Michigan, have invented a new and useful Improvement in a Feed-Cutter; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my device.

Figure 2 is a cross-section through the cutting-box taken on the line *x x* in fig. 1.

Figure 3 is an enlarged side elevation of the cutting-box, detached, to show the operation of the self-adjusting weighted feed-roll.

Like letters indicate like parts in each figure.

The nature of this invention relates to a device for cutting hay, straw, stalks, &c., into feed of any desired fineness for feeding to stock.

The invention consists in the peculiar construction and arrangement of a self-adjusting weighted toothed upper feed-roll, in combination with a corrugated lower feed-roll and other devices, as more fully hereinafter set forth.

In the drawing—

A represents a proper frame, across the middle part of which is journaled the shaft B, which may be rotated by hand or power.

On this shaft is keyed a fly-wheel, C, on opposite spokes or arms of which are secured two curved knives, D, by proper set-screws.

Preferably I make these knives in the form of a segment of a circle, so that as they revolve past the throat of the cutting-box E they will sever the projecting fodder with a shearing or drawing cut.

F is a shaft journaled in the frame at right angles with the shaft B, from which it receives motion through the bevel-wheels *a b*, keyed to the respective shafts.

G is a shaft journaled in the frame parallel with the shaft F, but passing through the lower part of the throat of the cutting-box, where it carries a feed-roll, G′.

On the overhanging end of the roll-shaft G is secured a differential or coned gear-wheel, H, having three or more spur-gears of various diameters, with one of which a pinion, F′, meshes, and rotates the roll-shaft.

Corresponding pinions are kept on a suitable stud ready for use, when the speed of the roll-shaft requires to be changed.

The feed-roll G′ is serrated or corrugated in the direction of its length to compel the material to feed.

I are plates sliding in ways at the sides of the cutting-box directly over the lower feed-roll.

In these plates is journaled a toothed feed-roll, J.

To the plates I is suspended a stirrup, K, which serves as a fulcrum to the weighted lever L, pivoted under the cutting-box.

By adjusting the weight *c* on the lever any desired pressure of the upper feed-roll upon the material passing through may be exerted. At the same time the feed-roll may adjust itself to any change in the volume thereof.

Motion is given the upper feed-roll in the following manner:

A pair of standards, M, are erected on the main frame directly over the shaft G, and in them is journaled a short shaft, N, carrying a pinion, O, meshing with a spur-wheel, P, of the same diameter keyed to the feed-shaft G below.

A tumbling-rod, Q, provided with a universal joint, *d*, at each end, couples the shaft N with that of the upper feed-roll, so that the latter may be free to move up or down while in motion.

In cutting various kinds of feed the change-wheels F′ may be used of the size which will increase or diminish the speed of the feed-rolls with relation to the number of revolutions of the knife-wheel, so that the fodder will be cut to the desired length.

In feeding through the cutting-box the different kinds of fodder, the right pressure of the upper feed-roll, to insure their passage, is obtained by adjusting the weight on the lever L.

I am aware that there are feed-cutters whose specific parts are constructed substantially like mine, and also feed-cutters having a combination of parts substantially similar to those found in portions of my device, and do not claim to have invented such, but only the particular combination hereinafter set forth as my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the toothed upper feed-roll J, tumbling-rod Q, with universal joint *d d*, sliding plates I, stirrups K, lever L, and weight C, with the lower corrugated feed-roll G′, all constructed and operating substantially as described and shown, for the purposes set forth.

Witnesses: WILLIAM HUTCHINS.

FREDERICK EBERTS,

PATRICK F. BARRY.