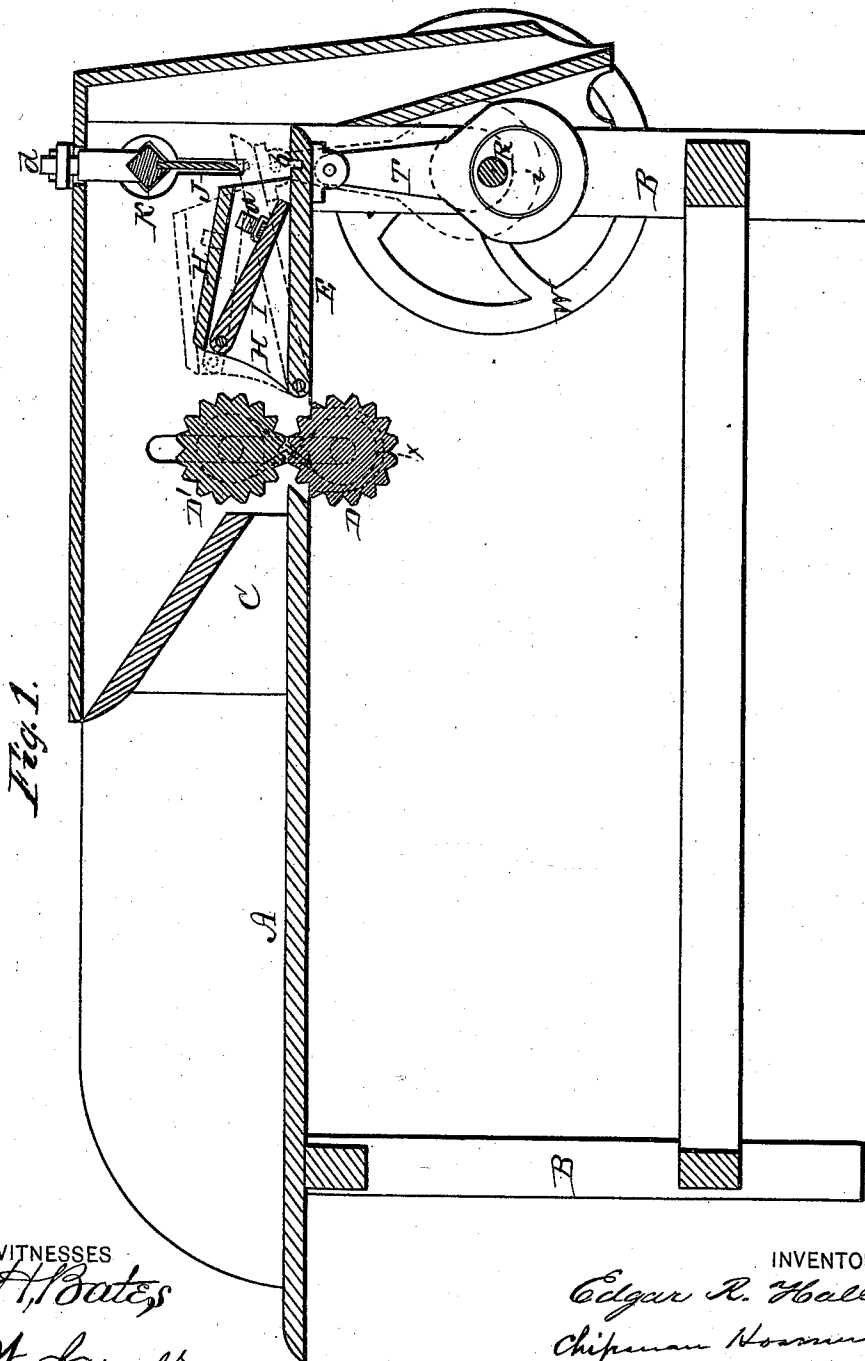


E. R. HALL.
FEED-CUTTER.

No. 174,235.

Patented Feb. 29, 1876.



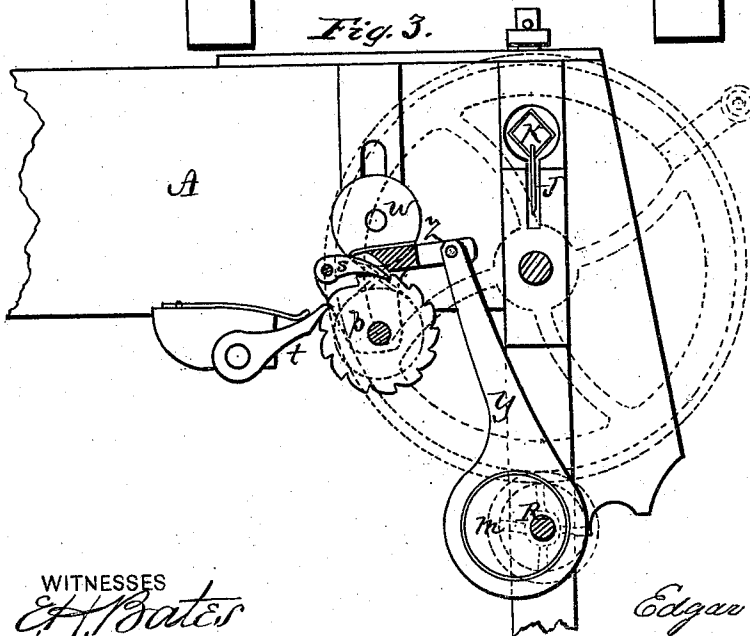
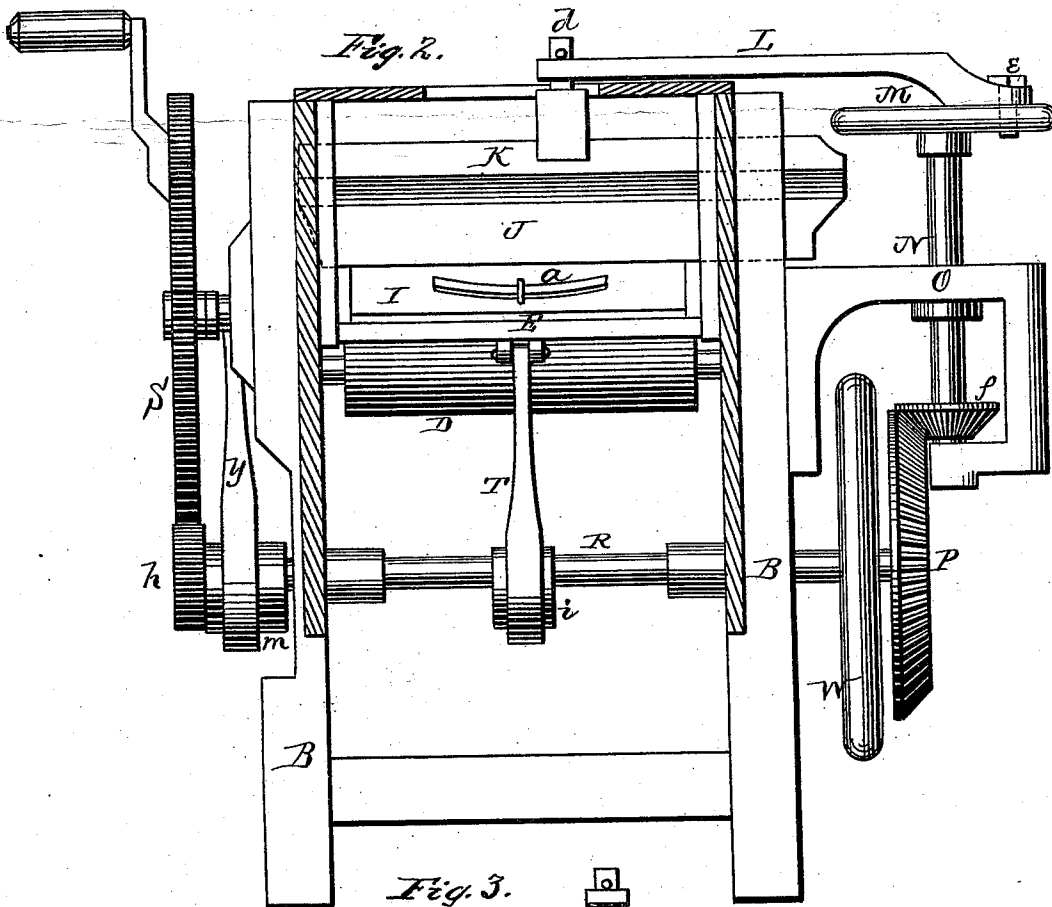
WITNESSES
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WITNESSES
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UNITED STATES PATENT OFFICE

EDGAR R. HALL, OF WATERVILLE, NEW YORK, ASSIGNOR OF ONE-HALF
HIS RIGHT TO CHARLES STODDARD, OF SAME PLACE.

IMPROVEMENT IN FEED-CUTTERS.

Specification forming part of Letters Patent No. **174,235**, dated February 29, 1876; application filed
January 8, 1876.

To all whom it may concern:

Be it known that I, EDGAR R. HALL, of Waterville, in the county of Oneida and State of New York, have invented a new and valuable Improvement in Feed-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my feed-cutter, and Fig. 2 is a transverse vertical sectional view of the same. Fig. 3 is a sectional detail view thereof.

My invention relates to machines for cutting hay, straw, or corn-stalks for feed; and it consists in the construction and general arrangement of a horizontally-running knife with vibrating apron upon which the feed is brought to the knife, the feed-rollers of the machine geared by a rubber band; in the ratchet-device for operating the feed-rollers; and in the combination of parts as will be hereinafter more fully set forth.

In the annexed drawings, A represents the feed-box, supported upon a suitable frame, B, and formed with a throat, C, through which the feed passes to the feed-rollers D D'.

In front of the feed-rollers is hinged an apron, E, forming a continuation of the bottom of the feed-box. On this apron is erected, as it were, a tapering box, H, open at both front and rear, and provided in the top with a hinged leaf, I, pivoted at its rear end and pressed downward at the front by a spring, a, so as to hold the feed down on the apron E, close to the point where it is cut by the knife J. Across the front end of the apron E, in the upper side, is a groove, b, for the knife to work in. This knife is attached to a diamond-shaped bar, K, which runs in correspondingly-shaped guides in the sides of the box at the front end, the knife passing through slots in the sides of the box.

The knife runs horizontally, and is operated by the following means: From the center of the bar K projects a vertical stud or pin, d, on which is placed one end of a pitman, L,

the other end thereof being placed on a crank or wrist-pin, e, on a wheel, M, secured on the upper end of a shaft, N, said shaft having its bearings in a frame, O, secured to the side of the frame B at the front end.

On the lower end of the shaft N is a beveled gear-wheel, f, which gears with a bevel cog-wheel, P, on the end of the main shaft R. This shaft has its bearings in the main frame B, and is on its other end provided with a pinion, h, which gears with the cogged crank-wheel S, said wheel being mounted on a stud projecting from the frame B, as shown.

On the center of the main shaft R is an eccentric, i, around which is placed an arm, T, connecting with the hinged apron E.

At the side of the cog-wheel P, on the main shaft R, is secured the fly-wheel W; and on the other end of said shaft, next to the pinion h, is an eccentric, m, connected by a pitman, Y, with a slotted lever, Z, placed loosely on the journal of the lower feed-roller D. On said journal is secured a ratchet-wheel, p, into which takes a spring-pawl, s, pivoted to the lever Z. As the shaft R revolves this lever and its pawl are moved so as to, at the proper time, revolve the said lower feed-roller, it being held from turning backward by means of another spring-pawl, t. By changing the point of connection between the upper end of the pitman Y and the lever Z closer to or farther from the pawl s, the extent of the feed-motion is easily regulated so as to cut the feed longer or shorter, as desired.

The journals of the upper feed-roller D' are placed in vertical slots in the sides of the box, and on the journals of the two rollers are pulleys w connected by means of a rubber-belt, x, which allows the rollers to adjust themselves to the feed as it is placed within reach of said rollers.

The operation of the machine is substantially as follows:

The hay, straw, &c., is fed in by hand in the usual manner until it is caught by the feed rollers, when they draw it forward to the desired length, according as the feed mechanism has been set. It is thereby passed forward between the apron E and pressure-board I. As soon as the feed stops, the eccentric i

and pitman T raise the apron E upward, carrying the straw up to the knife J, which is continually reciprocating horizontally in its guides. When the straw has thus been cut, the apron E descends again and the feed mechanism turns the rollers to feed the straw forward again.

The knife J may either have a straight cutting edge or a sickle-shaped edge, as desired, or deemed most advantageous.

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

The hinged vertically-vibrating apron E

forming a continuation of the bottom of the feed-box, provided with the hinged leaf I pivoted at its rear end and pressed downward at the front by a spring, *a*, in combination with suitable operating mechanism, substantially as and for the purpose set forth.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

EDGAR R. HALL.

Witnesses:

G. H. CHURCH,

HENRY T. UTLEY.