

(No Model.)

3 Sheets—Sheet 1.

A. HAMACEK,

FEED CUTTER.

No. 346,200.

Patented July 27, 1886.

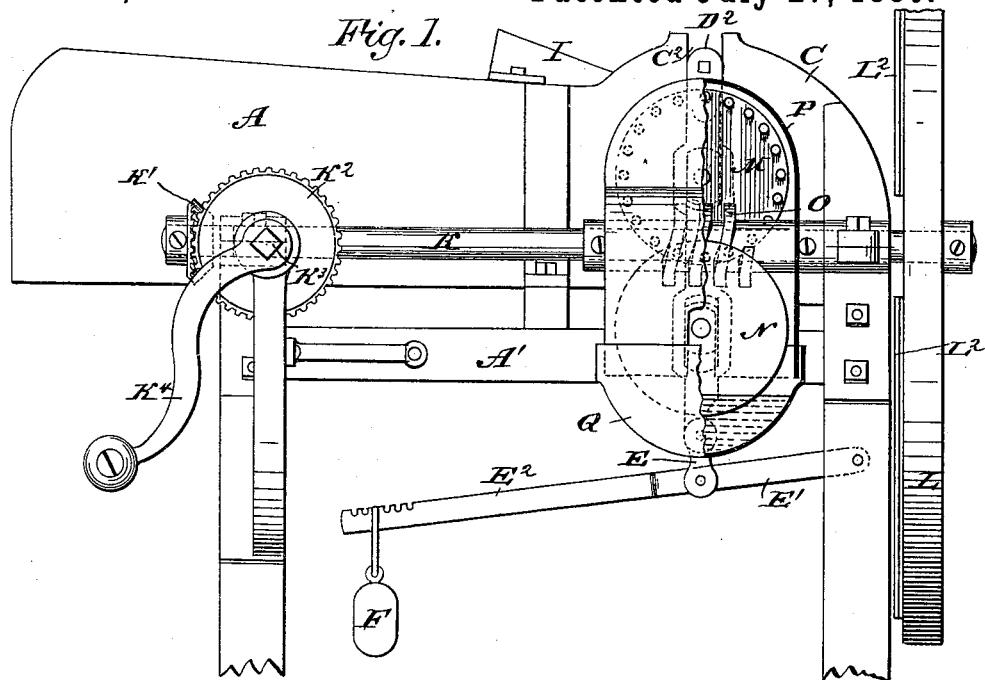
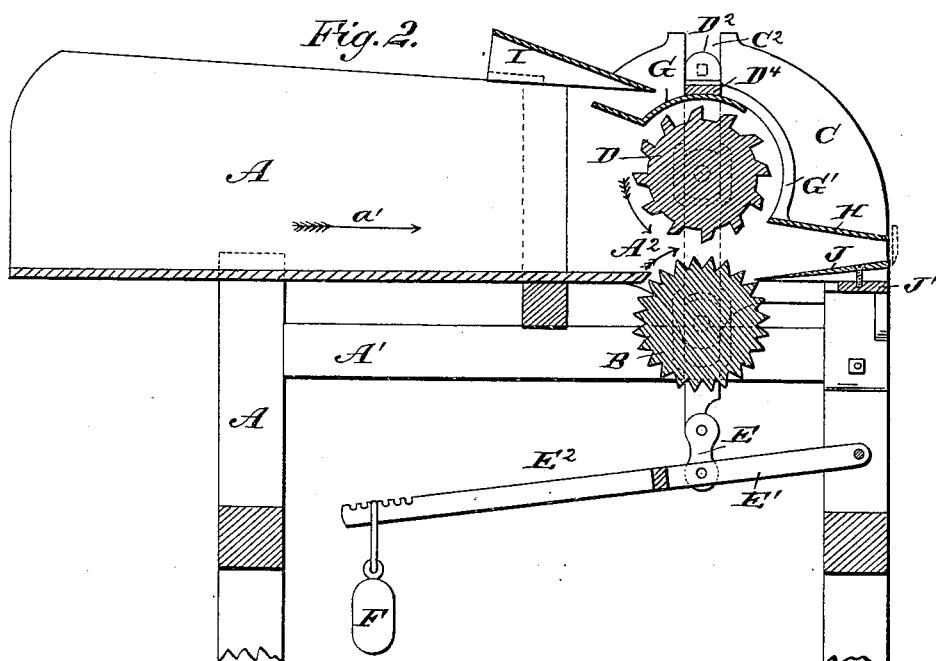


Fig. 2.



WITNESSES:

WITNESSES: *Geo. Beyer*
Geo. Mathew Putter

INVENTOR:

BY H. Hamacek
Munn & Co
ATTORNEYS

ATTORNEYS.

(No Model.)

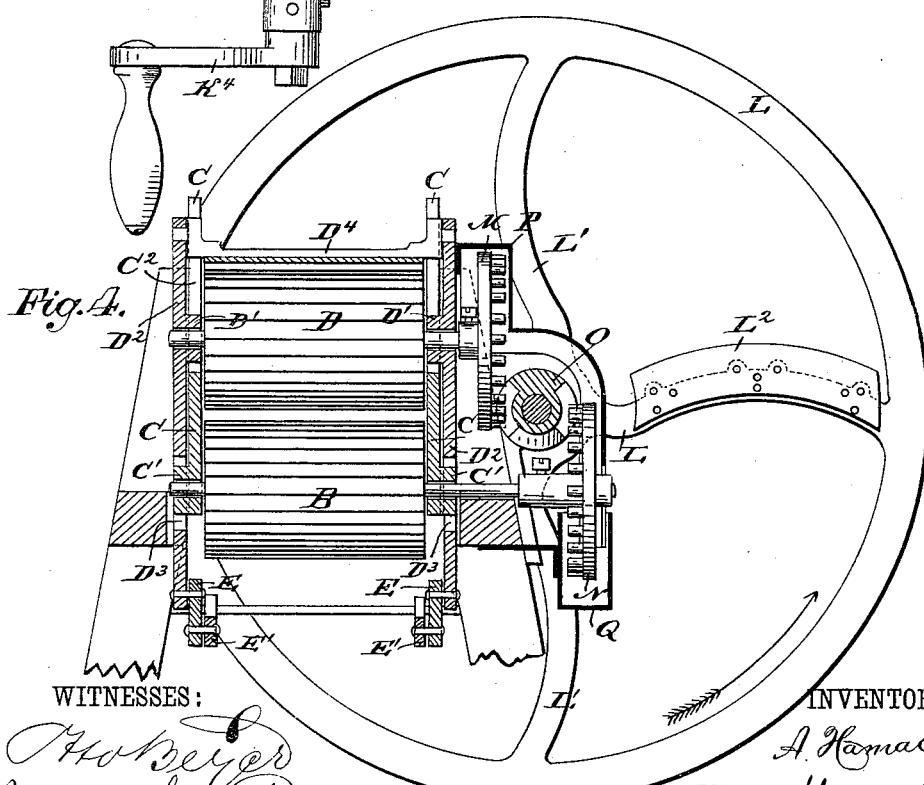
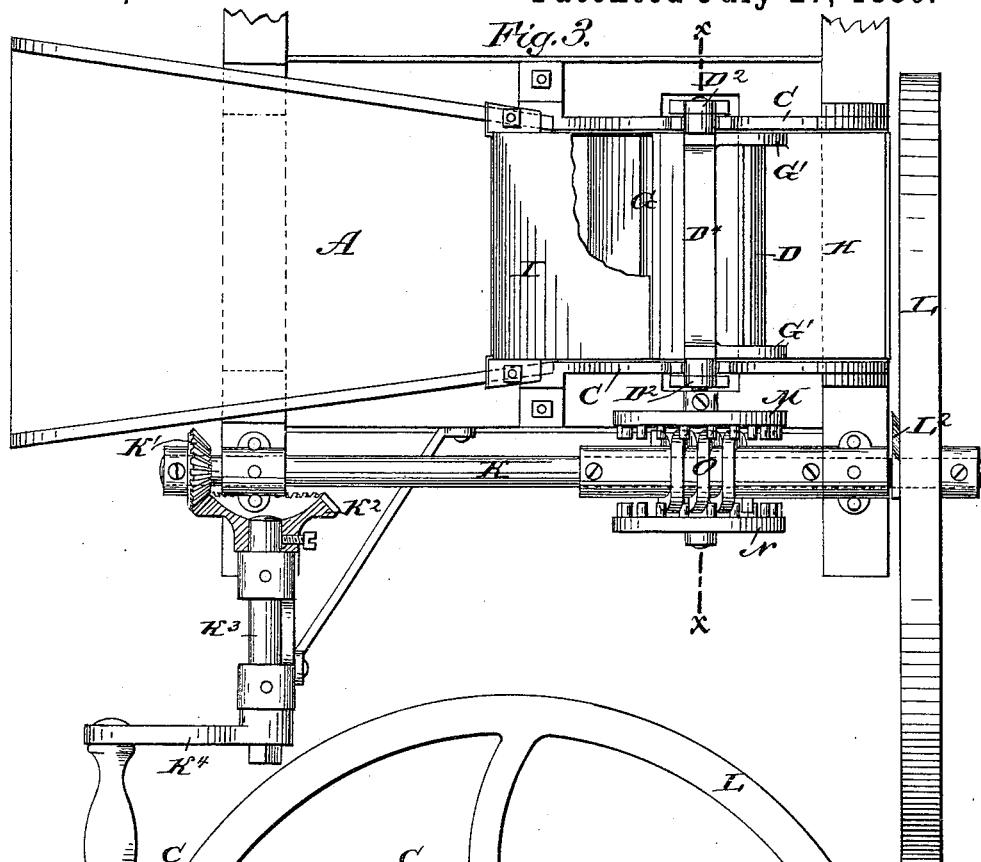
A. HAMACEK.

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WITNESSES:

Prokryer
John Mathew Ritter

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BY

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(No Model.)

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Fig. 5.

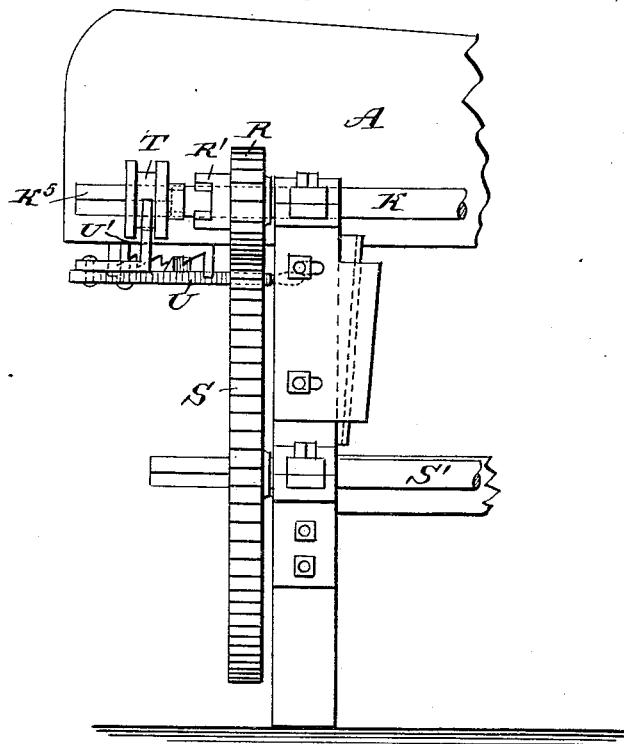


Fig. 6.

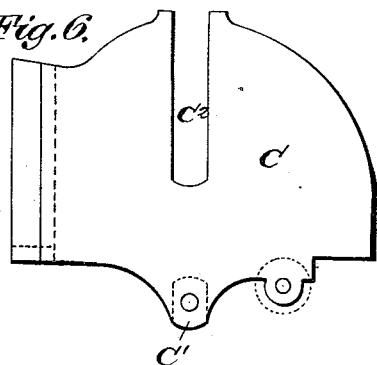


Fig. 7.

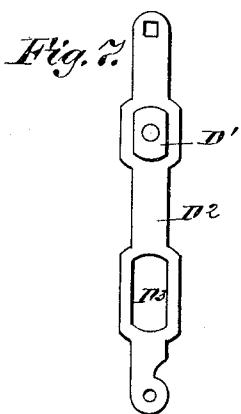


Fig. 9.

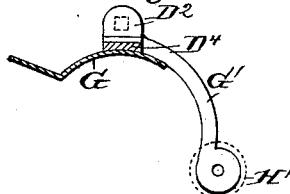
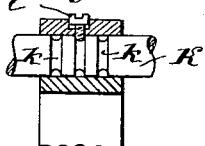


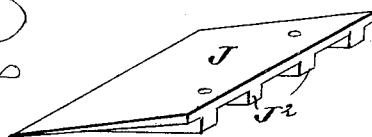
Fig. 10.



WITNESSES:

O. H. Breyer
John Mathew Ritter

Fig. 8.



INVENTOR:

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BY *Munn & Co.*

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UNITED STATES PATENT OFFICE.

ADOLPH HAMACEK, OF AHNAPEE, WISCONSIN.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 346,200, dated July 27, 1886.

Application filed July 29, 1885. Serial No. 172,957. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH HAMACEK, of Ahnapee, in the county of Kewaunee and State of Wisconsin, have invented a new and 5 Improved Feed-Cutter, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved machine for cutting hay, straw, and like material for feeding purposes. 10 The invention consists in the arrangement and combination of parts and details, as will be fully described and set forth hereinafter, and pointed out in the claims.

Reference is to be had to the accompanying 15 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of my improved feed-cutter, parts being broken out and others 20 shown in section. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a plan view, parts being broken out and others shown in section. Fig. 4 is a cross-sectional elevation of the same on the line $x-x$, Fig. 3. Fig. 5 is a side view of the rear part of the box, 25 showing the gearing for driving the cutter by power. Fig. 6 is a side elevation of one of the side plates inclosing the feeding mechanism. Fig. 7 is a side view of one of the slides in 30 which the upper roller is journaled. Fig. 8 is a perspective view of the fixed knife. Fig. 9 is a cross-sectional view of the cover for the upper feed-roller. Fig. 10 is a detail view of 35 one of the shafts, and the means for preventing it from moving in the direction of its length.

The box A, for receiving the hay, straw, or other like material to be cut, is secured on a frame, A', and is flared toward its rear end, 40 so that the hay, &c., will be compressed as it moves toward the front. In front of the front end of the bottom of the box a longitudinally-ribbed feed-roller, B, is journaled in side plates, C, secured to the frame at the front 45 ends of the sides of the box A, the said side pieces being provided with downwardly and outwardly projecting lugs C', forming boxes for the ends of the shaft of the roller B. A longitudinally-ribbed feed-roller, D, is journaled in boxes D', formed on bars D², provided 50 with slots D³, through which the boxes of the

lower roller can pass. The boxes D' of the roller D slide in vertical grooves C² in the side pieces, C. The upper ends of the bars D² are connected by a cross-bar, D⁴, parallel with the 55 rollers D B, and the lower ends of the bars D² are connected by links E to the forked end E' of a lever, E², pivoted to the uprights of the frame A' and having notches in its top edge at the swinging end, from which notched end a 60 weight, F, is suspended.

To the bottom surface of the bar D⁴, uniting the bars D², a curved top, G, is secured, which is above the roller D, and from the said bar D⁴ curved arms G' project downward in front 65 of the roller D, to the lower ends of which arms the presser-plate H is secured, which is slightly inclined downward and outward. This construction is shown in Fig. 2; but, if desired, a presser-roller, H', may be provided 70 in place of the presser-plate H, as shown in Fig. 9. The weight F on the lever E² can pull the upper roller down, so that the boxes D' can rest on the bottoms of the recesses C². The rollers D and B will then be their normal distances from each other. When hay or straw 75 is fed in between the two rollers, it forces the upper roller upward more or less. A deflector or inclined top plate, I, is secured to the top of the box A at the front end, and projects 80 over the top G, above the roller D, as shown.

In front of the roller B a bottom cutter, J, is secured on a bar, J', uniting the bottom edges of the side plates, C, the upper surface of the cutter J being inclined from the roller 85 B upward and outward. The outer edge of the cutter J is flush with the rounded front edges of the side pieces, C. The beveled cutter J and the presser-plate H are inclined toward each other from the rollers toward the 90 front end of the machine, and gradually compress the hay or straw as it passes between them. The main driving-shaft K, journaled in the frame at the side of the box, carries a beveled pinion, K', on its rear end, which engages with a bevel cog-wheel, K², on a shaft, K³, having a crank, K⁴, provided with a handle, whereby, by turning the shaft K³, the main driving-shaft K is revolved. 95

On the front end of the shaft K, which projects beyond the front of the frame of the machine, a cutter-wheel, L, is mounted, which has 100

spokes L', and on two diametrically opposite spokes the blades L² are bolted, the cutting-edges of the blades being rounded on convex lines. The said blades are so arranged that 5 their cutting-edges are in close proximity to the cutting-edge of the bottom cutter, J.

On the ends of the shafts of the rollers D and B the toothed wheels M and N, respectively, are mounted, and are arranged on opposite 10 sides of a worm, O, on the shaft K, the upper wheel, M, engaging with the worm O at its bottom, and the lower wheel, N, engaging with the worm at its top, whereby the said wheels are revolved toward each other. The toothed 15 wheels M N and the worm O are surrounded by a metal casing, P, secured to one of the bars D², and the lower part of the lower toothed wheel N is surrounded by a casing, Q, containing oil, into which the lower wheel, N, dips 20 and carries the oil to the worm O, from which it passes to the wheel M, whereby all these parts are thoroughly lubricated. The casings P Q also prevent parts of the straw, hay, or other feed from passing in between the teeth 25 of the wheels M and N and the worm O, and consequently clogging the said parts.

To prevent the shaft K or the shaft K³ from shifting in the direction of its length, it is provided with annular grooves, k, for receiving the ends of binding-screws l.

When it is desired to run the machine by power, the pinion R is mounted loosely on the shaft K, and is provided with a clutch-collar, R'. The said pinion engages with the cog-wheel S on a shaft, S', and is driven from an engine, horse-power, or any other suitable motor. A sliding clutch-collar, T, is arranged on the square part K³ of the shaft K, and is adapted to engage with the clutch-collar R' on the pinion R. The clutch-collar T is shifted by means of a lever, U, having an upwardly-projecting arm or pin, U', which passes into a groove of the clutch-collar T. The pinion R is revolved continuously from 45 the cog-wheel S on the shaft S', but will not revolve the shaft K. By engaging the clutch-collar T with the clutch-collar R' on the pinion, R, the collar T is revolved by the pinion and as the collar T is mounted on the squared 50 end of the shaft K, the said shaft must necessarily revolve with the said collar.

The bottom fixed knife, J, may consist of a solid wedge-shaped piece, or it may have wedge-shaped ribs J² on its under side, as 55 shown in Fig. 8.

The operation is as follows: The hay or straw is placed in the box A and between the feed-rollers B D, which draw it in the direction of the arrow a' and force it through the space between the fixed blade J and the top 60 plate, H. The projecting ends are then cut off by the knives or blades on the revolving wheel L. The weight F acts on the lever E' E², and causes a downward pressure of the top feed-roller, D, upon the hay or straw between the 65 two rollers.

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

1. In a cutter, the box A, the side plates, C, formed with vertical slots C² and bearings C', projecting from their outer sides below and in vertical alignment with the slots C², and the roller B, journaled in said bearings, in combination with the bars D², having inward-projecting bearings D' fitting in the slots C² and slots D³ in vertical alignment with the bearings D', and receiving the bearings C', the upper feed-roller, D, journaled in the bearings D', the counterbalanced lever E², and links 80 E, connecting it with the lower ends of the bars D², substantially as set forth.

2. The combination, with the box A, of the lower feed-roller, B, journaled in fixed bearings, the upper feed-roller, D, vertically movable 85 bars D², provided with bearings for said roller D, the cross-bar D⁴, connecting the said vertically-movable bars D², the cover G, secured to the bar D⁴ over the upper feed-roller, arms G', curved downward and inward from the cross-bar D⁴, the presser-roller H' on the free ends of said arms, the fixed knife J below the roller H, and the movable cutting-knife, substantially as set forth.

3. The combination, with the upper and 95 lower feed-rollers, D B, and the toothed wheels M N, of the shaft K, the worm O, meshing with the said wheels, the casing P, open at its lower end and covering the said gearing, and the oil-vessel Q, open at its top and registering with 100 the open end of the casing P, and receiving the lower part of the wheel N, substantially as set forth.

ADOLPH HAMACEK.

Witnesses:

HENRY SHMILING,
GEORGE MCCOSKEY.