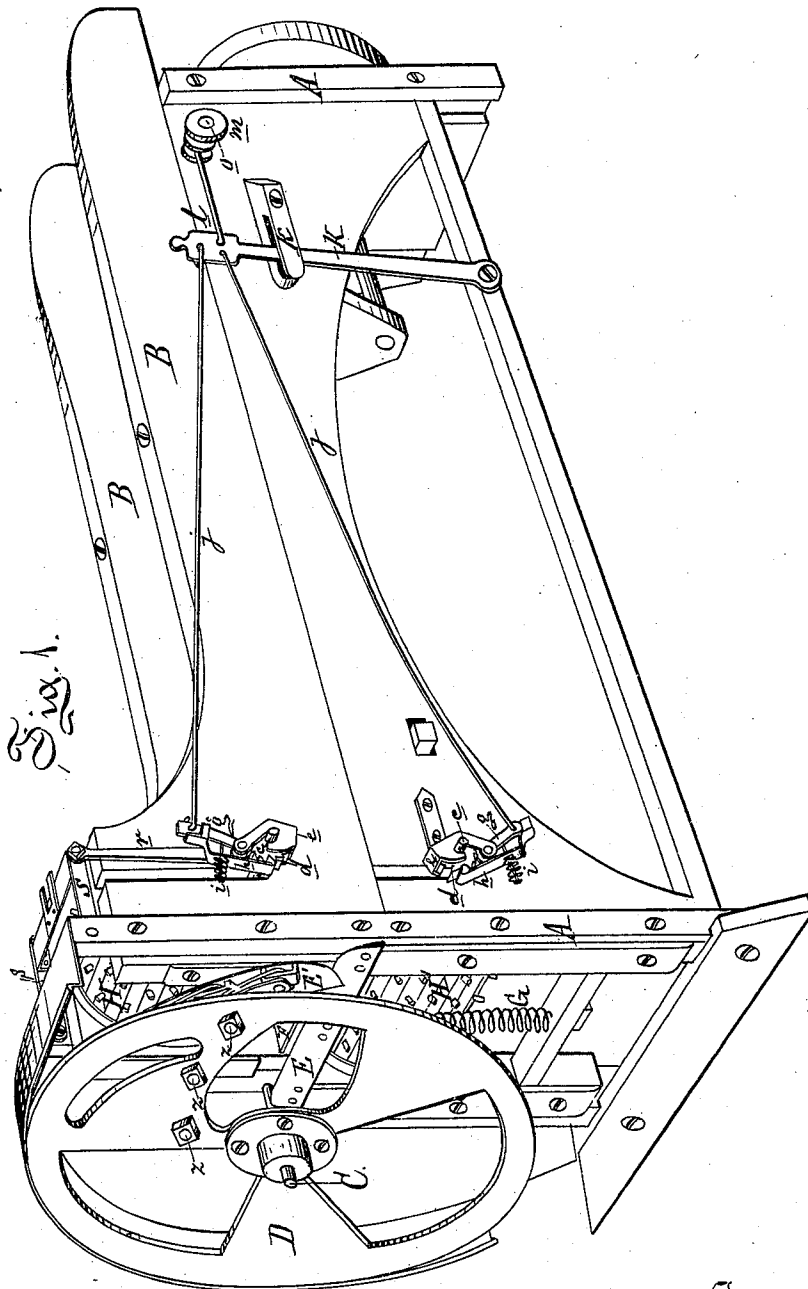


T. B. LAMB.
FODDER-CUTTER.

No. 170,569.

Patented Nov. 30, 1875.



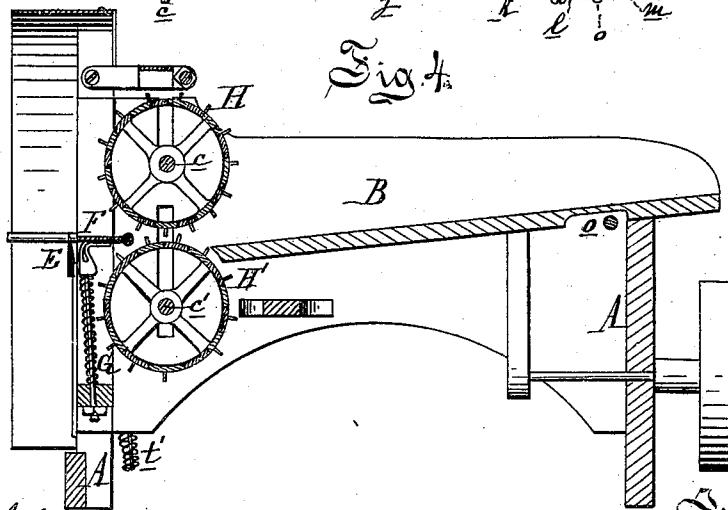
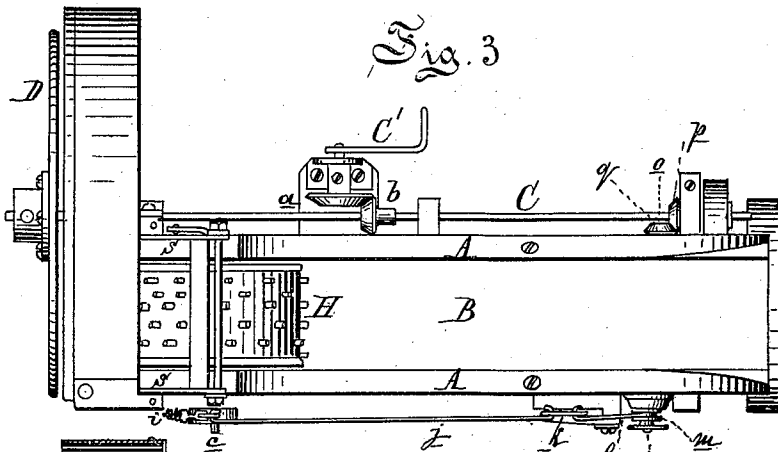
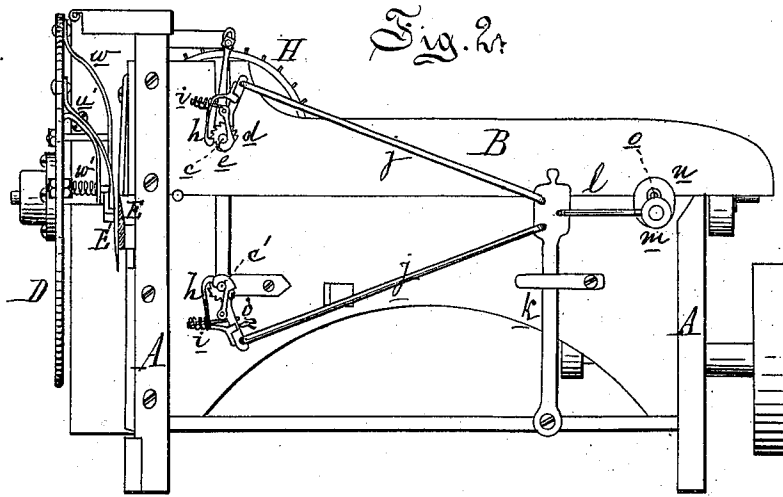
Attest:
Edward Barthel.
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T. B. Lamb
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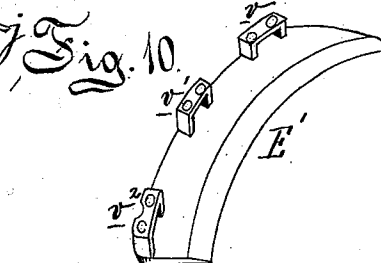
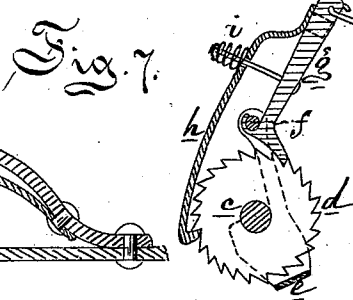
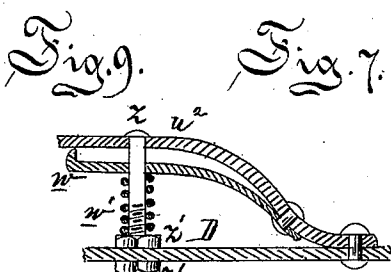
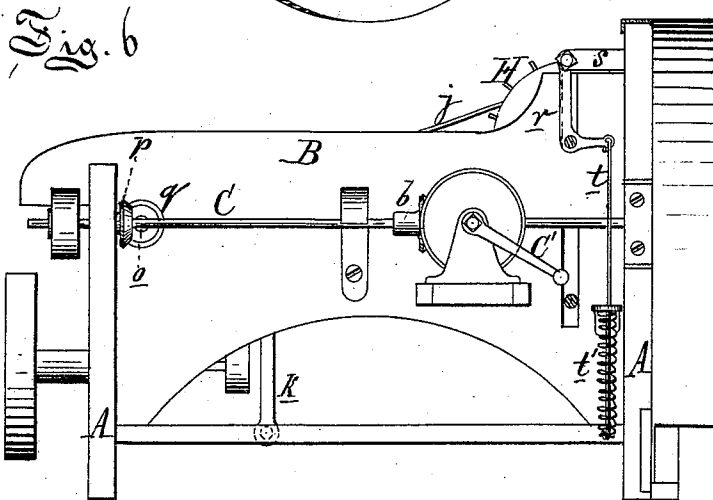
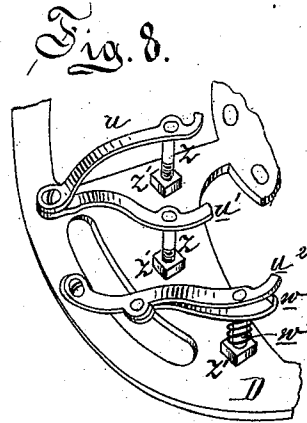
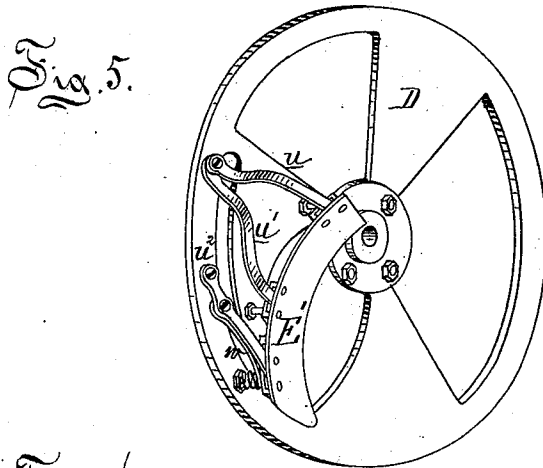
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Witness:
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UNITED STATES PATENT OFFICE.

THOMAS B. LAMB, OF LOWELL, MICHIGAN.

IMPROVEMENT IN FODDER-CUTTERS.

Specification forming part of Letters Patent No. **170,569**, dated November 30, 1875; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, THOMAS B. LAMB, of Lowell, in the county of Kent and State of Michigan, have invented an Improvement in Fodder-Cutters, of which the following is a specification:

The nature of my invention relates to an improvement in fodder-cutters; and it consists in various combinations, all as more fully hereinafter explained.

Figure 1, Sheet 1, is a perspective view. Fig. 2, Sheet 2, is an elevation of the machine, showing the "feed" side. Fig. 3 is a bottom plan. Fig. 4 is a longitudinal vertical section at *x x*. Fig. 5, Sheet 3, is a perspective view of the balance-wheel and knife. Fig. 6 is an elevation of the machine, showing the driving-gear. Fig. 7 is an enlarged sectional elevation of a feed-pawl. Fig. 8 is a perspective of the braces which support the knife in position on the balance-wheel. Fig. 9 is a cross-section of the same at *y y*. Fig. 10 is a perspective view of the loops on the inner side of the wheel-knife.

In the drawings, A represents the main frame, supporting the feed-box B, at one side of which a shaft, C, is longitudinally journaled through bracket-bearings, and carries at its front end a heavy balance-wheel, D, rotating across the mouth of said box. The shaft C may be rotated by a belt around a driving-pulley at its rear end, or by a crank, *c'*, through bevel-gears *a b*. Near the front end of the frame two feed-roll shafts, *c c'*, are journaled across the same in suitable bearings, the one above the other, and respectively carrying the feed rolls or drums H H', each of which has a pair of iron spiders for the heads, which have double flanges on their inner faces to receive the wooden staves with which the drums are built up, and which have their faces thickly studded with short metal teeth.

The feed-rolls have an intermittent rotary movement imparted to them in the following manner: Each feed-roll shaft carries on one end a ratchet, *d*. A pair of hook-plates, *e*, embrace the ratchet and are hooked at the inner end around the shaft, and between their outer ends there is a transverse pin, *f*, which connects them. This pin has an L-shaped pawl, *g*, pivoted thereon at its angle, the short arm engaging with the teeth of the ratchet. A

spring-pawl, *h*, has one end riveted to the long arm of the pawl *g*, and its other reaches part way around the ratchet, the object of which is to compel the proper position of the working-pawl in its movements. The long arm of each pawl *g* is connected by a rod, *j*, with the top of a rocker, *k*, pivoted at its lower end to the main frame, and which rocker is vibrated by a rod, *l*, from a wrist, *m*, that is adjustable, in its throw, in a slotted crank, *n*, at one end of a shaft, *o*, transversely journaled under the feed-box, the said shaft being rotated by bevel-gears *p q* from the driving-shaft C. By adjusting the throw of the crank-pin *m* the length of the cut pieces can be changed at will.

The shaft of the upper feed-roll is journaled in a pair of straps, *r*, pendent from a swinging frame, *s*, pivoted to the upper front standards, and is held down by a rod, *t*, engaging with one of the said straps *r*, through a spring, *t'*, spirally coiled about said rod, so that the upper roll may yield to pass an enlarged volume of fodder between it and the lower roll. E is a horizontal stationary knife secured across the front standards in the plane of the bottom of the upper roll, and behind it a yielding platform, F, is pivoted, at its inner corners, to the throat of the box. It is supported in a level position by a spiral spring, G, which yields to the pressure of the fodder lying on it when the projecting ends thereof are struck by the rotating knife, and thus allows the stationary knife to do its share of work in cutting the fodder lying across it. E' is a segment-shaped knife, mounted on the inner face of the balance-wheel, to the inner rim of which are secured three curved braces, *u u' u''*, whose outer ends are received, respectively, in loops *v v' v''*, forged, bolted, or riveted to the inner back edge of the knife. The brace *u*, which is inserted in the loop nearest the heel of the knife, is hooked, so as to form a locking hinge-joint therewith, and is the first one inserted when putting the knife onto the wheel. The knife is then swung onto the others, and a spring-catch, *w*, riveted to the under side of the brace *u''*, with a hook turned in its free end, is depressed to allow the loop *v''* to pass by said hook, when the catch is released to let the hook pass in front of the outer edge of said loop, and thereby lock the knife fast to the

balance-wheel. A spring, w' , is employed to force up the spring-catch, if the elasticity of the latter alone be not relied on. To adjust the knife E' with relation to the stationary knife, a bolt, z , is tapped in or welded to each of the curved braces, near the outer ends thereof, and passes through a hole in the wheel-rim, at each side of which an adjusting-nut, z' , is threaded on it. By shifting these nuts on the bolts z the knife E' may be adjusted to or from the wheel-rim, as occasion may require.

The knife, as will readily be seen, can be removed from the wheel in a few seconds of time by simply retracting the spring-catch and swinging the knife off the braces, and as quickly replaced, after sharpening, without moving a single nut or screw.

The feed-drums, constructed as described, are of much greater diameter than the ordinary iron rolls, without increase of weight or cost, and have an advantage over them in the certainty of feeding and no slipping when the volume fed to them is heavy.

The object sought and secured by the L-shaped pawl is that, by working it by its long or projecting arm, the catch is made with

greater certainty, and a bounding or slipping upon the ratchet becomes an impossibility.

What I claim as my invention is—

1. The combination of the hook-plates e , pin f , L-shaped pawl g , pawl h , and spring i , when the several parts are constructed and arranged substantially as described and shown.

2. The braces u u^1 u^2 , their adjusting-bolts z , and spring-catch w on the wheel D , in combination with the loops v v^1 v^2 on the knife E' , for securing the latter to said wheel, substantially as described.

3. In a fodder-cutter, substantially as described, the combination, with the frame A and box B , of the following elements: the shaft C , journaled on one side of the frame and having the cutter-carrying wheel on its outer end, the cross-shaft o , the adjustable crank n , attached to one end of the said cross-shaft, the rod l , the rocker k , and the rods j , when the several parts are constructed and arranged to operate substantially as described and shown.

THOS. B. LAMB.

Witnesses:

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CHARLES H. LESLIE.