

A. GORDON.  
Straw Cutter.

No. 37,687.

Patented Feb. 17, 1863.

Fig. 3,

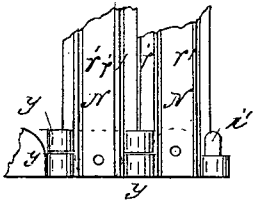


Fig. 4,



Fig. 2,

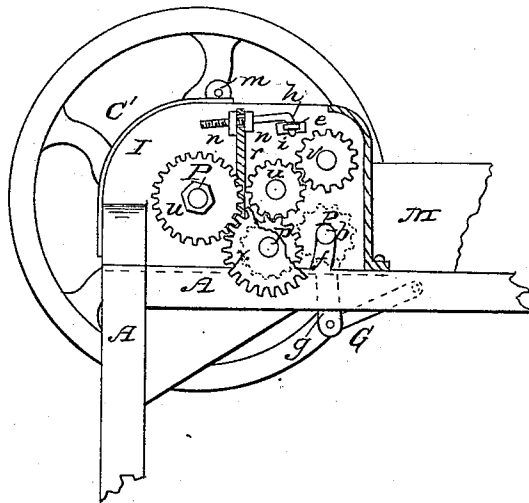
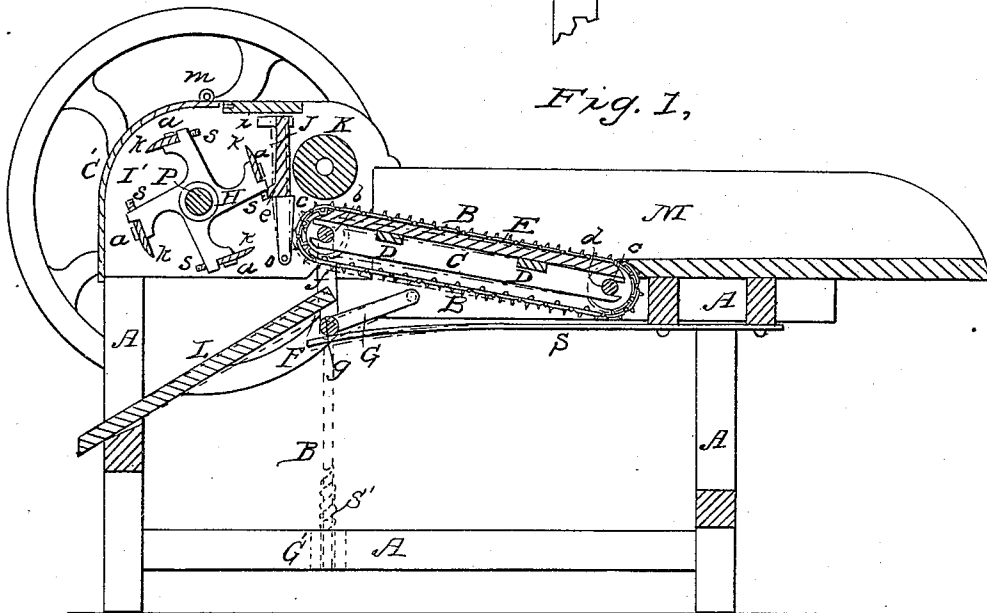


Fig. 1,



WITNESSES:

*Wm. Loughborough*

INVENTOR:

*Alex Gordon*

# UNITED STATES PATENT OFFICE.

ALEXANDER GORDON, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. 37,687, dated February 17, 1863.

*To all whom it may concern:*

Be it known that I, ALEXANDER GORDON, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cutting-Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a side elevation of the cutter-case, showing the pinions of the feeding apparatus uncovered. Fig. 3 is an enlarged top view of a section of two of the feeder-slats N and their links *y*. Fig. 4 is a side view of the links *y*, showing the end of the slats N.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of the invention will be understood by reference to the drawings and specification.

The apparatus is supported by a suitable frame, A. The endless belt B is composed of a series of ribbed slats, N, corresponding in length to that of roller K. These slats are riveted at each end to the links *y*, which are cast with spurs *t*, Fig. 4, and every other link has eyes *v* to receive the pins *v'*, cast on each alternate link. The slats N may be cast with ribs *r'* on, or they may be made of wood and grooves sawed in their upper faces corresponding to the ribs, and narrow strips of sheet-iron inserted with one edge projecting about one-fourth of an inch above the face of the slat. The spurs *t* catch in the openings made in the flanges of the pulleys *c* and *c'*. To the shafts of these pulleys is suspended a spreader which is composed of two side rails, C, cross-bars D, and two bars, E, which latter support the upper or loaded half of the belt. The shaft *b* turns in the upper ends of the straps *g*, their lower ends being hinged to the yoke F. There is a curved slot, *f*, struck from the center of pinion *p*, as seen in Fig. 2, in each of the side plates, I and I', through which the ends of this shaft *b* reach, thus securing a uniform depth of mesh between the pinions *p* and *p'*, as the shaft is moved up or down by the varying thickness of the passing substance which is being cut, and the boxes of the shaft *d* are allowed to slide in mortises in the plates of

the frame A, the shafts *b* and *d* being prevented from approaching each other by the spreader-bars C. The yoke F is provided with two fixed arms, G, which are hinged to the frame A, and, as it swings, both ends must move equally, thus effecting a parallel movement vertically of the shaft *b*, which causes the pinion *p'* to sustain its relative position with pinion *p*. The yoke is pressed upwards by the spring S, and the upper edge of the chute-board L is hung to the yoke. There may be a spiral spring, S', substituted for the spring S, applied as shown by the dotted lines in Fig. 1, by fixing a rod, B', to the yoke F, and the lower end of the rod being encircled by the spring S' fits loosely through the girt G', upon which the lower end of the spring rests, while the upper end presses against a shoulder made on the rod. The axis of roller K is fixed. The arms of the throat-bar J are hinged to the side plates, I and I', at the lower end, as seen at *o*, Fig. 1, and there is a lug, *e'*, Fig. 2, cast on each end of the bar, which projects through the curved slots *i*. There is a hole drilled through each lug, and one end of the adjusting-screws *h* is bent down through it, the other end being secured by the nuts *n* to the rib *r*, cast on the sides I and I', and by turning the nuts on or off, the bar J is swung to or from the knives *k*. These knives are secured to tangential seats or brackets on the arms of the heads H by countersunk screws *a*, the knives being slotted to receive them. There are also set-screws *s*, which screw through the end of the arms and against the back of the knives. It will be seen that these set-screws *s* constitute a permanent backing, always being set against the back of the knives after they have been properly set to the throat-bar, notwithstanding any variance in their width. By this means the knives are also much more firmly held than if depending solely upon the screws *a* to resist the concussion of the knives against the substance which is being cut. The heads H are placed upon the shaft P so as to set the knives a little spiraling, which gives them a shearing cut across the edge *e* of the throat-bar J, and when the knives become so much worn as not to reach the throat-bar it may be drawn up to them by turning up the nuts *n* on the adjusting-screws *h*. If desirable, the feeder-belt B may be extended to the full

length of the hopper between the sides M and M'. The cap C', which guards the knife-cylinder, is hinged to the side plates, I and I', at *m*. The spur-wheel *w* turns wheel *x*, which is keyed to pinion *p*, the latter turning the belt-shaft *b* by the pinion *p'*. The roller K is turned by the intermediate *u*, and pinion *v*, as seen in Fig. 2. The material to be cut is deposited upon the feeder-belt B, by which it is carried forward to the cutters and entirely fed through, however short and broken it may be, without further attention from the operator.

What I claim as my invention, and desire to

secure by Letters Patent of the United States, is—

1. The employment, in cutting-boxes, of the feeder-belt B, when constructed, arranged, and operating in the manner specified.

2. The yoke F and straps *g*, as specified, for the purpose of keeping the pinions *p* and *p'* in the same relative position as the latter moves up or down.

ALEX. GORDON.

Witnesses:

WM. S. LOUGHBOROUGH,  
B. D. MCALPINE.