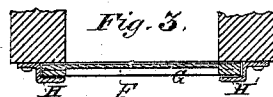
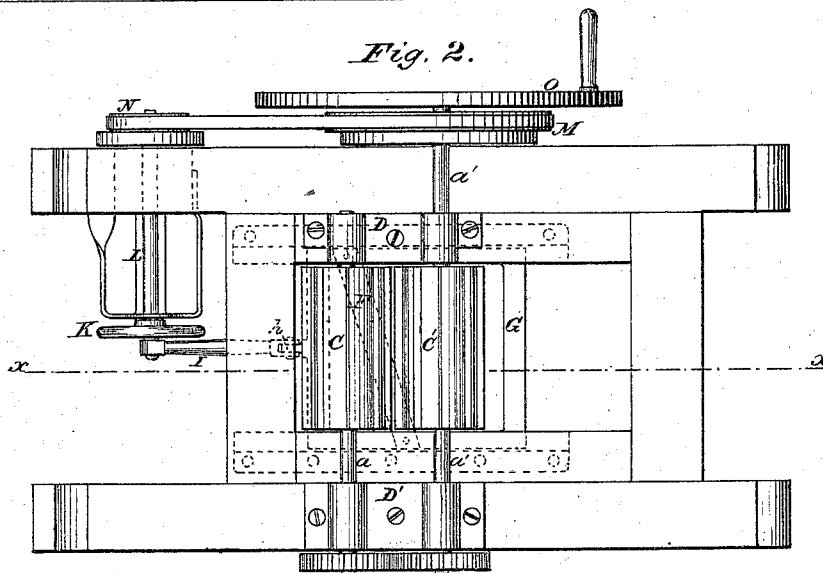
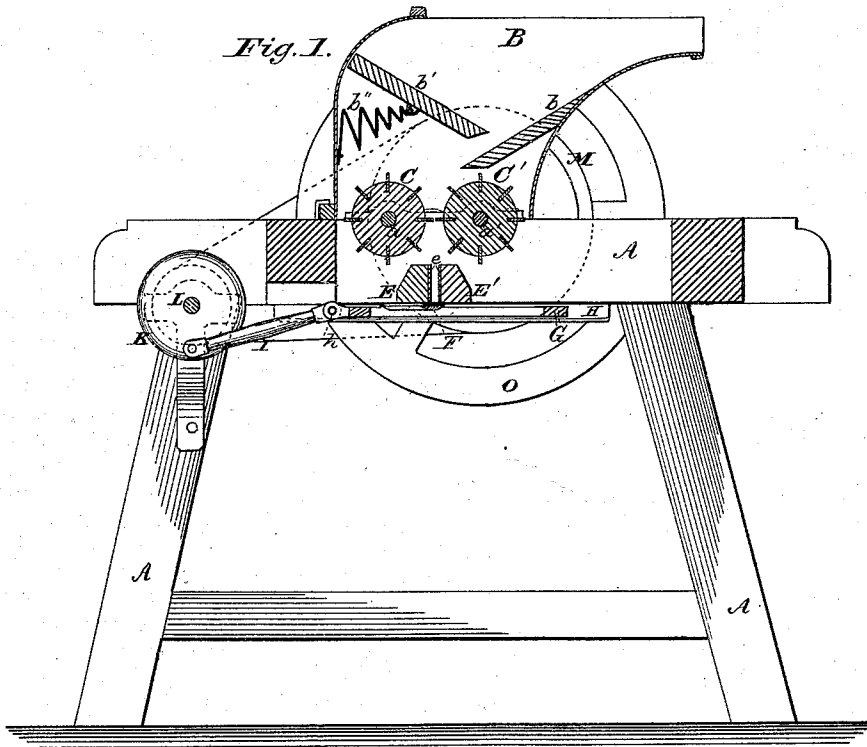


A. KINDERMANN.
Straw-Cutters.

No. 143,356.

Patented September 30, 1873.



Witnesses:
 Geo. A. Kollie
 J. W. P. Schreder

Inventor:
 Aug Kindermann

UNITED STATES PATENT OFFICE.

AUGUST KINDERMANN, OF CLEVELAND, OHIO.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **143,356**, dated September 30, 1873; application filed June 2, 1873.

To all whom it may concern:

Be it known that I, AUGUST KINDERMANN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Straw-Cutters, of which the following is a specification:

This invention consists in the arrangement of devices by which the straw is taken from the hopper by two feed-rollers, each having a positive motion, and delivered to the knife in a compressed state between two blocks, forming a narrow space, and in the construction of the devices, as hereinafter more fully described.

To enable others skilled in the arts to make and use my invention, I will now proceed to more definitely describe the same, reference being had to the accompanying drawing, in which—

Figure 1 is longitudinal vertical section on line *x x*. Fig. 2 is plan view of the same with the hopper removed. Fig. 3 is a detail cross-section, showing the guideways for the knife.

In the drawing, A represents a frame of suitable construction, to which the hopper B is attached. In this hopper is arranged a guide-board, *b*, upon which the straw is placed, and is held by a spring-cover, *b'*, secured to the opposite side of the hopper by a spring, *b''*, and which regulates the amount of straw fed to the feed-rollers C C' on shafts *a a'* which are journaled in suitable bearings D D' secured to the frame A. Immediately under the feed-rollers are arranged two bars, E E', having sufficient space between them to allow the straw to pass through. Said bars are lined on their inner faces with steel or other metal strips *e*, to prevent them from wearing out, and also to present better cutting-edges, as the knife F reciprocates by them. The knife F is

double-edged and arranged in an oblique manner, so as to give a shearing cut. It is secured in a frame, G, which slides in suitable guideways H H', that are secured to the inner side of the frame A, as will be more clearly seen in Fig. 3. The frame is provided at one end with a lug, *h*, to which a pitman or connecting-rod, I, is attached, and connects it with a crank-wheel, K, on a shaft, L, in suitable bearings on the rear end of the machine. On the extended end of shaft *a'* is secured a cone-pulley, M, which imparts motion to the pulley N on shaft L, by which the knife and frame are reciprocated.

Motion may be imparted to crank-wheel O by hand; or any prime motive power may be substituted, so as to operate it by horse or steam power.

The advantages of my machine are, that there is no danger in feeding the straw by hand; it is very simple in construction; the knife can be readily removed for sharpening, and the straw is cut off squarely and regularly, so that no long pieces are left, but all are of an even length, as the knife has a shearing cut, and no long pieces can be drawn in by it.

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

The hopper B, provided with the guide-board *b* and spring-cover *b'*, and the two toothed feed-rollers C C', each having a positive motion, and the blocks E E', forming the narrow opening, all located directly above the knife F, all constructed and arranged for operation, as and for the purpose specified.

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Witnesses:

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