2 Sheets—Sheet 1.

J. BARON.

Straw-Cutter.

No. 199,893. Patented Feb. 5, 1878.

Fig. 1

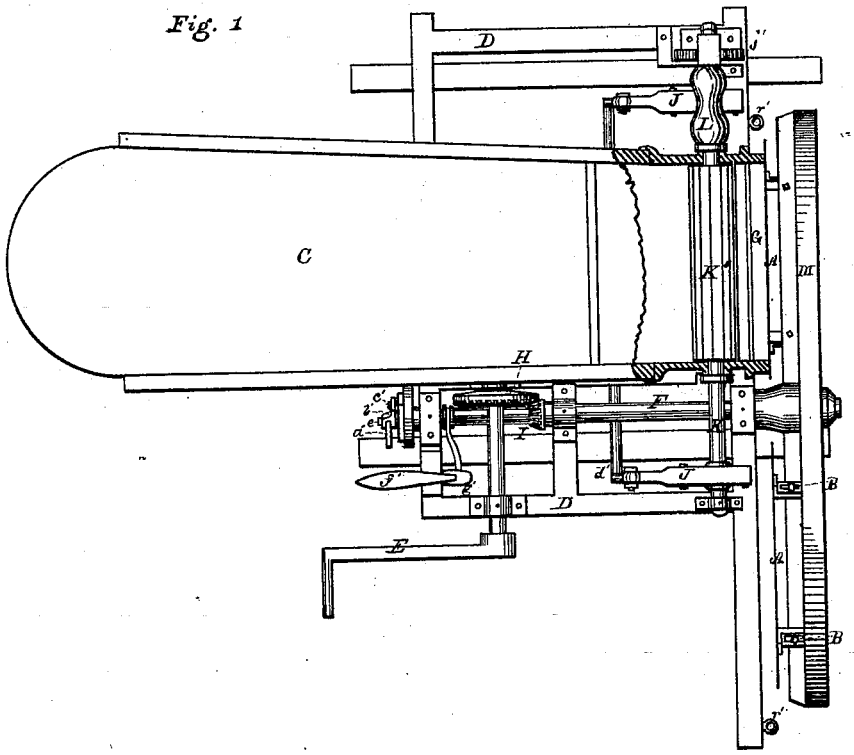
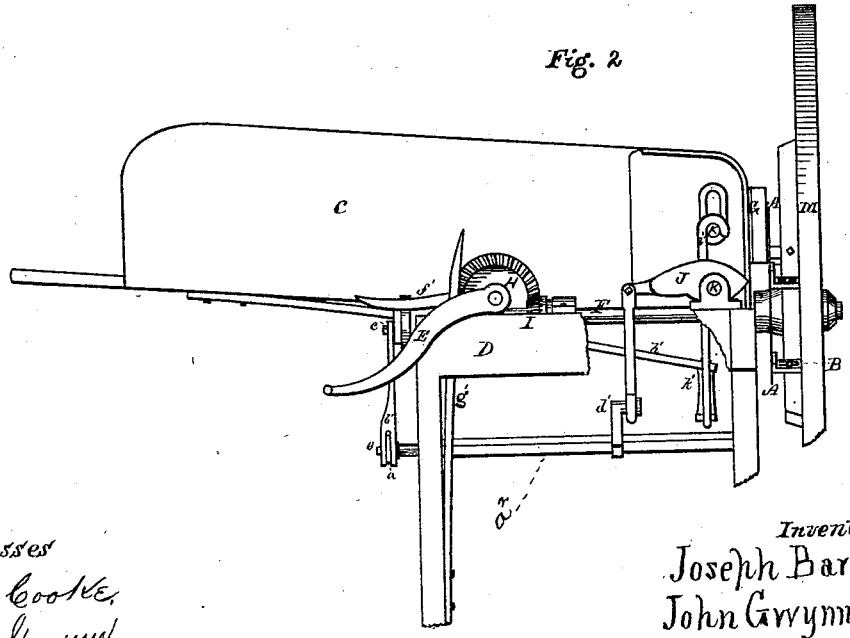


Fig. 2



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2 Sheets—Sheet 2.

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Fig. 3

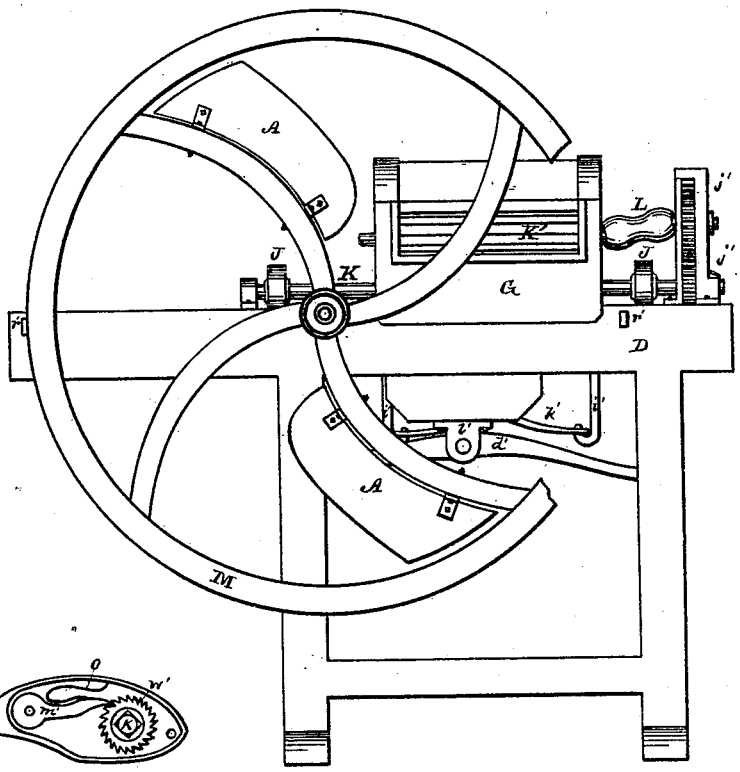


Fig. 4

Fig. 5

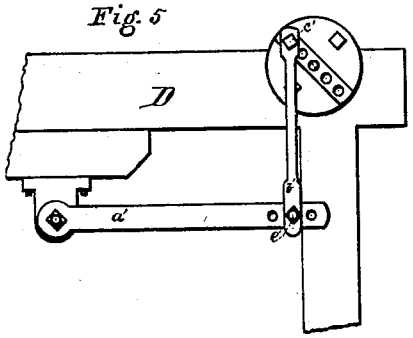
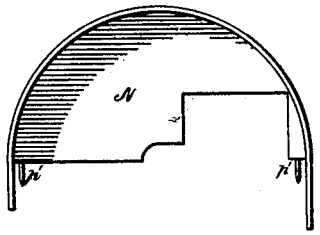


Fig. 6



Witnesses;

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UNITED STATES PATENT OFFICE.

JOSEPH BARON, OF DAYTON, OHIO.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **199,893**, dated February 5, 1878; application filed March 3, 1877.

To all whom it may concern:

Be it known that I, JOSEPH BARON, of Dayton, county of Montgomery and State of Ohio, have invented new and useful Improvements in Feed-Cutters, of which the following is a specification:

The invention relates to the feeding mechanism, the manner of adjustment to regulate the length of cut, and the attachment of the cutters to the balance-wheel.

The object of my invention is the construction of a rapidly-operating feed-cutter by attaching knives to the face of the wheel on opposite sides of its axis, and adapting a feeding mechanism thereto, so that two cuts are made in each revolution, the same being readily adjusted to cut varying lengths of feed, and a device to instantly arrest the feed when obstructions are met.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a top view of the feed-cutter. Fig. 2 is a side elevation of the same. Fig. 3 is a front view of the same. Fig. 4 is a side view of the oscillating arm which carries the feed-shaft. Fig. 5 is a rear view, illustrating the device for adjusting the length of cut. Fig. 6 is a front view of the shield.

D represents a substantial quadrangular frame, which supports the superincumbent parts. Across the top of this frame is firmly secured the feed-box C, which is of the usual form.

To the front of the frame may be attached the shield N by pins p', which enter eyes r', attached to the same. The use of this shield is to protect the operator from contact with the knives.

On top of the frame, and near the front, are bearings, which support the shaft K. On this shaft, and within the cast-iron end G of the feed-box, is a corrugated roller, and immediately above is a similar roller, K′, the spindles passing through lengthened orifices of the feed-box; and external to the box are stirrups i', connected to the arm k', which is attached to the end of the long spring h', the opposite end being secured to the under side of the feed-box. This device serves to hold the roller on the material as it is being carried forward to be cut, moving up and down to accommodate the varying thickness of material. This roller is driven from a cog-wheel, which is connected to the roller by a jointed arm, L, the cog-wheel being driven by the cog-wheel j', attached to the shaft K. (See Fig. 3.)

The shaft K has bearings, one on each side of the frame, and near each end is connected an oscillating arm, J, which arms inclose ratchet-wheels W, attached to the shaft; and inclosed within the arms are also pawls m', backed by the springs o, to cause the pawls to engage the ratchet-wheels when the movement of the arm is upward. The relation of these parts is fully illustrated by Fig. 4.

On top and to the rear of the frame is supported, in suitable bearings, a short transverse shaft, to which, at the inner end, is attached the bevel-wheel H. On the other end of this shaft is attached the crank E, and, when it is desirable, a band-pulley may be substituted. Another shaft, F, supported in bearings on the frame and at a right angle to the driving-shaft, has on the left-hand end the bevel-pinion I, which meshes into the wheel H, by which it is driven. To the right end is attached a large balance-wheel, M. To the arms of this wheel are secured, by brackets, the knives A A. These brackets have oblong orifices for the screws, for the purpose of adjusting the knives in contact with the end of the cutting-box. (See Fig. 3.)

Connected by a clutch to the shaft, external to the frame, is a crank-plate, c', and a pitman, b', connects the wrist of this plate to the arm a^1, and this latter is fixedly attached to the shaft a^2, which is supported in bearings on the frame beneath the box. To this shaft is attached the cross-arm d', the ends of which connect, by jointed straps, to the oscillating arms which operate the feed-rollers.

At Fig. 2 is shown a spring-arm, g', which has a lateral projection, that actuates the ordinary form of clutch and holds the same in gear, the other part of the clutch being connected to the crank-plate, and by this means the feeding mechanism is operated from the shaft F. When it is desirable to arrest the motion, the arm may be thrust forward; then the clutch is released, and the catch f' drops down and holds the clutch out of gear. When it is desired to throw the clutch in gear, the

catch is raised, and the arm throws it again into gear.

The crank-plate has a series of holes, in which threads are cut for the crank-pin, and by changing the pin in these holes the length of the cut is regulated. The farther the wrist-pin is carried from the center the longer the cut. As the shaft beneath the feed-box is kept in constant motion, and the arm extends on both sides, communicating with the oscillating ratchets, the feed has thereby two motions to each revolution, corresponding to the movement of the knives.

The operation is nearly identical with that of the ordinary feed-cutter, and may be described thus: The straw is placed in the box and is pressed forward, so that the rollers will engage it, it being projected twice by the feeding mechanism, and is cut at each half-revolution by the knives attached to the balance-wheel. If any hard material is met with in the straw, the clutch-arm may be thrust forward, and the feeding movement instantly ceases.

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

The combination, with the motor or crank-shaft, the feed-roll shaft K, and the ratchet-and-pawl devices connected to the two ends of said shaft, of the herein-described mechanism for imparting feed movement to the roll through the medium of the two pawl-and-ratchet devices, operating alternately, thus producing two feed movements to every revolution of the cutter-wheel.

JOSEPH BARON.

Witnesses:
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