# I. W. Croff.

## Straw Cutter.

No. 1,573. Patented Apr. 30, 1840.

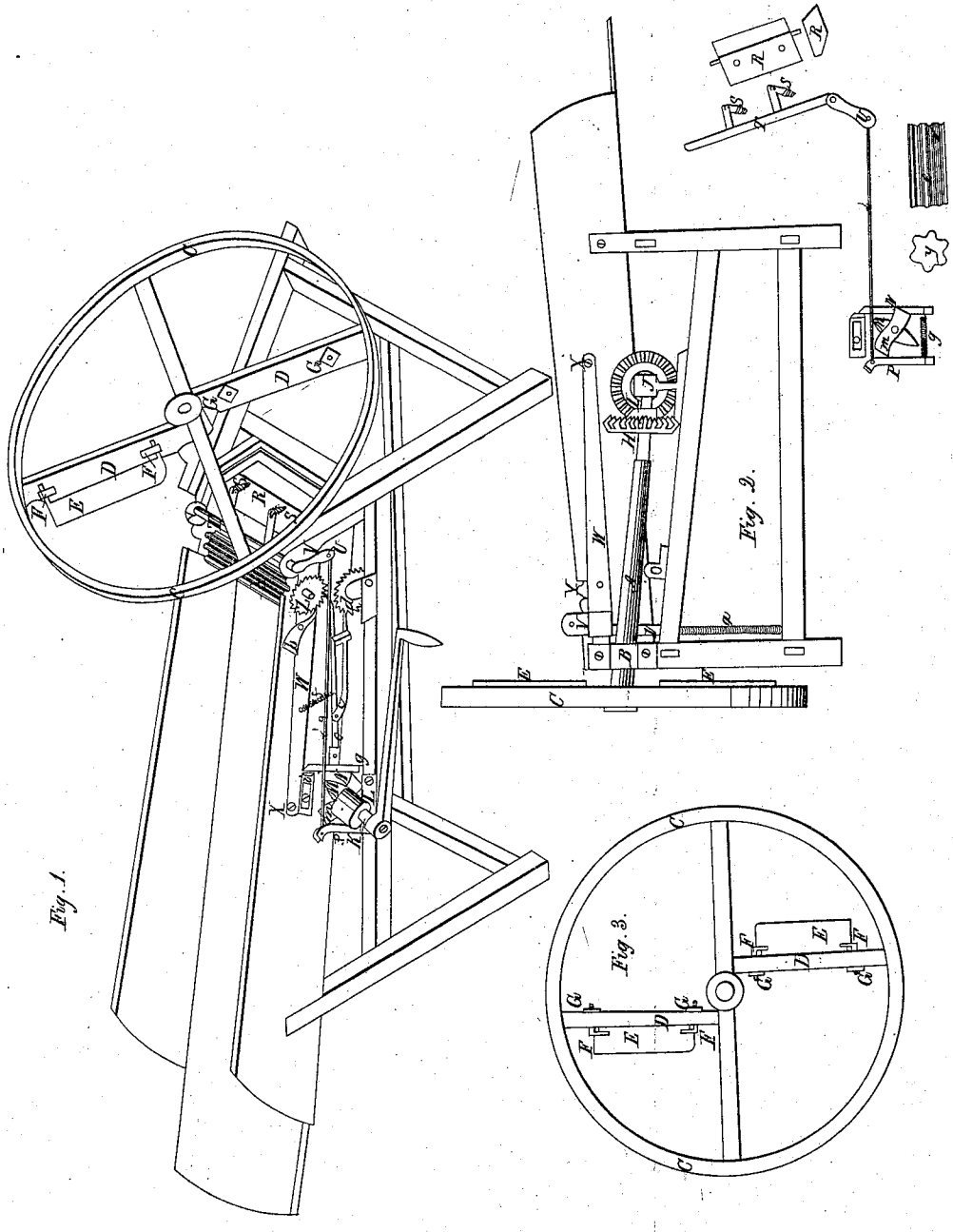


Fig. 1.



Fig. 2.



Fig. 3.

# UNITED STATES PATENT OFFICE.

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## MODE OF FEEDING AND PRESSING STRAW IN STRAW-CUTTING MACHINES.

Specification of Letters Patent No. 1,573, dated April 30, 1840.

*To all whom it may concern:*

Be it known that I, ISRAEL W. GROFF, of Lampeter township, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Improvement for Cutting Straw, Corn-Fodder, &c.; and I do hereby declare that the following is a full and exact description.

A box is made in the common form about six feet in length ten inches wide, and about eight inches deep, and placed on a frame of sufficient height; see No. 1. An iron shaft of about three feet long, an inch and a half in diameter, called the fly wheel shaft (A) is placed on the off side of the box. The pedestal (B) in which the fore end of the shaft turns is made fast near the top of the off front foot in such a position that the shaft will be about opposite the center of the box in height, and about six inches from the side of it. On the front end of this shaft is placed the fly wheel (C) which is made of metal about forty inches in diameter, with a bar dividing it in two equal segments, these segments are subdivided by two arms (D) running from the middle of the periphery, and each joining the first mentioned bar about three inches in front of the center, and to the arms are attached the cutters (E). These cutters are made about thirteen inches long, and three broad; about three-fourths of an inch of the back of these cutters extend two and a half inches longer than the blade, and are bent at right angles with the blade, which forms the means by which they are fastened to the arms. A clutch-bolt, (F.) is put through the arms holding each of these fastenings, and is made fast by a screw and nut on the other side (G.). On the opposite end of the fly wheel shaft is placed a bevel wheel (H.) of about eight inches in diameter, working in a similar bevel wheel, (I.). On the end of a shaft, which passes at right angles with the former shaft under the box, and both resting on a pedestal, (J.) fixed on the frame of the box, this may be called the crank shaft, (K.) or the shaft by which the whole is put in motion; the other end of this shaft also rests on a pedestal, (L.) fixed on the frame which supports the box. Close to the side of the box, on this shaft is placed two cams, one of which, (M.) works against a lever, (N.) to which is attached a dog, (O.) which works the upper feed roller. The other cam, (*m.*) operates on a lever, (P.) on the opposite side of the shaft, and to which is attached a rod (Q.) that works the bearer, (R.). The bearer is a block of wood of about two and a half inches thick in front, and about four inches broad, and in length to suit the inside of the width of the box. This block is somewhat beveled in front, leaving the lower side longest, and rounded at the bottom, the back edge about one inch thick with a small tenon on each end working in a groove in the sides of the box. On the top near the front side, and near each end are placed two uprights of iron, (S.). An iron shaft of about an inch in thickness, called the bearer shaft, (T.) with a crank on the near end to which the rod, heretofore described, Q, is fixed by a movable joint, (U.) two arms extend forward from this shaft and are attached by movable joints to the uprights, S. in the bearer. This shaft works in the top of an iron frame, (V.) on each side of the box, which frame extends down, and is joined under the box, and from it on each side immediately below the shaft a branch, (W.) extends backward alongside of the box about two feet in length, the hind end of which is fastened to the side of the box by a pivot, (X.). In this part of the frame, about two inches behind the bearer shaft, is a shaft on which is placed a fluted, or ribbed roller, about four, or four and a half inches in diameter, called the feeder, (Y.). And also on the near end is placed a rack wheel, (Z.) of about the same diameter in which the dog, O, heretofore described works. The fore end of this frame containing the bearing shaft and feeder, is movable upward and downward, to suit it to the quantity of straw or fodder in the box. (To the lower part of this frame is attached the end of a spiral spring, *a.*). The other end of this spring extends downward and is attached to the frame supporting the box. This spring by its contraction assists the pressure of the bearer. An additional dog (*b.*) is put to this wheel (*z*) to prevent it from receding while the other is drawn back. Near the hind end of the first mentioned dog another dog (*c*) is attached by a pivot, which works a similar rack wheel (*d.*) and a roller (*e.*) made like the one heretofore described.

The shaft of this rack wheel and roller is placed under the box, so that the roller extends up in the box a small distance above the surface of the bottom, and with the other roller forms the feeder. A spiral spring (*f.*) is fastened to about the middle of the branch, (W) on the near side, and also to the dog (O.) which supports, and holds it to its place on the rack wheel. A movable stop (*i*) is placed on the side of the box, at the top of lever (N.) for the purpose of regulating the feeder. The two levers are drawn toward each other by a spiral spring (*g.*) near their lower ends.

No. 1, is the machine, or box in perspective; No. 2, the opposite side of the box; No. 3, front view of the fly wheel.

What I claim as my invention, and desire to secure by Letters Patent is—

The combination of the bearer and the rack wheel, constructed and operating as herein set forth, that is worked by the dogs in such a manner as to change the pressure alternately from the bearer to the feeder, which effect is produced by the manner in which the dogs are worked by the cams, the feeding by this operation being made thicker or thinner, and the stuff cut short or long at pleasure.

ISRAEL W. GROFF.

Witnesses:
SAM. DALE,
JAMES J. DALE.