B. DENSMORE.

Straw Cutter.

No. 5,622. Patented June 6, 1848.

Fig. 1.

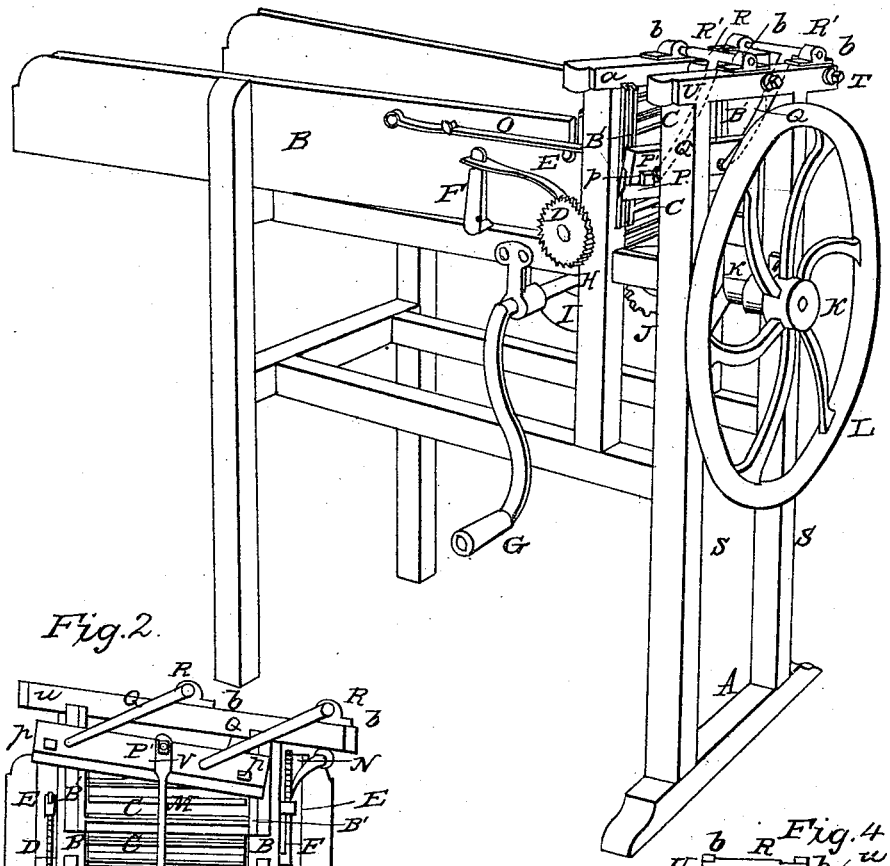


Fig. 2.

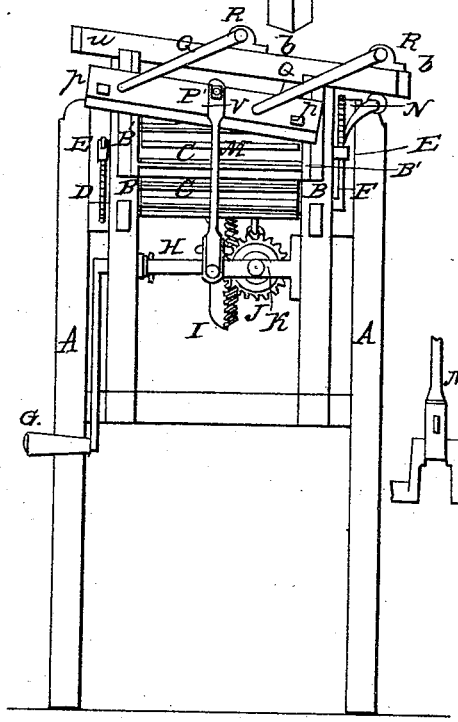


Fig. 3

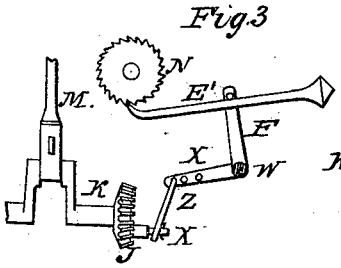
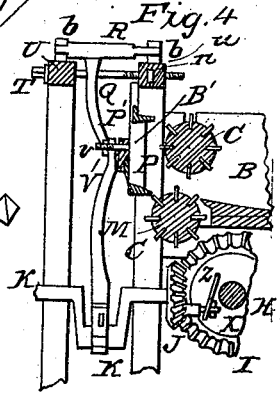


Fig. 4



UNITED STATES PATENT OFFICE.

BYRON DENSMORE, OF KENDALL, NEW YORK.

STRAW-CUTTER.

Specification of Letters Patent No. 5,622, dated June 6, 1848.

To all whom it may concern:

Be it known that I, BYRON DENSMORE, of Kendall, in the county of Orleans and State of New York, have invented a new and useful Improvement in Machines for Cutting Straw, Hay, and other Substances, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a front elevation of the mouth of the cutting box—the knife and stock—the parallel arms and rock shafts—the connecting rod or pitman—and the crank shaft. Fig. 3 is a view of a part of the feed gear attached to the bevel wheel. Fig. 4 is a vertical longitudinal section through the middle of the front part of the cutting box showing the knife, stock, and feed rollers.

Similar letters in the several figures refer to corresponding parts.

The nature of my invention and improvement consists in attaching the knife stock by means of two oblique parallel vibrating hanging arms, to two horizontal parallel rock shafts turning in boxes fastened to inclined caps on the top of the frame, in front of the knife box, and connecting the knife stock to a revolving crank shaft, turning in boxes, below the knife by means of a connecting, or pitman rod, so that the knife shall be operated obliquely against the mouth of the cutting box at the same angle of inclination—the hanging arms preserving their parallelism throughout the entire movement of the knife. Also in arranging two horizontal parallel screws in combination with the two inclined cap timbers of the frame that sustain the boxes of the aforesaid parallel rock shafts, for adjusting the knife to the metallic mouth or facing of the cutting box to compensate for the wear of the box and knife. Likewise in a new mode of operating the rock shaft of the feed gear by attaching it to the face of a bevel wheel on the main crank shaft.

The frame A—the cutting box B—the ratchet wheels D, N, feed hands E E′, crank F, to which the feed hand is attached—propelling crank or winch G—horizontal shaft H, bevel wheel I,—bevel pinion J,—main crank shaft K,—fly wheel L, pitman M,—spring O for pressing down the upper feed roller; and the upper and lower feed rollers C, C, being arranged and operated in the usual manner, and no claim being laid to these parts, or their combination, need not therefore be particularly described.

The combination of the knife P—parallel swinging arms Q, Q—rock shafts R—R, adjustable bent S of the frame—parallel screw rods T, T,—inclined caps U *u;* and nut V constituting the improvement, will be particularly described. Also the combination of the rock feed shaft W, wrist X, arm Y, and connecting rod Z, for operating the feed hands.

The knife P, which is made in the usual manner, is firmly held in a suitable metallic stock P′ and is suspended by the arms Q, Q, to the parallel rock shafts R, R, that turn in boxes B B bolted to the inclined caps U *u* of the frame—said rock shafts having gudgeons and shoulders R′ adapted to the said boxes B B in such manner that when the inclined cap U is drawn toward the stationary inclined cap *u* (which is effected by turning the parallel screws T T) the said shafts R will be caused to have a longitudinal movement in the boxes B B carrying with them the arms Q Q connected therewith, and also the knife stock P′ attached to the lower ends of said arms Q Q and thus bringing the knife against the mouth of the cutting box B, the cutting edge of which being accurately adjusted to the metallic face or lining B′ of the cutting box B by means of the nut V and screw *v* which connect the knife stock to the pitman rod M. This adjustment is produced, or effected, by shaping the upper end or portion of the pitman rod M in the form of an obtuse angle on the side next to and in contact with the knife stock, as represented in the drawing Fig. 4 which causes the angle, or knuckle, *m* to strike against the back of the knife stock near the lower edge thereof serving as a point of support on which the stock turns, as the nut V is turned. The upper end of the pitman rod being bent back from the stock, allows room for the stock to move toward or from the cutting box, at the same time causing the edge of the knife to move toward or from the cutting box.

The lower end of the pitman rod is connected to the crank by a strap and key so as to have very little play, and be as firm as possible without interfering with the due operation of the crank.

T T are two horizontal parallel screws for moving the upper end of the bent U and knife toward the cutting box. These screws turn in female screws or nuts fixed in the cap *u*. It will be seen that the knife is moved toward or from the mouth of the cutting box by simply turning the two parallel screws T T. The lower or cutting edge of the knife is caused to advance toward or recede from the cutting box by turning the nut V on the screw *v*. These adjustments are rendered necessary from the constant wear of the knife and end of the cutting box.

The rock shaft W is arranged in the usual manner beneath the cutting box and the arms F and feed hands E E′ are attached to it in the old mode. The rock shaft W has an arm Y projecting from it at right angles, which is connected to a wrist X of the bevel wheel J by means of a connecting rod Z.

The feed hand E′ acts against the underside of the rag wheel N of the upper feed roller C, as shown in Figs. 2 and 3. The feed hand E acts against the upper side of the rag wheel D of the lower feed roller C.

The knife is secured to the stock by means of the nuts *p*, *p*.

The connection of the arms Q Q with the stock P is effected by turning their lower ends at right angles and inserting these turned ends through corresponding holes in the stock.

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

Attaching the knife to the arms Q Q connected with the rock shafts R R, in combination with its attachment to the pitman M in the manner described—said combined attachment serving to give support and the peculiar motion to the knife as above described.

In testimony whereof I have hereunto subscribed my name before two witnesses.

BYRON DENSMORE.

Witnesses:
WM. P. ELLIOT,
A. E. H. JOHNSON.