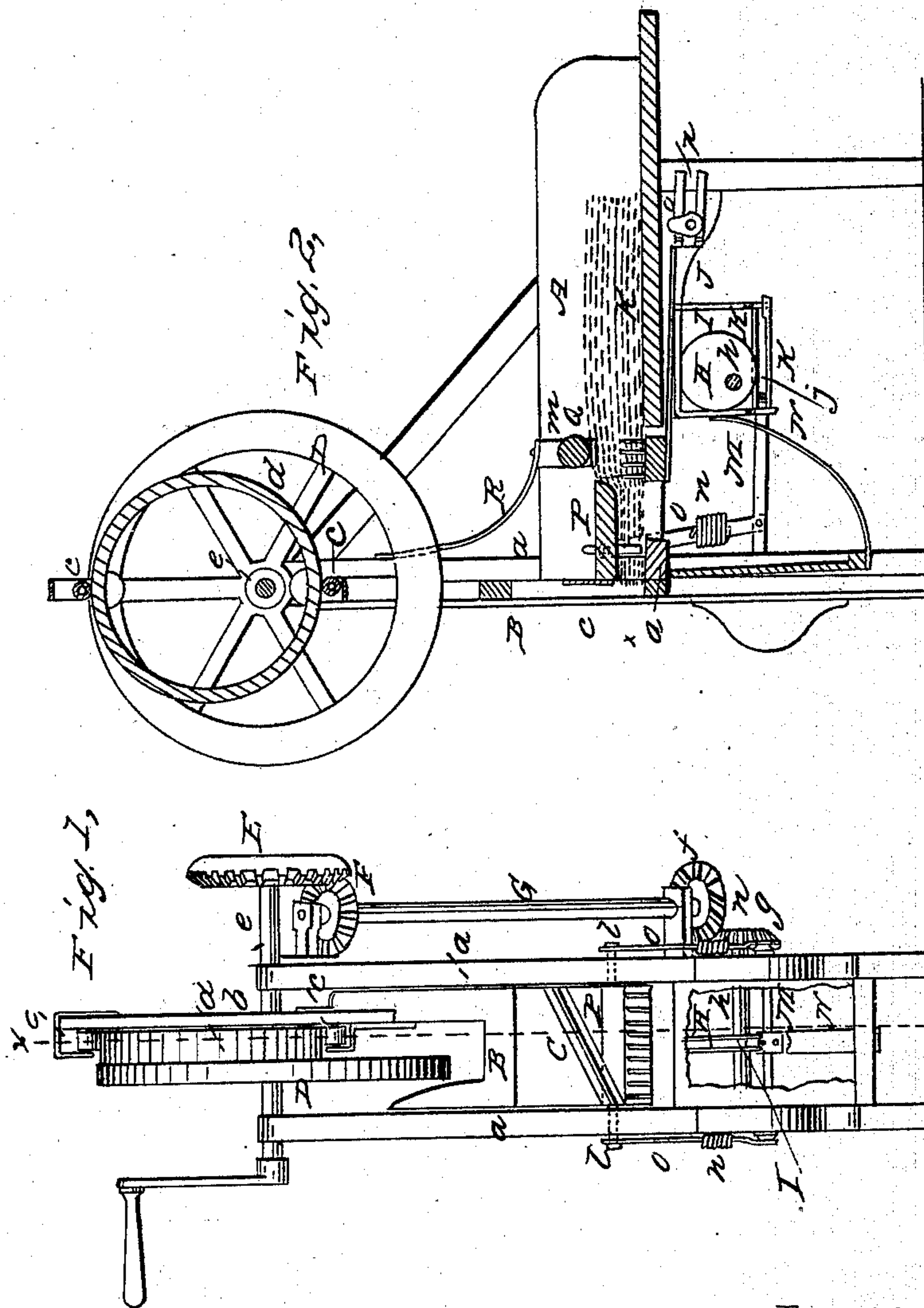


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Straw Cutter.

No. 26,554.

Patented Dec. 27, 1859.



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# UNITED STATES PATENT OFFICE.

W. H. BAKER, DANL. DEAN, AND B. L. FETHEROLF, OF TAMAQUA, PENNSYLVANIA.

## STRAW-CUTTER.

Specification of Letters Patent No. 26,554, dated December 27, 1859.

*To all whom it may concern:*

Be it known that we, W. H. BAKER, DANIEL DEAN, and B. L. FETHEROLF, of Tamaqua, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Straw and Stalk Cutter; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a front view of our invention. Fig. 2, a side sectional view of ditto, taken in the line *x, x*, Fig. 1.

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

The object of this invention is to obtain a machine that will cut hay, straw and stalks for fodder with great rapidity, perform the work well, and be capable of having certain parts graduated so as to regulate as may be desired the length of the pieces into which the stuff is to be cut.

The invention consists in the employment or use of a double-edged reciprocating knife, feed mechanism, and pressure bed, arranged substantially as hereinafter described.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A, represents a rectangular feed box which is supported at a suitable height by any proper framing the front uprights *a, a*, of which extend above the feed box and form guides for a knife frame B, in which a double-edged knife C, is placed obliquely as shown clearly in Fig. 1. The upper end of the frame B, has a vertical bar *b*, attached to it at the upper and lower ends of which there are rollers *c, c*. Between the two rollers *c, c*, an annular rim *d*, works. This rim is attached eccentrically to a wheel D, the shaft *e*, of which has its bearings on the upper ends of the uprights *a, a*, the bar *b*, being slotted vertically to allow the shaft *e*, to pass through and at the same time permit the bar to work up and down.

On one end of the shaft *e*, there is placed a bevel toothed wheel E, which gears into a pinion F, on the upper end of an oblique shaft G, the lower end of which has a bevel pinion *f*, on it, which pinion gears into a corresponding pinion *g*, placed on a horizontal shaft *h*, underneath the feed box. The shaft *h*, has an eccentric H, on it which works in a yoke I, said yoke being attached

to a slide J, the back part of which works on a rod or shaft *i*, as shown in Fig. 2.

To the upper surface of the slide J, an elastic plate K, is attached and to the front part of this plate a bar L, is secured, said bar having its upper surface provided with vertical spikes. The bar L, is equal in length to the width of the feed box A.

To the lower parts of the uprights *a, a*, a lever frame M, is secured. The inner end of this frame is provided with a cross pin *j*, which is fitted between guides *k, k*, at the lower part of the yoke I. Against the front side of the yoke I, a spring N, bears, and to the lever frame M, near its outer end two bars *o, o*, are attached the upper ends of which are connected to rods *l, l*, which pass through slots in the sides of the feed box and are attached to a board or bed P, in the feed box.

Within the feed box a roller Q, is placed, said roller having its journals fitted in yielding bearings *m, m*, each of which has a spring R, bearing on its upper surface.

The bars *o, o*, are each formed of two pieces connected by springs *n, n*, and on the shaft *i*, on which the back part of the slide J, rests there is placed an eccentric plate *o*.

The operation of the machine is as follows:—The operator places the straw, stalks or other substance to be cut, shown in red, in the feed box A, and motion is given the shaft *e*, by any convenient power. A reciprocating motion is given the knife frame B, by the annular rim *d*, fitting between the rollers *c, c*, on the vertical bar *b*, and from the shaft *e*, motion is communicated to the shaft by the gearing E, F, *f, g*. As the shaft *h*, rotates the eccentric H actuates the yoke I, and gives a compound movement to the toothed bar L, viz, and up and down and lateral movements. This movement of bar L, feeds the straw, stalks or other substance to be cut underneath the bed P, to the knife C, and the length of this movement may be regulated by turning shaft *i*, so that the major diameter of the eccentric plate *o*, may be adjusted more or less in line with the slide J, and thereby determine the length of its vibration. As the knife C, vibrates, the bed P, is also moved up and down by the lever frame M, and bars *o, o*. The bed P, serves to press on the upper surface of the straw or stalks when the knife is effecting its cut and consequently when the knife is descending, the bed P, descends,



the bed also descending as the knife rises. This movement of course is effected by having the lever frame M, and mechanism which operates it properly arranged. The  
5 straw or stalks are cut between the bed P, and the front end  $a^*$ , of the bottom of the feed box. By having the bars  $o, o$ , formed of two parts connected by springs  $n$ , due provision is made for irregularity in the  
0 thickness of the straw or stalks being cut, and the bed and its operating mechanism will consequently not be subjected to any undue strain thereby. The straw or stalks may be cut into pieces of greater or less  
5 length by controlling the lateral movement of the slide J, which is effected by turning the shaft  $i$ , and properly adjusting the eccentric plate  $o$ , relatively with the slide J. The spring N, keeps the front part of the  
0 yoke in contact with the eccentric, the former being somewhat larger than the diameter of the eccentric in order to admit of the variation in the length of the longitudinal movement of the slide J, for varying  
5 the length of the feed. The roller Q,

slightly presses on the straw or stalks and causes the same to be fed properly underneath the bed P.

Having thus described our invention what we claim as new and desire to secure 30 by Letters Patent, is,

1. The double-edged reciprocating knife C, in connection with the bed P, arranged to operate substantially as and for the purpose set forth. 35

2. The arrangement of the eccentric H, yoke I, slide J, lever frame M, and bars O, substantially as shown and described for operating conjointly the feed bar L, and pressure bed P. 40

3. The eccentric plate  $o$ , placed on the shaft  $i$ , when used in connection with the slide J, to control its longitudinal movement for the purpose herein set forth.

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