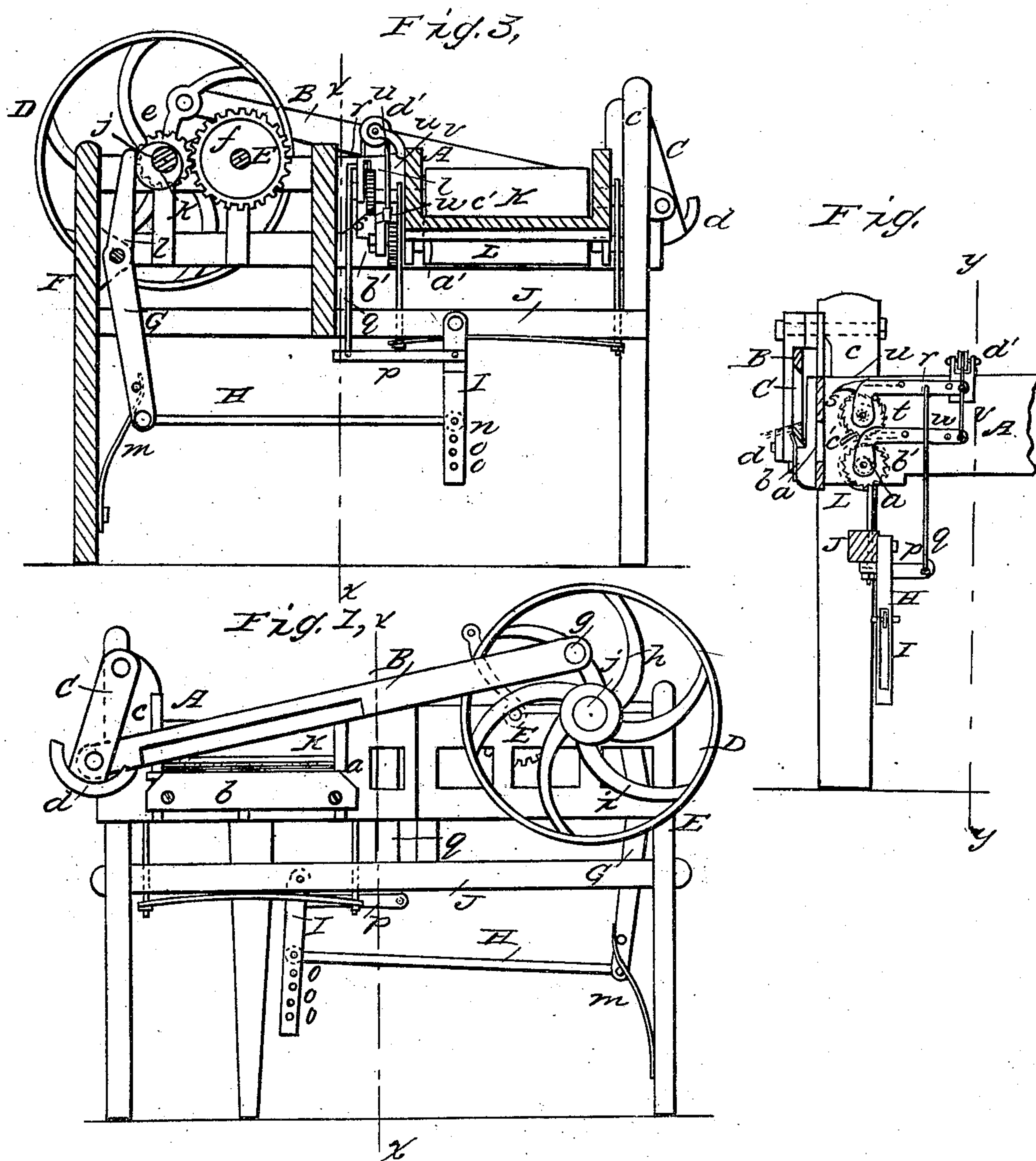


E. P. RUSSELL.

Straw Cutter.

No. 19,952.

Patented April 13, 1858.



UNITED STATES PATENT OFFICE.

E. P. RUSSELL, OF MANLIUS, NEW YORK.

STRAW-CUTTER.

Specification of Letters Patent No. 19,952, dated April 13, 1858.

To all whom it may concern:

Be it known that I, E. P. RUSSELL, of Manlius, in the county of Onondaga and State of New York, have invented a new and Improved Straw and Stalk Cutter; and I 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 my improvement. Fig. 2, is a vertical section of ditto taken in the line (x) (x) Figs. 1 and 3. Fig. 3, is also a vertical section of ditto taken in the line (y) (y) Fig. 2.

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

This invention consists of an improvement in that class of straw and stalk cutters in which a reciprocating knife is made to work over the end of the feed trough or box for the purpose of cutting the straw or stalks.

The object of the invention is to economize in the application of power hitherto required to operate the knife, and also to economize in the application of power hitherto required to feed the straw to the same.

The invention consists in the peculiar means of hanging and arranging the knife and also in a novel arrangement of means employed for feeding the straw or stalks to the knife by which the object above alluded to is obtained.

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

A represents a feed trough or box supported at a suitable height in the usual way. The front or discharge end of the trough or box A is provided with a metal plate (a) at its bottom and a metal plate (b) is also attached to the front end of said box, said plate (b) being in a vertical or nearly vertical position and having its upper edge a short distance from the front edge of plate (a). See Fig. 2.

B represents a knife, one end of which is pivoted to the lower end of a pendent arm C, the upper end of said arm being pivoted to the upper end of an upright (c) which supports the front end of the feed box. To the lower end of the arm C a weight (d) is attached. The opposite end of the knife B is attached to a crank wheel D which is rotated from the driving shaft E through

the medium of gear wheels (e) (f) shown in Fig. 3. The wheel D, its shaft and the wheels (e) (f) are placed in a framing F adjoining the front end of the feed box and the edge of the knife B passes down between the plates (a) and (b).

From the above description of parts it will be seen that by turning the wheel D a drawing cut is given the knife B and a great leverage power is also obtained. The leverage power is obtained as the connecting pivot (g) of the knife B with the wheel D passes from the pivot (h) to (i). See Fig. 1. The drawing cut is obtained in consequence of the attachment of the knife to the arm C and wheel D, as shown and described.

On the shaft (j) of the wheel D an eccentric or cam (k) is placed, and the upper end of a lever G bears against said eccentric. This lever G is pivoted in the frame F as shown at (l) and a spring (m) presses against its lower end, said spring keeping the upper end of the lever against the cam (k) as plainly shown in Fig. 3. To the lower end of the lever G one end of a rod H is attached and the opposite end of this rod is secured by a pin (n) in either of a series of holes (o) made in a slotted bar I, the upper end of which is pivoted to a bar J of the framing. To the bar I, near its upper end an arm (p) is attached and to the outer end of said arm a rod (q) is connected the upper end of the rod being attached to a lever (r) which is fitted loosely on the shaft (s) of an upper feed roller K. On this shaft a ratchet (t) is placed and a pawl (u) attached to the lever (r) catches into said ratchet, see Fig. 2. To the outer end of the lever (r) a cord or chain (v) is attached, said cord or chain being also attached to a lever (w) which is placed loosely on the shaft (a') of the lower feed roller L, the shaft (a') having a ratchet (b') place on it, into which ratchet a pawl (c') catches. The cord or chain (v) passes over a pulley (d') secured to one side of the feed box A. It will be seen that as the cam (k) rotates, the two levers (r) (w) are operated simultaneously in opposite directions and the ratchets (t) (b') being provided with reverse teeth the two rollers K, L, will be operated intermittingly, the rollers being rotated during the upward movement of the knife B. The rollers K, L, are placed as usual on the front end of

the feed box, one directly over the other in the same plane, the point of contact being about on the level with the bottom of the feed box.

5 By operating the rollers K, L, as shown a comparatively small amount of power is required, there are no parts liable to get out of repair, and an even or regular feed is obtained, both rollers being acted upon by
10 a positive movement, direct from the driving shaft.

This device has been practically tested and it operates well. I am enabled in consequence of the leverage power obtained to
15 cut a large quantity of straw at once, the

feed box being made much wider at its mouth than usual. A complete bundle of usual size may be placed in the feed box at once and fed to the knife.

Having thus described my invention what 20 I claim as new and desire to secure by Letters Patent, is—

The arrangement of knife B and feed rollers K, L, when attached for operation, and arranged relatively with the feed box A, substantially as and for the purposes set forth. 25

E. P. RUSSELL.

Witnesses:

J. T. BENKLE,

W. TUSCH.