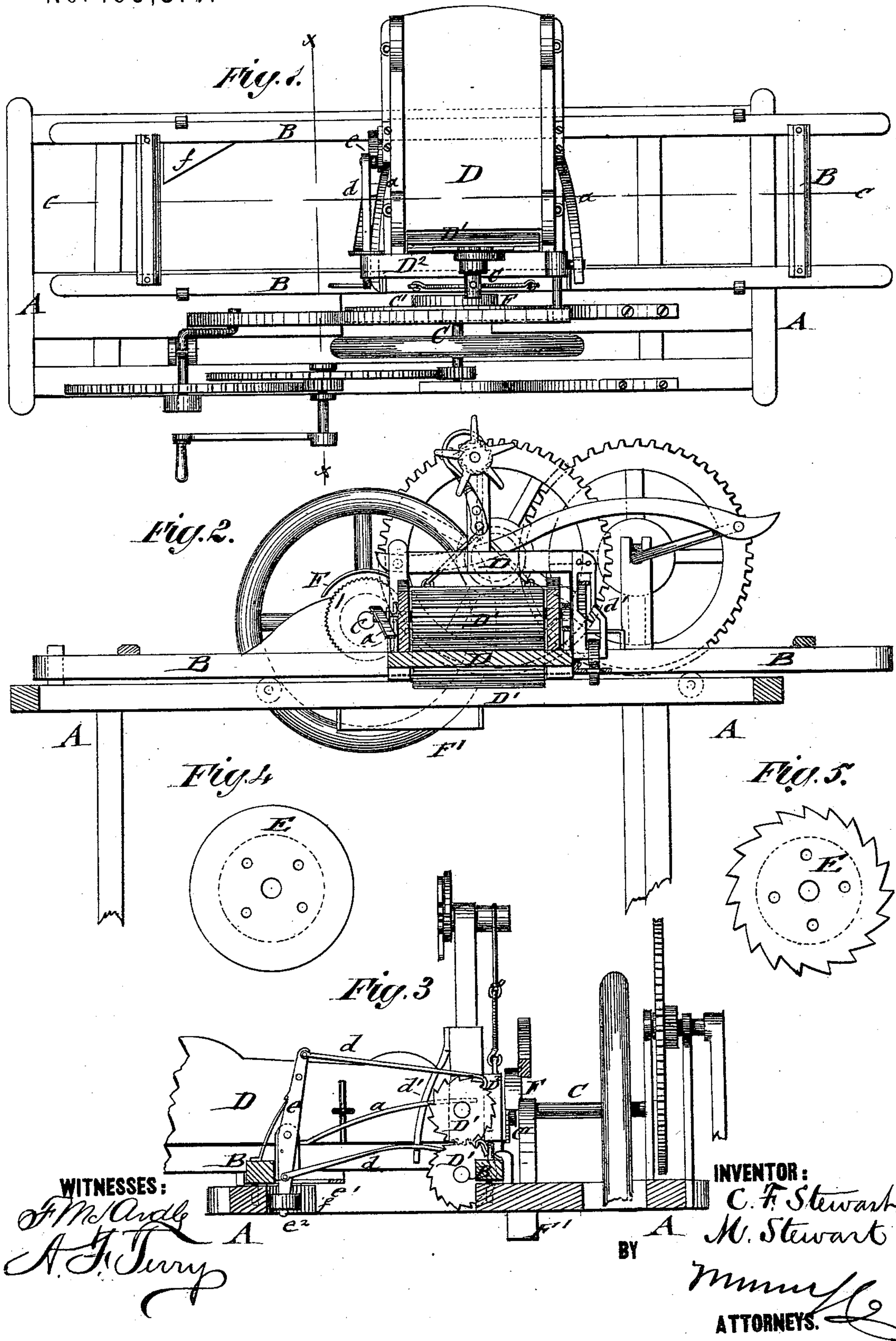


C. F. & M. STEWART.
Straw-Cutter.

No. 165,514.

Patented July 13, 1875.



WITNESSES:

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CHARLES F. STEWART AND MILTON STEWART, OF MUNCIE, INDIANA.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. 165,514, dated July 13, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that we, CHARLES F. STEWART and MILTON STEWART, of Muncie, in the county of Delaware and State of Indiana, have invented a new and Improved Straw-Cutter, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view of our improved straw-cutter; Fig. 2, a vertical longitudinal section on the line *cc*, Fig. 1; Fig. 3, a vertical transverse section of the same on the line *xx*, Fig. 1; and Figs. 4 and 5 are front views of different forms of cutting-knives detached.

Similar letters of reference indicate corresponding parts.

Our invention relates to an improved straw-cutter with reciprocating feed-box, which is capable of very rapid and effective work; and it consists of a revolving cutting-knife, in combination with a reciprocating feed-box, that moves the straw forward by a ratchet-wheel and pawl connection of the feed-rollers with an actuating-lever and cams of the supporting main frame. The upper feed-roller turns in bearings of a compressing front gate, and is forced on the straw by springs of suitable power.

In the drawing, A represents the supporting main frame of our straw-cutter; B, the reciprocating feed-box frame, which slides in suitable guides of the same by means of pitman and gear-wheel connection with the driving crank-shaft. The cutter-shaft C is simultaneously revolved from the driving-shaft, being provided with a balance-wheel and a dishing head, C', at the end facing the reciprocating feed-box D. The cutting-knife E, of round sickle-toothed or other suitable form, as shown in Figs. 4 and 5, for cutting in either direction, is applied by countersunk bolts to the cutter-head, and sharpened with forward bevel to pass as nearly as possible to the stationary knife-edge of the feed-box. Feed-box D is placed laterally at right angles on its sliding frame B, the material to be cut being fed at the rear side of the machine, while motion is imparted at the front part of the same. Grooved or channeled feed-rollers D¹ at the mouth of the feed-box take hold of the straw,

and carry it forward against the rotating cutting-knife. The shaft of the upper feed-roller D¹ turns in side bearing of a feed-compressing front gate, D², which may be raised with the feed-roller by a roller with pawl and ratchet at the top of the feed-box, side slots of the feed-box allowing the upward motion of the shaft of the upper feed-roller. On the release of the pawl of the compressing-gate strong band-springs *a* bear on the shaft, and carry top roller and gate on the material, so as to hold it firmly, yet yieldingly, between the rollers, top gate, and stationary knife, and expose it thus in the most favorable condition to the cutting action of the rapidly-revolving knife. The feed-rollers D¹ are revolved in opposite direction to each other by means of pawls *d*, pivoted to a swinging lever, *e*, at the side of the box. The regular action of the pawls and ratchets is secured by a slotted guide, *d'*, and check-pawl, in the customary manner. The fulcrumed lever *e* is also guided in a slotted arm, *e'*, and provided with a friction-roller, *e''*, at its lower end, that travels along the rear piece of main frame A, and along cams *f*, applied thereto at points defining the extent of motion of the reciprocating feed-box in each direction, so that the straw may be fed forward during the time when the feed-box has moved beyond the cutting-knife, to be ready for cutting on the return trip. The cutting-knife is surrounded by a guard or casing, F, to prevent the cut-off feed from being thrown too far, the guard-casing connecting with a spout, F', below the cutting-knife, which takes up the feed and transmits it to a suitable receptacle below.

The separation of the feeding and cutting action admits of a higher speed and more rapid and effective work of the straw-cutter, as the material is exposed in a firmly-compressed state to the knife, and fed forward instantly when the box has passed the revolving cutting-knife.

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

1. In straw and feed cutters, the combination of a revolving cutting disk or knife with

a reciprocating feed-box, arranged to feed the material separately from the cutting action after having passed beyond the cutting-knife, substantially in the manner and for the purpose set forth.

2. The combination of the lower fixed feed-roller with the upper sliding and spring-acted feed-roller, turning in bearings of the adjustable compressing front gate, and with the gate, for exposing the material in compact state to the cutting-knife, as specified.

3. The reciprocating feed-box having feed-rollers, with actuating ratchets, pawls, and

lever, in combination with the stationary cams of main frame, defining extent of reciprocating motion of box, for the purpose of feeding the material only on the completion of the cutting action of the knife, substantially as set forth.

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mark.

Witnesses:

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