

D. J. OWEN.

Straw Cutter.

No. 39,062.

Patented June 30, 1863.

Fig. 1.

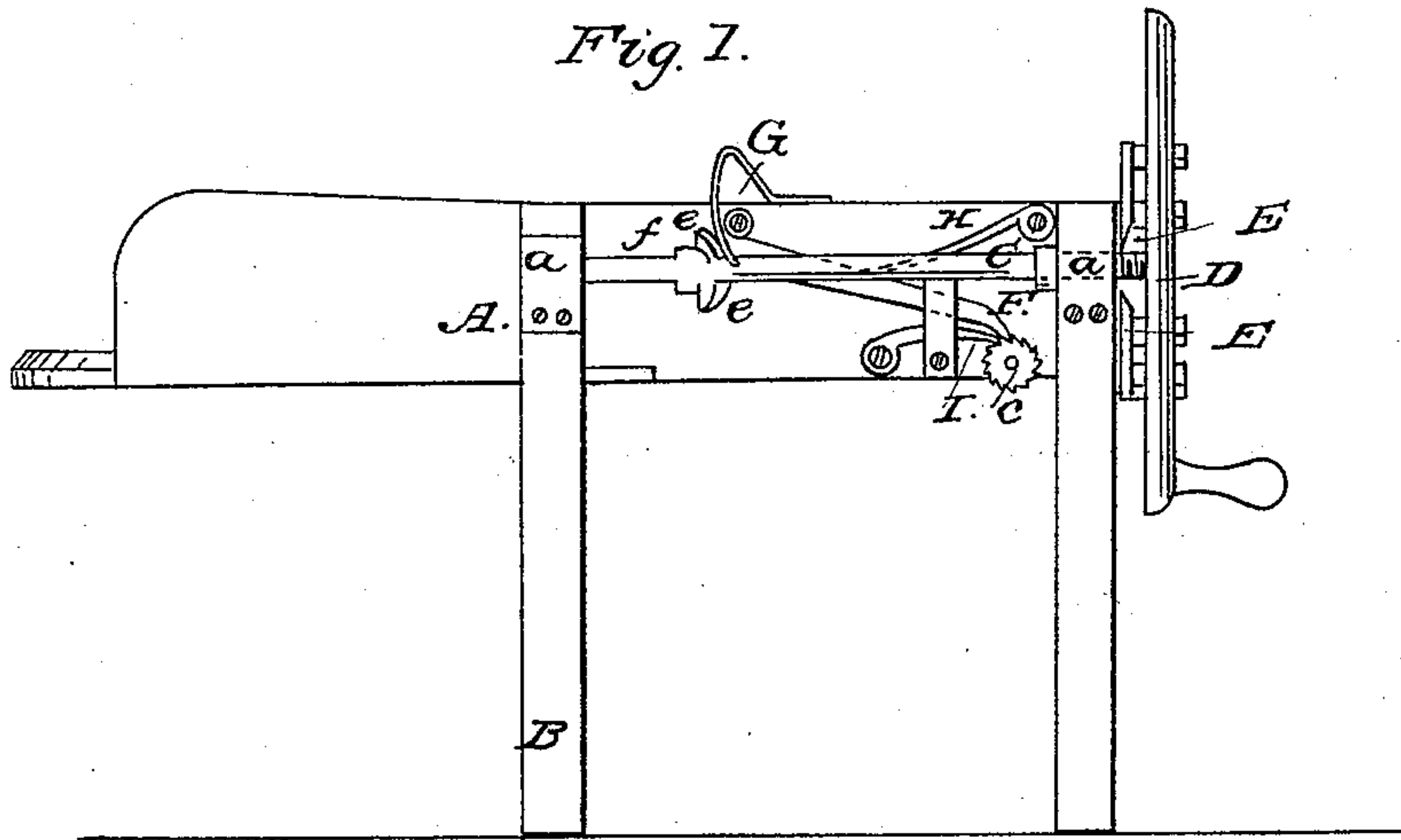


Fig. 2.

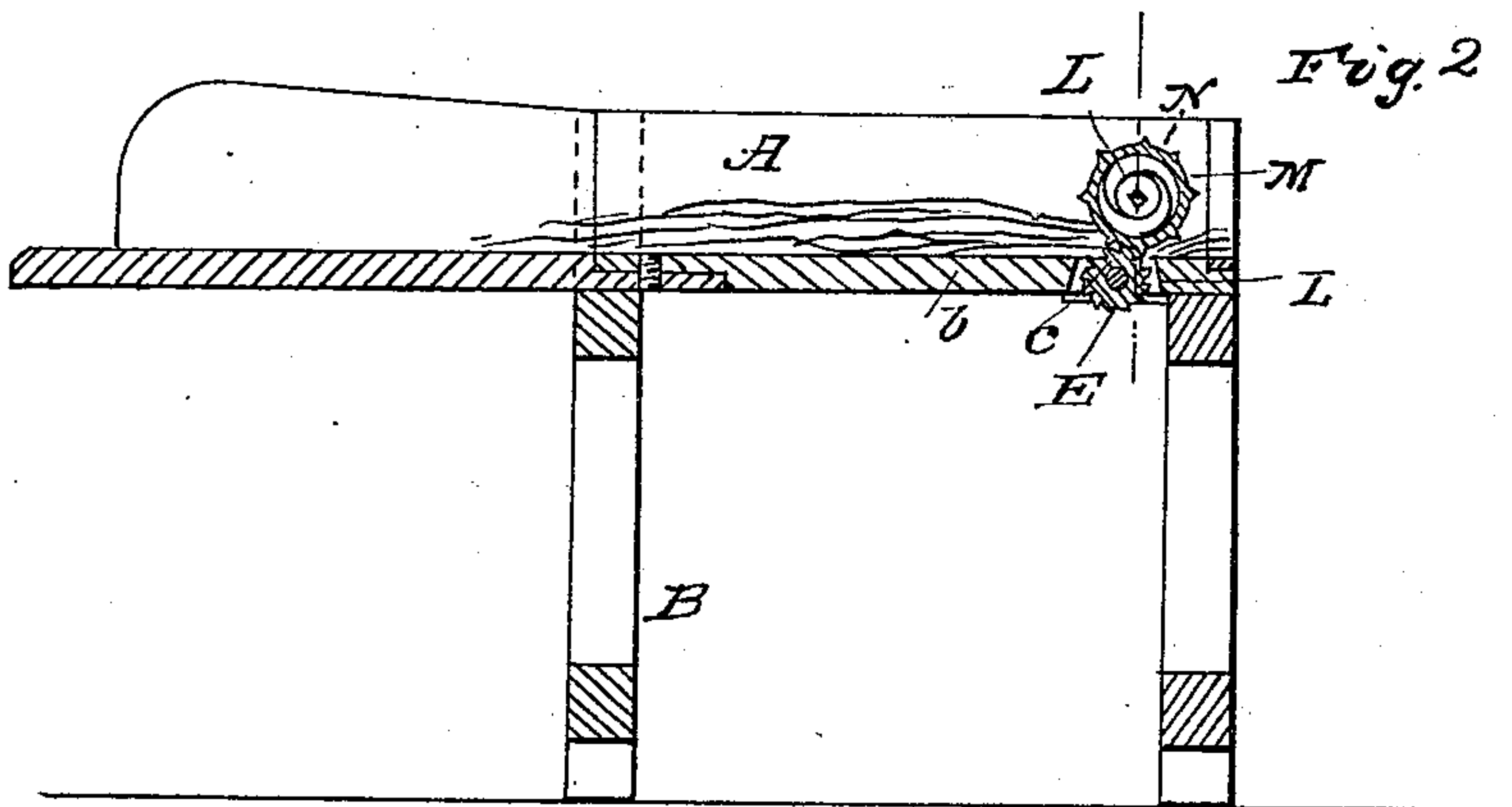
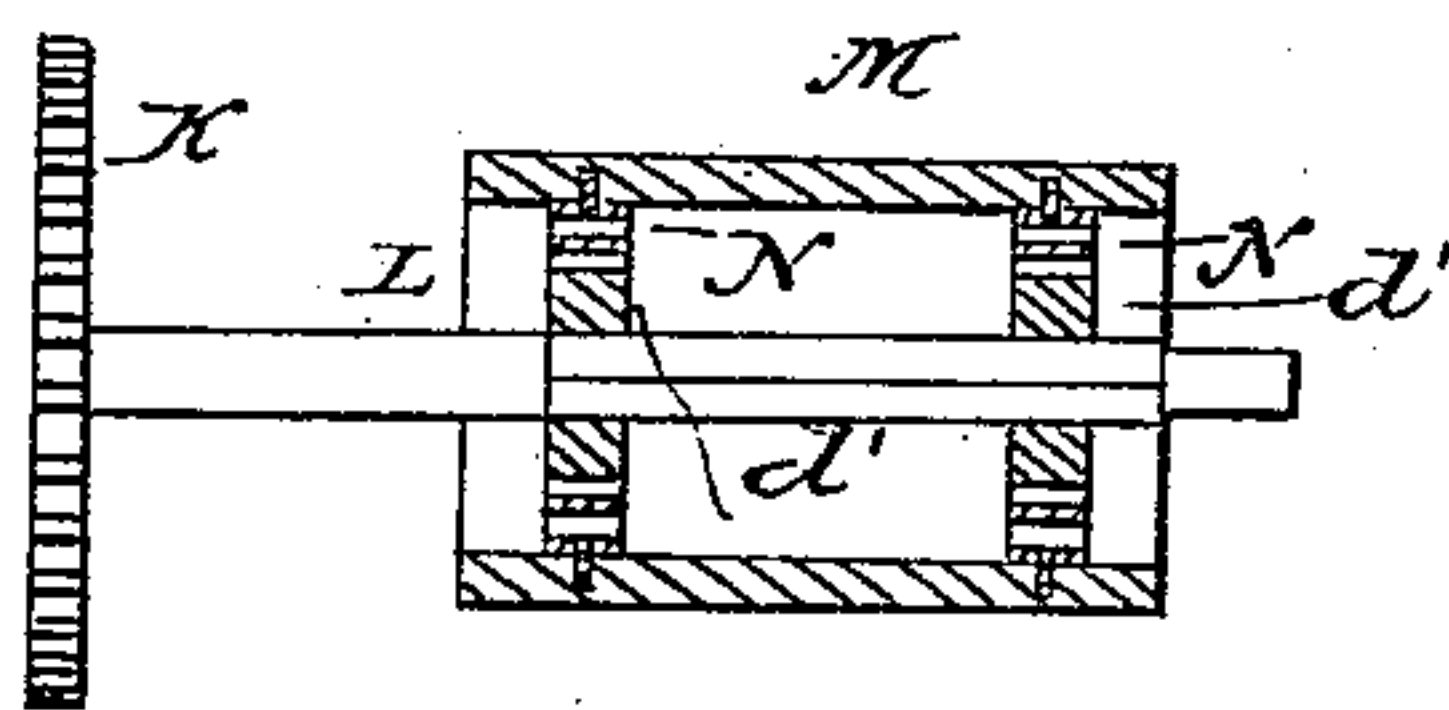


Fig. 3.



Witnesses  
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# UNITED STATES PATENT OFFICE.

D. J. OWEN, OF SPRINGVILLE, PENNSYLVANIA.

## IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. 39,062, dated June 30, 1863.

*To all whom it may concern:*

Be it known that I, D. J. OWEN, of Springville, in the county of Susquehanna and State of Pennsylvania, have invented a new and useful Improvement in Straw-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a vertical longitudinal section of the same, the plane of section passing through the center; Fig. 3, a detached longitudinal central section of the upper feed-roller pertaining to the same.

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

This invention relates to an improved feed mechanism of that class in which fluted pressure-rollers are employed.

The object of the invention is to obtain a means for rendering the upper adjustable feed-roller more perfect in its operation than heretofore, so that it will conform better to the varying thickness of the layer of straw which passes underneath it, and at the same time insure a regular or uniform feed of the straw to the cutters.

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

A represents the feed-box of the straw-cutter, which may be of the usual or any proper form and supported at a suitable height by a framing, B.

C is a shaft, which is fitted in suitable bearings *a a* at the outer side of the feed-box, the said shaft having a horizontal position and parallel with one side of the feed-box. On the front end of the shaft C there is fitted a wheel, D, which has two cutters, E E, attached to it, said cutters having concave cutting-edges, and as the shaft C rotates working over and in contact with the mouth of the feed-box A.

In the bottom *b* of the feed-box A, and near its mouth, there is fitted transversely a fluted roller, E', the upper edge of which projects a trifle above the upper surface of the bottom *b*. The shaft *c* of this roller E projects beyond the sides of the feed-box A, and on one end of this shaft there is fitted a ratchet-wheel, *d*, into which a pawl, F, catches. This

pawl is a sliding one, and has a spring, G, connected to its outer end, and a spring, H, bearing on its upper surface, to keep it engaged with the ratchet *d*, as will be fully understood by reference to Fig. 1.

I is a holding-pawl, which is attached to the outer side of the feed-box and engages with the ratchet *d*. On the shaft G there is placed a cam, J, which is formed of two spiral flanges, *e e*, attached to a hub or boss, *f*. This cam, as the shaft C rotates, acts against the outer or back end of the pawl F, the cam throwing the pawl F forward, so that the latter will actuate the ratchet *d*, and the spring G throwing the pawl back as each flange *e* leaves or passes the pawl. The flanges *e e* of the cam are so arranged or disposed as to move the ratchet immediately after each cutter E has passed over the mouth of the feed-box. On the end of the shaft *c*, opposite to the end on which the ratchet *d* is placed, there is fitted a pinion which gears into a toothed wheel, K, on a shaft, L, the bearings of which are in the sides of the feed-box A. This shaft L is parallel with the shaft *c* of the roller E', and on the shaft L a fluted roller, M, is fitted in a novel way, as follows: Within the roller M, which is tubular, there are placed two or more disks or heads, *d' d'*, which are considerably less in diameter than the interior of M, and these disks or heads are connected to the inner side of M by means of coil-springs N N, as clearly shown in Fig. 2. These coil-springs admit of the roller M yielding or giving both vertically and laterally, so that it may conform perfectly to the varying thickness of the layer of straw underneath it, and cause the straw to be fed evenly or uniformly to the cutters. The ordinary yielding rollers of the feeding devices in common use merely have an upward yielding movement, and in case of the straw varying much in thickness they operate very imperfectly, causing a great deal of unnecessary friction, and frequently, when the layer of straw is thin, will fail to feed at all. This difficulty is fully obviated by my invention, as the lateral yielding movement admits of the roller M operating with far less friction, and causes it to adjust itself snugly to the upper surface of the layer of straw. It will be understood, of course, that the straw is fed along at each movement of the lower roller, E', communicated to it by the ratchet and



pawl previously described, the yielding roller M serving as the pressure-roller and bearing upon the upper surface of the straw. The roller M is larger in diameter than the roller E', and the former, owing to the gearing which drives it, rotates slower than the latter.

I do not claim, broadly, the attaching of the feed-roller M to its shaft L by springs, irrespective of the arrangement and mode of connection herein shown and described; but

I do claim as new and desire to secure by Letters Patent—

Connecting or attaching the tubular feed-roller M with its shaft L by means of the coil-springs N N and disks or heads  $d'$   $d'$ , and arranged specifically as herein shown and described, in combination with the feed-roller E', cam J, pawl F, and ratchet  $d$ , all combined and arranged to operate conjointly, as and for the purpose herein set forth.

D. J. OWEN.

Witnesses:

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