

A. E. JAMES.
Straw Cutter.

No. 26,592.

Patented Dec. 27, 1859.

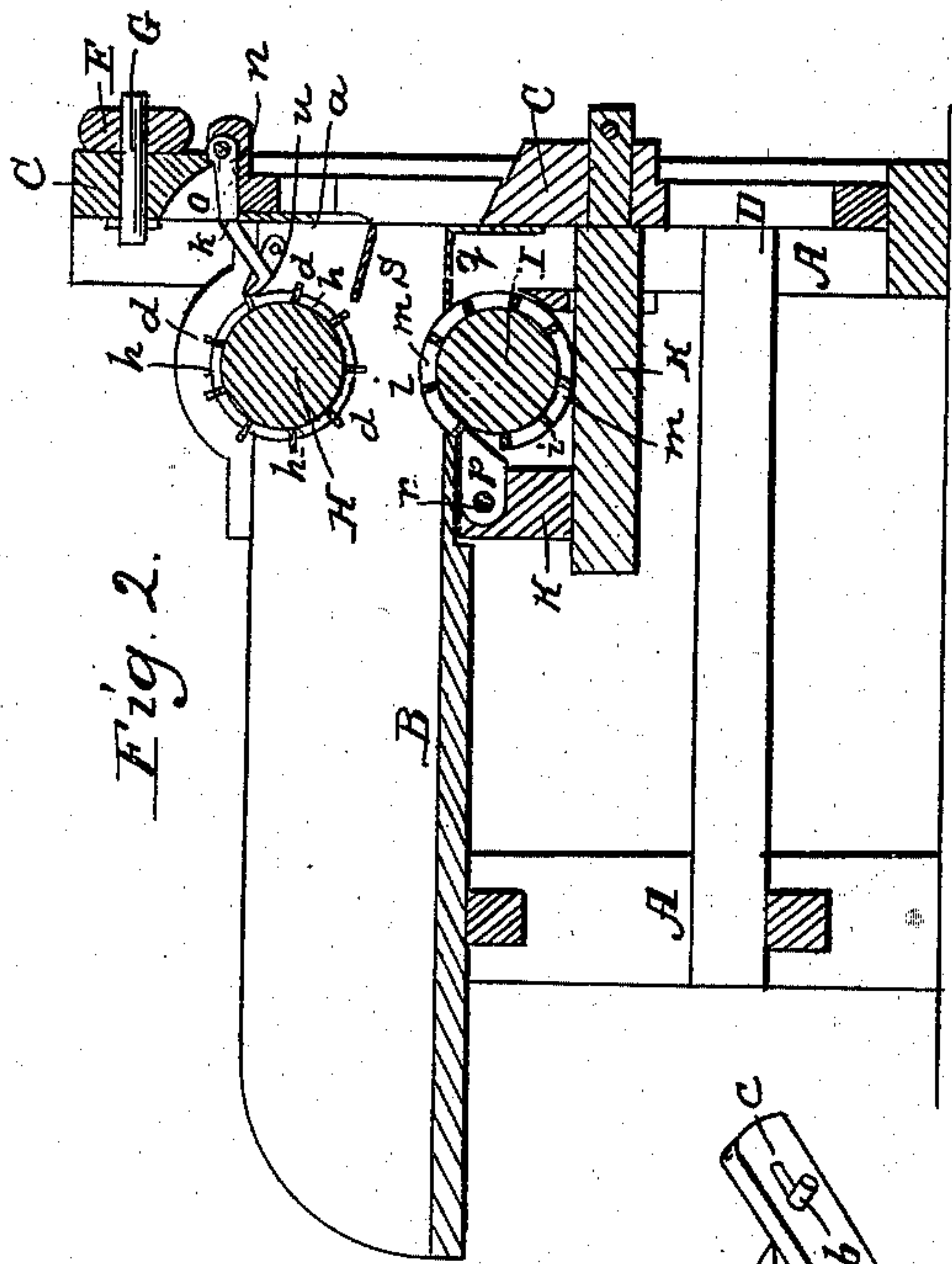


Fig. 2.

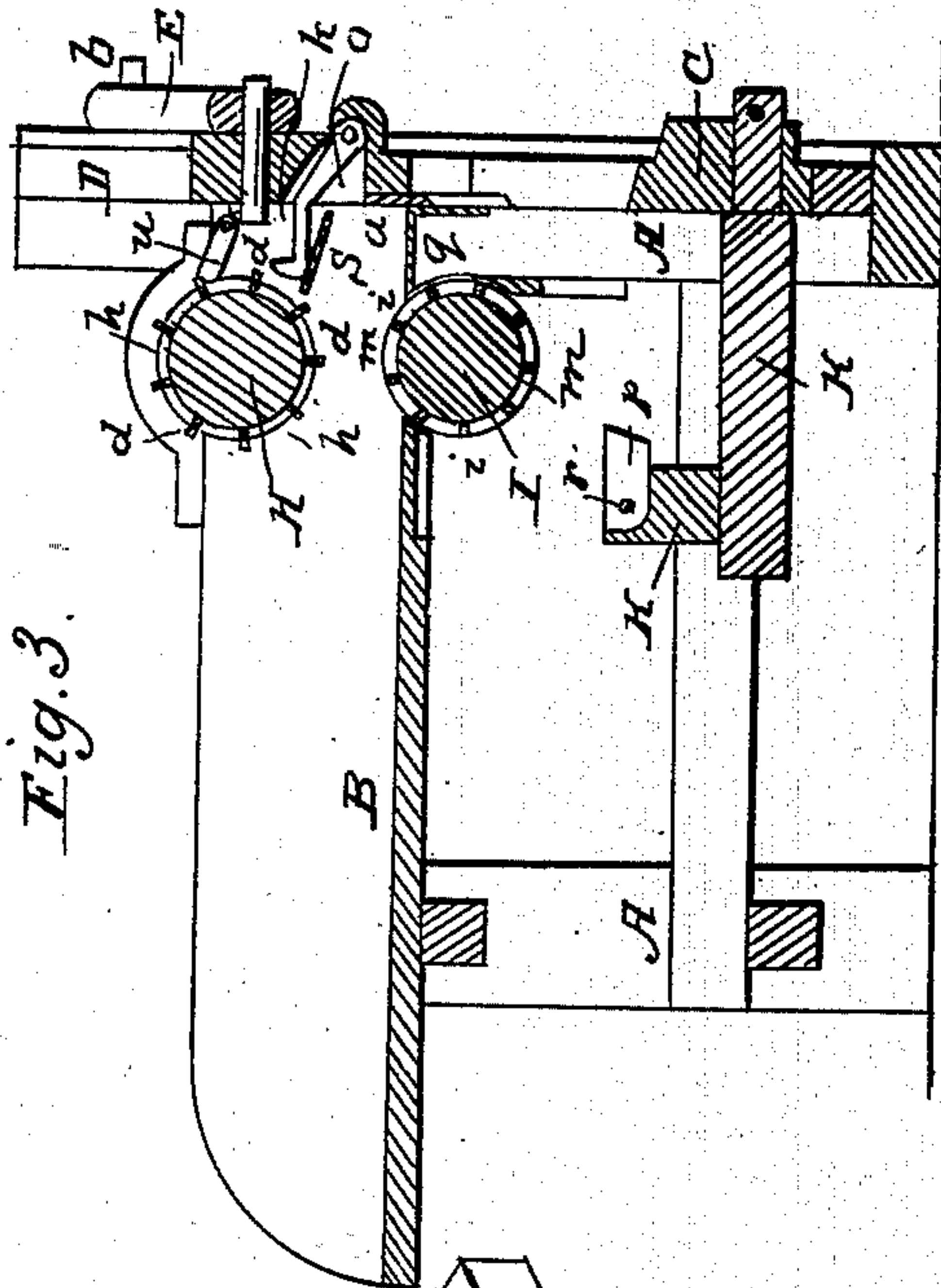


Fig. 3.

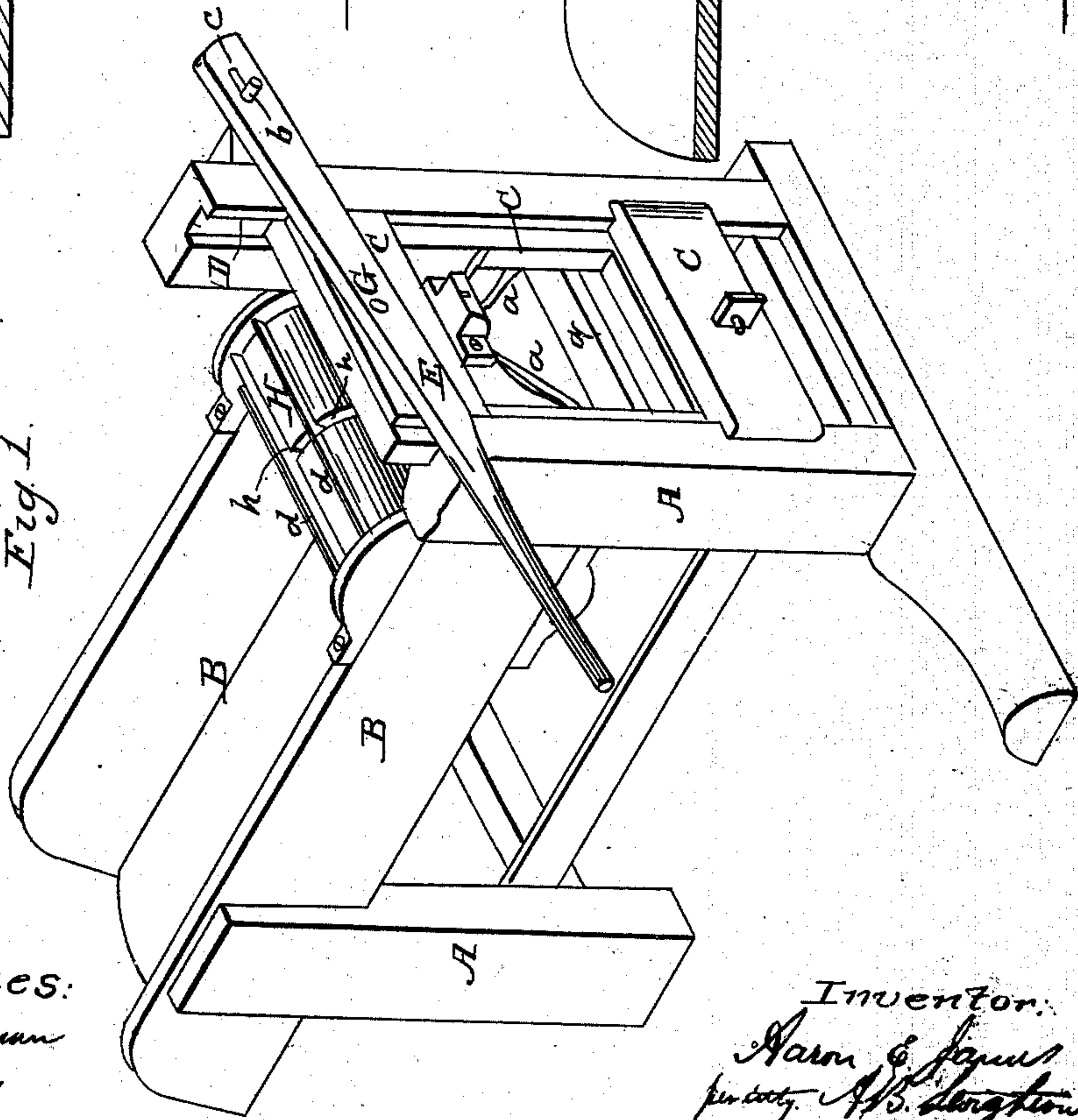


Fig. 1.

Witnesses:
Thos. H. Upman
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Inventor:
A. E. James
per Atty. A. B. Longdon

UNITED STATES PATENT OFFICE.

AARON E. JAMES, OF DECATUR, ILLINOIS.

STRAW-CUTTER.

Specification of Letters Patent No. 26,592, dated December 27, 1859.

To all whom it may concern:

Be it known that I, AARON E. JAMES, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Straw-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1, represents a perspective view of said straw cutter. Figs. 2, and 3, represent longitudinal vertical sections through the same.

My invention relates to the particular construction and arrangement of the racks and pawls by which the two feeding cylinders are operated, between which the straw passes, and by which it is fed to the knife by means of a positive motion imparted to each feeding cylinder separately, whereby a perfect feed of the straw is insured.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, represents the frame of the machine.

B, represents the straw box.

C, represents the knife frame, which moves within the grooves D, to be guided in its vertical motion.

a, represents the knife or knives, which are secured to the frame C; the latter is operated by means of a lever E, which is pivoted at G, to the knife frame C, and which turns on the pin *b*, as its fulcrum; the latter passes through a slot *c*, of the lever G, to give said lever, sufficient end play in its operation.

H, and I, represent the feed rollers of the machine; they have their bearings in the sides of the straw box B, and can turn freely on said bearings. The cylinder H, has secured to its circumference a number of radial blades or strips *d*, which are pressed into and take hold of the straw when they push it forward; it has also a groove *h*, cut in its circumference, into which the feeding pawl drops which turns the cylinder. The cylinder I, has a similar groove *m*, cut on its circumference for the same purpose, in which a number of plates *i* equal to the number of the blades *d*, are secured radially against which the feeding pawl can operate.

k, represents the feeding pawl of the cylinder H. It is pivoted at *n*, to the knife frame C, and it can play upward in the re-

cess *o*, of said frame, but when operating the feed roller H, it is supported by and rests on the upper edge of the knife *a*, as represented in Fig. 2.

p, represents the pawl, which operates the cylinder I; it is pivoted to the stock K, which is secured to the knife frame C, and can turn upward on its pivot *r*; but in operating the cylinder I, its lower edge bears on the stock K, and it is then held rigidly.

q, is an iron plate, which forms one side of the throat of the machine, against which the knife *a*, cuts the straw.

s represents an iron plate which is in front of the cylinder H, and which is inclined toward the front; it is secured at such point over the plate *q* as to form another side to the throat of the machine and keep the straw within the compass to which it has been compressed by the feed rollers, and to present it in its compressed state to the knife *a*, and the plate *s*, also acts as a support and guide for the pawl *k*, to prevent it from dropping too low.

The operation of the machine is as follows: When the knife has made a cut, the parts are in the position represented in Fig. 3, where the knife and its frame C, are in their lowest position. On raising the lever E, the frame C, is raised to the position represented in Fig. 2, and while said frame is raised the pawls *k* and *p* are also raised and bear respectively on the plates *d*, and *i*, of the feeding cylinders H, and I, which are thus turned through the same spaces against each other, and feed the straw toward the knife, they being both operated by the positive action of their respective pawls and feed the straw with the full power applied to the lever E, on pressing down the lever E, the knives *a* cut the straw, the pawl *k* drops down on the plate *s*, while the pawl *p*, can turn on its pivot *r*, and thus slip over the plates *i*, and be ready for the next operation. The hinged pawl *u*, bears against the plates *d*, and thus prevents the cylinder H, from turning in an opposite direction, if it should have a tendency to do so; and the pawl *p*, effects a similar purpose to its feed roll *i*.

The advantage of making the ratchets in the rolls themselves is this, that it obviates the necessity of cogged gearing, and by making the grooves *m*, *h* in the rolls, and laying into the rolls the radial strips *i*, *d*, I make said strips serve a double purpose, viz.—for clamping the straw tightly to feed it

along, and to form a ratchet for the pawl to work in, and which ratchets in no wise catch or tangle up the straw, or become clogged.

5 Having thus fully described the nature of my invention, what I claim therein as new, and desire to secure by Letters Patent is—

10 Feeding the straw toward the knife by means of two feed rolls, between which the

straw passes when said rolls or cylinders are both operated simultaneously by the positive actions of separate pawls or their equivalents working in ratchets made and arranged in said rolls, substantially in the manner, and 15 for the purpose herein described.

AARON E. JAMES.

Witnesses:

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