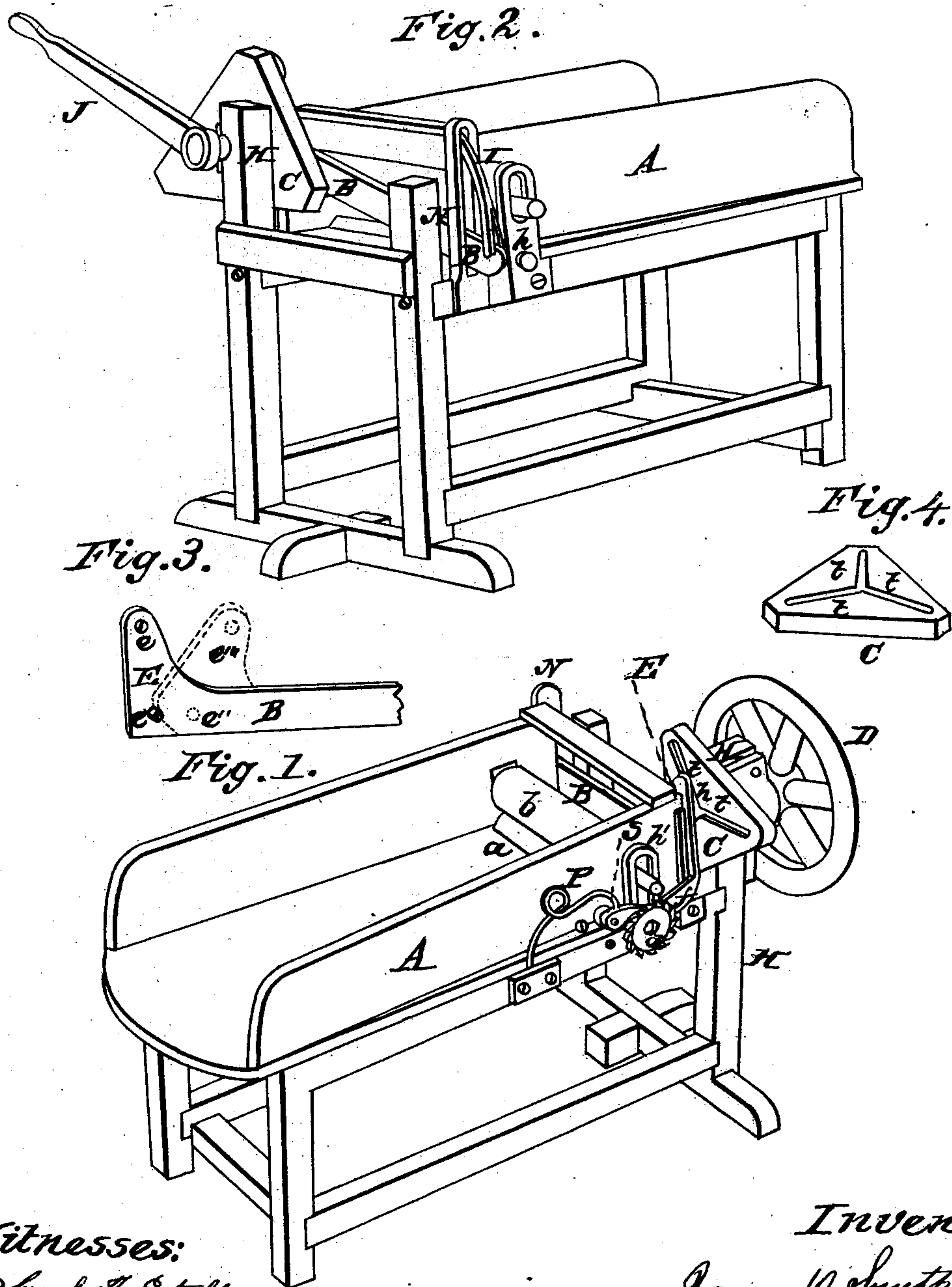


J. D. SMITH.
Straw Cutters.

No. 69,593.

Patented Oct. 8, 1867.



Witnesses:
Saml. H. Estell
R. A. Paige

Inventor:
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By Joseph R. Roder
His attorney.

United States Patent Office.

JAMES D. SMITH, OF RICHMOND, INDIANA.

Letters Patent No. 69,593, dated October 8, 1867.

IMPROVEMENT IN STRAW-CUTTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES D. SMITH, of the city of Richmond, and State of Indiana, 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 drawing, making a part of this specification, in which—

Figure 1 is a perspective view as designed to be operated by rotary motion.

Figure 2, a view of the reverse side, with lever attached.

Figure 3 represents a section of the knife, and

Figure 4 a triangular-grooved disk or cam.

The same letters in different figures refer to corresponding parts of the machine.

My invention relates to an improved feed-cutting machine, efficient in operation, and cheap in construction.

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 box, of ordinary construction. D represents a fly-wheel, provided with a handle for turning the same, by which motion is imparted to the knife. Said fly-wheel is attached to a journal, having a bearing against post H, to the inner end of which journal is attached the triangular disk or cam C, the latter having three grooves radiating from the centre at equal distances apart. B represents the knife, having a right-angular or vertical projection, E, provided with pins *e* and *e'*, which latter work in the grooves *t t t* of cam C, by which, as the latter is rotated by turning fly-wheel D, the knife B is operated. *a* and *b* are feed-rollers. *d* is the ratchet on the journal of roller *a*. The journals of upper roller *b* work in slots of standards *h* in the usual manner. *f* represents a lever, suspended loosely on the journal of roller *a*, to one end of which lever is attached the pawl S. The spring P operates downwardly on the end of said lever, a screw or pin beneath the latter preventing it from being depressed too low.

In operating the knife the lower edge of end E, as it descends, strikes the front end of lever *f*, thus carrying forward the pawl S, and operating the feed-rollers, the pawl being again carried back by the action of spring P. One end of knife B is suspended by the oscillating rod I, which latter is connected to the top of slotted standard N, as seen in fig. 2, thus permitting an oscillating motion of the knife. The operation of cam C, when pins *e* and *e'* are situated on a line at right angles to knife B, imparts an oval motion to said knife, the longest diameter of which oval is vertical, thus making nearly a direct cut. I propose also to place the pins *e* and *e'* at an acute angle with the knife, as shown by dotted lines *e''* and *e'''*, fig. 3, which will produce a motion of the knife, circular, or approximating closely thereto; thus a more slanting cut is obtained. If desirable, the cutter may be operated by attaching a lever, J, thus giving a reciprocating motion to cam C, the fly-wheel or crank being dispensed with. By connecting lever J to the journal in such a manner as to occupy a convenient medium position with the lower groove of the cam in a vertical position, a short motion of the lever only is required to operate the knife, each stroke, up or down, of the lever making a cut of the knife, and also a turn of the ratchet.

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

1. I claim operating the knife B by means of the tri-radial grooved disk or cam C, either with rotary or reciprocating motion, substantially as described.

2. I claim operating the feed by means of the knife, in combination with the lever and pawl, substantially as described and for the purpose specified.

JAMES D. SMITH.

Witnesses:

JOSEPH RIDGE,

SAML. F. ESTELL.