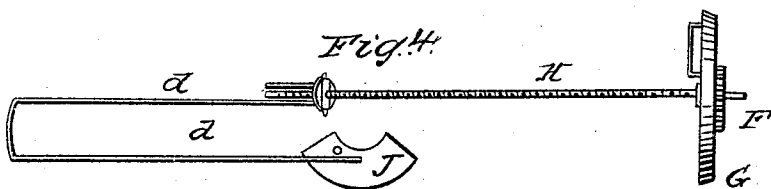
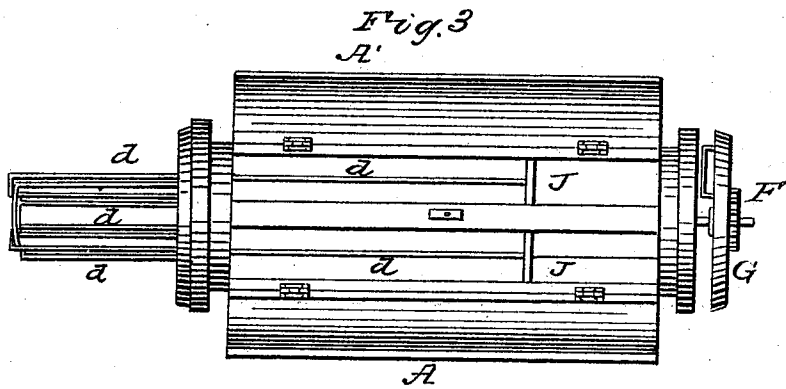
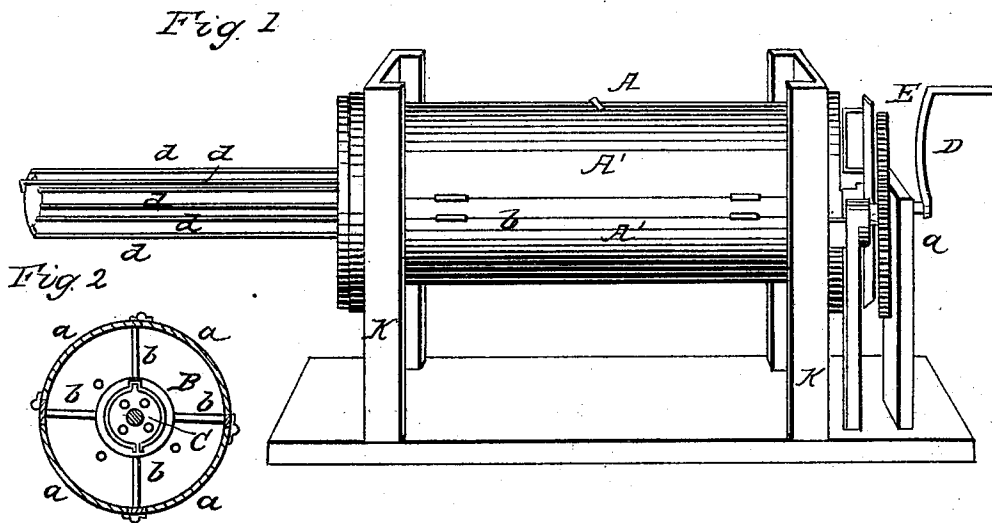


H. SILLIMAN.

Straw Cutter.

No. 158.

Patented March 1, 1837.



Witnesses  
Ebenzer Hoyer  
Edward B How

Inventor  
Henry Silliman.

# UNITED STATES PATENT OFFICE.

HENRY SILLIMAN, OF PERRY, NEW YORK.

## MACHINE FOR CUTTING STRAW, HAY, AND OTHER VEGETABLE PRODUCTS.

Specification of Letters Patent No. 158, dated March 30, 1837.

*To all whom it may concern:*

Be it known that I HENRY SILLIMAN, of the town of Perry, Genesee county, New York, have invented a new and useful Machine for cutting Straw, Hay, and other Vegetable Products of a like Character; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings which accompany and make a part of this specification.

Figure 1, is a perspective representation of the whole machine, the body of which, A, is cylindrical, and has within it four (or any other number that may be preferred) longitudinal chambers, or troughs, within which the straw, or other article to be cut, is placed. The parts marked A', A', are hinged doors, extending the whole length of the trough, to admit the material to be cut; in the machine as represented, there are supposed to be four such doors.

Fig. 2 is a transverse section of the cylinder, showing the manner in which its interior, including the chambers, or troughs, is formed. The letters *a, a*, indicate the doors, B, is an interior cylinder, forming the bottom of the troughs; and *b, b, b, b*, are partitions extending along the machine, and dividing the chambers from each other. Within the interior cylinder there is a screw nut C, having feathers, or projections, which fit into grooves formed along the cylinder, allowing the nut to traverse backward and forward by the revolution of a screw that extends along in the axis of the cylinder, and fits the nut.

This machine may be operated upon by power applied in various ways, but it will ordinarily be turned by hand, by means of a winch, and pinion, as shown in Fig. 1, where D is a winch, upon the axis of which is the spur wheel E, which meshes into the pinion F, giving motion to the knife, and also to the screw, above mentioned, by which the feeding is to be effected, in a manner to be presently described.

G, is a wheel which I usually, and in preference, make of plank and solid, but it may be made of cast-iron, with arms, or spokes; the cutting knife stands out from the inner face of this wheel, in a manner well known in revolving straw cutters; it may be either curved, or straight, and its edge may be set in a radiating line, or obliquely, as may be preferred. Instead of fastening it by screws

and nuts, in the ordinary manner, I so construct it that it may be slid into its place and removed for sharpening, by merely sliding it out in the direction of its cutting edge. The ends of the troughs toward the cutting knife are open; and their edges are armed with iron or steel, to sustain the action of, and react against, the cutting knife.

The straw, or other article to be cut, is forced forward by pistons, or followers, fitting the cavities of the troughs; two of these pistons are shown in Fig. 3. The following is the manner in which they are moved: The pinion F, and also the wheel G, are firmly fixed onto a projecting end of the screw which passes through the axis of the inner cylinder, and they, of course, revolve together; this screw is seen at H, Fig. 4, F being the pinion. C, is the nut, as in Fig. 2. *d*, is an iron rod attached to the nut, and extending from it the whole length of the cylinder; this rod is recurved, as shown in the drawing, and has upon its opposite end the piston, or follower, J. There are as many of these rods as there are troughs, each of them being attached to the nut, and having its piston, as described. These rods slide freely through suitable openings in the back end of the cylinder, which is otherwise closed.

The cylinder A, may be made altogether of wood, and be about four feet long, and eighteen inches in diameter. It is sustained by the standards K, K, which embrace it, and within which it may be turned so as to bring either division uppermost, for the purpose of supplying the troughs.

Operation: In order to run the pistons back for the purpose of supplying the troughs, the winch must be turned backward, which will cause the nut, and the pistons, to pass to the back end of the machine; the troughs are then filled and the winch turned forward, when the nut and the pistons, and, consequently, the straw, will advance toward the fore, or cutting, end of the machine and the cutting be effected. The different parts are so proportioned that with one knife the straw shall be cut of the greatest length required. By using two knives, it will be half that length, and by using three, one third.

Having thus, fully described the construction and operation of my machine for cutting straw, hay, &c., I do hereby declare that I do not claim as my invention, either

of the component parts thereof, taken individually; but

What I do claim is—

The manner in which I have combined  
5 these parts together so as to produce a machine essentially new in its mode of operation; that is to say, I claim the manner of acting upon the pistons, by which the straw is fed to the cutting knife, or knives, by the  
10 intervention of a revolving screw, carrying a nut backward and forward, and with it

the rods and pistons, substantially in the manner, and for the purpose, set forth; and this I claim, irrespective of any precise shape, or proportion of parts, intending to 15 vary these as I may think proper, while I produce the same effect by analogous means.

HENRY SILLIMAN.

Witnesses:

MASON G. SMITH,  
HENRY A. SMITH.