J. SANFORD.

Straw Cutter.

No. 3,304. Patented Oct. 12, 1843.

Fig: 1.

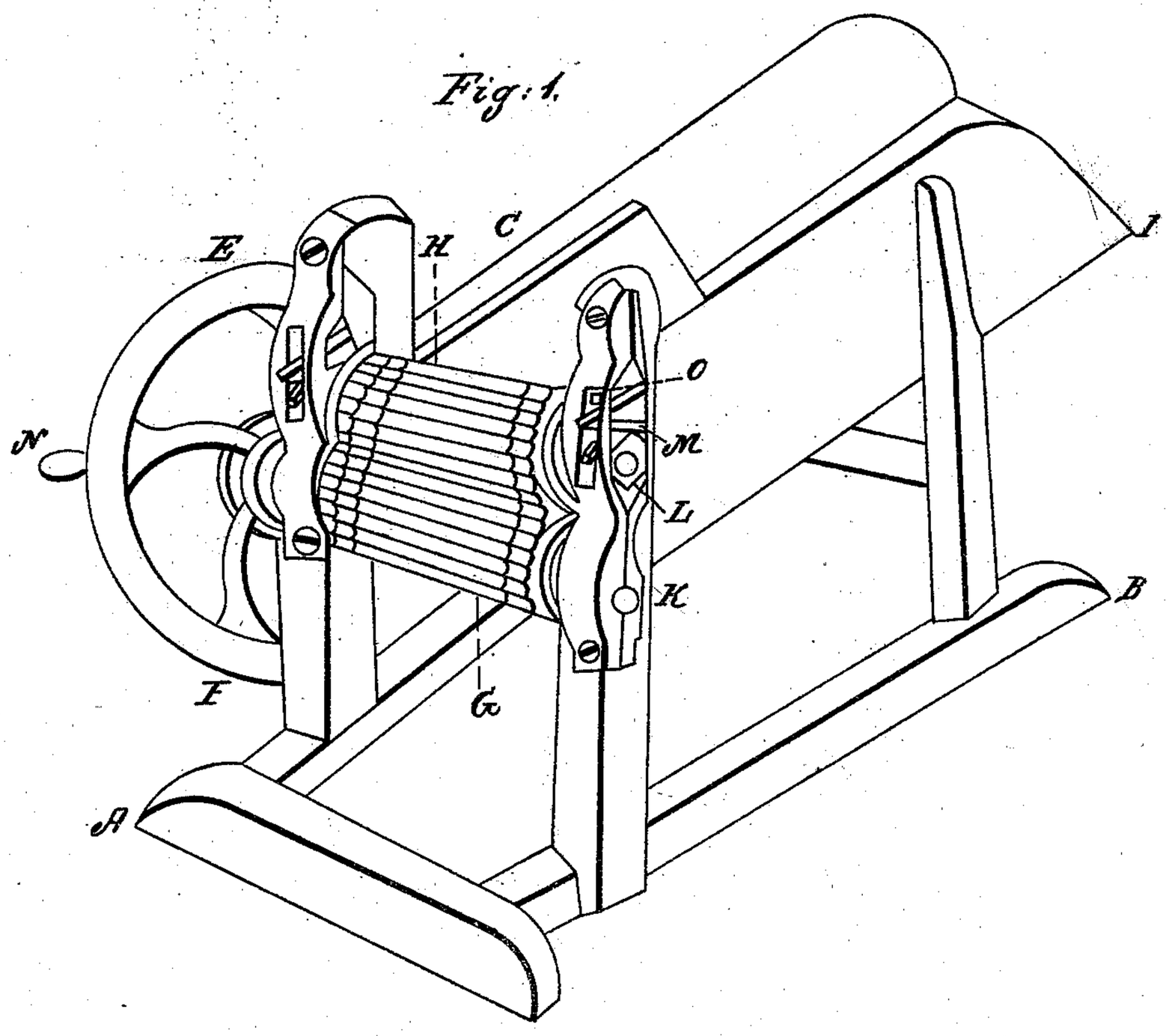


Fig: 2.

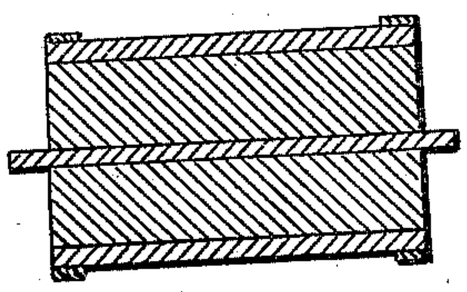
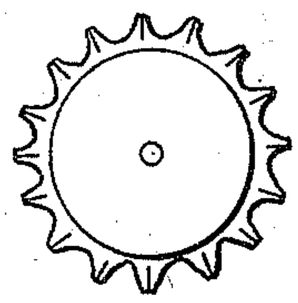


Fig: 3.



UNITED STATES PATENT OFFICE.

JAMES SANFORD, OF REDDING, CONNECTICUT.

STRAW-CUTTER.

Specification of Letters Patent No. 3,304, dated October 12, 1843.

To all whom it may concern:

Be it known that I, JAMES SANFORD, of Redding, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Machines for Cutting Straw and Hay, which improved machine is called "Sanford's Perfect Straw Cutter"; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawing, which is to be taken as a part of this specification.

The machine consists of a frame A, B, Figure 1 a box to receive the straw or hay, C, D, and two cylinders, between which the straw or hay passes and is cut and bruised. The lower cylinder G is about eight inches in length. The ends are surrounded by cast iron or other metal cog wheels. The rest of the cylinder is of wood and about three inches in diameter. Into grooves in this cylinder are set, longitudinally, blades or knives, extending about one inch from the surface of the cylinder, the ends of which blades or knives are entered into and supported by the cogs of the cog wheels above described.

The manner in which the blades or knives are inserted in and supported by the cogs is seen in Fig. 2 and Fig. 3. Fig. 2, represents a section, passing through the center of the cylinder and splitting the cogs on its opposite sides. The blades are seen as they pass through and are supported by the cogs. Fig. 3, represents the end of the cylinder and the end of the blades as they pass through the cogs. The edges of these blades or knives when placed in their proper position, are about three fourths of an inch or an inch apart, the edge extending outward from said cylinder. Through the middle of this cylinder passes an iron shaft, one end of which is seen at K, when it is supported by the frame. The other end, passing through a socket in the frame supports a balance or fly wheel E F. This balance wheel is about twenty inches in diameter, of cast iron or other metal, and weighs about thirty pounds. Into the rim of this balance wheel and at right angles to its plane, is entered the handle N by which the whole machine is put in motion. Directly above this cylinder is placed the second cylinder H. The place where the two cylinders come near together, is opposite to the lower end of the box. This cylinder is of precisely the same construction as the other, except that instead of blades or knives, flat blunt strips of iron or other metal are used. These are inserted in and supported by the cogs in the same manner as the knives or blades. These strips correspond very nearly in thickness with the backs of the blades or knives, or about half an inch. The shaft at each end of this cylinder rests and turns in a movable block of iron or other metal, which moves up and down in the frame. The block is represented on the plan by letter L. This is kept down by a spring M. This spring is strengthened if necessary by a wedge O. This cylinder is placed in the frame at such distance from the former, that the cogs of the first revolve into the cogs on this, and as the first revolves it turns this the same number of times in an opposite direction. When I use the machine, I put a suitable quantity of straw or hay into the box, and with my left hand bring the end of it in contact with the cylinders, while with my right I turn the balance wheel. The straw or hay is immediately drawn in, and pressed by the flat pieces in the upper cylinder against the edges of the knives in the lower. By this process the straw or hay is cut into pieces of uniform length, and also mashed or bruised in passing between the cylinders. The machine, by its own operation, after once taking hold of the straw, draws it in as fast as it is required. The upper cylinder, is allowed by the springs to give a little, if the quantity of straw is greater than usual, and thereby prevents the machine from being clogged. The strength of the spring however is sufficient to prevent any reasonable quantity from passing without being cut.

What I claim as my invention and desire to secure by Letters Patent is—

1. The method of cutting and bruising straw and hay by means of two cylinders, one having blades or knives and the other strips, set in them longitudinally, and revolving into each other, so that each strip in one passes near by the corresponding edge in the other, and presses the straw or hay upon the edge, in the manner above described.

2. I also claim the method of entering the blades and strips into the cogs by means of which I am enabled to use thinner blades and strips than I could otherwise do, to support them in their places in the most effectual manner, without allowing them to interfere with each other, and to make the cogs answer a double purpose, whereby both the weight and expense of the machine is diminished.

JAMES SANFORD.

In presence of—
HENRY DUTTON,
JAMES D. JOHNSON.