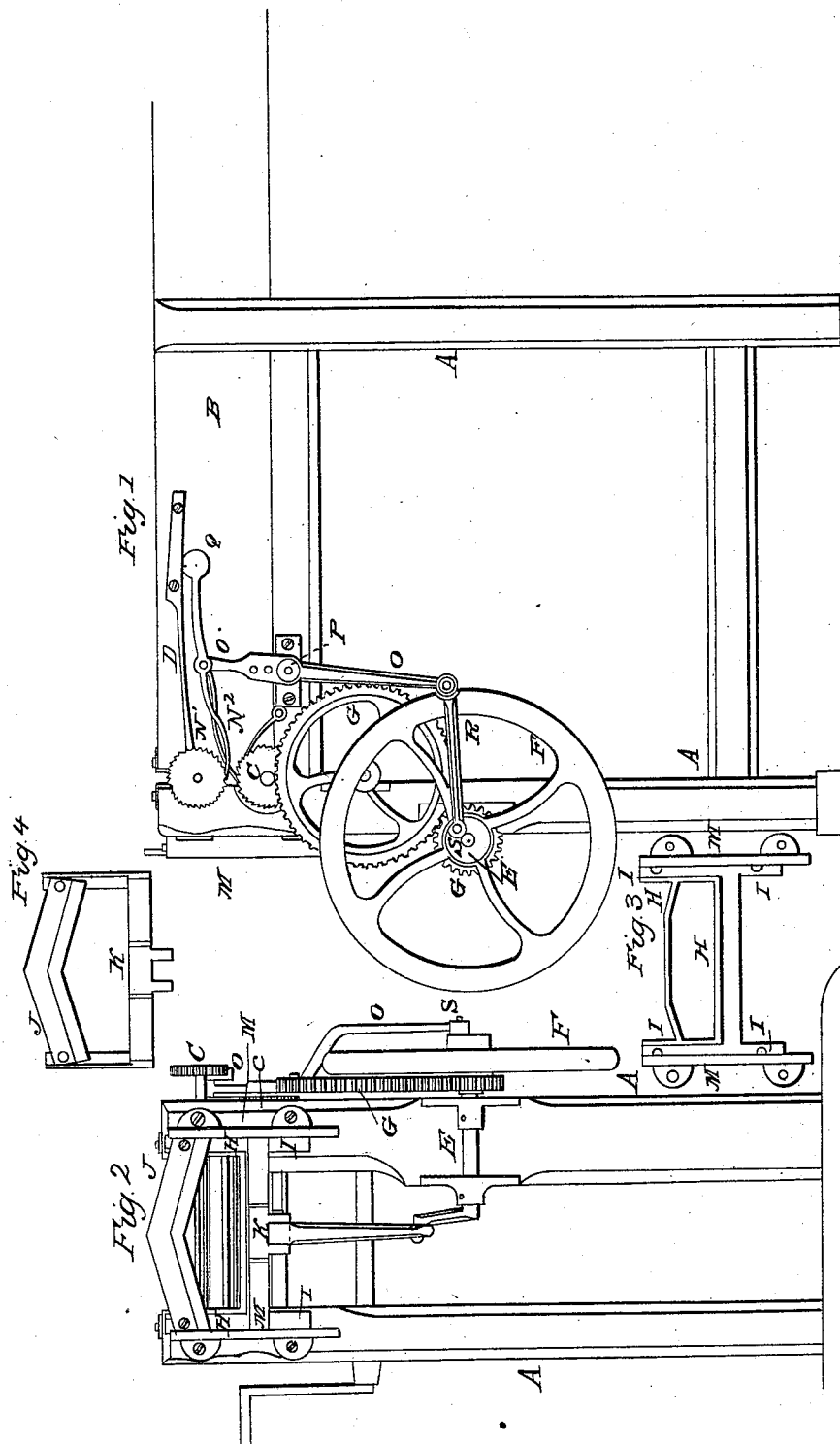


J. C. RICH.
Straw Cutter.

No. 4,351.

Patented Jan'y 7, 1846.



UNITED STATES PATENT OFFICE.

JOSEPH C. RICH, OF PENFIELD, NEW YORK.

STRAW-CUTTER.

Specification of Letters Patent No. 4,351, dated January 7, 1846.

To all whom it may concern:

Be it known that I, JOSEPH C. RICH, of Penfield, in the county of Monroe and State of New York, have invented a new and useful Improvement in the Construction of Machines for Cutting Straws, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is a front or end view; the knife being raised. Fig. 3 is a front view of the metallic mouth or casting and vertical L shaped plates. Fig. 4 is a front view of the sliding gate and knife attached thereto.

The frame A, box B, feeding rollers C C, springs D, crank shaft E, fly wheel F, gearing G are made in the usual manner.

My improvement consists in lining the front of the box with a metallic mouth H provided with flanges I extending above and below said mouth; forming the back for the gate to play against perforated with round apertures for bolts by which it is fastened to the frame. This metallic mouth, or casting H, is made vertical and smooth on the face next to, and against which, the knife J moves in the act of cutting the straws. The face being made smooth and even and the back of the knife, which moves against it, being likewise made flat and smooth it acts on the knife not only as the back of a pair of shears but as a whetting plate against the back of the knife.

The gate K to which the knife is fastened for cutting the straws is made in the usual manner. The knife J is made of cast steel in the form of an obtuse angle and is bolted or otherwise secured to the face of the sides of the gate. The grooves or gains in which the gate moves is formed by means of two vertical cast iron plates M provided with ears through which bolts are passed to fasten them against the vertical front posts.

The feeding or ratchet wheels C C are turned by means of two curved arms N' N² attached to the extremity of a lever O that vibrates on a bolt P inserted into the side of the frame. One of said arms N' is bent downward and is brought in contact with the teeth of the upper side of the ratchet

wheel of the lower feed roller. The other arm N² is bent upward and acts against the teeth of the under side of the ratchet wheel of the upper feed roller and is kept in contact therewith by a counterweight Q fixed to a part of the said arm extending back beyond the pin on which it turns.

The lever O is vibrated by means of a connecting rod R attached to its lower extremity and a wrist S on the face or hub of the fly wheel. The sweep or play of the arms for feeding in order to cut the straw longer or shorter at the will of the operator is regulated by lengthening or shortening the upper arm of the lever O which is done by inserting the bolt on which it vibrates into one of a series of holes in the lever, nearer to or farther from the fulcrum.

The wrist pin S on the hub of the fly wheel F, and to which the connecting rod R is attached, is placed on a line horizontal and parallel with the sweep of the crank shaft E, in order that the roller may feed, while the knife is above the straws.

The above arrangement for feeding operates so uniform and even that the straw or material to be cut, is always cut of a uniform length.

The upper part, or cross bar of the metallic mouthpiece H is made so as to conform to the shape of the lower edge of the knife J—that is to say the two ends (about $\frac{2}{3}$ the length of the bar) stand at the same angle as the cutting edges of the knife—the remaining portion of the bar is horizontal. The object aimed at in dropping the ends of the cross bar to conform to the angle of the knife is to do away with the necessity of having a long crank in order to raise the obtuse angled knife to act over or against a mouthpiece with its upper corners as high as the middle of the top.

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

The form of the mouth piece or face plate H, in combination with the angular knife J, as above set forth.

JOSEPH C. RICH.

Witnesses:

ALBERT E. JOHNSON,
T. C. DONN.