L. SCHELLINGER.

Straw-Cutter.

No. 166,307 Patented Aug, 3, 1875.

Fig. 1

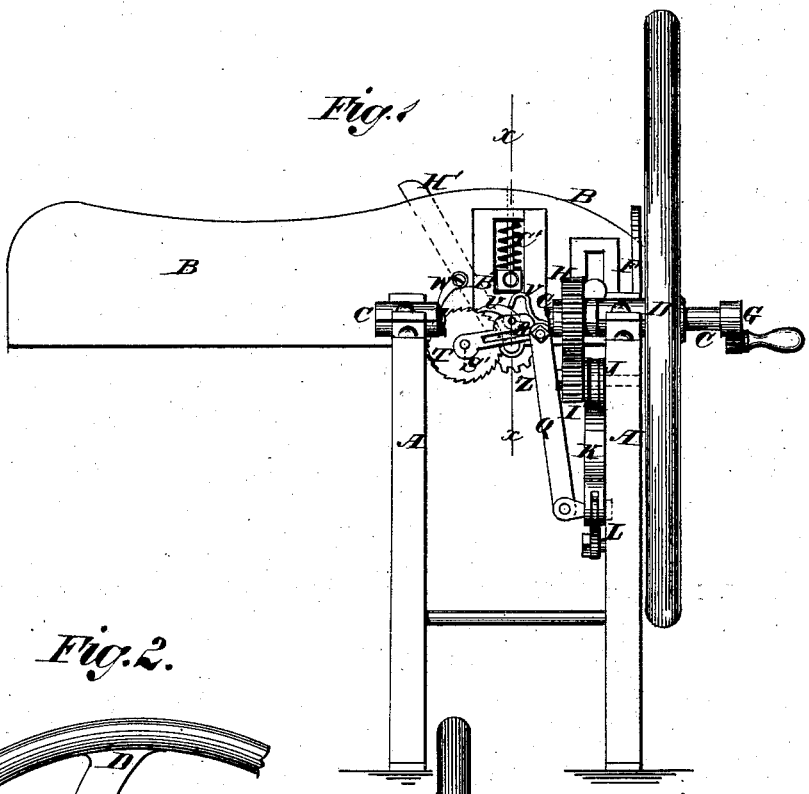


Fig. 2.

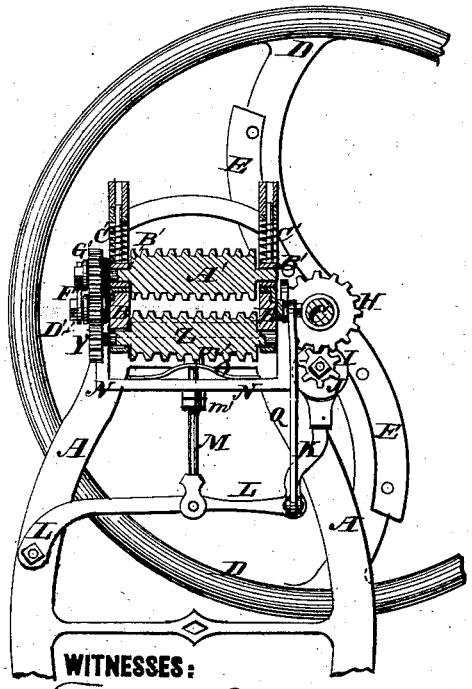
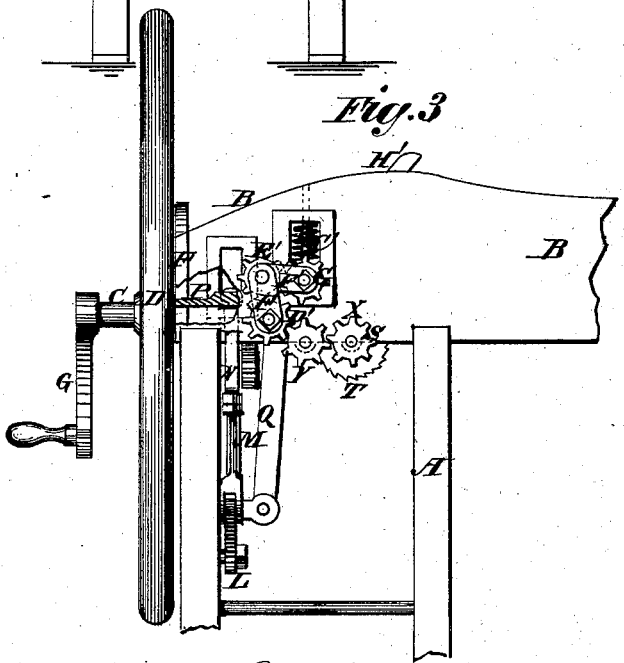


Fig. 3



WITNESSES:

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LEOPOLD SCHELLINGER, OF MISHAWAKA, INDIANA.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **166,307**, dated August 3, 1875; application filed June 19, 1875.

To all whom it may concern:

Be it known that I, LEOPOLD SCHELLINGER, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in Feed-Cutter, of which the following is a specification:

Figure 1 is a side view of my improved feed-cutter, part of the driving-shaft being broken away to show the construction. Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a side view of the same, showing the opposite side from that shown in Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention is an improvement in the class of straw-cutters in which the rollers for feeding the straw and the bar for clamping the same while being cut are operated from the shaft of the hand-wheel, to which the knives are attached. The improvement relates to the construction and arrangement of parts hereinafter described and claimed.

A is the frame of the machine, to the top of which is attached the feed-box B. In bearings attached to the top of the frame A, at one side of the feed-box B, revolves a shaft, C, to which, in front of the frame A and feed-box B, is attached a fly-wheel, D. To the arms or spokes of the fly-wheel D are bolted the knives E, which work close up to the mouth-piece F, attached to the forward end of the feed-box B. To the forward end of the shaft C is attached a crank, G, or a pulley, according as the machine is to be operated by hand or other power. To the shaft C, near the forward part of the frame A, is attached a gear-wheel, H, the teeth of which mesh into the teeth of the gear-wheel I. The gear-wheel I revolves upon a stud attached to the frame A, and with it is rigidly connected an eccentric-wheel, J. The gear-wheel I is made of the same size as the gear-wheel H when one knife is to be used, half the size of said gear-wheel H when two knives are to be used, and one-third the size when three knives are to be used. The eccentric-strap of the wheel J is attached to the upper end of the bar K, the lower end of which is pivoted to the end of the lever L. The lever L passes across beneath the feed-box B, and its other end is pivoted to the frame A. To the lever L, directly beneath the central line of the feed-box B, is pivoted the lower end of the bar M, which passes up through a hole in the center of the bar N, and through a hole in the center of the half-elliptic spring O, placed upon the upper side of the said bar N. The upper part of the bar M has a screw-thread formed upon it to receive the two nuts *m'*, which are placed the one above the spring O, and the other below the bar N. The end parts of the bar N are bent upward at right angles, pass up upon the opposite sides of the feed-box B, and are attached to lugs formed upon the ends of the pressure plate or saddle P, and which pass out through vertical slots in the side boards of the feed-box B, which slots are faced with metal to prevent wear.

By this construction the plate or saddle P, at each revolution of the eccentric J, will be drawn upon the substance in the feed-box B and then raised, the fly-wheel D and the eccentric-wheel J being so arranged that the saddle P will be drawn down as the knife begins to cut, and will be raised as the cut is completed. To the arm K and lever L, at their point of meeting, is pivoted the lower end of the bar Q, the other or upper end of which is pivoted to the end of an arm, R. The other end of the arm R is pivoted to the end of the shaft S, which revolves in bearings attached to the bottom of the feed-box B, and to which, at the side of the arm R, is attached a ratchet-wheel, T. To the arm R is pivoted a pawl, U, which is held forward by the spring V, and the engaging end of which takes hold of the teeth of the ratchet-wheel T. The ratchet-wheel T is kept from being turned back by the friction of the pawl U, by a stop-pawl, W, attached to the feed-box B, and the engaging end of which rests upon the teeth of the ratchet-wheel T. The arm R is slotted longitudinally to receive the pivot of the upper end of the bar Q, so that, by moving the said end out or in, the throw of the pawl U, and consequently the rapidity of the feed, may be regulated as may be required. To the other end of the shaft S is attached a gear-wheel, X, the teeth of which mesh into the teeth of the gear-wheel Y, attached to the journal of the lower feed-roller Z. The journals of the lower feed-roller Z revolve in bear-

ings attached to the bottom of the feed-box B. The lower feed-roller Z is placed in a transverse slot in the bottom of the feed-box B, and its upper side projects a little above the bottom of said feed-box. A′ is the upper feed-roller, which is placed directly above the lower feed-roller Z, and its journals revolve in movable bearings B′, placed in vertical slots in the side boards of the feed-box B, and which are held down by coiled springs C′, also placed in said vertical slots, so that the upper feed-roller A′ may adjust itself to the thickness of the substance in the said feed-box. The slots in the side boards of the feed-box B are lined with metal to prevent wear. The faces of the feed rollers Z A′ are corrugated or toothed to enable them to take a better hold upon the substance in the feed-box B. The teeth of the gear-wheel Y, attached to the journal of the lower feed-roller Z, mesh into the teeth of the gear-wheel D′, the teeth of which also mesh into the teeth of the gear-wheel E′, pivoted to and between the ends of the two pairs of straps F′. The other end of the lower pair of straps F′ are pivoted to the journals of the gear-wheel D′, and the other end of the upper pair of straps F′ are pivoted to the journal of the upper feed-roller A′. To the journal of the upper roller A′, between the ends of the straps F′, is attached a gear-wheel, G′, the teeth of which mesh into the teeth of the gear-wheel E′.

This construction causes the feed-rollers Z A′ to revolve toward each other to feed the substance forward, and allows the upper roller A′ to move up and down to adjust itself to the thickness of the substance without being thrown out of gear. The feed mechanism is so arranged as to stand still when the saddle P is pressed down, and to operate when the said saddle is raised. H′ is an inclined board, secured to the side boards of the feed-box B, to guide the substance into the space between the feed-rollers Z A′.

I do not claim jointed straps or bars for connecting meshing-gears with feed-rolls, one of which is arranged for free vertical movement; nor do I claim, broadly, a ratchet-and-pawl mechanism for connecting the power-shaft with the feed-rolls. The arrangement I have adopted is more compact and less complex than others of its class.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a straw-cutter, the combination, with the saddle P and bar N, of the curved spring O, rod M, and nuts m', for adjusting the tension of the spring, as shown and described.

2. In a straw-cutter, the combination of the eccentric-wheel J, meshing-gears H and I, and arm K, through which motion is transmitted to feed-rolls, as shown and described.

LEOPOLD SCHELLINGER.

Witnesses:
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