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W. H. HALL.

Straw-Cutter.

No. 167,334. Patented Aug. 31, 1875.

Fig 1

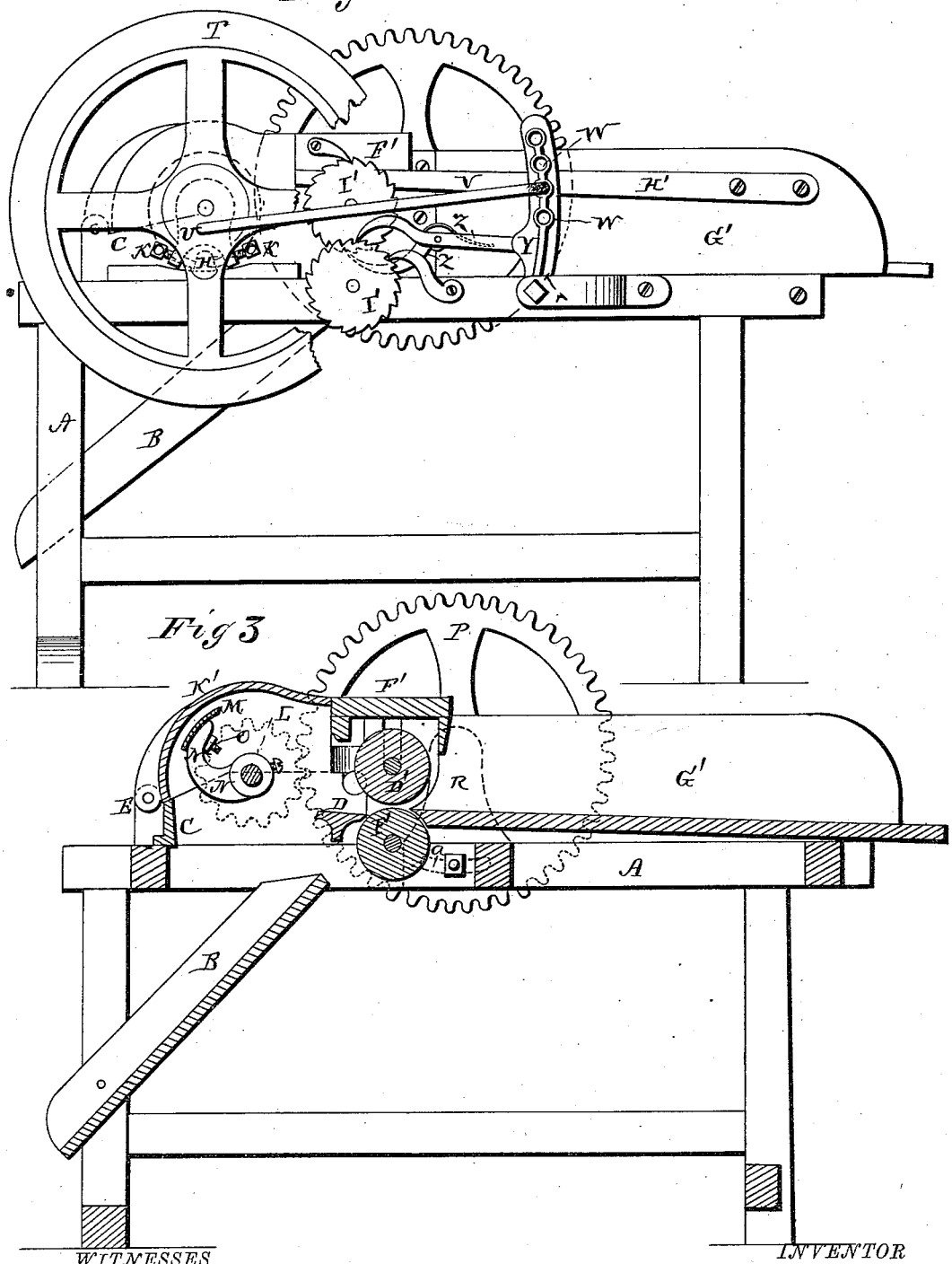

Fig 3

WITNESSES

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2 Sheets--Sheet 2.

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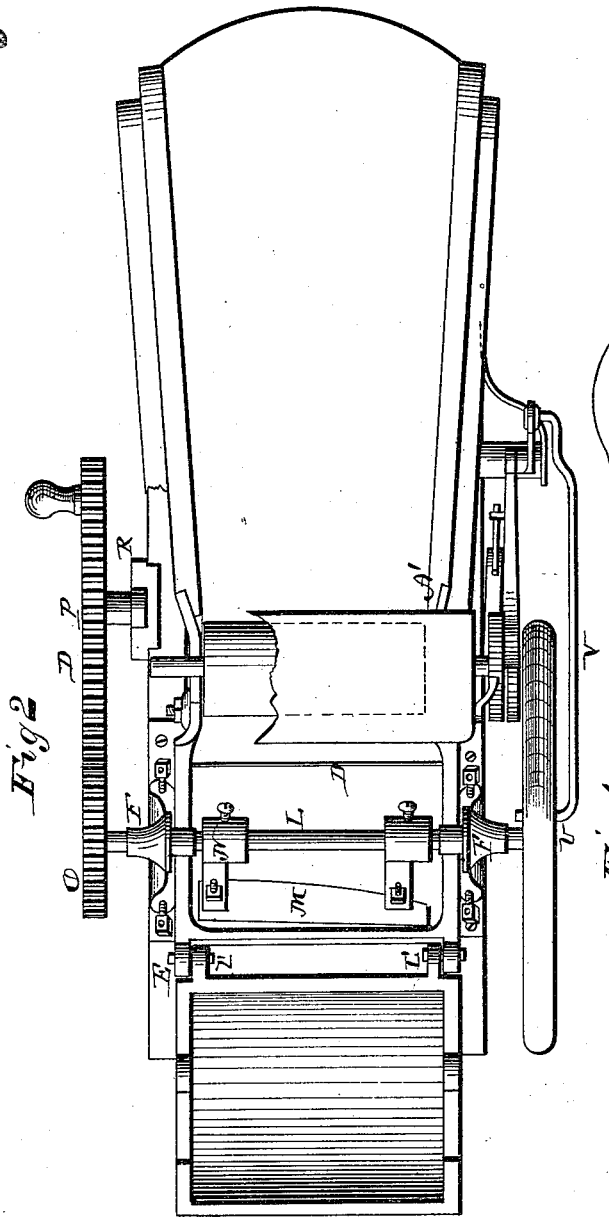

Fig 2

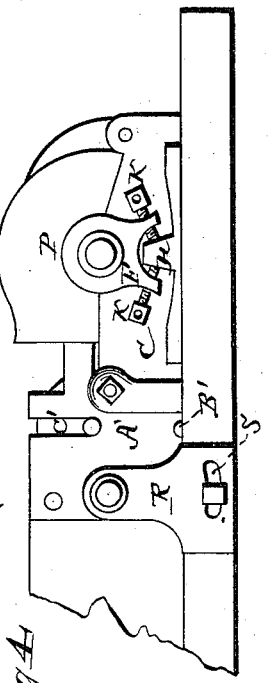

Fig 4

WITNESSES

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WILLIAM H. HALL, OF TIFFIN, OHIO.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **167,334**, dated August 31, 1875; application filed July 22, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. HALL, of Tiffin, in the county of Seneca and in the State of Ohio, have invented certain new and useful Improvements in Feed-Cutters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in straw and stalk cutters; and it consists, first, in an improved construction and arrangement of the journal-boxes in which the knife-shaft has its bearings, in such manner that the same will be capable of a slight oscillating movement, for the purpose of adjusting the revolving knife to the cutting-bar; second, in the combination, with the main driving-wheel, of an adjustable standard, upon which the same is journaled, by which said wheel can be adjusted to gear or mesh properly with the gear-wheel on the cutter-shaft or journal, as the same is moved back and forth to adjust the cutters; third, in the combination of the two feed-rollers, provided with ratchet-wheels on their journals, and the double pawl attached to the oscillating arm, for moving the same in opposite directions, all as more fully hereinafter set forth and described.

In the drawings, Figure 1 represents a side elevation of my improved straw-cutter. Fig. 2 represents a longitudinal vertical section of the same. Fig. 3 represents a view looking down upon the apparatus, and Fig. 4 represents a detached view of a portion of the main frame and adjacent parts.

The letter A represents the frame-work supporting the various working parts of the apparatus, provided with the usual discharge-spout B for the cut straw or stalks. C represents the main frame of the apparatus, secured to the top of the frame-work or table A, at the rear end of the same. Said frame C is constructed of iron or other suitable metal, and it is cast with the cutter-bar D and lugs E, and slots or holes for the attachment of the roller-plates, complete in one piece. The letters F F represent the journal-boxes in which the knife-shaft G has its bearings. Said boxes are formed separately from the main frame, and are attached thereto at each side by means of screw-bolts passing through them into the sides of the frame. The said boxes are capable of a slight oscillating play on their bolts, and the lower ends of the same are so formed as to straddle the lugs or projections H H on the frames C, which form the bearings for the set-screws K K, passing through the lower parts of the boxes, by means of which the position of the same may be adjusted. I represents the knife-shaft, carrying a revolving spiral blade, M, which is mounted upon radial arms N, and on one end of said shaft is mounted a toothed gear-wheel, O, meshing into a gear-wheel, P, mounted on an adjustable standard, R, attached to the frame-work A by means of a set-screw passing through a slot, S, in said standard, which admits the same to be moved to or from the gear-wheel O, and thus adjust the meshing of the two wheels O and P. To the other end of the knife-shaft I is secured a fly-wheel, T, provided with a crank-pin, U, to which is attached one end of a connecting-rod, V, the other end of which is adapted to be secured in apertures W, formed in an upright oscillating arm, Y, attached to the frame A, and carrying the pawls Z Z, which engage in toothed ratchet-wheels on the ends of the feed-rollers, as will be presently shown. A′ A′ represent two plates, adapted to be secured to the main frame A C and the frame-work A A by means of bolts and screws, or in other suitable manner. Said plates are cast separately from the frame C and from each other, with the attachment holes complete. Each is provided with an aperture, B′, and slot C′, for the reception of the shafts of the feed-rollers D′ and E′, which have their bearings therein. F′ represents a cap secured over the upper roller, its edges bearing upon the journal of the same, for the purpose of pressing said roller downward, the cap being attached to the feed-box G′ by means of springs H′ H′ on opposite sides. The feed-rollers have secured to their ends, which terminate on the side to which the fly-wheel is secured, ratchet-wheels I′ I′, with which the pawls Z Z are secured to the oscillating arm Y, said pawls giving each wheel a motion in the proper direction at each oscillation of the arm, which motion is communicated to the feed-

rollers, for the purpose of carrying the straw to the knife. The length of cut can be readily adjusted by means of the apertures W in the arm Y, the connecting-rod V being shifted at pleasure in the same. K′ represents a cover of cast metal, arranged to fit over the main frame C, being attached thereto by means of lugs or ears L′, pivoted to corresponding lugs E on the main frame. The said cover is formed with suitable recesses on its lower edges, to set over the boxes F F of the knife-shaft. The sides of the feed-box approach each other toward the roller-plates A′ A′, falling inside of said plates, and are attached to the same by means of screws from the outside, forming guides on each side, to prevent the straw from getting between the journals of the rollers and their bearings, and clogging the same, which would prevent their proper operation.

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

1. The journal-boxes F F, in which the knife-shaft has its bearings secured to the main frame C on opposite sides, and capable of a slight oscillating movement for adjusting the knives to the cutters, all substantially as set forth.

2. In combination with the driving-wheel P, the adjustable standard R, supporting the same, for the purpose of allowing the said wheel to be adjusted to mesh with the gear-wheel attached to the knife journal or shaft, substantially as described.

3. In combination with the feed-rollers D′ and E′, provided with ratchet-wheels I′ I′ on their shafts, the double pawl Z Z, attached to the oscillating arm Y, for moving the same in opposite directions, substantially as set forth.

In testimony that I claim the f o eg ongI have hereunto set my hand this 7th day of June, 1875.

WM. H. HALL.

Witnesses:
G. I. KEEN,
B. G. ATKINS.