3 Sheets—Sheet 1

M. M. HOOTON.

Band-Cutting Feeder for Thrashers.

No. 202,546. Patented April 16, 1878.

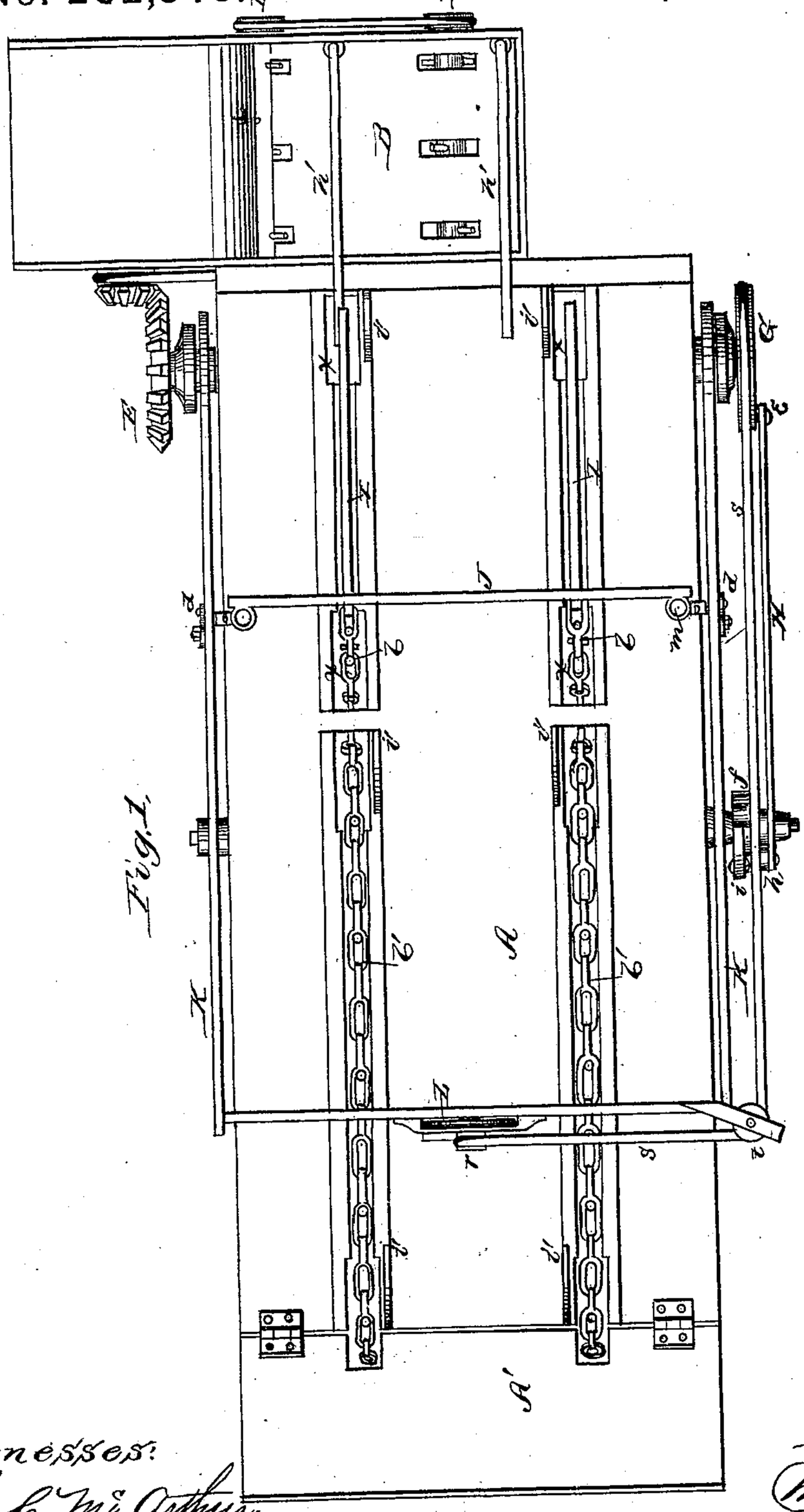

Fig. 1.

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3 Sheets—Sheet 2

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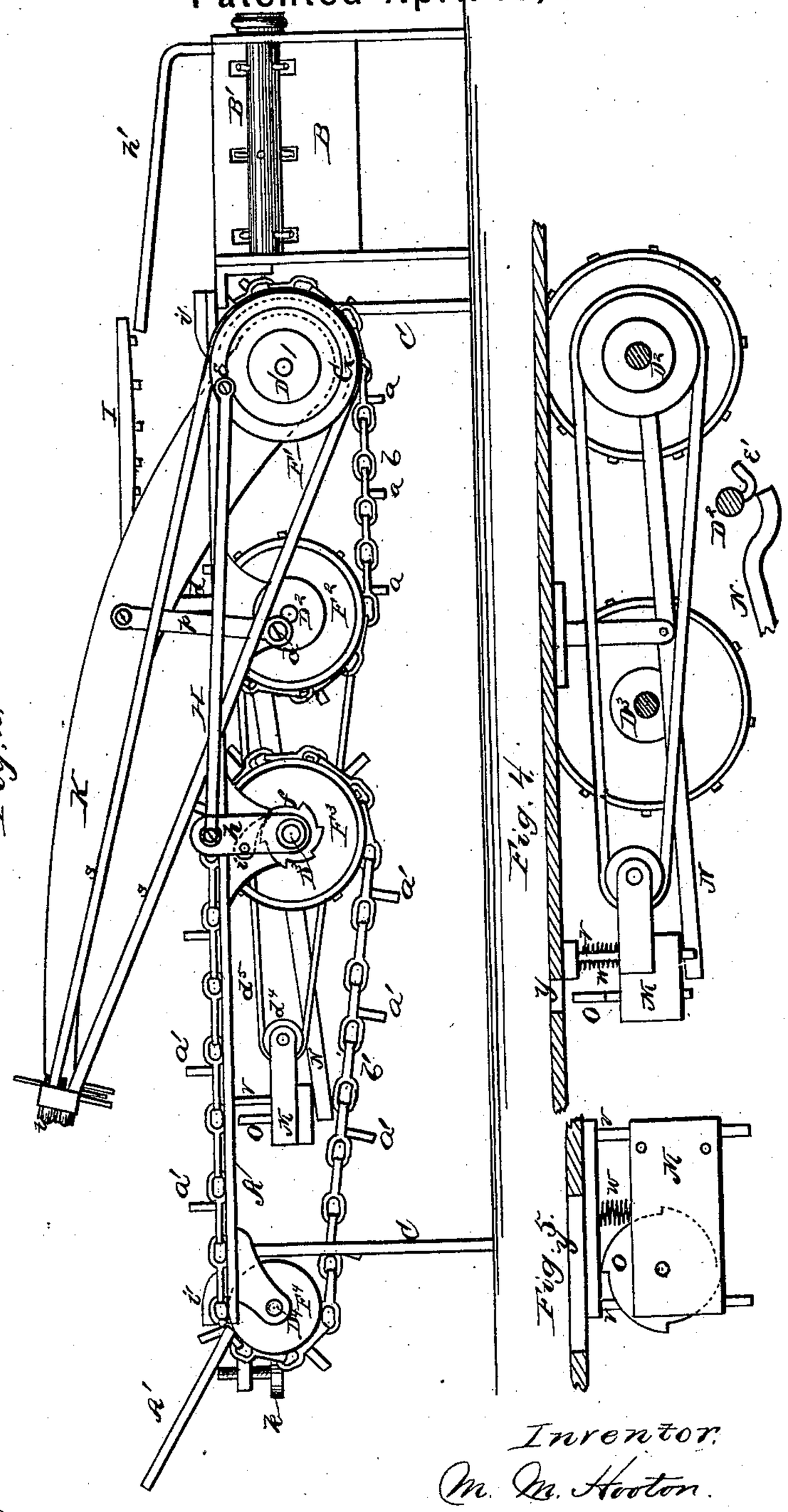

Fig. 2.

Fig. 4.

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3 Sheets—Sheet 3

M. M. HOOTON.

Band-Cutting Feeder for Thrashers.

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Fig. 5.

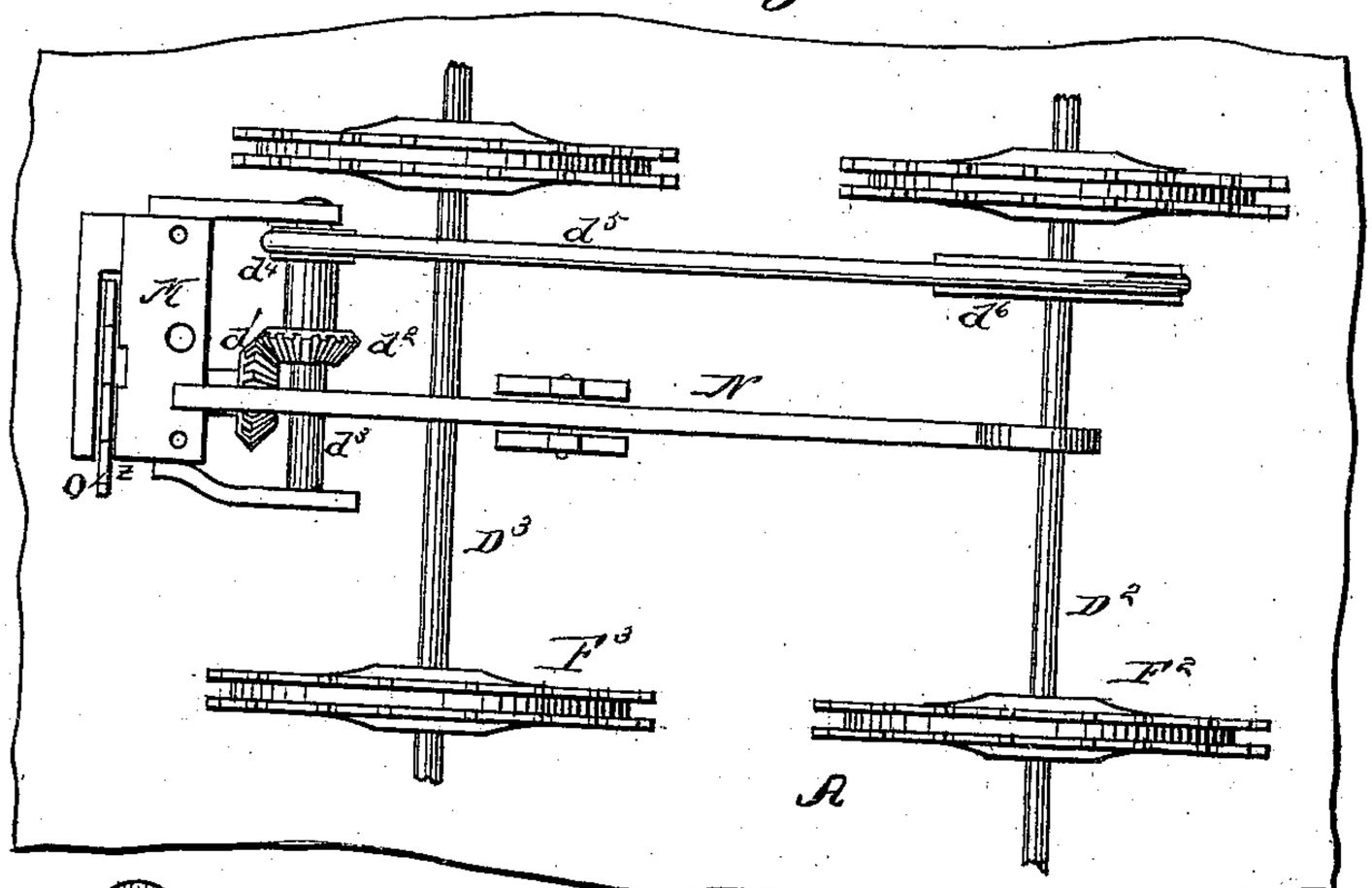


Fig. 7.

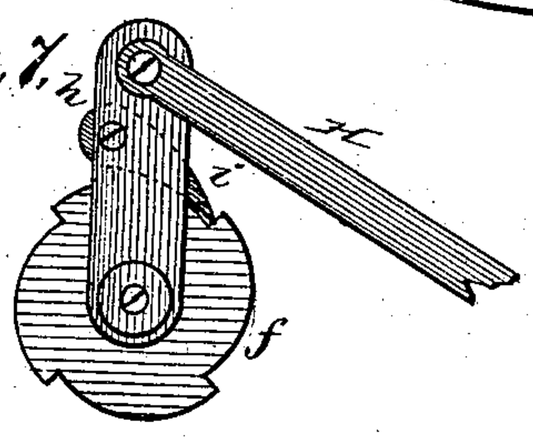


Fig. 8.

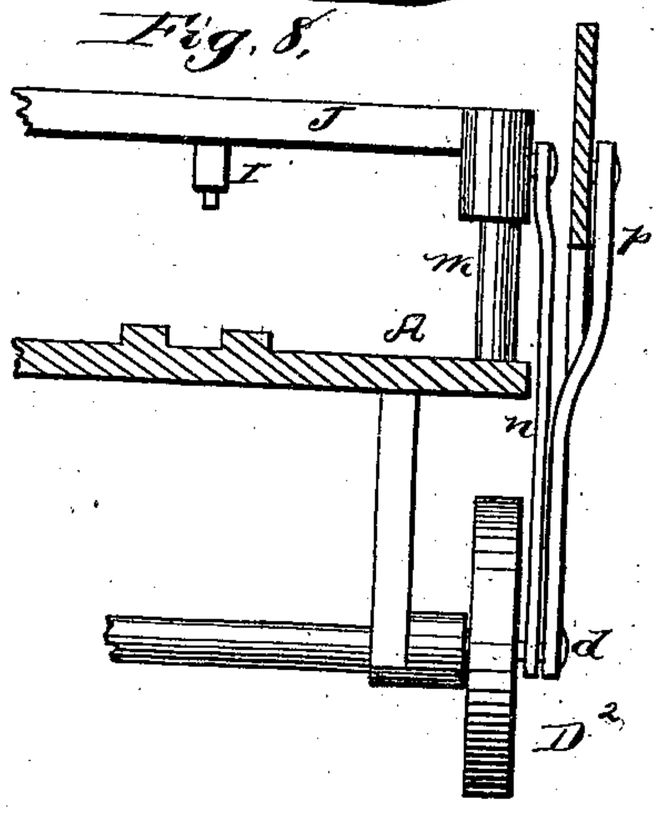
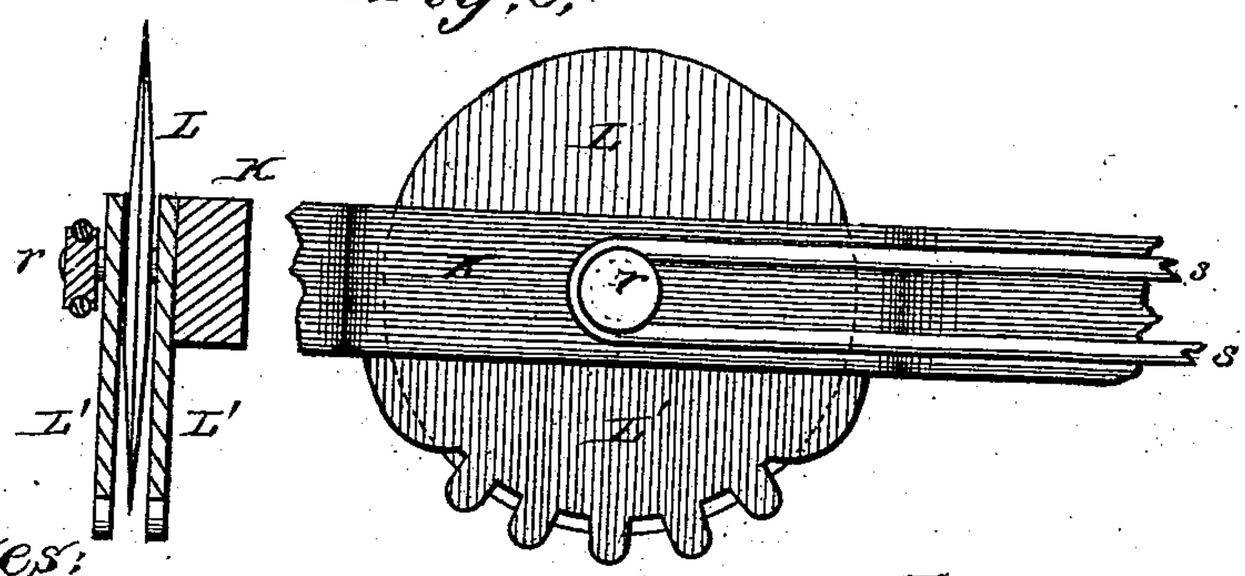


Fig. 6.



Witnesses:
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per M. M. Hooton.
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Attorneys.

UNITED STATES PATENT OFFICE.

MARSENA M. HOOTON, OF BROOKSIDE, ASSIGNOR OF ONE-HALF HIS RIGHT TO MARK M. POMEROY, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BAND-CUTTING FEEDERS FOR THRASHERS.

Specification forming part of Letters Patent No. **202,546,** dated April 16, 1878; application filed February 23, 1878.

To all whom it may concern:

Be it known that I, MARSENA M. HOOTON, of Brookside, in the county of Clinton and State of Illinois, have invented certain new and useful Improvements in Band-Cutters and Feeders for Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of a band-cutter to be connected to a thrashing-machine and operated directly from the same, as will be hereinafter more fully set forth, and pointed out in the claims.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of my machine. Fig. 2 is a side elevation of the same. Fig. 3 is a bottom view of a part of the machine; and Figs. 4, 5, 6, 7, and 8 are detailed views of parts thereof.

A represents a table, constructed of any suitable material and of any desired dimensions. This table is connected at one end to the receiving throat or hopper B of a thrashing-machine, and supported otherwise by suitable legs C. Below the table A, in suitable hangers, are placed four shafts, D^1 D^2 D^3 D^4. The first shaft, D^1, is placed near the end of the table A next to the thrasher, and upon it are secured two pulleys, F^1 F^1, of suitable size, and at a convenient distance apart. The tops of these pulleys run flush with the upper surface of the table A through slots therein, as shown.

The ends of the shaft D^1 project beyond the sides of the table A, and upon one end is secured a gear-wheel, E, for connection with a similar wheel on the shaft of the thrashing-cylinder. On the other end of said shaft D^1 is fastened a belt-pulley, G. This pulley G and the wheel E are interchangeable, so that the machine can be used on either side of the thrasher, as may be desired.

The shaft D^2 is also provided with pulleys F^2 F^2, similar to and corresponding with the pulleys F^1, and around said sets of pulleys are passed endless chains or belts *b b*, provided with outwardly-projecting teeth or spikes *a a*, at suitable equal distances apart. In applying these chains or belts, they are to be passed through the openings *x x* in the table, so that when the pulleys are revolved the belts will revolve partly above and partly below the table.

Still farther from the thrasher is another system of pulleys, F^3 F^3 and F^4 F^4, secured on the shafts D^3 and D^4 in the same manner, and provided with similar chains or belts *b′*, with teeth or spikes *a′*, except that these latter teeth or spikes are of greater length.

On the ends of the shaft D^2 are secured cranks *d d*, and upon one end of the shaft D^3 is secured a ratchet-wheel, *f*. From the side of the pulley G projects a wrist-pin, *e*, upon which is placed a rod, H, connecting with an arm, *h*, secured to the end of the shaft D^3, and a pawl, *i*, is connected to said arm, to engage with the ratchet-wheel *f*. These parts are so arranged that for each revolution of the pulley G the ratchet will cause the pulleys F^3 to revolve a distance exactly equal to the distance between the pins *a′* on the chains or belts that run over them.

At the point where the shaft D^4 crosses the table said table is cut in two, and the outer part A′ connected to the main part A by hinges. The hinged part A′ may be adjusted to any angle desired by means of one or more set-screws, *k*, as shown.

On each side of the table A, nearly on a line with the centers of the pulleys F^2, is a guide-post, *m*, and upon these two posts is fitted a cross-bar, J, capable of moving up and down on them. From this cross-bar extend two arms, I I, above and parallel with the chains *b b*, said arms being provided with teeth on their under sides. The ends of the cross-bar J are, by pitmen *n n*, connected with the cranks *d d* on the ends of the shaft D^2, whereby, as said shaft revolves, the cross-bar, with its arms, obtains a vertically-reciprocating motion upon the posts *m*.

On the ends of the shaft D^1, inside of the pulley G and gear E, are pivoted the ends of

a frame, K, which extends rearward to about midway between the pulleys F^3 and F^4, and said frame obtains an up-and-down motion on its pivot by means of pitmen *p p*, connecting it with the cranks *d d* on the ends of the shaft D^2. In the center of the rear end of this frame is mounted a suitable circular cutter, L, having upon its arbor or shaft a pulley, *r*. This pulley *r* is, by a belt, *s*, connected with the pulley G, said belt passing around pulleys *t t* at the rear corner of the frame, whereby, when said pulley G revolves, a rapid rotary motion is imparted to the cutter L.

Below the circular cutter L there is a transverse slot, *y*, of suitable length and width, in the table A. Immediately in front of this slot, below the table, are two downwardly-projecting guide-pins, *v v*, upon which is placed a movable frame, M, supported by the rear end of a pivoted lever, N, and pressed downward onto the same by one or more springs, *w*.

In the frame M is mounted a metallic disk, O, provided on its periphery with a series of hooked teeth, and made of the same size, about, as the cutter L. On the shaft of the disk O is a bevel-gear wheel, d^1, meshing with a similar wheel, d^2, on a shaft, d^3, and on this latter shaft is a pulley, d^4, connected by a belt, d^5, with a pulley, d^6, on the shaft D^2, whereby said disk O obtains a rapid rotary motion, and the teeth of said disk play through a close-fitting notch at *z*, the sides of which are of tempered steel.

The lever N, which supports the frame M, is pivoted in a suitable arm below the table, and its front end passes under the shaft D^2 and impinges against it. On this shaft is a tooth, *e'*, so arranged as to at the proper time depress that end of the lever and force the other one up, and with it the frame or sash M and disk O, until the edge of the disk is above the upper surface of the table the required distance.

This completes the attachment to the table; but I have found it necessary to place two cylinders armed with spikes in connection with the throat or hopper B of the thrasher—viz., one, B^1, in the throat of the hopper, and one, B^2, under the apron. The cylinder B^2 is armed with spikes long enough to reach through the apron some distance, the apron being slotted to permit the spikes to pass through it. These cylinders are driven by belts running over a pulley on the cylinder-head of the thrasher.

On each side of the belts or chains on top of the table A are guides *i'*, made high enough so that the sheaf or bundle will not touch any part of the belt but the teeth. At the end next to the thrasher these are raised sufficiently to keep the straw from fouling in the teeth.

As a measure of safety I have placed two rods, *h' h'*, over the throat of the thrasher by inserting one end in a socket at the side opposite the table, and bending the other over to meet the toothed arms I, thus making it impossible for the wind or other causes to cast the unthrashed grain and straw out of the throat. The arms extend over a sufficient distance to receive the grain in the straw direct from under the arms I.

The operation of the machine is as follows: The sheaves of grain are laid on the hinged part or tail-board A' of the table, which is sufficiently raised to cause them to slide down on it until they strike the guides *i'*, where they stop until the pins *a'* on the belts *b'* strike the bottom one, which is carried away, and the second one drops in, and is, in turn, carried away in like manner. Each pair of teeth takes a sheaf or bundle, which they carry beneath the circular knife L, where they each stop, while the knife descends on it and instantly severs the band.

If it is a metallic band to be removed from the straw, the metallic disk O is used, and is pressed up through the table, and catches the band on one of its hooks, and pulls it through the hole *y* in the table, and as the tooth passes through the fitted notch the wire is cut in two pieces, which drop into a receptacle. Meantime the unbound sheaf or bundle is carried forward to the first belts *b b*, which are running quite rapidly. Here it is checked by the toothed arms I I, and held until the teeth *a a* have carded it off in thin layers and cast it into the throat of the thrasher, where it is instantly caught by the cylinders, and drawn and forced into the thrasher.

If the band be straw or cord, it is only necessary to remove the pin that pivots the lever N and throw off the belt d^5, and the band will pass through the machine with the straw.

At the side of the cutter L is a toothed rack, L', to serve as a check in cutting metal bands.

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

1. In a band-cutter for thrashing-machines, the combination of one set of intermittingly-rotating toothed belts for carrying the sheaves in succession to the cutting mechanism, and one set of continuously-rotating toothed belts for carrying the loosened grain to the thrasher, substantially as herein set forth.

2. In a band-cutter for thrashing-machines, a slotted table carrying two systems or sets of toothed belts, a cutting mechanism, and an adjustable feed-board, over which the sheaves are fed to the machine, as herein set forth.

3. The combination of the system or set of belts *b'*, provided with teeth *a'*, arranged to have an intermittent rotary motion, and the rotating cutter L, having an up-and-down motion, substantially as and for the purposes herein set forth.

4. The combination of the frame K, pitmen *p p*, shaft D^2, with cranks *d d*, cutter L, pul-

leys *r*, *t t*, and G, and belt *s*, all constructed and arranged substantially as and for the purposes herein set forth.

5. The horizontal toothed arms I I, having a vertically-reciprocating motion, in combination with the continuously-rotating endless toothed belts *b*, for the purposes herein set forth.

6. The combination of the rotating shaft D^2, with cranks *d d*, cross-bar J, posts *m m*, pitmen *n n*, and toothed arms I I, substantially as and for the purposes herein set forth.

7. The guides *i'*, arranged upon the receiving end of the table A in the relation described to the feed-board A', and toothed chains *b' b'*, for the purpose specified.

8. The rods *h'*, arranged over the thróat of the thrasher, in combination with the reciprocating arms I and belts *b*, for the purposes herein set forth.

9. The combination, with the band-cutting knife L, of the rotating hooked disk O, arranged under the table, and having an up-and-down movement, for the purposes herein set forth.

10. The combination of the sash M, guide-pins *v v*, hooked disk O, with devices for rotating the same, spring *w*, lever N, and tooth *e'* on the shaft D^2, substantially as and for the purposes set forth.

The above specification of my invention signed by me this 11th day of January, 1878.

MARSENA M. HOOTON.

Witnesses:
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W. H. JACOBS.