(No Model.) 3 Sheets—Sheet 1.

L. CLOSE.

BAND CUTTER AND FEEDER FOR THRASHING MACHINES.

No. 455,657. Patented July 7, 1891.

Fig. 1.

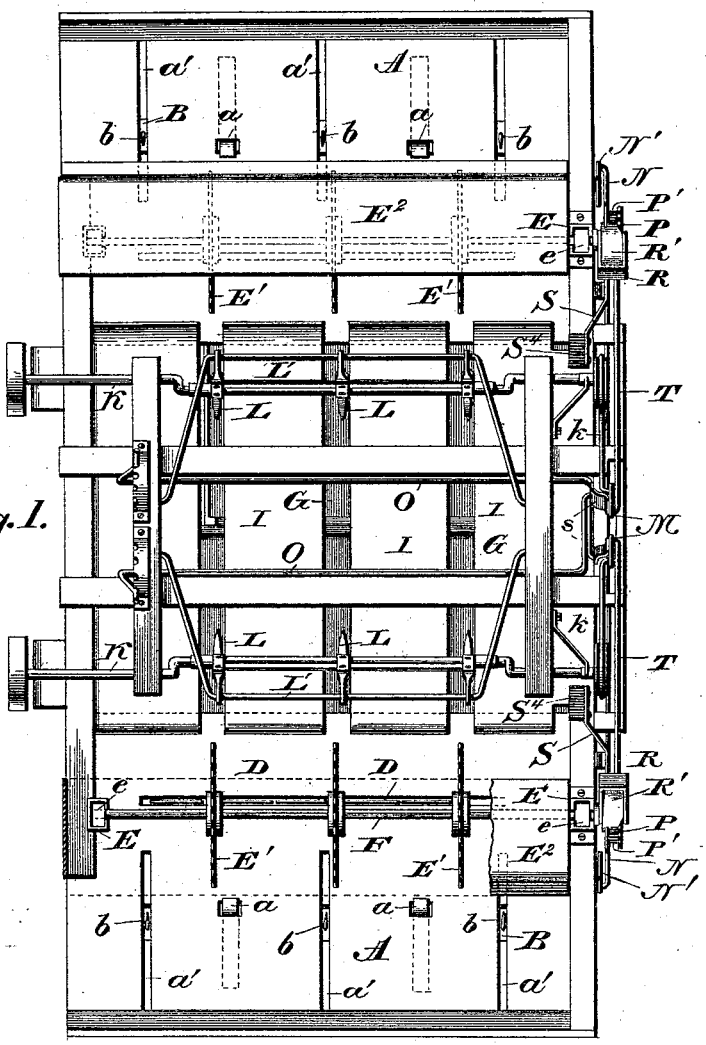
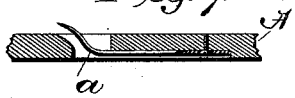


Fig. 7.



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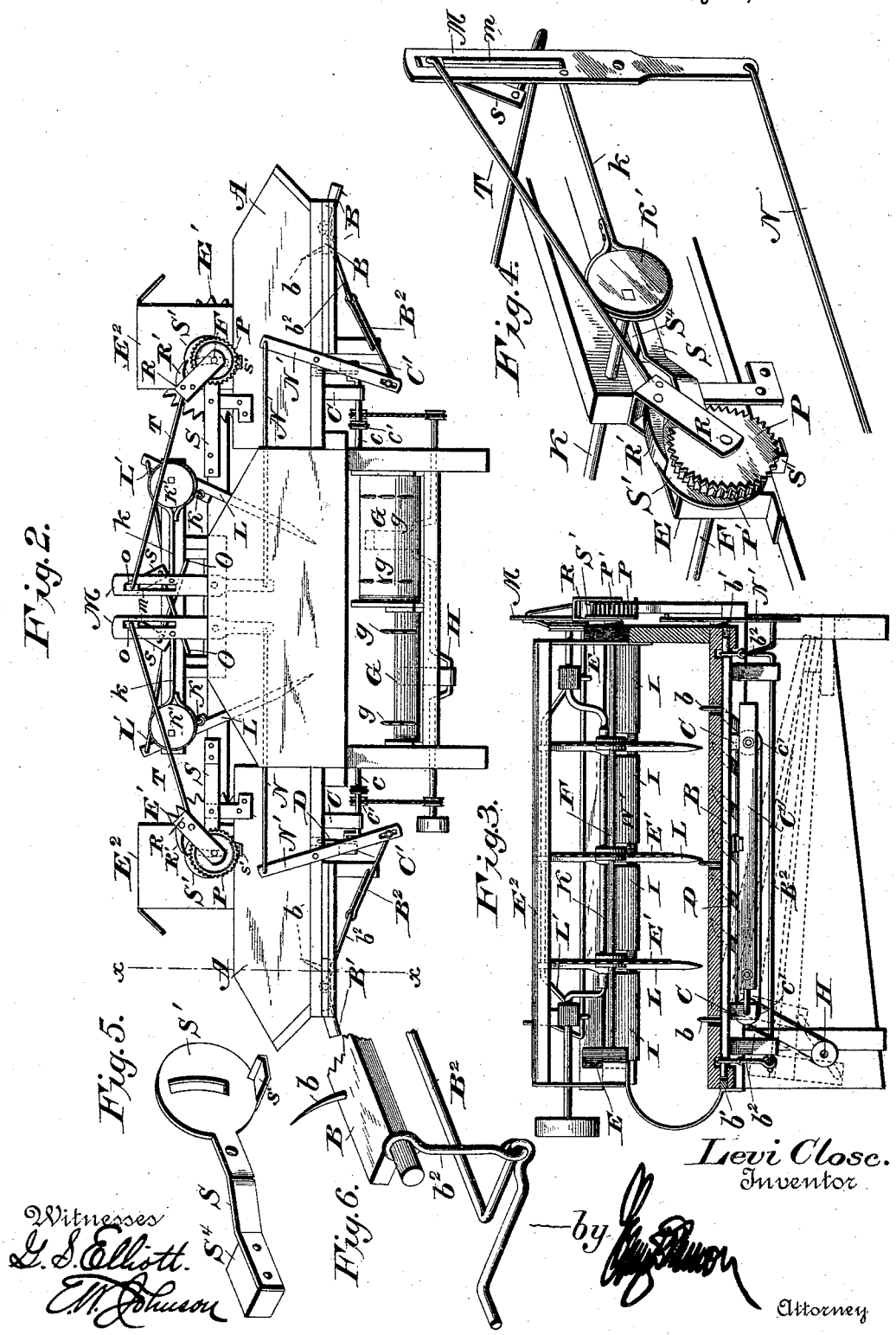

Fig. 2.

Fig. 4.

Fig. 3.

Fig. 5.

Fig. 6.

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(No Model.) 3 Sheets—Sheet 3.

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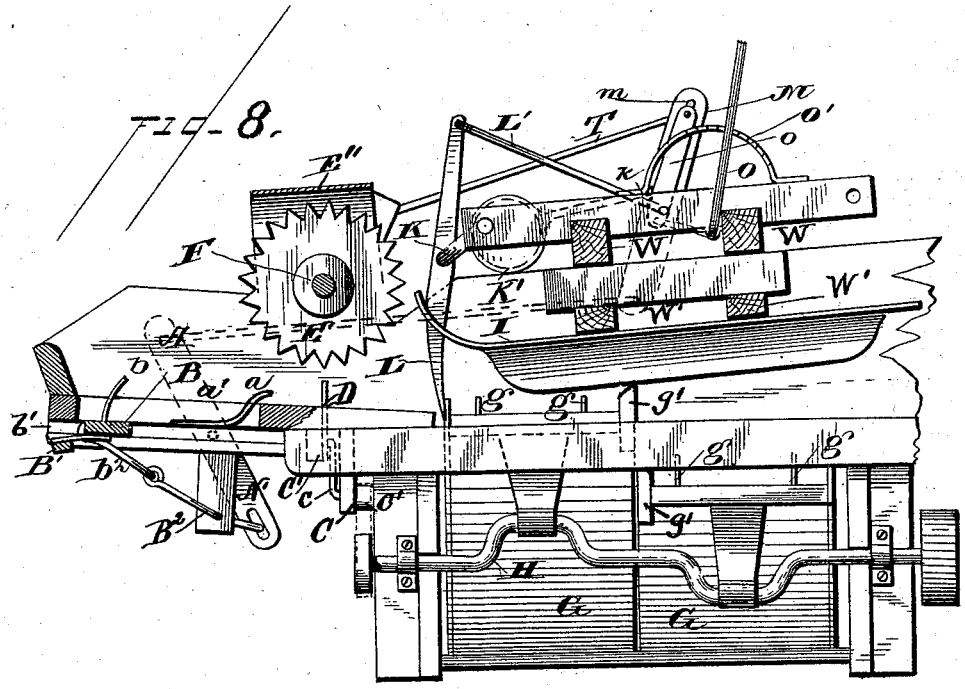
FIG. 8.



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LEVI CLOSE, OF LEONA, KANSAS.

BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,657, dated July 7, 1891.

Application filed May 15, 1890. Serial No. 351,922. (No model.)

To all whom it may concern:

Be it known that I, LEVI CLOSE, a citizen of the United States of America, residing at Leona, in the county of Doniphan and State of Kansas, 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 of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in band-cutters and feeders for thrashing-machines.

The object of the invention is to provide a simple and compact band-cutter and feeder in which the feed may be regulated to suit the condition of the sheaves; and it consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view. Fig. 2 is a rear view. Fig. 3 is a sectional view on the line $x\,x$ of Fig. 2. Fig. 4 is a detail perspective view of the device for operating the shaft carrying the feed-wheels. Fig. 5 is a detail view of the weighted lever carrying the detent which operates in connection with the ratchet-disk on the shaft upon which the feed-wheels are mounted. Fig. 6 is a detail view of one end of the pusher-bar and mechanism for operating the same. Fig. 7 is a detail sectional view of one of the spring-teeth located in the platform. Fig. 8 is a side view, partly in section, one of the sides being removed to better show the construction.

A A refer to the feed-tables upon which the sheaves are placed, and are provided at suitable intervals with projecting spring-teeth a, which pass through openings in said tables. The projecting ends of these teeth are inclined, so that the sheaves will pass freely over the same, but will hold the sheaves against movement in an opposite direction. Each table is also provided between the spring-teeth a with slots a', in which works a series of feed-teeth b, which are secured upon a transverse strip or board B, located beneath the table and supported by their reduced ends or trunnions in suitable guides or grooves b'. This strip or board is provided with a weighted arm B′, which has a tendency to throw the teeth b up to contact with the sheaves as it is moved forward and will cause said teeth to fall below the upper surface of the table in their backward movement, the board having a rocking movement in its guides or supports. The strip or board B is operated through the medium of the crank rock-shaft B^2 and links b^2, as will be hereinafter set forth.

In suitable bearings C, which depend from the under side of the feed-tables A, are crank-shafts c, provided with pulleys c', over which passes a belt for actuating the same, and to said crank-shafts are pivotally secured bars C′, carrying a series of cutters or blades D, which operate through slots in the feed-tables and are raised and lowered as the crank-shafts are turned.

To each side of the machine above the feed-tables are located housings E, in which move vertically the bearing-blocks e for the transverse shafts F, upon which is mounted a series of feed-wheels E′, said wheels being merely disks, the peripheries of which are serrated or provided with projecting pins. These feed-wheels are partially covered by a casing E^2.

Between the feed-tables and below the level thereof is a suitable platform, upon which slide the lower ends of the delivery-tables G G, the opposite ends of which are connected in any suitable manner with the double-crank shaft H, which may be considered the main driving-shaft, and as this shaft is rotated the upper ends of the delivery-tables are alternately raised and lowered to deliver the wheat. These delivery-tables are provided on their upper surfaces with inclined teeth g, which assist in feeding the wheat to the thrashing-machine. Above these delivery-tables are shields or screens I, which are supported by transverse beams W′ W′, above which is a frame supporting at each end a crank-shaft K, carrying a series of feed-fingers L, which are connected to the frame by bails L′, passing through the upper ends thereof, so that

when the crank-shaft K is turned the fingers will feed the wheat from the table A to the delivery-tables G. The rear ends of the crank-shafts K are provided with eccentrics, around which pass rods *k*, which connect with the rock-levers M M, suitably pivoted to the frame. These levers have their upper ends slotted, as shown at *m*, and to their lower ends are connected rods N, which connect with the upper ends of the pivoted levers N′, the lower ends of which are slotted to receive arms forming part of the crank-shafts B^2.

Working in the slots *m* in the upper ends of the levers M are sliding blocks *o*, in which are journaled rods S for operating the shafts F through the mechanism shown in Fig. 4 and to be hereinafter set forth, the throw of said rods being regulated by the position of the slides in the slots *m*, these slides being positioned manually by rock-shafts O, connected thereto by links *s*.

Each shaft F is capable of a vertical movement, as its bearing-blocks *e* are loosely mounted in the housings E. Rigidly attached to the outer end of said shaft is a ratchet wheel or disk P, which also carries or has attached thereto a notched disk P′. A loop R is loosely mounted on the shaft F, so as to lie over the notched disk P′ and the disk S′, formed on the end of the lever S. This loop has pivoted near its upper end a pawl R′, and beneath said pawl and to one side of the loop is attached the rod T, which connects the loop to the slide *o* at the upper end of the lever M. The pivoted lever S has formed on its forward end a disk S′, which is centrally provided with a slot, so that it can move freely upon the shaft F, and the lower portion thereof carries a projecting finger or detent *s*′, which engages with the notched disk P and holds the shaft from rotation, and the pawl R′, hereinbefore referred to, is notched to engage with the upper portion of the disk S′, so that when the detent is in engagement with the notched disk P the pawl will be held out of engagement with the ratchet-wheel. The rear end of the pivoted lever S is provided with a weight s^4. It will be noted that the knives when operated will cut the bands of the sheaves, and while cutting the sheaves will be held stationary by the feed-wheels E′, and the feed-fingers L will enter the straw before the rotation of said feed-wheel commences.

By the construction hereinbefore described when the lever M is oscillated or moved upon its pivot by the eccentric K′ and connecting-rod *k* the loop R will be moved, and its rearward movement, relieving the disk S′ on the pivoted lever S from pressure, will allow the same to rise and move the pawl R′ out of engagement with the ratchet-wheel P′, and as the loop is moved forward the pawl engaging with the disk S′ will depress the same and move the detent *s*′ out of engagement with the serrated disk P, and the pawl R′, engaging with the ratchet-teeth, will rotate the shaft a given distance, according to the position of the slide in the slot *m*, the adjustment being accomplished by moving the rock-lever O. By this construction the shaft F and feed-wheels E′ may be rotated to give the desired feed, according to the condition of the sheaves.

This band-cutter and feeder may be operated by suitable pulleys from the thrashing-machine, one of which passes over the pulley at the end of the main driving-shaft H, which is geared to the pulleys *c*′, as shown, to operate the knives D, and the other belt may connect with the shafts carrying the feed-fingers.

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

1. In a band-cutter and feeder for thrashing-machines, the combination of the table A, having spring-projected teeth *a* and reciprocating fingers *b*, cutters or knives D, operating transversely therewith, and a series of feed-wheels mounted above said knives, and intermittingly-operating connections whereby the feed-wheels will remain stationary while the knives are in contact with the sheaf, substantially as set forth.

2. In a band-cutter and feeder for thrashing-machines, the combination of the feeding-platforms, an intermittingly-rotating shaft having feed-wheels, a series of cutting-blades operating transversely beneath the same, and a series of fingers for moving the separated sheaves from the platform, substantially as set forth.

3. In a band-cutter and feeder for thrashing-machines, the combination of the feed-platforms, a series of band-cutting blades adapted to be moved through and above the platform, so as to sever the bands of the sheaves, intermittingly-rotating feed-wheels journaled in vertically-movable bearings, and fingers for moving the sheaves from the platform to the delivery-table, substantially as set forth.

4. In a band-cutter and feeder for thrashing-machines, the combination of the platform having a series of slots, movable feed-fingers *b*, working therethrough, spring-teeth attached to said platform for preventing rearward movement of the sheaf, a transverse bar carrying a series of cutting-blades, feed-wheels E′, arranged above said cutting-blades, and fingers L for separating the sheaf, together with the inclined reciprocating delivery-tables G, substantially as set forth.

5. In a band-cutter and feeder for thrashing-machines, the table or platform A, having a series of slots on a line with the movement of the sheaf, the forwardly-inclined feed-fingers *b*, secured to a sliding and pivoted bar, said bar being weighted, as shown, and means for actuating said bar, whereby said fingers will be elevated by contact with the sheaves in their forward movement and depressed below the surface of the table when moved in an opposite direction.

6. In combination with the feed-table A, having a series of slots, a pivoted transverse

bar B, having feed-fingers, said bar being supported in suitable guides beneath the feed-table and provided with a weighted arm for normally holding the fingers raised in the slot, links for connecting said bar adjacent to its pivot to a rock-shaft, and means for operating said rock-shaft, substantially as set forth.

7. The combination, in a band-cutter and feeder for thrashing-machines, of a feed-table A, reciprocating bar carrying fingers, spring-teeth *a*, rigidly secured to said table, the ends of said spring-teeth being inclined in the direction of the feed to prevent a backward movement of the sheaf, said spring-teeth being adapted to be depressed by the weight of the sheaf in its forward movement, substantially as set forth.

8. The combination, in a band-cutter and feeder for thrashing-machines, of the feed-shaft F, having an intermittingly-rotary motion, said shaft having feed-wheels E′ mounted thereon and a band-cutter located adjacent thereto, substantially as set forth.

9. In combination with the vertically-movable intermittingly-rotating shaft F, feed-wheels mounted on said shaft and a band-cutter.

10. In combination with the shaft having fingers L mounted centrally thereon, a bail L′, connecting the upper ends of said fingers to the frame, an eccentric K′ and rod *k*, a pivoted lever M, operated by said rod, rods T and N, connected to the lever M, a loop carrying a pawl which engages a ratchet-disk on the shaft F, and a lever N′ for reciprocating the bar carrying the feed-fingers, substantially as set forth.

11. In combination with the feed-shaft F, a pivoted lever carrying a slotted disk with a detent, said lever being weighted at one end, a ratchet-wheel and serrated disk rigidly mounted on the shaft F, a loop or bail carrying a pawl for engagement with the ratchet-disk, said pawl also being engaged by the plate, and a bar connecting the loop with an adjustable slide carried by the lever M, so that when said lever M is rocked the shaft will be rotated, substantially as set forth.

12. In combination with the feed-shaft F, provided with serrated disks, a pivoted lever weighted at one end and provided at the opposite end with a slotted disk, through which said shaft passes, said disk having a detent, a ratchet-wheel and serrated plate rigidly mounted on said shaft and a loop loosely pivoted thereto, said loop carrying a pawl which is adapted to engage with the upper portion of the slotted disk when the detent is in engagement with the serrated disk, a bar connecting the loop to a rock-lever, and means for operating said lever, substantially as shown, and for the purpose set forth.

13. The combination, in a band-cutter and feeder for thrashing-machines, of the shaft K, a series of feed-fingers mounted on said shaft, a slotted rock-lever M, connected to said shaft, a slide *o*, adjustable in said slotted lever, a loop carrying a pawl, a rod connecting said slide and loop, a feed-shaft F, provided with feed-wheels and disks P P′ and S, a bar N, connected to the lower end of the rock-lever M and to the rock-lever N′, and means for connecting the lower end of the rock-lever N′ to a sliding board carrying feed-teeth *b*, whereby the sheaf is first fed forward by the feed-fingers and held rigidly upon the platform by the feed-wheels while the band-cutters operate, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEVI CLOSE.

Witnesses:
J. S. BEELER,
T. J. ARMSTRONG.