

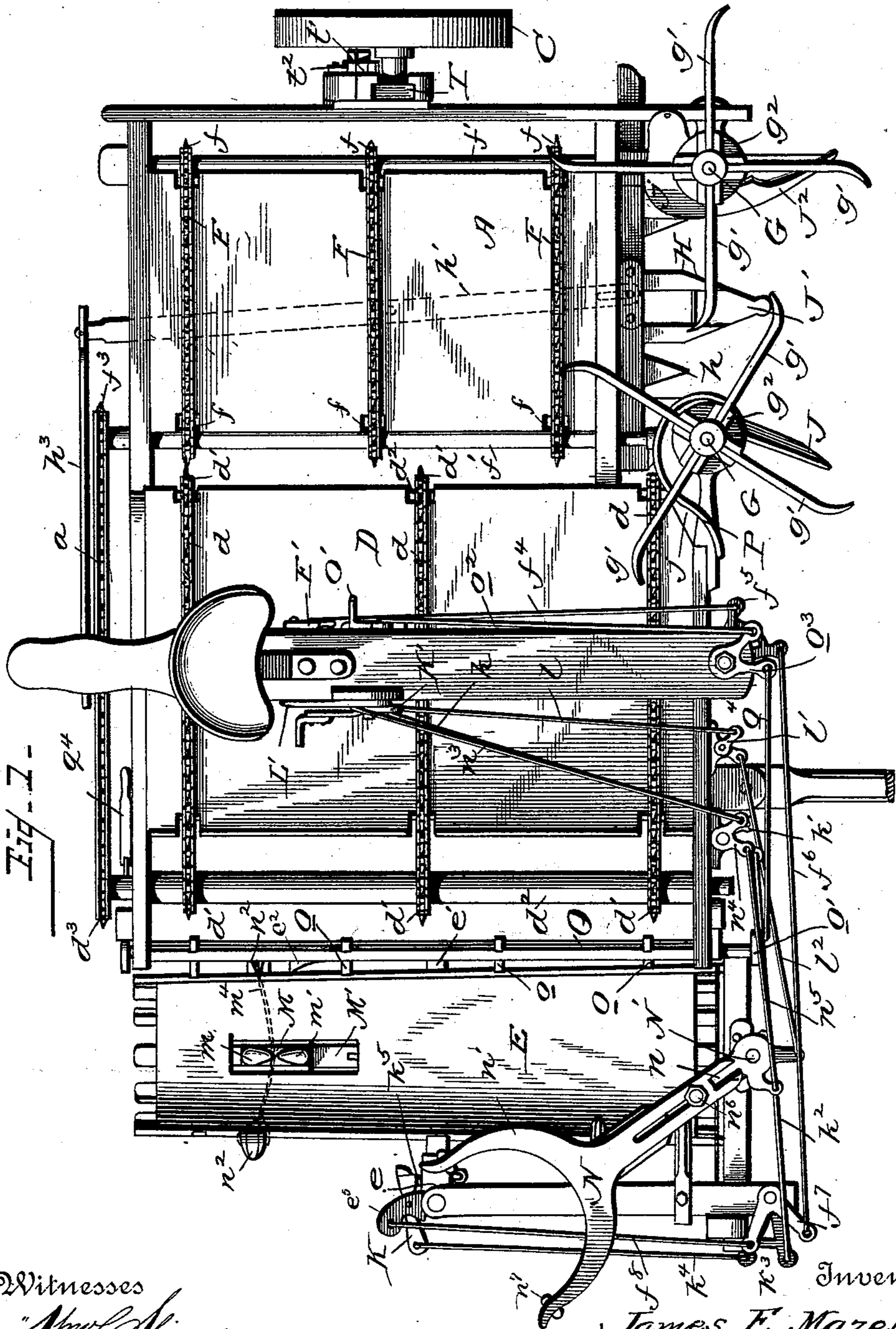
(No Model.)

5 Sheets—Sheet 1.

J. E. MAZELIN.
CORN HARVESTER.

No. 541,562.

Patented June 25, 1895.



Witnesses
Wm. H. Hildner.
Van Buren Hillyard.

Inventor
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By Attorneys
Robt. A. Lacey

(No Model.)

5 Sheets—Sheet 2.

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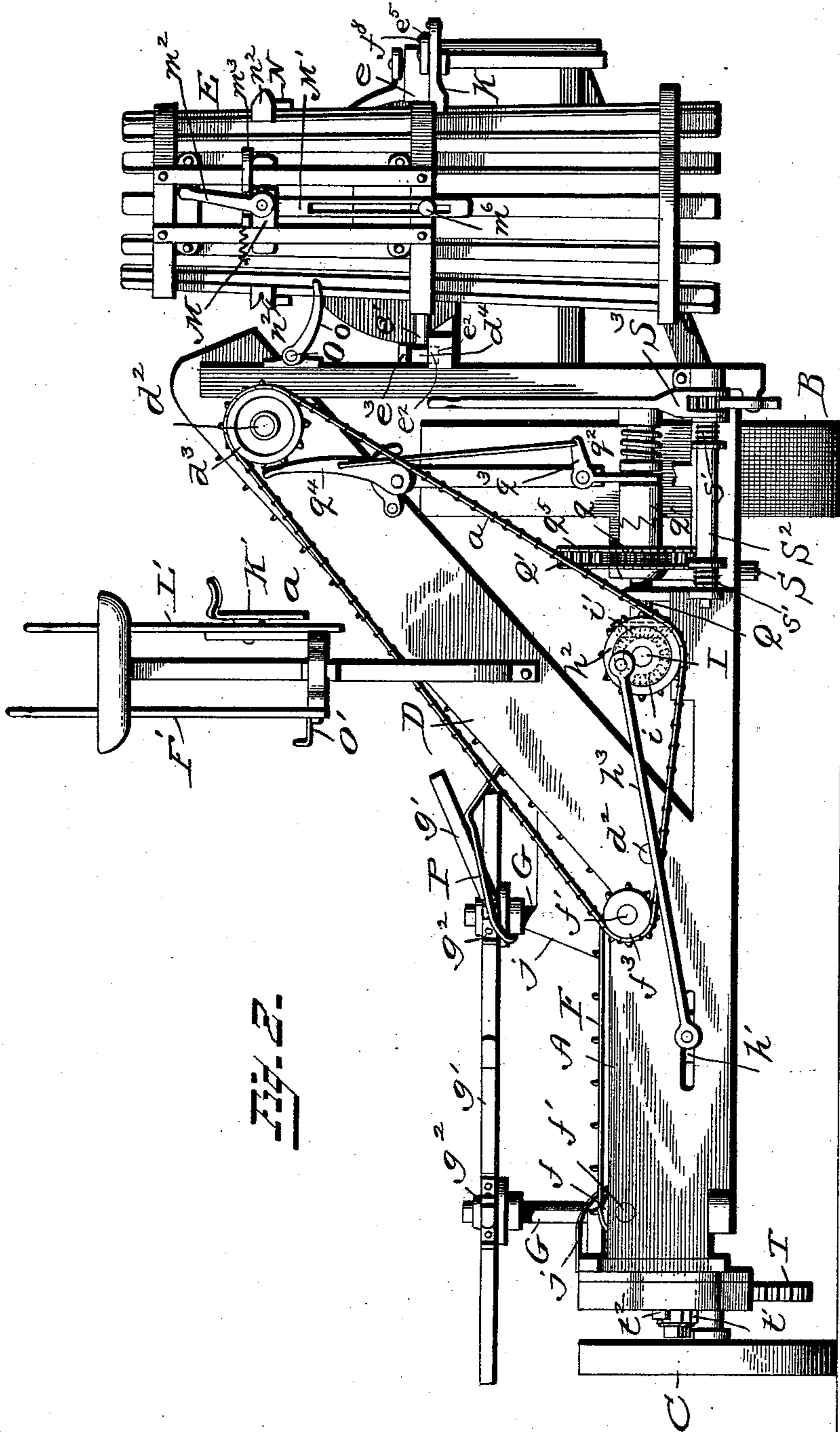


Fig. 2.

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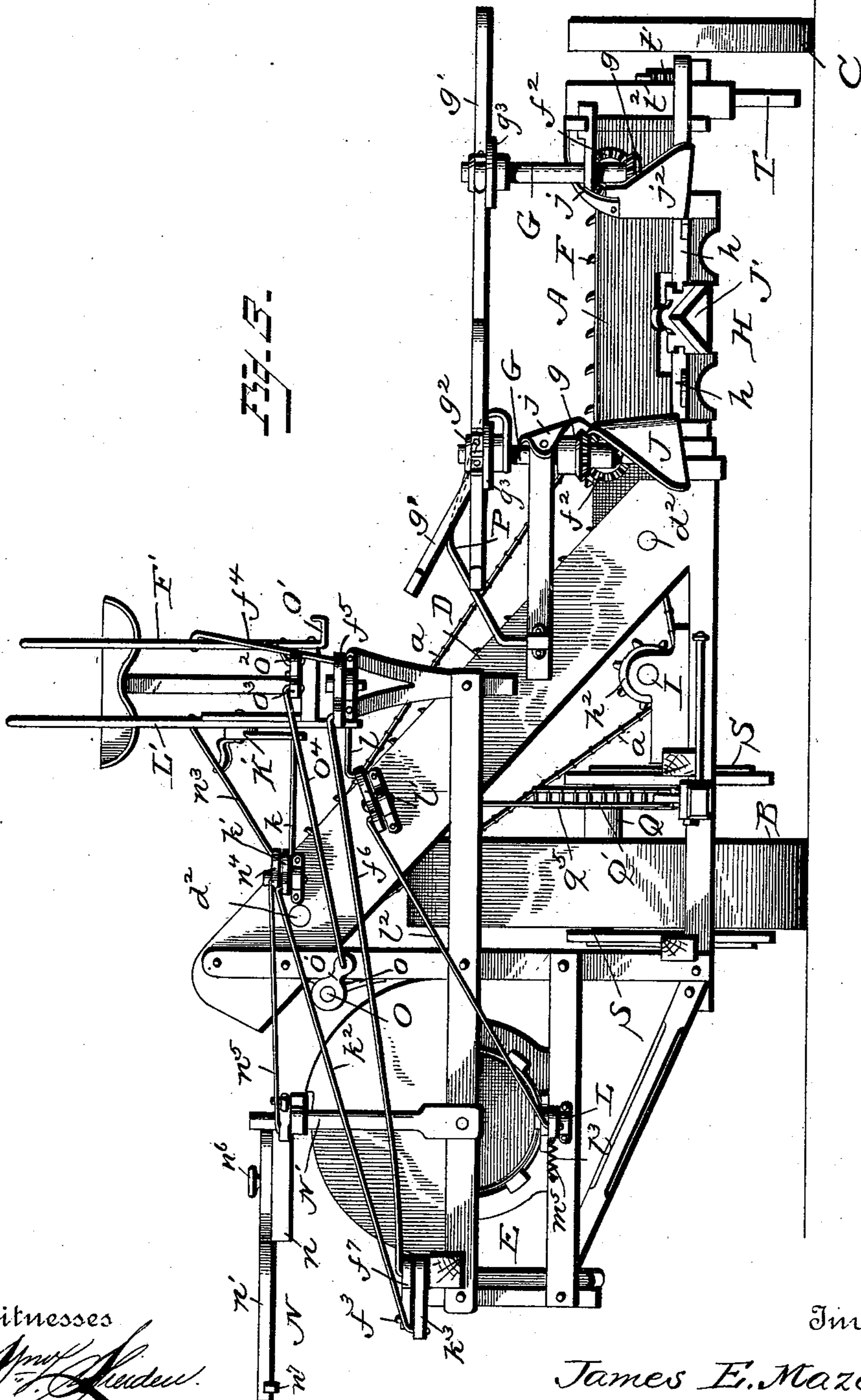
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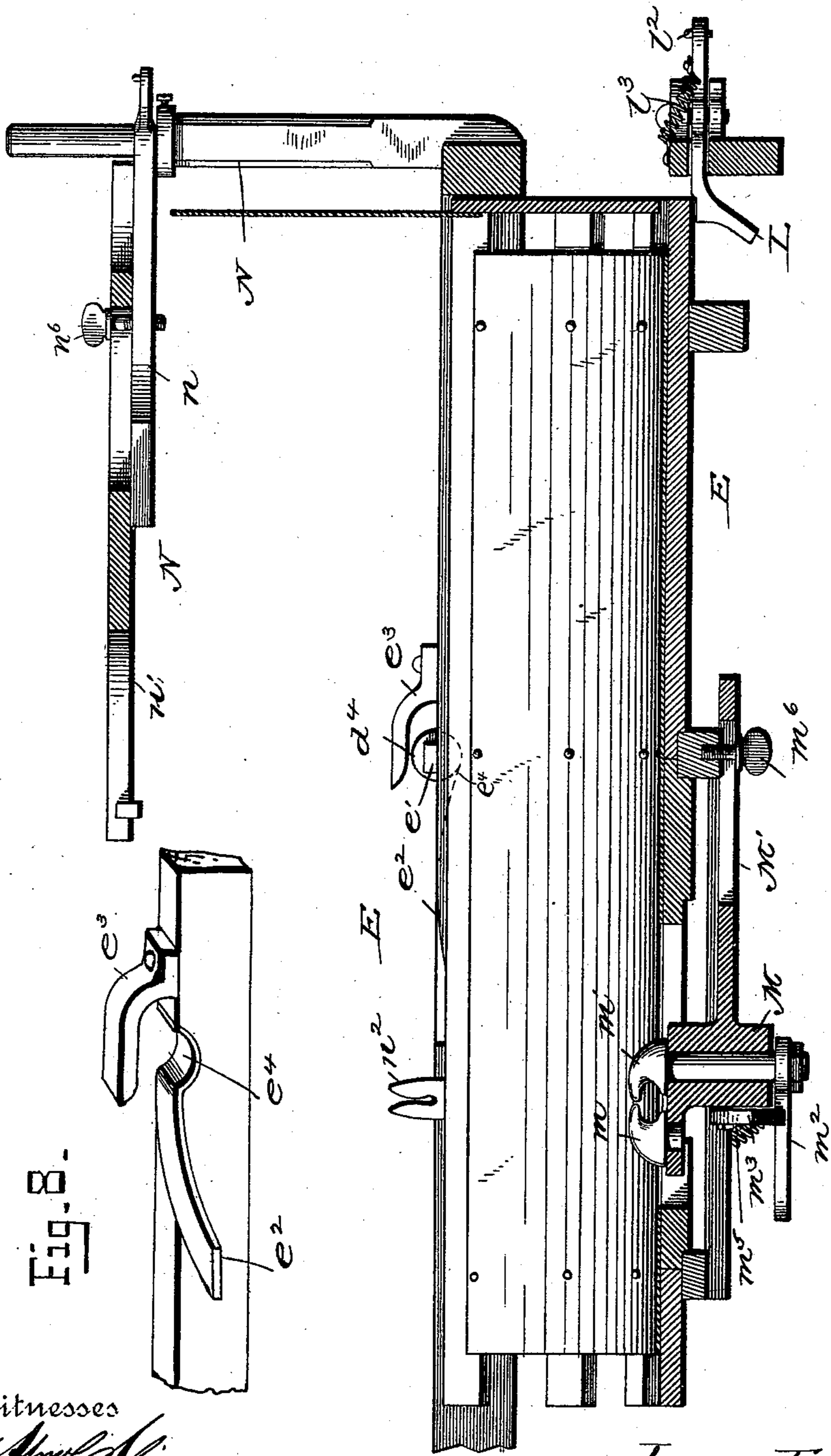


Fig. 4.

Fig. 8.

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5 Sheets—Sheet 5.

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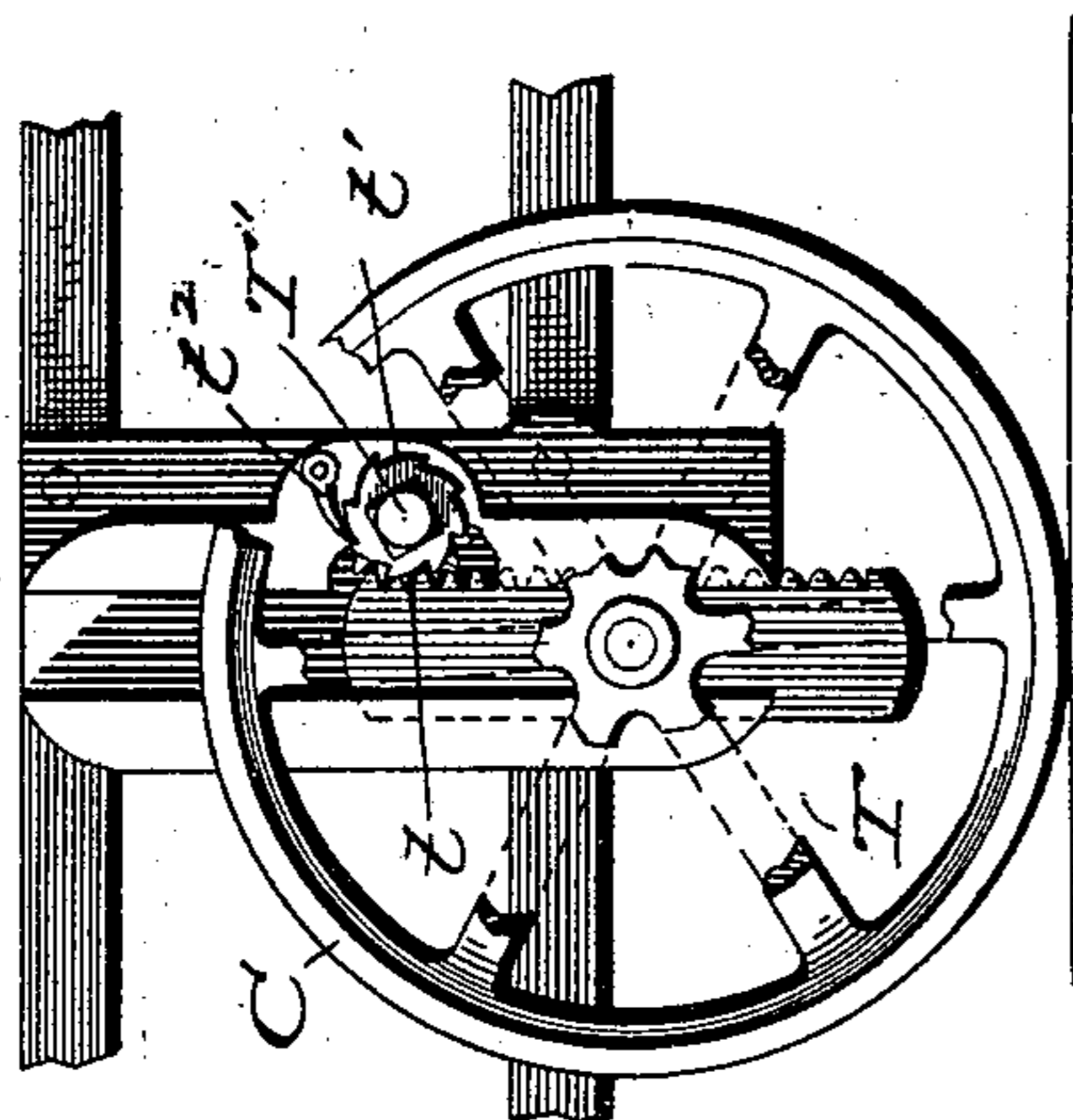


Fig. 6.

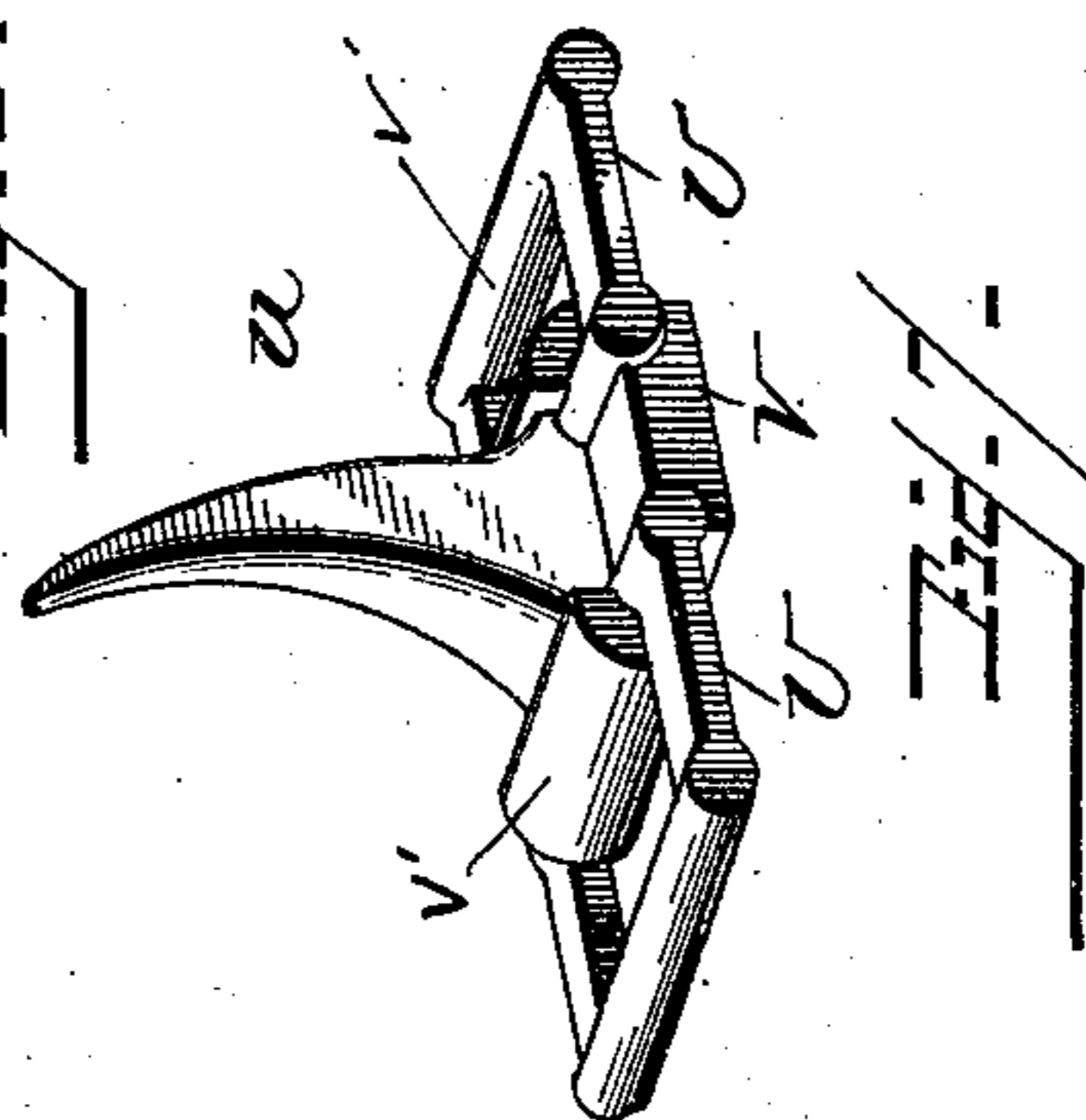


Fig. 7.

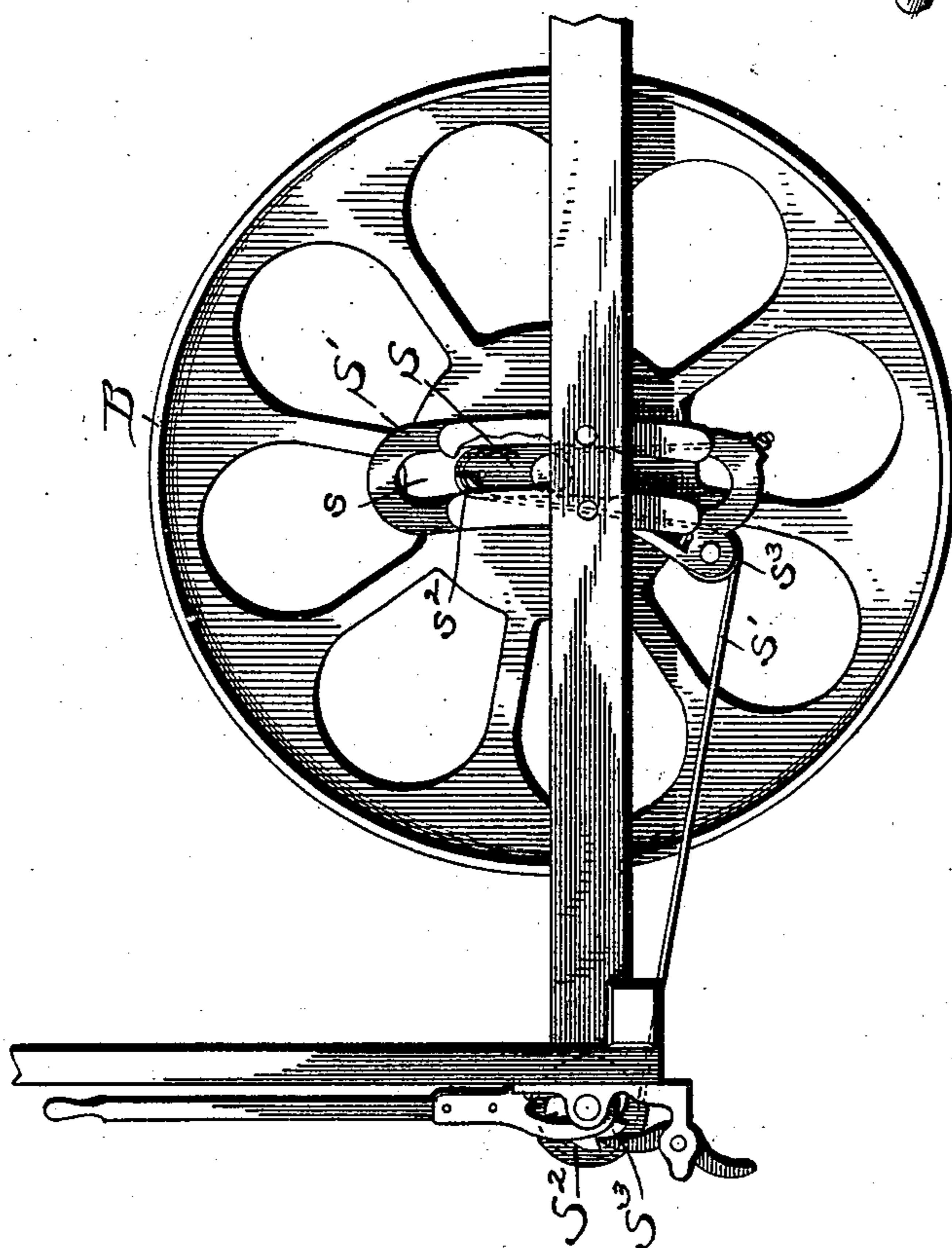


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES E. MAZELIN, OF BALTIMORE, OHIO.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 541,562, dated June 25, 1895.

Application filed October 1, 1892. Serial No. 447,543. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. MAZELIN, a citizen of the United States, residing at Baltimore, in the county of Fairfield, State of Ohio, have
5 invented certain new and useful Improvements in Corn-Harvesters; 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 ap-
10 pertains to make and use the same.

This invention relates to corn harvesters, and has for its object to improve the general construction of this class of machines whereby their efficiency and usefulness are in-
15 creased in an eminent degree.

The improvement consists of the novel features and the peculiar construction and combination of the parts which will be hereinafter more fully described and claimed and
20 which are shown in the annexed drawings, in which—

Figure 1 is a top plan view of a machine embodying my invention. Fig. 2 is a view from the rear side, showing the shocker tipped
25 into a vertical position. Fig. 3 is a front view. Fig. 4 is a longitudinal section of the shocker, showing the means for holding the band in an adjustable position. Fig. 5 is a detail view showing the means for raising and
30 lowering the drive-wheel. Fig. 6 is a detail view showing the means for raising and lowering the grain-wheel. Fig. 7 is a detail view of the elevating-chain. Fig. 8 is a detail view showing a portion of the main frame with
35 the track attached thereto and also the stop for limiting the movement of the shocker.

The machine is supported and nicely balanced upon the drive wheel B and the grain wheel C, both of which wheels are relatively
40 adjustable in a vertical direction to change the elevation of the machine to cut the corn the required distance above the ground.

The platform A for receiving the corn after it has been cut, is located at one side of the
45 machine, and the elevator D and the shocker E are located on the opposite side of the machine and have the drive wheel B located below the upper end of the elevator. Traveling
50 belts F are provided on the platform A to convey the corn to the elevator D and are supported on sprocket wheels f which are secured on the shafts f' which are arranged at

the opposite edges of said platform A. The shafts f' are projected at their front ends and are provided with beveled pinions f^2 which
55 mesh with corresponding beveled pinions g on the reel shafts G which are arranged at the front ends of the platform A, and which are provided at their upper ends with the reel
60 arms g' which are pivotally connected at their inner ends to a hub casting g^2 secured to the upper ends of said reel shafts G. The reel
arms g' are adapted to be moved into a vertical position and are supported in a horizontal
65 position by a disk or collar g^3 which is secured to the reel shafts G immediately below the hub castings g^2 . The outer ends of the reel arms g' are curved forward to engage
70 with the corn and carry the same forward onto the platform. The arms of one reel are disposed to operate in the space between the
arms of the other reel thereby insuring engagement of the corn with one or the other
75 of the reels so as to throw it upon the platform A.

The cutting apparatus H which is of usual
construction is located at the front end of the platform A, and the cutter bar h is reciprocated by means of the lever h' which is pivotally supported between its ends beneath the
80 platform A and has its front end in engagement with said cutter bar h and its rear end connected with a crank pin on the sprocket wheel h^2 by means of the pitman h^3 , said
sprocket wheel h^2 being on the rear end of a
85 shaft I which is arranged between the upper and lower chains of the elevator and is driven from the drive wheel B by the mechanism hereinafter more fully set forth. Three guards
project forward from the front end of the
90 platform A and flare in opposite directions on their opposing sides to receive the corn and guide the same to the cutting apparatus. The guards J J^2 are located in advance of the
shafts f' and serve in a measure to shield the
95 gearing $f^2 g$ and prevent the corn from coming in contact therewith. The guard J' is located midway between the guards J J^2 and has its forward end tapering, as shown, to
100 form the flaring mouth or throat between the opposing sides of the three guards as hereinbefore stated. The housings j are provided to further protect the gearing $f^2 g$ from the
corn and other matter which would have a

tendency to lodge in said gearing and choke the same.

The elevator D is of ordinary construction and inclines upward from the plane of the platform A and is provided with carrier chains d which pass around sprocket wheels d' on the rollers or shafts d^2 which are located at opposite ends of the elevator. The upper shaft d^2 is projected at one end and provided with a sprocket pinion d^3 . The inner shaft f' is projected on the end corresponding with the projected end of the shafts d^2 and is provided on said projected end with a sprocket pinion f^3 . A sprocket chain a passes around the sprocket pinions f^3 d^3 and the sprocket wheel h^2 and transmits motion from the latter to the shafts f' , d^2 and the respective carrier chains which pass around said shafts and are operated thereby.

The shocker E is located just below the upper or delivery end of the elevator D and is semi-circular in cross section and tapers slightly in the direction of its length, being wider at the end corresponding with the front portion of the machine. This shocker is pivotally supported about midway of its ends and is adapted to tilt to a vertical position to drop the shock in a standing position upon the ground. The bearing e for the outer journal of the shocker is adapted to swing horizontally for the purpose of swinging the shocker E free of the shock after the same has been dropped on the ground thereby enabling the machine to be drawn forward without interfering with the shock.

The journal e' on the inner side of the shocker E is provided with a roller d^4 which is adapted to travel upon a track e^2 when the shocker is swinging laterally. A stop e^3 limits the inward movement of the journal e' when the same reaches a normal position when swinging the shocker E back to its first position for receiving the corn. A slight depression e^4 is made in the track at its inner end for the roller on the journal e' to drop into when the shocker is in a normal position. The track e^2 , serves to guide the roller d^4 , and journal e' , away from the side member of the frame, and the bearing e , is mounted sufficiently strong to support the shocker when the same is moved outward to carry the bearing e , off the track. In returning the shocker to its normal position, the track again serves to guide the roller and its bearing back to the stop e^3 , and depression e^4 . The hand lever F' which is located within convenient reach of the driver's seat is connected with an arm e^5 of the bearing e by means of the rod f^4 , bell crank f^5 , rod f^6 , bell crank f^7 and the rod f^8 . The latch K for engaging with a portion of the shocker and supporting it in a vertical position is pivoted to said arm e^5 of the bearing e and is operated by means of the foot lever K' with which it is connected by means of the rod k , bell crank k' , rod k^2 , bell crank k^3 and the rod k^4 , and is returned to a normal condition after being actuated by means of

the springs k^5 . The latch L for engaging with the forward end of the shocker E for supporting the same in a horizontal position is connected with the hand lever L' which is located within convenient reach of the driver's seat by means of rod l , bell crank l' , and the rod l^2 and is held in an operative position by means of the springs l^3 .

The band holding mechanism which is adjustably connected with the shocker so as to change the position of the band to adapt the same for varying lengths of corn, is located on the under side of and is supported by said shocker and comprises a head M which is adapted to slide in suitable guides provided on the shocker, and which is provided with a fixed bill m and a rotatable bill m' , the shank of the latter extending through the head M and provided with a lever m^2 by means of which said bill m' is turned in said head M. A pivoted latch m^3 is provided to engage with the lever m^2 and retain the bill m' in proper position to retain the band m^4 in place between the bill m and m' . A spring m^5 holds the latch m^3 in proper position with the lever m^2 and retains the same in position to hold the band m^4 in place. A slotted bar M' projects from the head M and is held in the required position by binding screws or other suitable fastening m^6 which passes through the slot in said bar and enters a portion of the shocker frame E. On loosening the bindings crew m^6 the head M and the appliances carried thereby can be removed to change the relative position of the band holding mechanism relative to the shocker for the purpose aforesaid.

The holder N for retaining the shock in place in the shocker E after the latter has been tilted to a vertical position is pivotally supported on a vertical standard N' and is composed of an arm n and a fork n' the latter being adjustably connected with said arm n by means of a binding screw n^6 which passes through the slot in the shank of the fork and screws into the said arm n . The outer ends of the fork are provided with stops n^7 which engage with the shocker and limit the movement of the same when tilted into a vertical position. Prongs n^2 project beyond the top edges of the shocker E and are adapted to have the ends of the band m^4 attached thereto. These prongs are so disposed that when the shocker is tilted into a vertical position they will overlap the ends of the fork n' whereby the fork and shocker will mutually strengthen and brace each other. By reason of the fork n' being adjustably connected to the arm n , said fork can be regulated to suit the size of the shock. The lever L' is connected with an arm projected from holder N by means of the rod n^3 , bell crank n^4 and the rod n^5 . It will be seen that the latch L and the shock holder N are both connected with the same hand lever L'. Hence on operating the latter the latch L is released and the holder N is brought into

position to come opposite the shocker E when the same is tilted into a vertical position.

A holder for retaining the corn during the time the shocker is operated for discharging the shock and returning into an operative position to receive the corn for forming another shock, is composed of a shaft O which extends parallel with the shocker when the latter is in a horizontal position, and curved arms o which project laterally from said shaft O. A crank o' on the front end of the shaft O is connected with the foot lever O' by means of the rod o², bell crank o³ and the rod o⁴. During the interval that the corn is being received in the shocker, the curved arms o will occupy a pendent position, but after the shock is formed and while the same is being bound and discharged, the operator will press on the foot lever O' to throw said curved arms o into a horizontal position so as to receive the corn. After the shock has been discharged and the shocker has returned to a normal position, the foot lever O' is actuated to operate the shaft O so as to discharge the corn received by the arms o into the shocker E.

The reel bordering upon the elevator D is provided with a spiral cam guide rail P to engage with the pivoted reel arm and elevate the same as they approach the elevator D, thereby giving clearance for the grain or corn as it travels up the elevator D. This guide rail P serves to lift the outer end of the reel arm as the same passes by the elevator D to prevent interference of said arms with the efficient working of said elevator.

The shaft I is provided with a bevel pinion i which is adapted to mesh with a corresponding beveled pinion i' on the end of a counter shaft Q. A sprocket pinion q mounted on the shaft Q so as to turn loosely thereon is provided on one face with a half clutch which is adapted to engage with a corresponding half clutch q' which is keyed to revolve with the shaft Q but is free to slide thereon, being held in engagement with a half clutch on the sprocket pinion q by means of the spring q². A shipper q³ is provided to engage with the half clutch q' and move the same in and out of engagement with the half clutch on the sprocket pinion q as required. A lever q⁴ is provided to operate said shipper q³. A sprocket wheel Q' mounted so as to revolve with the drive wheel B imparts motion to the sprocket chain q⁵ which passes around said sprocket wheel Q' and sprocket pinion q.

The journals of the drive wheel B are mounted in bearings S which are located in curved slots s formed in castings S' which are secured to the frame of the machine. The opposing sides of the slots s have vertical grooves to receive the chain or cable s' by means of which the position of bearings S is changed with reference to castings S'. One end of the chain or cable s' is secured to the lower corner of the casting S' and extends vertically and passes over a pulley s² at the

upper end of the bearing S, thence down and around a pulley s³ at the opposite corner of said casting S' and extends to the rear end of the machine where its opposite end is attached to a windlass S² which is operated by an ordinary lever and ratchet mechanism S³.

The grain wheel C is carried by the rack bar T which is mounted in a vertical guide. A short shaft T' having pinion t is provided to engage with the rack bar T to move said rack bar vertically to change the relation of the platform A and the grain wheel C. A ratchet wheel t' and a pawl t² are provided to retain the grain wheel C in the adjusted position.

The carrier chains are composed of links U and the couplings V, the latter having hooks v' at its opposite ends to receive the ends of the cross bars of the links U. The fingers or prongs u for engaging with the corn for carrying the same along in a positive manner are let in the couplings and have their base portions extended to close the hooked ends of said couplings and retain the links U in position.

The operation of the machine is obvious from the foregoing detailed description and it is not deemed necessary to enter into a lengthy further description of the same.

By having the band holding mechanism located in the lower portion of the shocker, the position of the said band is fixed and maintained beyond any peradventure of slipping. Moreover, when the ends of the bands are grasped to bind the shock and are brought over the same, the said bands will be positively held at diametrically opposite points and can easily be secured in the predetermined position.

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

1. In a corn harvester the combination with a shocker adapted to tilt to a vertical position and swing laterally, of separate latches under the control of the driver for the purpose of holding the said shocker in either a horizontal or vertical position, substantially as set forth.

2. In a corn harvester the combination of a shocker constructed to be tilted to a vertical position, of a shock holder N composed of a shank and fork constituting sections, and means for securing said sections together in an adjusted position, whereby said holder is adapted to different sizes of shocks, substantially as set forth.

3. In a corn harvester the combination with a shocker adapted to tilt to a vertical position, of a shock holder N having a fork at one end, and having stops near the ends of the fork to engage with the said shocker and limit its vertical movement, substantially as described.

4. In a corn harvester the combination with a shocker adapted to tilt to a vertical position, of a latch to retain said shocker in a horizontal position, a shock holder N adapted to swing laterally, and a lever under the control of the driver having connection with said

holder and latch to simultaneously operate both, substantially as set forth.

5 In a corn harvester, the combination with a horizontally disposed shocker, of a band holding mechanism carried by said shocker and located in the lower part thereof and means for adjustably connecting the said band holding mechanism with the shocker at the required point in the length thereof, substantially as and for the purpose set forth.

10 6. In a corn harvester the combination with a shocker, of a band holding mechanism located in the bottom part thereof comprising a head having a fixed bill and a pivoted bill, and means for holding the latter in a fixed position or turning the same to release the band, substantially as set forth.

20 7. In a corn harvester, the combination with a shocker, of a band holding mechanism located in the bottom part thereof comprising a head having a fixed bill a second bill mounted in said head to be turned, a lever connected with the shank of the pivoted bill, and a latch to engage with said lever to retain the pivoted bill in an operative position, substantially as set forth.

8. In a corn harvester the combination with a shocker having a longitudinal slot, and having guides, one on each side of the said slot,

of a head provided with the band holding mechanism adapted to slide in the said guides and slot, a bar connected with said head, and means for adjustably connecting the bar with the shocker, substantially as set forth.

9. In a corn harvester the combination with a shocker having prongs projecting from its opposite edges to engage with the end portions of the band, of a band holding mechanism located in the bottom portion of said shocker to retain the band in place at a point between its ends, and means to adjust the said band holding mechanism longitudinally with reference to the shocker, substantially as described.

10. A carrier chain comprising links, a coupling having hooked ends to engage with the cross bars of the link, and a prong secured to said coupling and having its base portion expanded to close said hooked ends of the coupling and retain the links in position, substantially as shown and described.

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

JAMES E. MAZELIN.

Witnesses:

ADAM ROBY,
ROBERT GODDEN.