

No. 772,296.

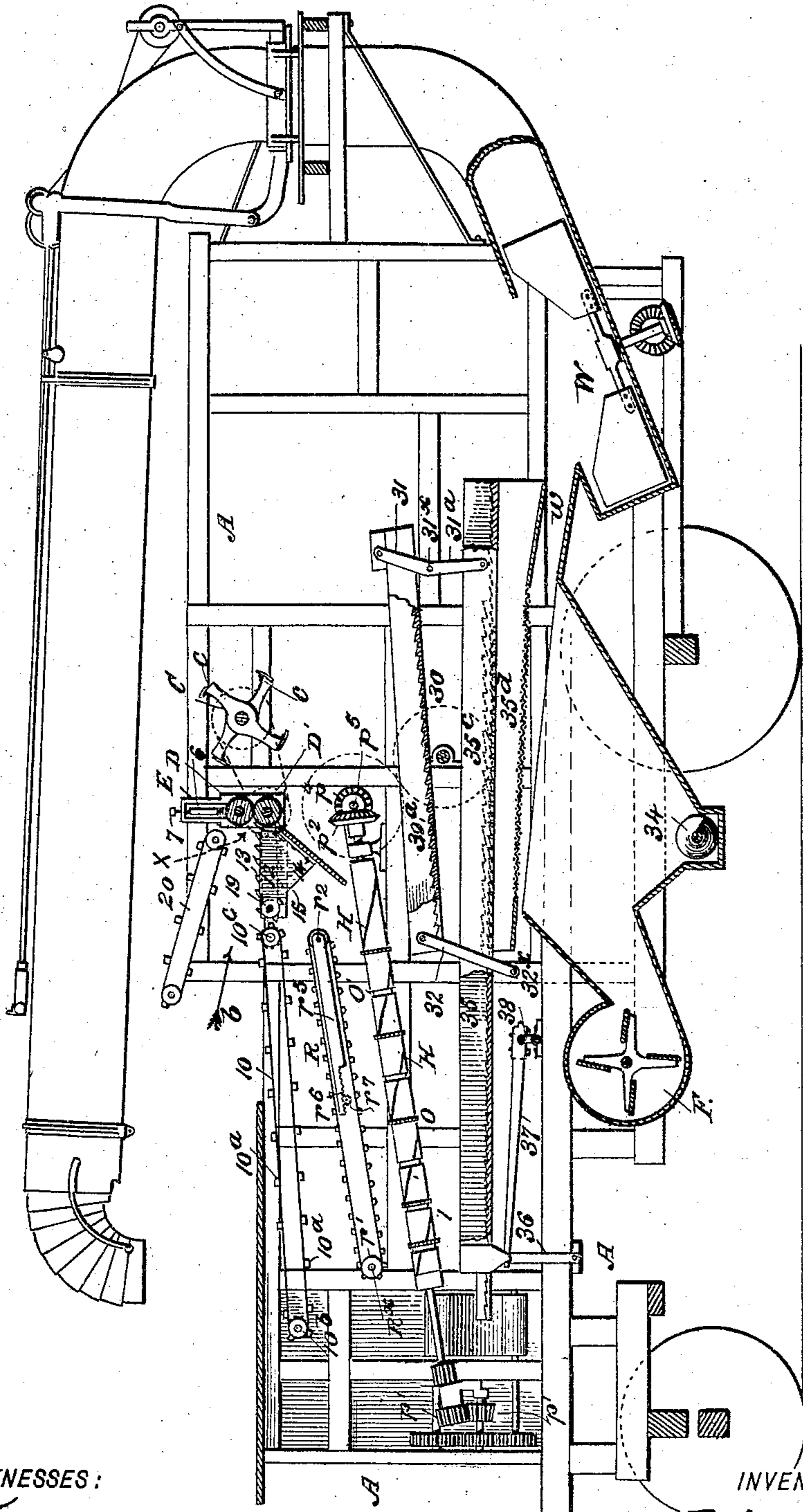
PATENTED OCT. 11, 1904.

P. RUPP.  
CORN HUSKER.

APPLICATION FILED SEPT. 22, 1902. RENEWED AUG. 3, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



**WITNESSES:**

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INVENTOR

*Peter Rupp*

**BY**

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3 SHEETS—SHEET 2.

Fig. 2.

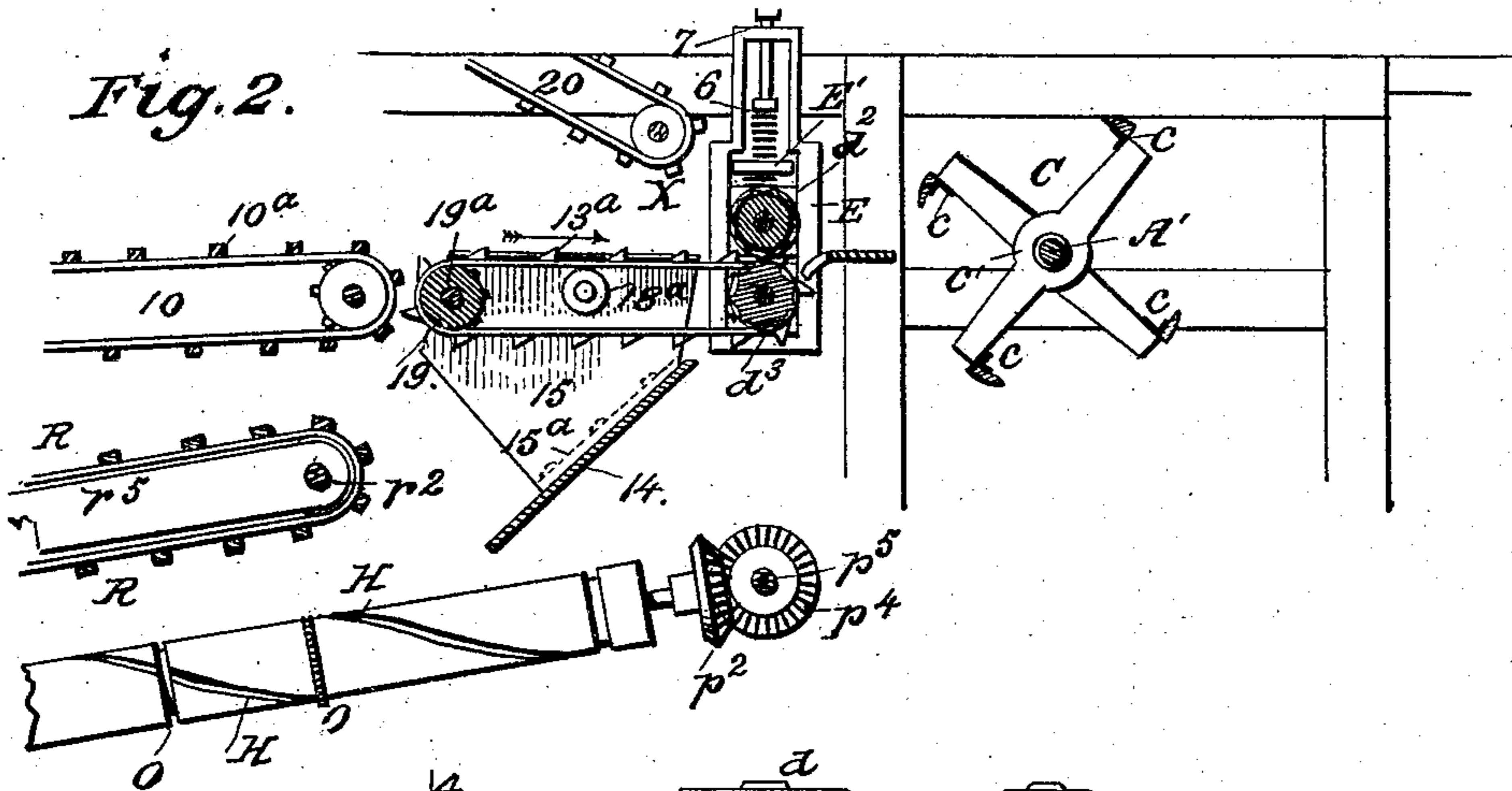


Fig. 3.

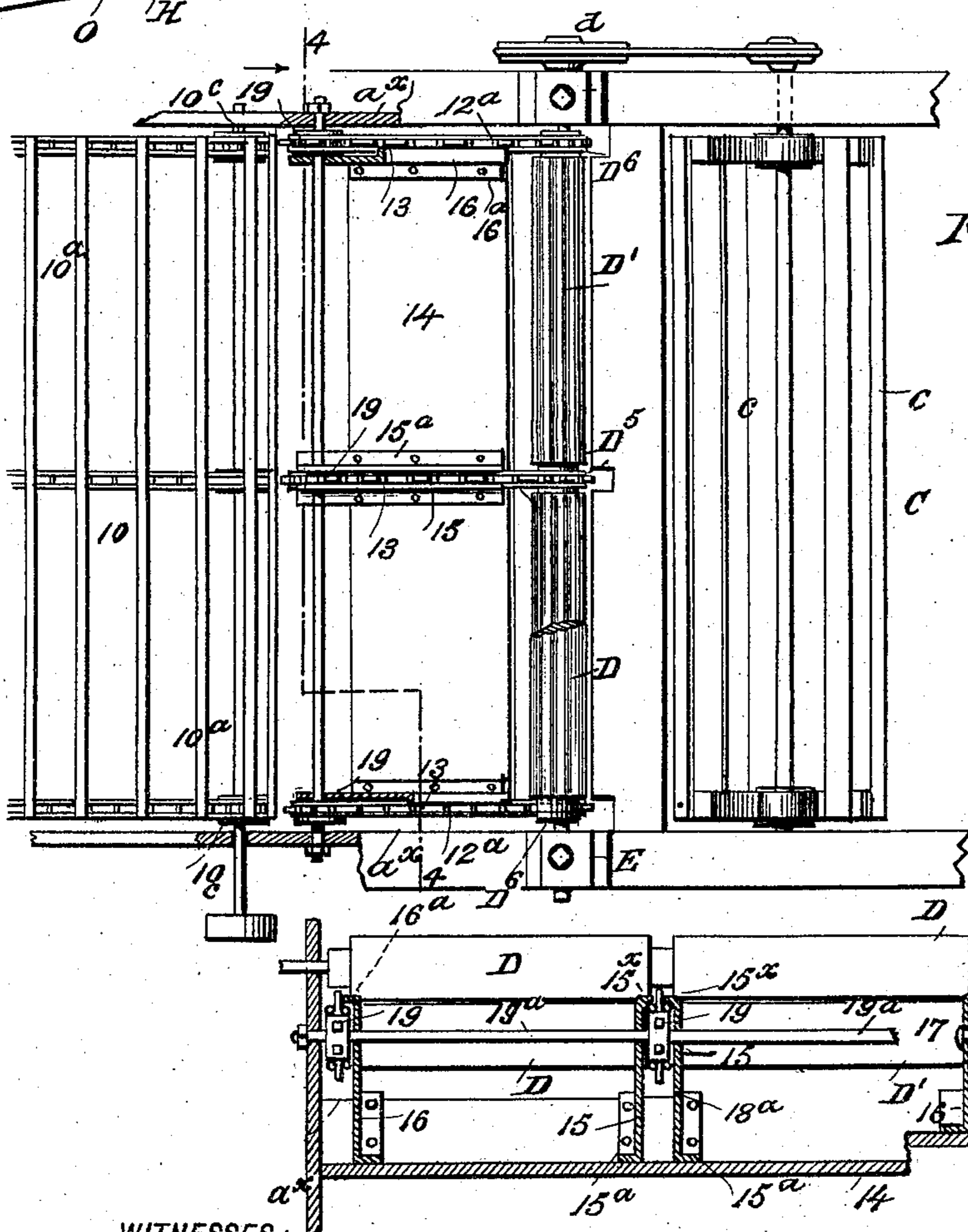


Fig. 4.

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Fig. 5.

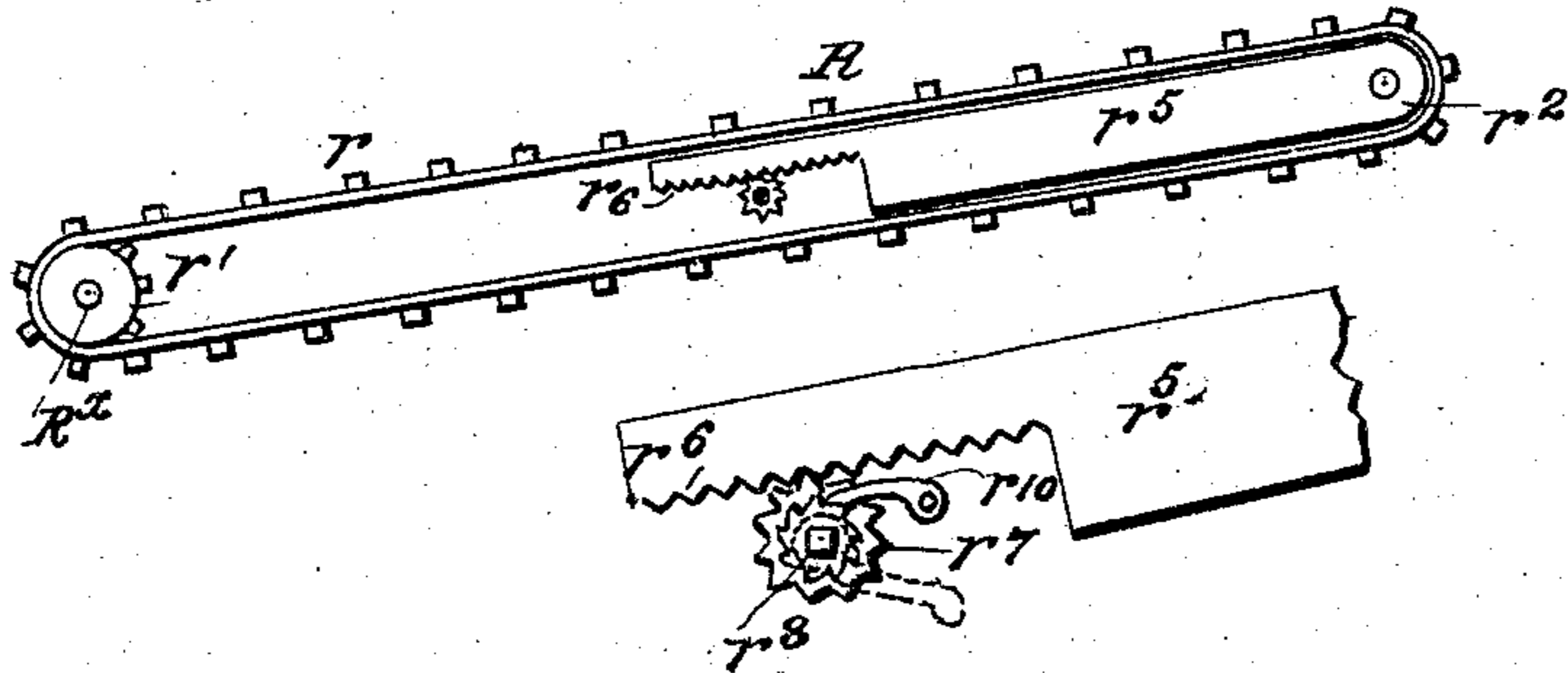


Fig. 6.

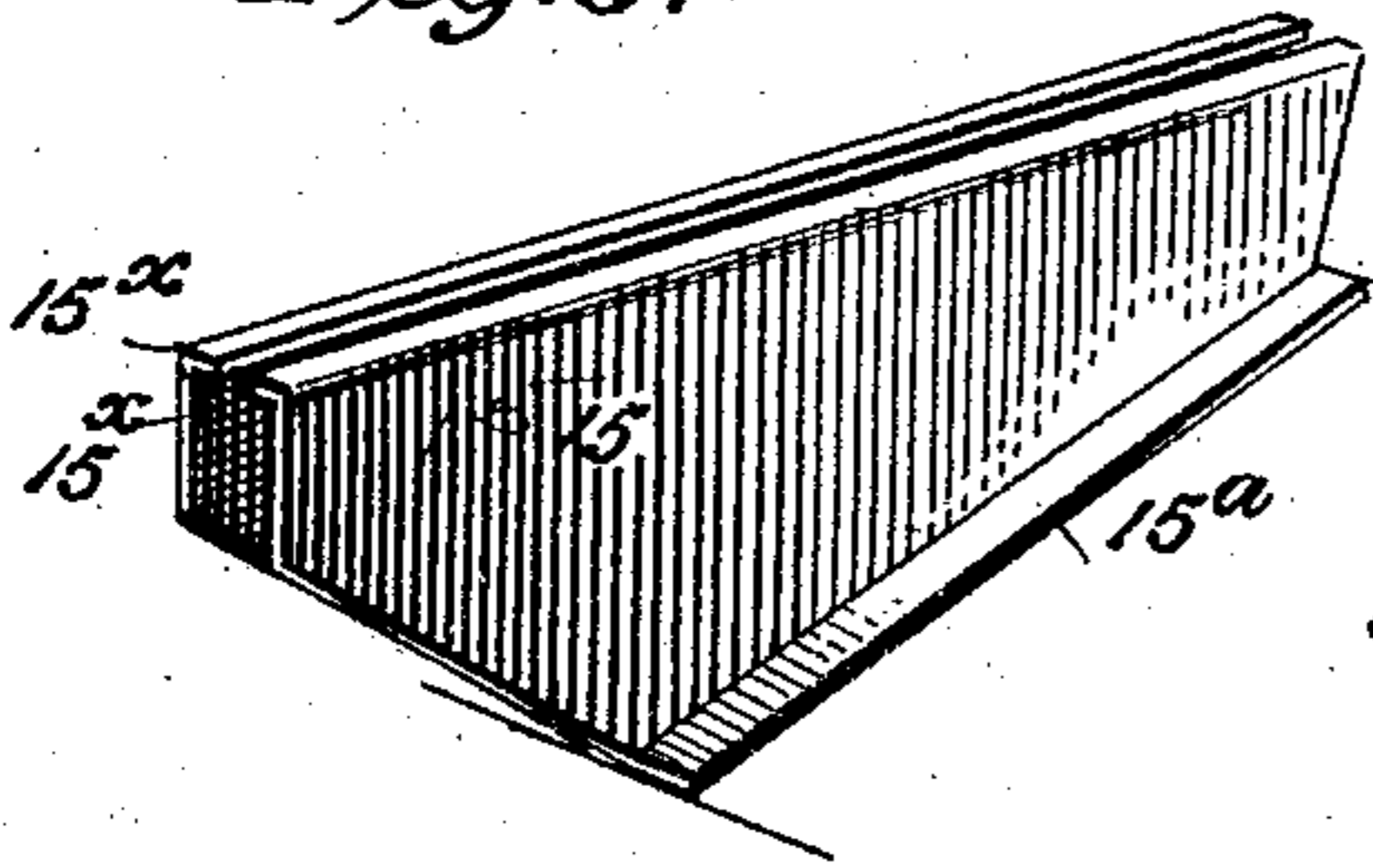


Fig. 9.

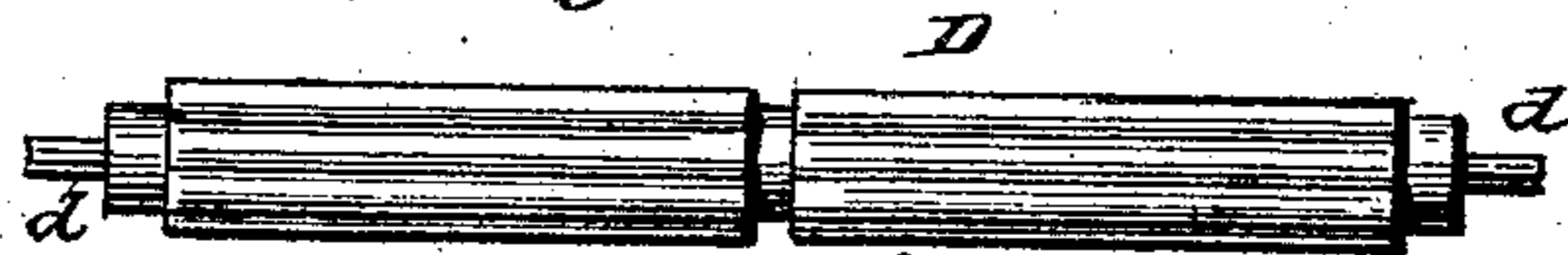


Fig. 9a.

# UNITED STATES PATENT OFFICE.

PETER RUPP, OF WHITEHOUSE, OHIO.

## CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 772,296, dated October 11, 1904.

Application filed September 22, 1902. Renewed August 3, 1904. Serial No. 219,333. (No model.)

*To all whom it may concern:*

Be it known that I, PETER RUPP, residing at Whitehouse, in the county of Lucas and State of Ohio, have invented a new and Improved Corn-Husker, of which the following is a specification.

My present invention, which generally relates to improvements in corn-husking, fodder-cutter, and shredding machines, particularly seeks to provide certain improvements on a machine of the character stated, disclosed in my Patent No. 619,231, dated February 7, 1899; and it primarily has for its object to improve the general efficiency of the said machine, simplify the construction thereof, and provide an improved coöperative arrangement of the parts whereby the stalk can be the more uniformly fed to the combined feed and snapping rolls and held in a more positive contact with the husking means.

With these objects in view my present invention consists in certain combinations and novel correlative arrangement of parts, all of which will hereinafter be fully described, and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of my improved corn-husking and feed-cutting machine. Fig. 2 is an enlarged longitudinal section of the combined feed and snapping rolls, the rotary cutter or chopper, and the conveyer devices for feeding the stalk to the rolls. Fig. 3 is a plan view of the parts shown in Fig. 2. Fig. 4 is a transverse section of the same, taken on the line 4 4 of Fig. 2 looking in the direction of the arrow *a*. Fig. 5 is a longitudinal section of the conveyer that coöperates with the husking-rolls and illustrating the adjusting means therefor. Fig. 6 is a detailed view of the central guide-bracket for the central tooth-equipped feed-chain. Fig. 7 is a plan view of the husking-rolls. Fig. 8 is a cross section thereof on the line 8 8 of Fig. 7. Figs. 9 and 9<sup>a</sup> are side elevations of the upper and the lower combined feed and snapping rolls.

In the practical application of my present construction of corn-husking and feed-cutting machine, the same in its complete form in-

cludes a wind-stacker attachment for carrying off the husks, cut stalks, and the leaves, the corn being gathered into and discharged by an auger, and the cobs carried off by any suitable conveyer, as is done in my patent construction referred to.

The framework A is of the usual type, on which, at a point about midway thereof, are located the combined feed and snapping rolls D D', which are disposed in superimposed relation transversely of the machine, and these rolls have long bearings *d d'* at the ends to engage the bearing-brackets E E for bearing-blocks *d<sup>2</sup> d<sup>3</sup>*, with the upper one, *d<sup>3</sup>*, of which engages the yielding pressure-blocks E', the tension of which is regulated by the spring and screw-bolt devices 6 and 7, as shown. The rolls D D' are serrated, grooved, or fluted to intermesh with each other, as shown, and for the purposes stated in my patent before referred to. The lower roll D' is driven from one end of the shaft A', which carries the rotary chopper or cutter C, presently again referred to, by any suitable connecting-gearing.

10 designates an endless conveyer-belt having transverse slats 10<sup>a</sup> and mounted on the bearing-rolls 10<sup>b</sup> 10<sup>c</sup>, the latter being disposed nearly in the plane of the lower feed-roll D' and at some distance in advance of said roll, whereby an intervening space is provided between the delivery end of the conveyer 10 and the said feed-rolls.

In the practical use of my patented machine some difficulty has been experienced in causing the butt-ends of the stalks to properly approach and positively move into engagement with the rolls D D'. To overcome this, I have provided a supplemental conveyer 12, consisting of three endless parallel-disposed chains 12<sup>a</sup> 12<sup>b</sup> 12<sup>c</sup>, the latter being centrally disposed, and the others, 12<sup>a</sup> 12<sup>b</sup>, in line with the opposite edges of the conveyer-belt 10. (See Fig. 3.) The chains 12<sup>a</sup> 12<sup>b</sup> each carry a series of triangular-shaped spurs or teeth 13, the vertical edges 13<sup>a</sup> of which face the roll on the forward movement of the chains, and they serve as guides for engaging the butt-ends of the stalks to pull them forward toward the rolls D D' and at the same time assist in moving the stalks into proper longi-

tudinal direction relative to the rolls D D'. To prevent the upper or ingoing portions of the chains from sagging and also to hold the stalks from entangling therewith, the said chains are incased in such manner that the upper ends of their teeth only project to engage the stalks, the incasing of the said chains being also provided so as to permit of the proper discharging of the cobs onto the chute 14. As is best shown in Fig. 4, the central chain 12<sup>b</sup> is held between the opposing angle-brackets 15 15, having base-flanges 15<sup>a</sup> 15<sup>a</sup> for conveniently securing the same to the chute 14, the upper horizontal portions 15<sup>x</sup> 15<sup>x</sup> being sufficiently separated to provide a longitudinal slot for the passage of the teeth onto the chains. The end chains 12<sup>a</sup> 12<sup>a</sup> travel close up to the sides *a*<sup>x</sup> of the machine-casing and back of brackets 16 16, having angle portions 16<sup>a</sup> 16<sup>a</sup> for properly guiding the chains, and secured to the casing sides by the bolts 17 17, which also form the bearings for the roller-chain, are guides 18 18.

18<sup>a</sup> indicates a roller-chain guide mounted in the central bracket. The chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> engage sprocket-gears 19, mounted on the cross-shaft 19<sup>a</sup> adjacent to and parallel with the discharge end of the main conveyer, and at the inner end they pass over sprocket-grooves formed on the lower roll D', which has a central sprocket D<sup>5</sup> and chain-receiving sprockets D<sup>6</sup> D<sup>6</sup> at the opposite ends, and the upper roll D is suitably grooved at the points opposing the sprocket-grooves D<sup>5</sup> D<sup>6</sup> in the lower roll, as best shown in Fig. 4.

So far as described it will be noticed the stalks which are laid on the main conveyer butt-end forward are fed to the rolls D D', and as the butts approach the said rolls, should they be positioned awry or out of proper longitudinal direction, the teeth on the supplemental conveyer-chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> will engage and straighten the said stalks and at the same time aid in feeding them to the rolls, which rolls pinch the cobs and feed the stalks and leaves separated therefrom to the cutter or chopper C, which cuts up the said stalks and leaves in the manner presently again referred to. The cobs are left free to pass down between the chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> onto the chute 14. As the stalks in traveling toward the rolls D D' frequently lift up from the chains and out of proper horizontal alignment with the opposing or pinching surfaces of the said rolls D D', I provide a second supplemental conveyer device in the nature of a stout endless belt 20, which is disposed over the belts 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> and inclined downwardly, whereby to create, as it were, a contracted throat X just at the entrant-point of the rolls D D'. The conveyer 20 is geared with a driving portion of the machine in such manner that its lower side, with its cross-slats 20<sup>a</sup>, will travel toward the throat X in the direction indicated by the arrow *b*, and thereby

press the stalks down and hold them in proper engagement with the straightener and conveyer-chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup>. It will be noticed the supplemental conveyer-chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> receive their power from one of the snapping-rolls and the main conveyer, together with the upper conveyer 20, is driven independently of the said chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup>.

The cutter-head C comprises a series of radially-extended arms arranged in diametrically opposite sets, and the said arms have knife-carrying members *c* disposed diagonally to the hub *c'*, and the several members *c* are of one-half the length of the cutter-head proper, whereby to present a series of independently-actuated cutter-blades for engaging and chopping up the stalks, husks, and leaves that pass through the pinch-rolls D D' to the rotary cutter or chopping devices. The cutter-head is mounted on a drive-shaft A', driven in any well-known or desired manner.

In my patented machine before referred to I provide a conveyer having transverse slats projecting over its upper surface and which is adapted to cooperate with the husking devices and as a special mechanism for adjusting it to its desired tension. In my present machine the construction of said conveyer and the means for adjusting the same is modified and improved.

The endless conveyer or feeding device (indicated generally by R) consists of a number of endless belts *r*, that pass over the sprocket-wheels *r'* *r'*, the former of which is mounted on a shaft R<sup>x</sup>, having stationary bearings in the machine-frame, and the other, *r'*, is mounted in the longitudinally-adjustable side bars *r*<sup>5</sup> *r*<sup>5</sup>, slidably mounted and having rack portions *r*<sup>6</sup> *r*<sup>6</sup> to coact with the rack-pinions *r*<sup>7</sup> *r*<sup>7</sup> on a transversely-disposed shaft *r*<sup>8</sup>, provided with a ratchet *r*<sup>9</sup> at each end, with which engage the pawls *r*<sup>10</sup>. The ends of the shaft *r*<sup>8</sup> are squared to receive a turning-crank, whereby to move the bars *r*<sup>5</sup> *r*<sup>5</sup> to take up the slack of the conveyer R.

By providing the adjusting means just described for the conveyer R, I dispense with the arms and the adjusting screw-shank devices shown in my other patent, which require considerable care and time to properly adjust them. In my present construction the conveyer R can be quickly and conveniently adjusted from the outside of the machine by simply applying a crank to either end of the shaft *r*<sup>8</sup>, which will be held to its adjusted position by the pawls *r*<sup>10</sup>, hereinbefore referred to.

The general arrangement of the husking-rolls P P' in my present construction is the same as in my patented machine referred to, the said rolls P P' being disposed closely together, their lower ends being joined by gearing, (designated by *p* *p'*), and the shaft of one of the rolls is extended at the upper end and provided with a beveled pinion *p*<sup>2</sup> to engage with a pinion *p*<sup>4</sup> on the drive-shaft *p*<sup>5</sup>, suit-

ably belted with a driving member of the machine in any well-known manner. Each husking-roll is formed with a spiral groove H, that extends from the upper to the lower end, and the said grooves are employed to produce a collecting and discharging pocket for gathering and throwing out the corn dropped thereon from the chute 14 and cleared from the husks that pass onto the said rolls, and the said grooves or pockets also cause the rolls to the better take hold of the husks and convey them lengthwise to the rolls, whereby to the more effectively cause the said husks to be cut up by the rasps or disks O, secured to one of the rolls, at predetermined intervals and guided within annular grooves O' within the opposing roll, as will be best understood by reference to Figs. 7 and 8, from which it will also be noticed the rolls P P' are cored radially their length, as indicated at p<sup>6</sup>, to receive wooden plugs or members B B, which form convenient bases, to which the rack bands or disks can be nailed.

At the lower extremity of the rolls P P', I prefer to use a double set of disks or rasps O O, whereby to positively cut up any of the husks that might ride down that end of the rolls P P'. In my present construction the cut-up fodder drops onto the forwardly and downwardly inclined corrugated bottom 30<sup>a</sup> of the shoe 30, which shoe is pivotally suspended at the rear end on the link 31, (of which there is one at each side of the machine,) fulcrumed at 31<sup>x</sup> and having a pendent member 31<sup>a</sup>, the purpose of which will presently appear. At the front end the shoe 30 is pivotally suspended on the upper end of links 32, (one only being shown,) the lower end of which pivotally joins with the fixed part of the machine-frame, as designated by 32<sup>x</sup>. The fodder that falls onto the shoe-bottom 30<sup>a</sup> discharges onto a second shoe, 35, that extends rearwardly under the shoe 30 and empties into a collecting-trough w of the wind-stacker W, and its rear end is suspended upon the lower end of the link members 31<sup>a</sup>. The front end of the shoe 35 extends forwardly under the husking-rolls P P', and the said end is supported upon the pivotally-hung vertical brackets 36 36, and the forward end of the said shoe is also joined to the pitman 37, which connects with a crank-shaft 38, which extends transversely under the shoe 35, and it is driven from any drive portion of the machine in any well-known manner. By supporting the shoes 30 and 35 in the manner described it is manifest that when a vibratory motion lengthwise is imparted to the shoe 35 through the medium of the pitman and the crank-shaft 38 a similar motion is imparted to the shoe 30 through the swinging action of the link members 31.

The shoe 35 has a grated portion 35<sup>c</sup> and a perforated member 35<sup>d</sup>, which is disposed under the grated portion, through which the

grains of corn pass into the auger 34, from whence said grain is discharged to one side of the machine.

In practice the light leaves are blown out and separated from the stalks by the fan F and the cut-up stalks or fodder are dropped into the wind-stacker and conveyed away to any desired point. The cobs slide down the rolls P P' and are discharged either onto an endless conveyer or onto a receiver.

From the foregoing, taken in connection with the accompanying drawings, it is believed the complete operation of my invention and its advantages will be readily understood by those skilled in the art to which it appertains. Briefly stated, the stalks with their butt-ends foremost are placed upon the main conveyer in line with the lower pinch-roll D', from whence the said stalks are gathered by the supplemental toothed endless chains, which serve to straighten out all of the stalks that lie crosswise, and furthermore to maintain the stalks in a proper position. The supplemental endless conveyer devices over the toothed chain conveyers 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup> serve to crowd the butts down in proper alinement with the rolls D D', it being also understood that as the said rolls engage the stalks they will draw the said stalks through the rolls in line to be engaged by the rotary cutter, and at the same time they will pinch off the corn and drop the corn, together with the cobs, onto the chute 14, from whence the parts pass onto the husking-rolls P P' and the cobs pass off at the lower ends of the rolls P P' onto an endless conveyer-belt or offtake of any approved construction. The husks are gathered by the rolls P P' and the conveyer that coöperates therewith and thoroughly separated and cut up and discharged onto the long shoe 35. At the same time the cut-up fodder is gathered into the shoe 30 and emptied onto the shoe 35 the cut husks and the fodder that drops onto the shoe 35 is discharged from the tail end of said shoe onto the receiving-trough w of the wind-stacker, while the corn is allowed to drop to the bottom of the shoe 35, and thereby cause a proper separation of the corn from the fodder and leaves.

My invention is extremely simple in its character, and the several parts are coöperatively so arranged as to act upon the stalk and the corn practically automatically after the stalk with the corn has been placed upon the main conveyer.

My invention particularly differentiates from my patented machine in the supplemental-endless-chain-conveyer members having triangular teeth and guards therefor and which bridge the space between the delivery end of the main conveyer and the pinch-rolls, the supplemental conveyer that coöperates with the endless chain conveyers having the fingers and which serve to provide, as it were, a contracted throat through which the stalk

is led as it is fed to the pinch-rolls, the peculiar construction of the husking-rolls and the endless conveyer that coöperates therewith and which is provided with a peculiar means  
5 for adjusting the slack thereof in combination, with said parts, of the shoes 30 and 35, forming also a new and novel part of my present invention.

While I have shown but three endless  
10 conveyer-chains 12<sup>a</sup> 12<sup>a</sup> 12<sup>b</sup>, one at each end and one at the center, it is manifest additional chains may be provided between the central and end chains, if desired, and the pinch-rolls D D' provided with additional groove and  
15 gear portions for accommodating the central chain 12<sup>b</sup>.

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

20 1. The combination with the rolls D D' and the endless conveyer 10; of a separate conveyer between the delivery end of the conveyer 10 and the rolls D D', said separate conveyer

comprising a series of endless chains geared with and driven by the lowermost roll D', 25 said chains having toothed projections for engaging the stalk and straightening the same as it is fed to the rolls.

2. In a machine as described, the combination with the pinching-rolls D D', the main 30 conveyer having its delivery end disposed away from the rolls D D' and the husking-rolls H located below the conveyer 10; of a supplemental conveyer mounted in the space between the conveyer 10 and the rolls D D' 35 and over the front end of the husking-rolls, the conveyer R longitudinally disposed between the main conveyer 10 and the husking-rolls H, and the chute 14 for leading the cobs from the entrance side D D to the husking- 40 rolls H, all being arranged as shown and described.

PETER RUPP.

Witnesses:

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