

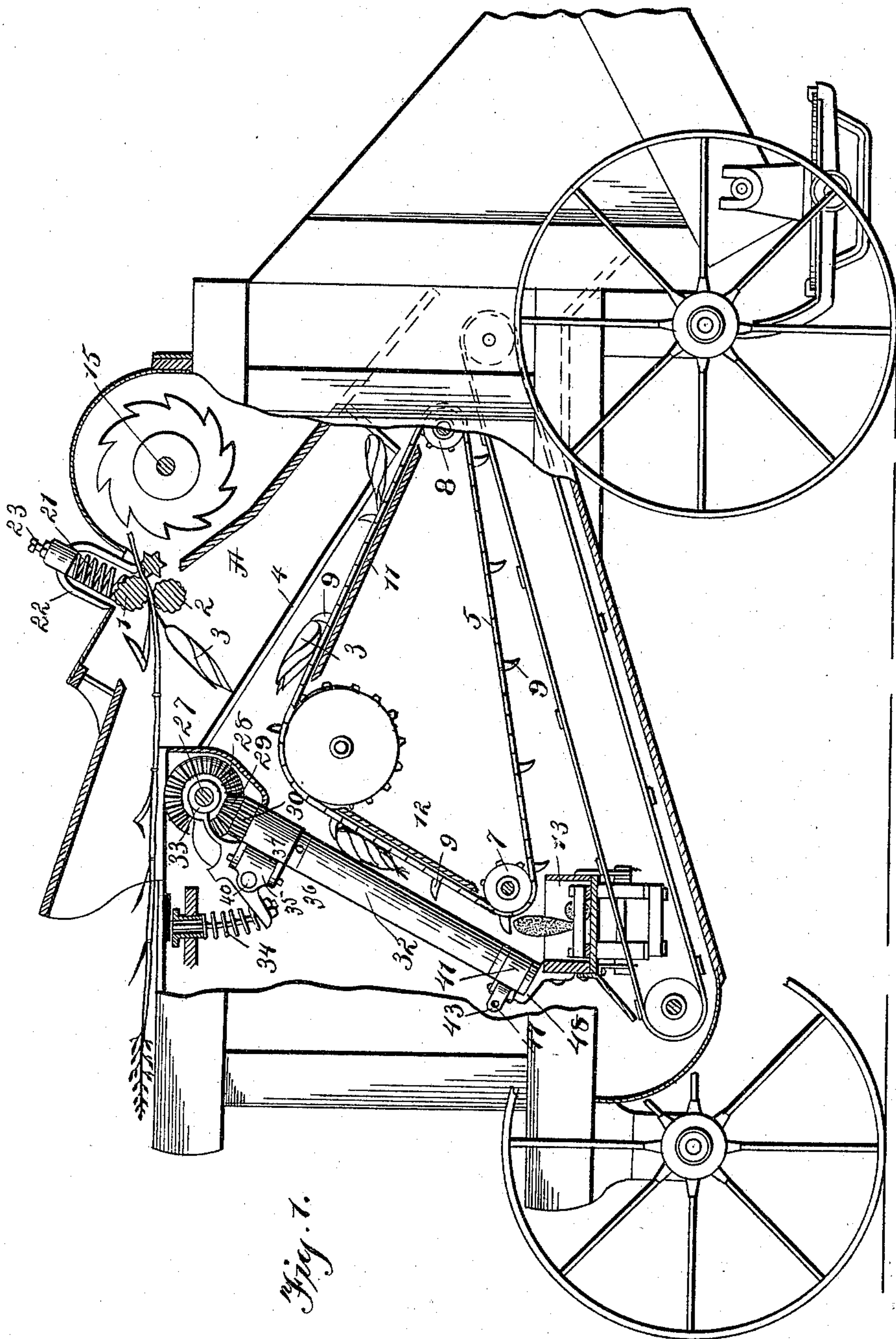
(No Model.)

G. W. PACKER.
CORN HUSKER.

2 Sheets—Sheet 1.

No. 584,889.

Patented June 22, 1897.



Witnesses
Geo. C. Frech.
Hubert E. Beck

Inventor
George W. Packer.
by *John E. Kananahan.*
Attorney

(No Model.)

G. W. PACKER.
CORN HUSKER.

2 Sheets—Sheet 2.

No. 584,889.

Patented June 22, 1897.

Fig. 2.

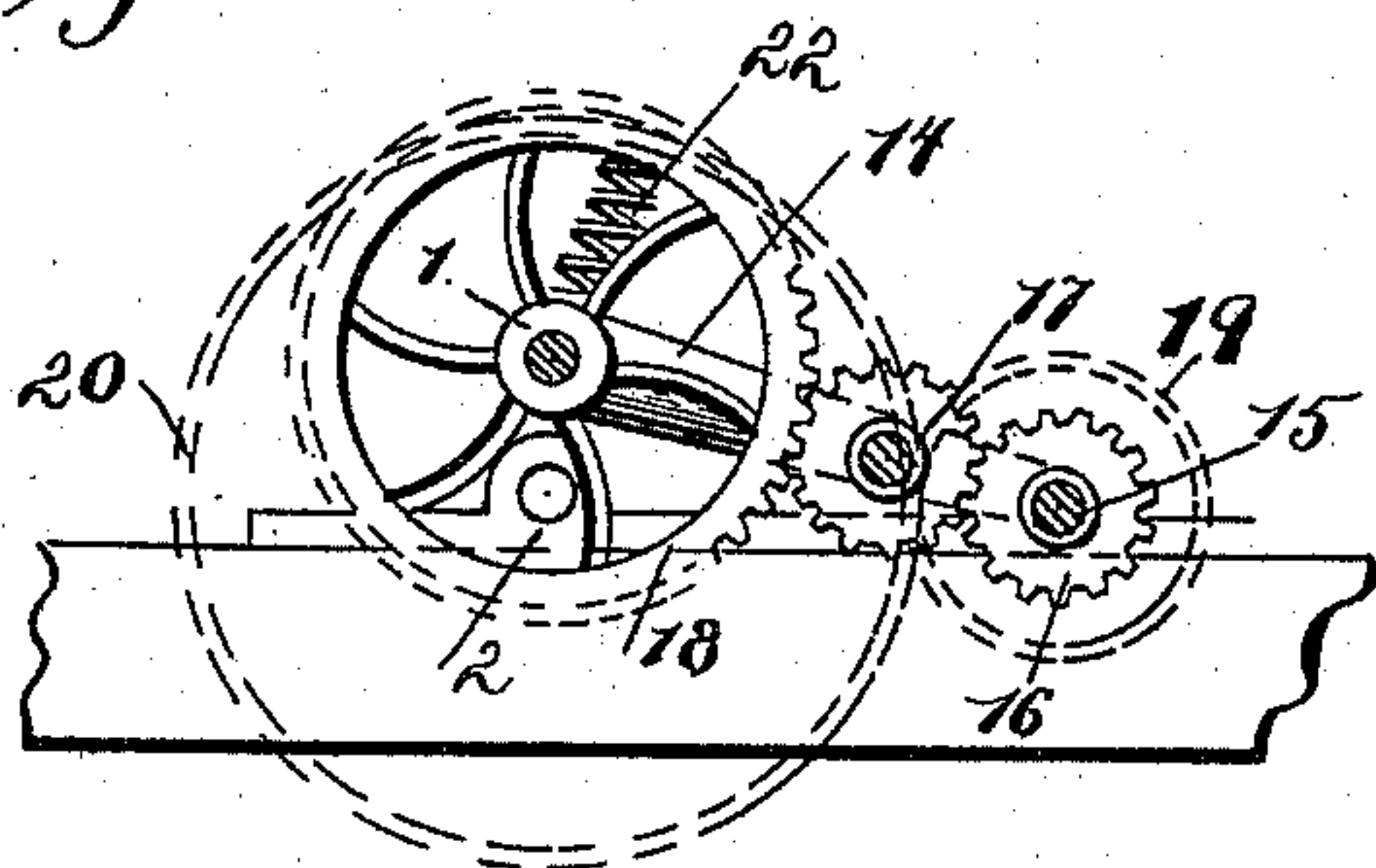


Fig. 3.

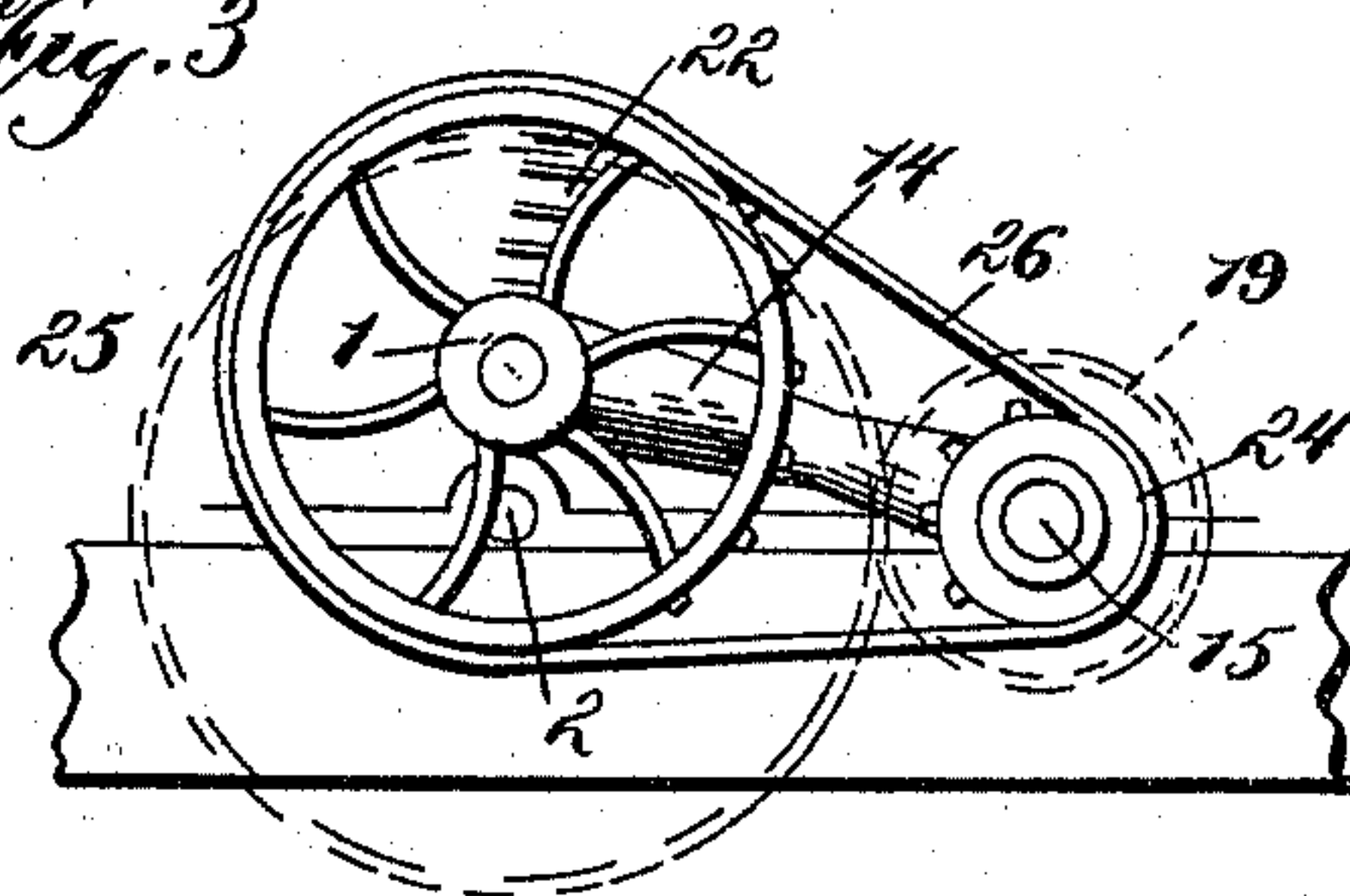


Fig. 4.

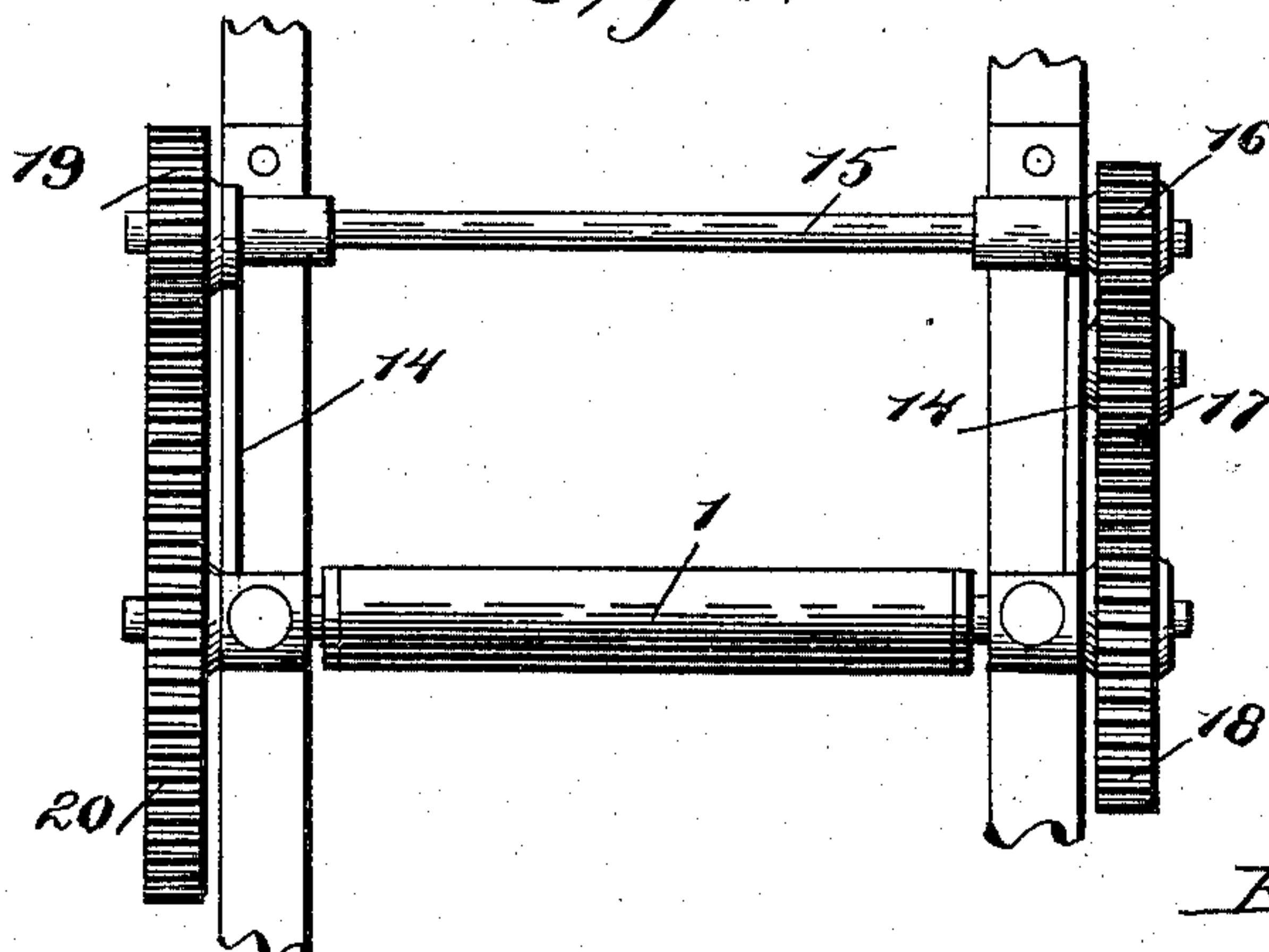


Fig. 5.

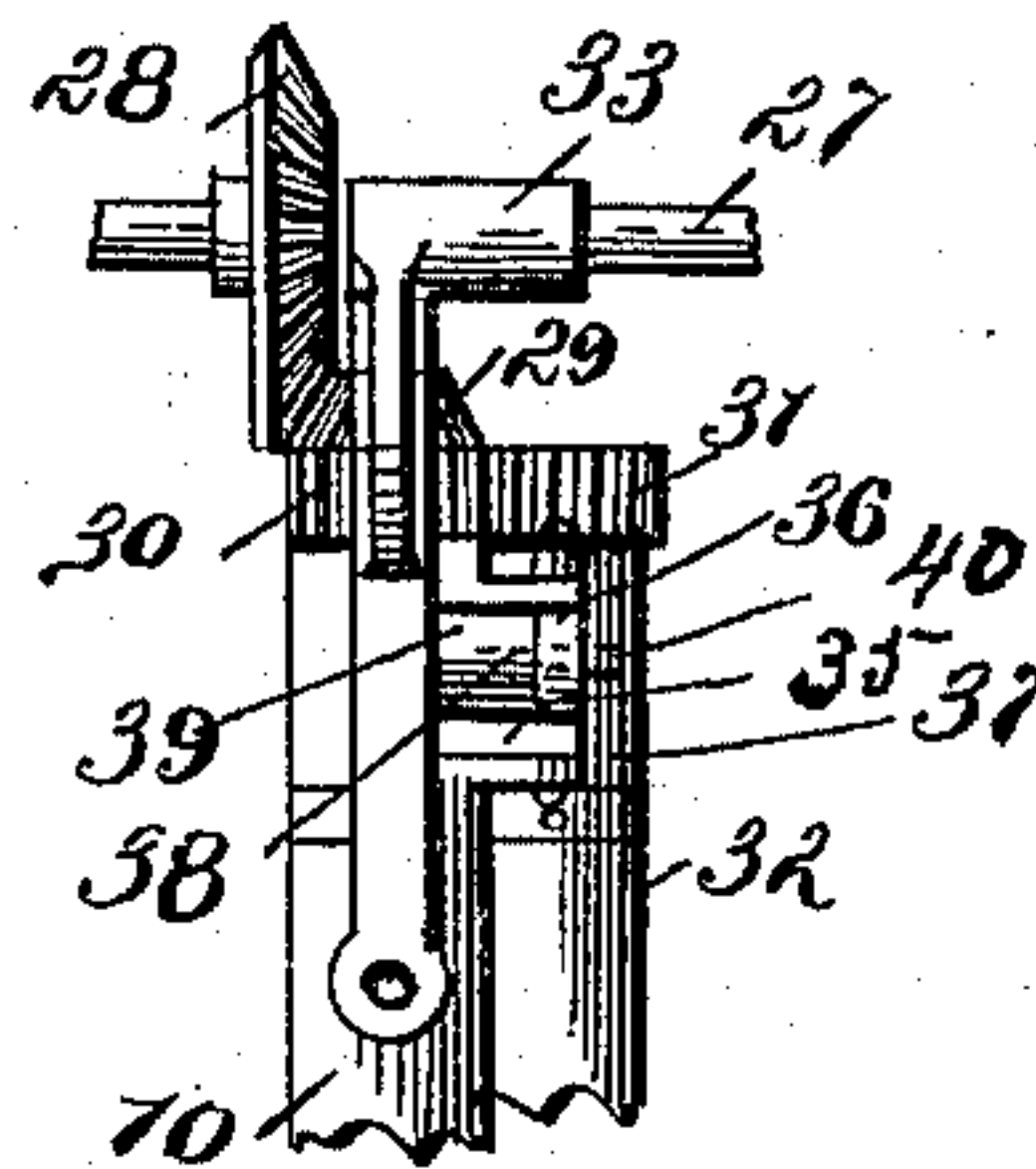


Fig. 7.

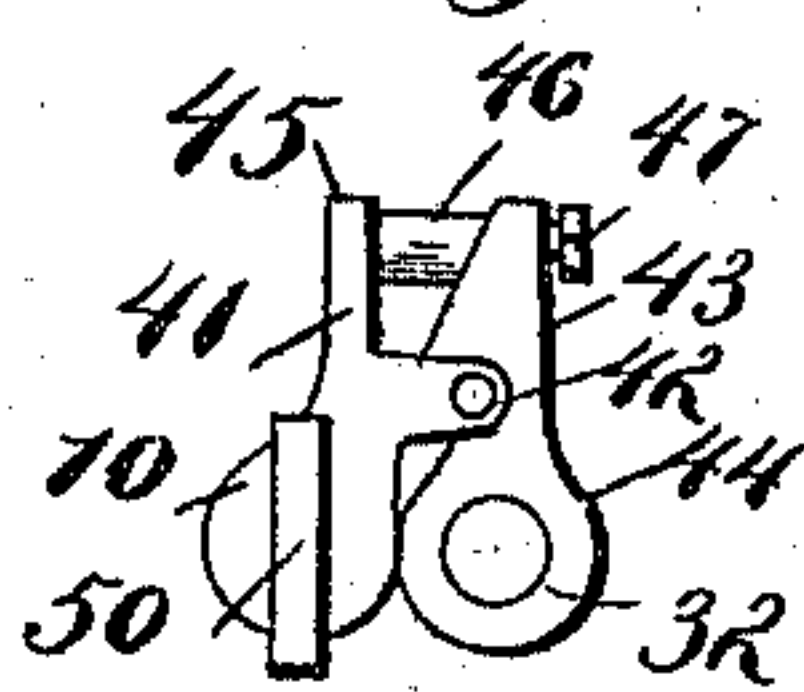


Fig. 6.

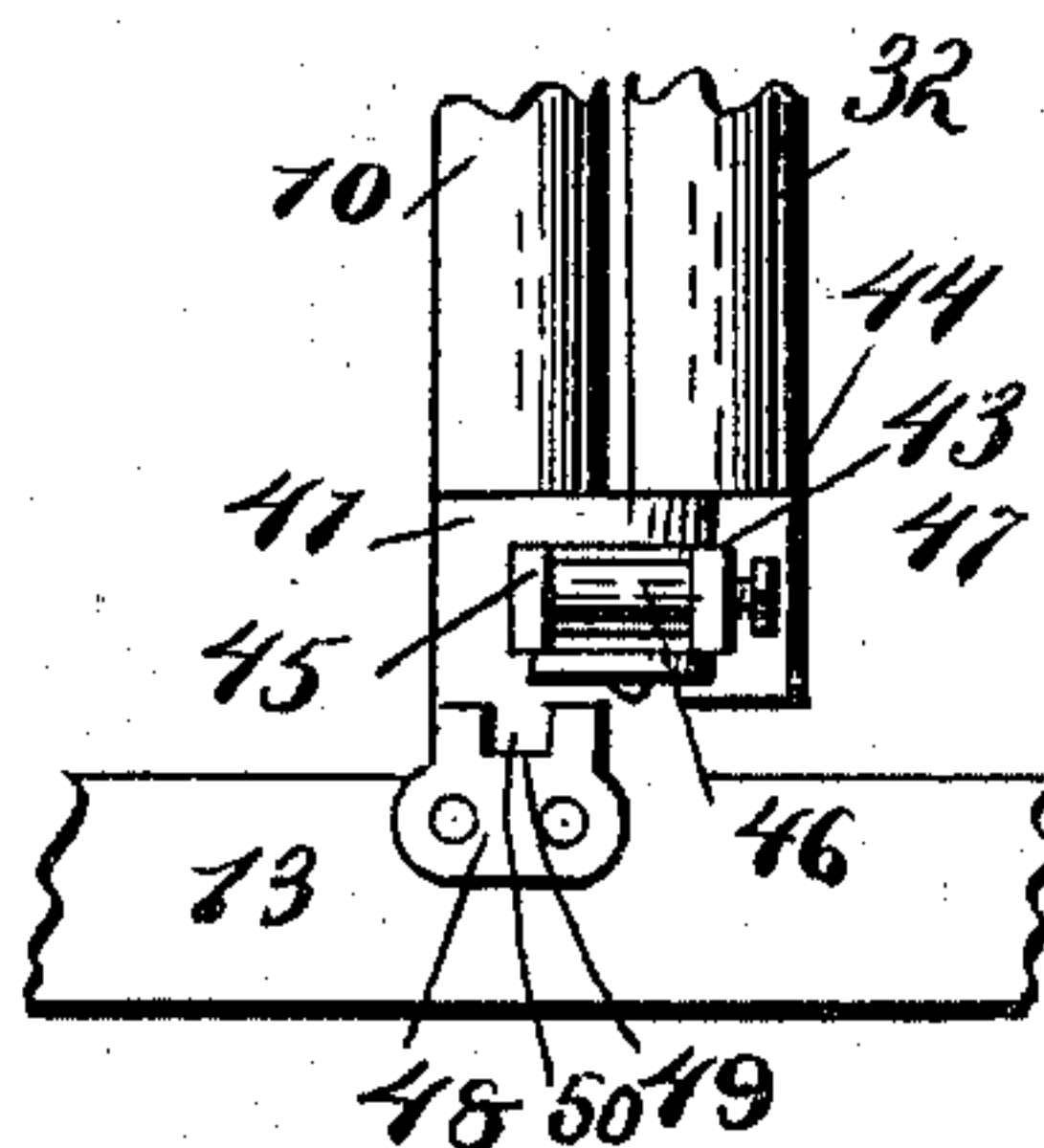


Fig. 8.

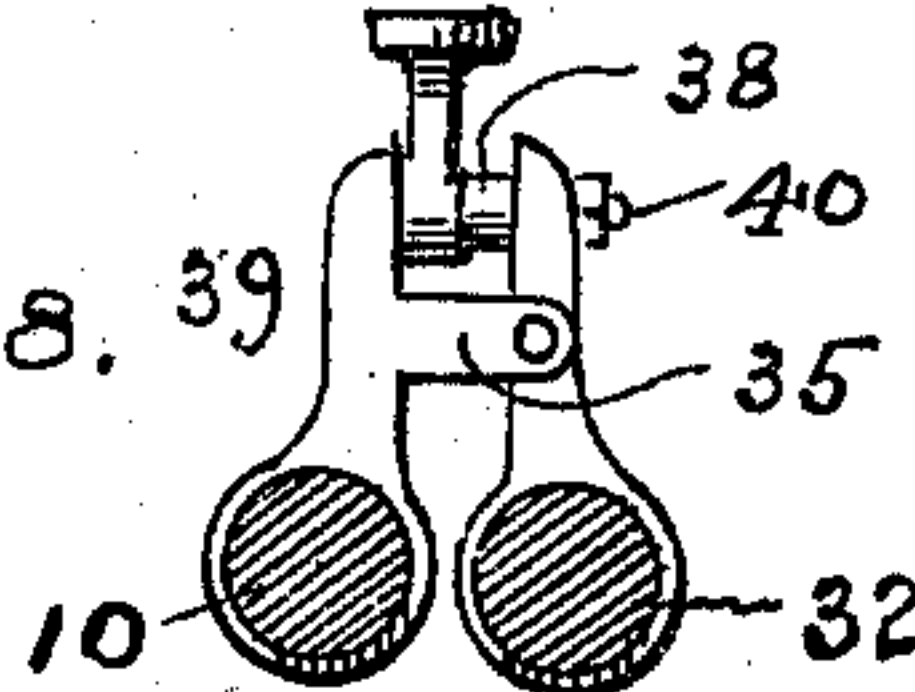
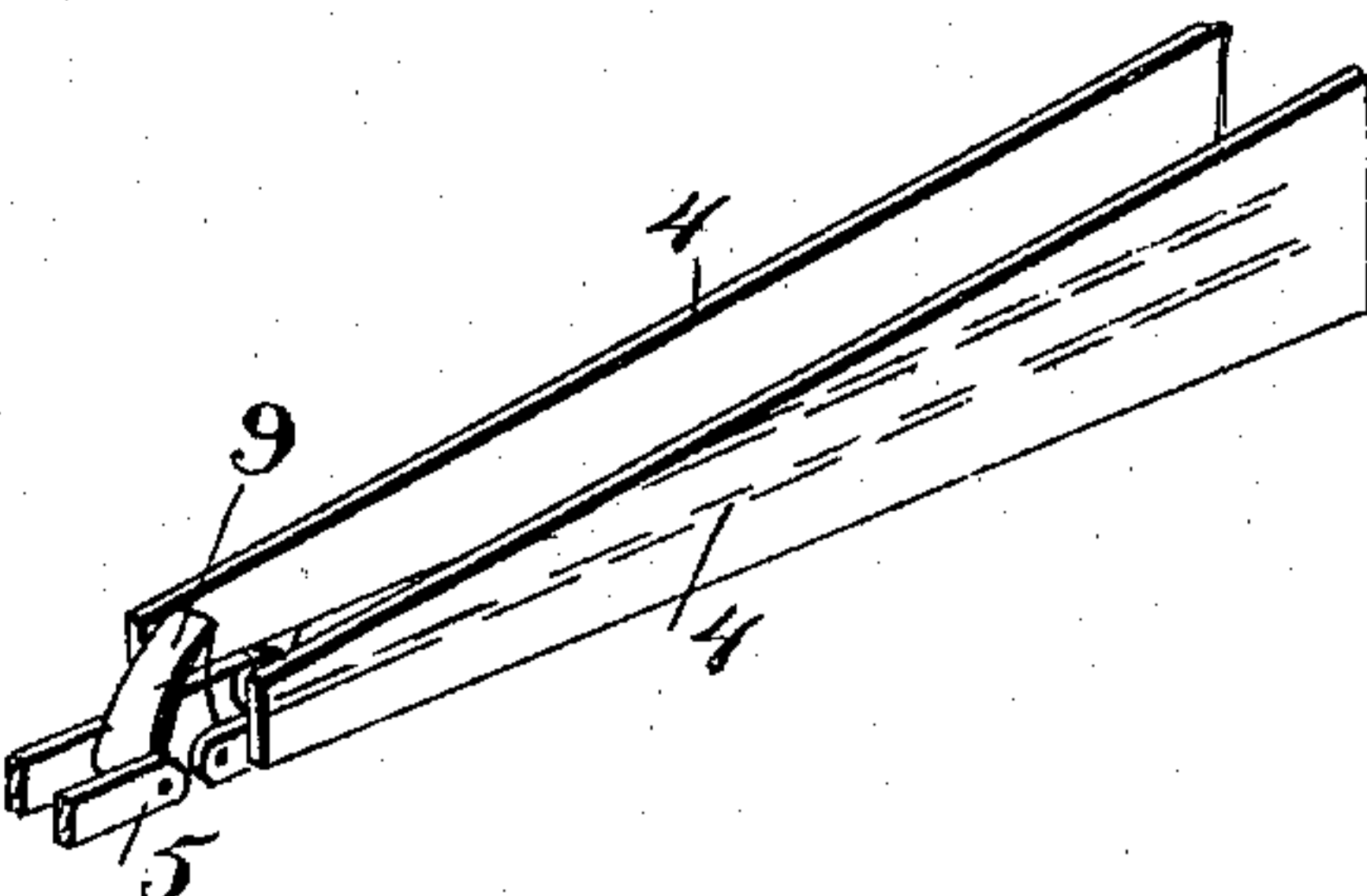


Fig. 9.



Witnesses

Geo. E. Frech.

Hubert E. Beck

Inventor

George W. Packer.

by John G. Manahan.

Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. PACKER, OF ROCK FALLS, ILLINOIS, ASSIGNOR TO THE KEYSTONE MANUFACTURING COMPANY, OF STERLING, ILLINOIS.

CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 584,889, dated June 22, 1897.

Application filed July 15, 1896. Serial No. 599,294. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PACKER, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Corn-Huskers; and I do 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 the figures and letters of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in corn-huskers, and comprises certain novel mechanism for permitting the automatic adjustment of the upper feed-roll to adapt itself to the quantity and bulk of the material passed in between said roll and its companion lower roll.

The object in this part of my invention is to permit said upper roll to vertically adjust itself, as aforesaid, without changing the relative positions of the adjacent faces of said rolls, so that rolls oblong in cross-section can be utilized with the assurance that the relative position in which said rolls are started will be maintained.

The second part of my present invention has reference to a departure from the usual modes of feeding the unhusked ears to the husking-roll. As far as my knowledge extends, it has heretofore been the practice to allow the unhusked ears after being snapped from the stock by the snapping-rollers to slide down over the husking-rollers, trusting to the latter to grasp and remove the husks while the ears are *in transitu*, as aforesaid. Objections to this method are numerous. One ear is likely to ride another, and thereby keep above the grasp of the husking-rolls. In very dry fodder the grasp of the husking-roll would tear out a portion of the husk without drawing the ear into sufficiently close contact with the roll to enable the latter to engage the residue of the husks. Again, the gravity alone of the ear must be relied upon to bring the same into sufficiently close contact with the rolls, and some ears are quite light, although they may be supplied with an unusual coat-

ing of husks. My invention in this regard consists in feeding the unhusked corn to the lower side of the husking-rolls by the positive action of an endless chain provided with projections which carry the ears in single file and in close succession in a single layer to the lower surface of the husking-rolls. As rendered practicable by said positive feed, another part of my invention is the employment of smooth husking-rollers, preferably of wood. A disadvantage in the use of husking-rollers with husk-engaging projections on their perimeters is that such formation virtually precludes the forcing of the ears of corn to the husking-rollers, because the aforesaid projections prevent the ear being forced against the pinching faces of the rollers, particularly where the contiguous sides of said rollers co-act to seize the husks. Again, if an ear lodge or be held in any manner said projections tear through the husks, shelling the corn.

Another part of my invention consists in providing a hopper within which the ears of corn drop from the snapping-rollers and from which the ears are gradually and uniformly carried by the said endless chain to the husking-rollers. The fodder is fed to the snapping-rollers in armfuls. The ears are all about midway of the stalks. About all of the ears in each armful of fodder are snapped from the stalks at the same time and in the usual construction precipitated in a body upon the husking-rollers, where they tumble over each other and by reason of the mass fail to properly distribute over said husking-rollers. In my invention I provide a hopper or chamber of sufficient capacity to hold these bunches of ears until gradually carried therefrom by said chain.

I attain the above objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is in part a longitudinal vertical section about through the line of one side of one of the husking-rolls. Fig. 2 is a detail of the mechanism for permitting the aforesaid adjustment of the upper snapping-roll. Fig. 3 is a modification of the same exhibiting a sprocket-chain motor in lieu of the intermediate gear of Fig. 2. Fig. 4 is a detail plan of the upper snapping-roll, the gear on

the lower roll, the shredder-shaft, and their intermediate connection. Fig. 5 is a detail of the upper end of the husking-roll. Fig. 6 is the same of the lower end of said rolls. Fig. 7 is an end view of the mutual attachment of the lower end of the husking-rolls. Fig. 8 is a broken plan view of the attachment of the upper end of the rolls, and Fig. 9 is a detail of the bottom of said hopper.

Similar figures and letters refer to similar parts throughout the several views.

As my invention is applicable to any of the usual types of huskers, or huskers and shredders, and as the residue of such machines are well known, I do not consider it necessary to show or describe an entire machine or any more thereof than will be requisite to show and explain the construction, location, and operation of my invention.

In Fig. 1 the section is about opposite the interval between one pair of the husking-rolls, but it will be understood that the mechanism there shown will be repeated with each succeeding pair of husking-rolls. The snapping-rolls 1 and 2 are driven as hereinafter described. The ears 3 as they are snapped by said rolls drop upon the divisions 4 of the hopper A, upon which by their own gravity they slide toward the rear of the machine, where the divisions 4 being lower said ears are engaged by the projections 9 upon the carrying-chain 5. The latter is carried and driven upon the three sprocket-wheels 6, 7, and 8, either one of which may be driven from some suitable portion of the machine and impart movement to the chain 5 and rotation to the other sprocket-wheels. The chain 5 is provided with projections 9 to engage the ears and carry them successively up over the sprocket 6 and down against the under side of the husking-rolls. Between the sprocket-wheels 8 and 6 and 6 and 7 the chain 5 is supported on bases 11 and 12, respectively. As the chain 5 is directly opposite the inner faces of the coacting husking-rolls 10 and 32, it forces the ears between said chain and said rolls into said interval between the latter, where the mutually approaching and coacting surfaces of said husking-rolls will clamp the husks between them and strip the husks from the ears. The ears when husked pass out the usual trough 13. The sprocket-chain carrier 7 is seated nearer the husking-rolls than is the sprocket 6. The interval, therefore, between the chain 5 and the husking-rolls diminishes as the ears descend and are gradually denuded of their husks. The space between the chain 5 and the husking-rolls 10 and 32 may be varied by any suitable adjustment of either or both of said parts.

Referring to Figs. 2 and 4, two arms 14 are collared loosely at one end, respectively, on the box of the shaft of the shredder or head 15. On the opposite end of the arm 14 is suitably journaled the upper snapping-roller 1. A gear 16, seated on the shaft of the shredder, intermeshes with a gear 17, seated intermediately

on one of the arms 14, which latter engages and actuates the gear 18, keyed on the upper snapping-roller 1. On the opposite end of the shaft 15 there is keyed a gear 19, which engages and actuates the gear 20 on the lower snapping-roller 2. It is obvious that with this construction the upper roller 1 may rise and fall in the arc described by the front end of the arms 14 without changing its distance from the shredder-shaft 15 and therefore be susceptible of being constantly driven from said shaft through the medium of gear 17, carried on one of said arms. The upper roller is adjustably held down by the coiled spring 21, suitably seated in a bracket 22, formed on the frame of the machine, said spring being given a varied pressure by the set-screw 23, seated in the top of said bracket in position to press upon the upper end of said spring. The gears driving the upper and lower rollers 1 and 2 from the shaft 15 are so proportioned that the surface velocity of such rollers shall be the same. One great advantage of this construction consists in the fact that the impact of the gear 17 upon the gear 18 of the upper snapping-roller 1 is in an upward direction as contrasted with a downward one, which renders it more easy in chopping ensilage, where the ear goes through with the fodder, for such ear to raise the upper roller.

In Fig. 3 is shown a modification of the aforesaid mode of driving the upper roller 1 by means of a sprocket-wheel 24, seated on the shaft 15, and a sprocket-wheel 25, seated on the upper roller 1, and a sprocket-chain 26, extending from one of said sprocket-wheels to the other. I consider, however, the mode shown in Fig. 2 preferable, as the velocity of the parts is too great for the satisfactory use of the sprocket-chain, and the gear connection shown in Fig. 2 insures greater exactitude and precision in the rotation of upper roll 1.

In Fig. 5 the shaft 27 is seated transversely of the machine and driven from any suitable part of the latter. Said shaft is provided with a beveled gear 28, which engages a beveled pinion 29, keyed on the shaft of the husking-roller 10. Integral with the pinion 29 is formed the gear 30, which intermeshes and actuates the gear 31, seated rigidly on the other husking-roller 32. The rollers 10 and 32 are afforded a limited vertical oscillation in the following manner: The box 33 of the roller 10 is projected forward and loosely collared on the shaft 27 and is held adjustably downward by the coiled spring 34, seated on a rear extension of said box and backed at its upper end against the frame of the machine. A lateral projection 35, similar to that shown in Figs. 6 and 7, extends from the box 33 of roller 10 and is pivotally connected to the upward extension 36 of the box 37 of roller 32. A rubber cushion 38 is seated between the upper ends of projection 36 of collar 37 and a like projection 39 of collar 33 and regulated as to pressure by the set-screw 40. The counterpart of this attachment, is more

clearly shown in Fig. 7, which represents the same mutual attachment of rollers 10 and 32 and by which 32 is held against 10 by said rubber cushion with any desired degree of force and yet permitted to swing away from said roller 10 in the contingency of a heavy body of husks passing between said rollers.

Figs. 6 and 7 illustrate the mode of seating the lower end of rollers 10 and 32 so as to permit said ends to rise in their aforesaid vertical oscillation. The lower box 41 of roll 10 has a lateral extension 42, pivoted on the upward extension 43 of the box 44 of roll 32. Between the extension 43 and the extension 45 of box 41 is seated the rubber cushion 46 and adjusted as to pressure by the set-screw 47. This is a substantial duplicate of the mutual connection of rolls 10 and 32 at their upper ends, heretofore described, and for the same purpose—to wit, to hold 32 against 10 but to permit the widening of said rolls under unusual pressure. A plate 48 is suitably fastened to the frame of the machine and provided at its front edge with the vertical groove 49. The lower box 41 of roll 10 is provided on its lower extremity with a guide 50 in the form of a straight-sided projection extending vertically across the end of box 41 and adapted to play vertically in the groove 49, thus permitting the lower ends of rolls 10 and 32 to rise and fall against the pressure of spring 34.

One special advantage of my present invention is that, as I believe, it for the first time affords means of positively forcing and also regulating the feed of the unhusked ears to the husking-rollers in such quantity and under such pressure as may be desired.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a corn-husking machine, the combination, with husking-rolls provided with means for rotating them in such manner as that they will bite on the under side, of an endless feed-chain under the rolls, and in a line with the inner surfaces thereof and arranged to travel in a line therewith; projections upon the chain extending toward the rolls, and means for driving the rolls and the chain, substantially as set forth.

2. In a corn-husker, the combination of the shaft 27 provided with the gear 28, the roll 10 provided with gears 29 and 30, collar 33 seated on said shaft and roll, spring 34, plate 48 provided with groove 49, box 41 seated on said roll and provided with guide 50 adapted to play in said groove 49 and a companion roller 32 pivoted to and carried by said roll 10 substantially as shown and for the purpose described.

3. In a corn-husker, the combination of the box 41 provided with projections 42 and 45, and with vertical guide 50, roller 10 seated in said box, box 44 provided with extension 43 pivotally attached to extension 42, roll 32 seated in box 44, and rubber 46 seated be-

tween projections 43 and 45 whereby roll 32 is normally held against roll 10 with a yielding pressure, substantially as shown and for the purpose described.

4. In a corn-husker, the combination of the hopper A adapted to receive the ears of corn from the snapping-roller, suitable husking-rollers and an endless feed-chain 5, communicating with said hopper and adapted to force the ears of corn against the lower surface of the said husking-rollers, substantially as shown and for the purpose described.

5. In a corn-husker, the combination of the hopper A adapted to receive the ears of corn from the snapping-rollers, the husking-rollers 10 and 32 and the endless chain 5 placed between said hopper and said husking-rollers, and adapted to continuously carry the corn from said hopper along the under side of said husking-rollers, substantially as shown and for the purpose described.

6. In a corn-husking machine, the combination, with snapping-rolls, of a hopper and inclined husking-rolls adjacent thereto, said hopper being provided with inclined partitions, the highest point of the partitions being nearest to the upper end of the rolls, an endless chain between the partitions and longitudinally adjacent to the under surface of the rolls, the chain being nearer the lower ends of the partitions and the lower ends of the rolls than at the opposite ends of the partitions and the rolls, substantially as set forth.

7. In a corn-husker, the combination, with a pair of husking-rolls, of an inclined base adjacent to the under surface thereof, the exit end of the base being nearer to the rolls than the other end, an endless feed-chain upon the base, and means for moving it toward the bottom of the rolls, substantially as set forth.

8. In a corn-husker, the combination, with a pair of inclined husking-rolls, of an inclined base adjacent to the under surface thereof, an endless feed-chain between the base and the rolls, and means for holding the rolls yieldingly in relation to each other and to the chain, substantially as set forth.

9. In a corn-husker, the combination, with a pair of husking-rolls, of a base under the same, one end of the rolls being nearer to the base than the other, and movable toward and from the same, and means for holding said rolls yieldingly in relation to the base, and an endless chain between the rolls and the base, substantially as set forth.

10. In a corn-husker, the combination, with a pair of husking-rolls, of an inclined base adjacent to the under surface thereof, a feed-chain between the base and the rolls, the bearings for one end of the rolls being movable in relation to the base, and the bearing of one roll being pivoted yieldingly in relation to the bearing of the other roll, substantially as set forth.

11. In a corn-husking machine, the combination of husking-rolls 10 and 23, chain 5 placed adjacent to and in line with the inner

side and below said rollers, suitable means of driving said chain, and means substantially as shown for delivering the unhusked corn to and upon said chain for the purposes described.

5 12. In a corn-husking machine, the combination, of the inclined husking-rollers 10 and 23, an endless feed-chain beneath said rollers provided with projections 9, said chain being
10 nearer the lower end of said husking-rollers

than at the upper end, and in line with the inner surfaces thereof, and suitable means for driving the rollers and chain, substantially as shown and for the purposes described.

In testimony whereof I affix my signature 15
in presence of two witnesses.

GEORGE W. PACKER.

Witnesses:

JOHN G. MANAHAN,
ISABELLE MANAHAN.