

(No Model.)

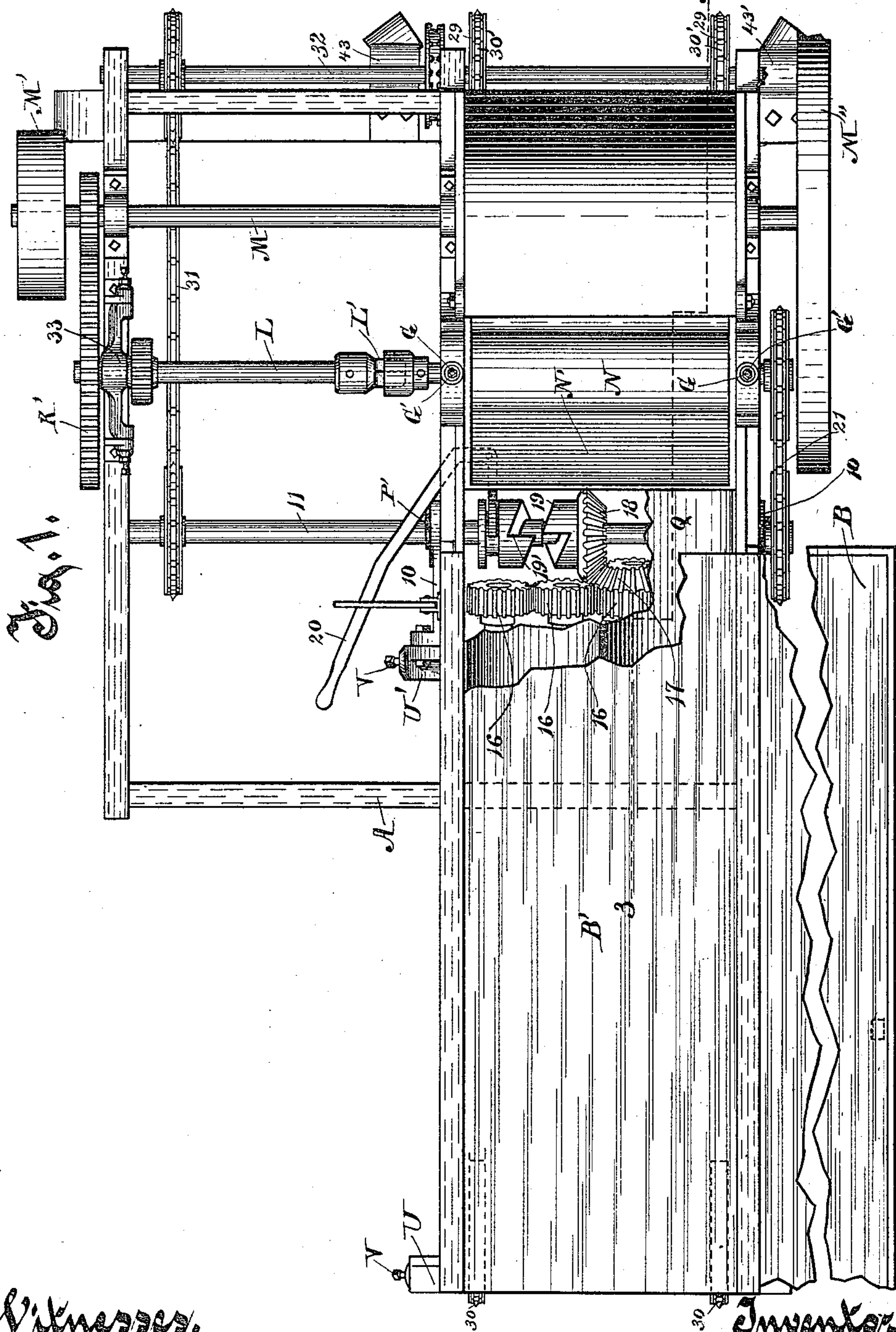
4 Sheets—Sheet 1.

W. GUTENKUNST.

COMBINED FEED CUTTER AND CORN HUSKER.

No. 440,826.

Patented Nov. 18, 1890.



Witnesses.  
O. H. Keeney,  
Anna Faust.

Inventor.  
William Gutenkunst  
Curtis T. Benedict  
Attorney.

(No Model.)

4 Sheets—Sheet 2.

W. GUTENKUNST.  
COMBINED FEED CUTTER AND CORN HUSKER.

No. 440,826.

Patented Nov. 18, 1890.

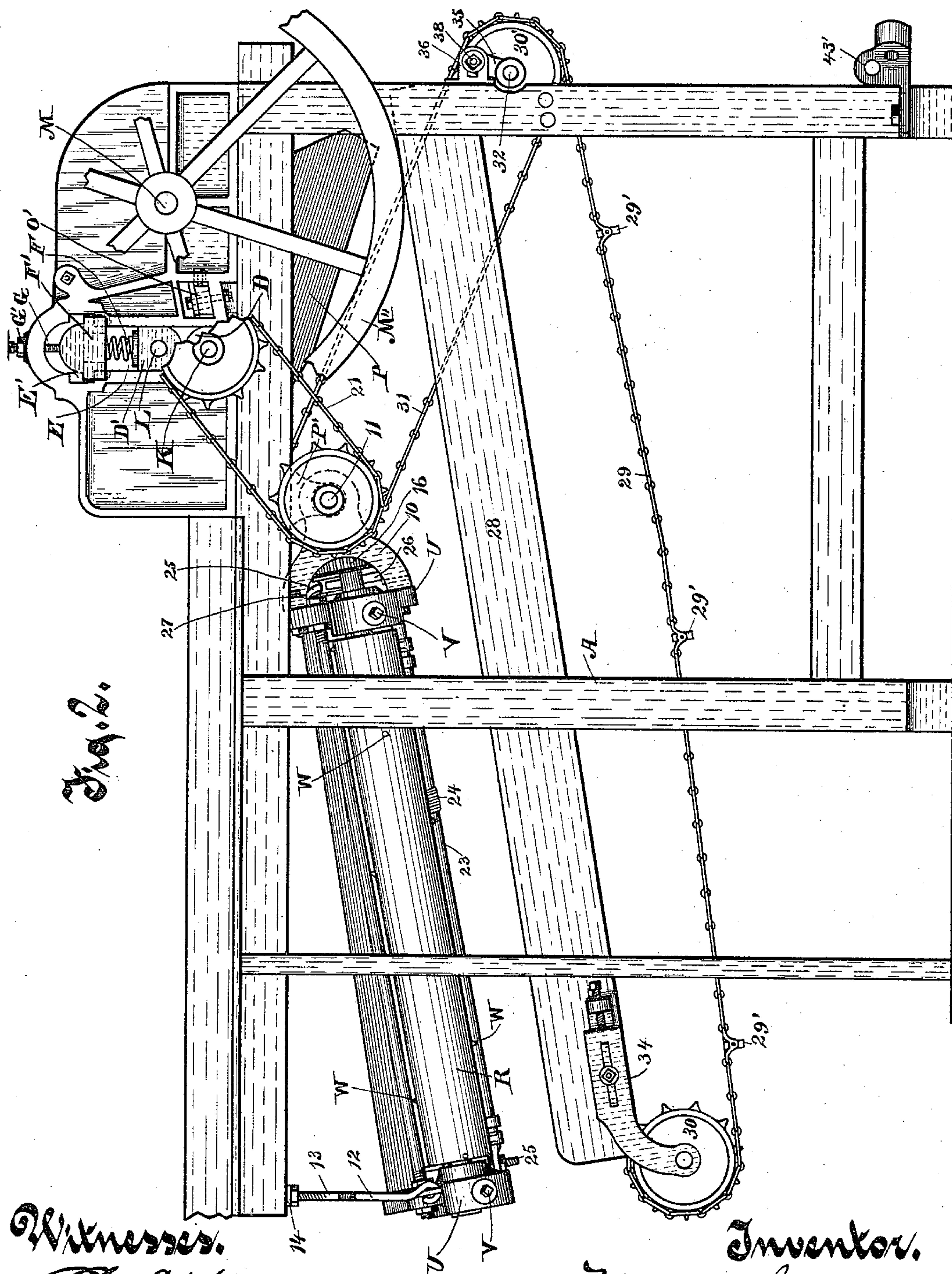


Fig. 2.

Witnesses.

*W. H. Keeney,*  
*Anna Faust.*

Inventor.

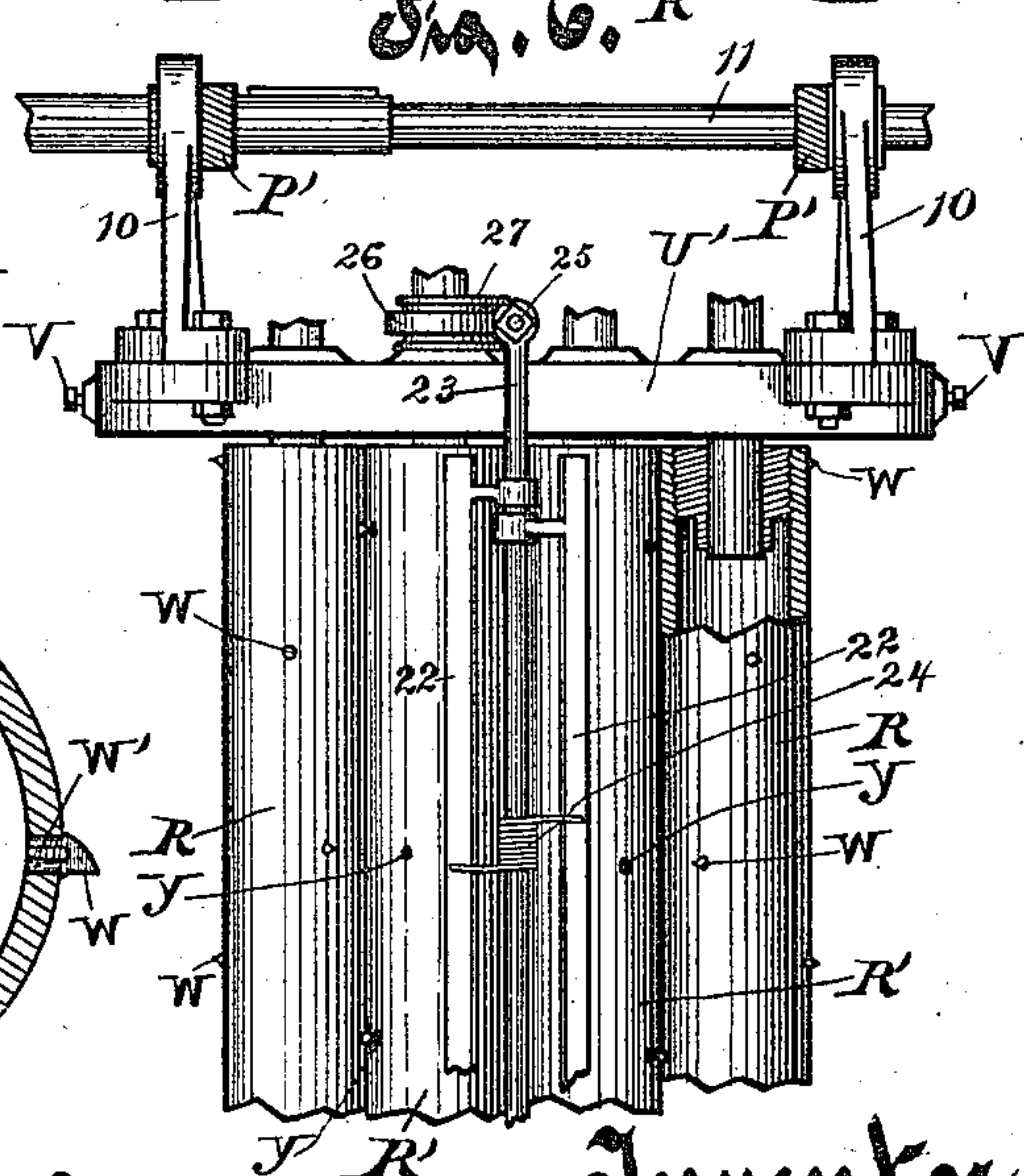
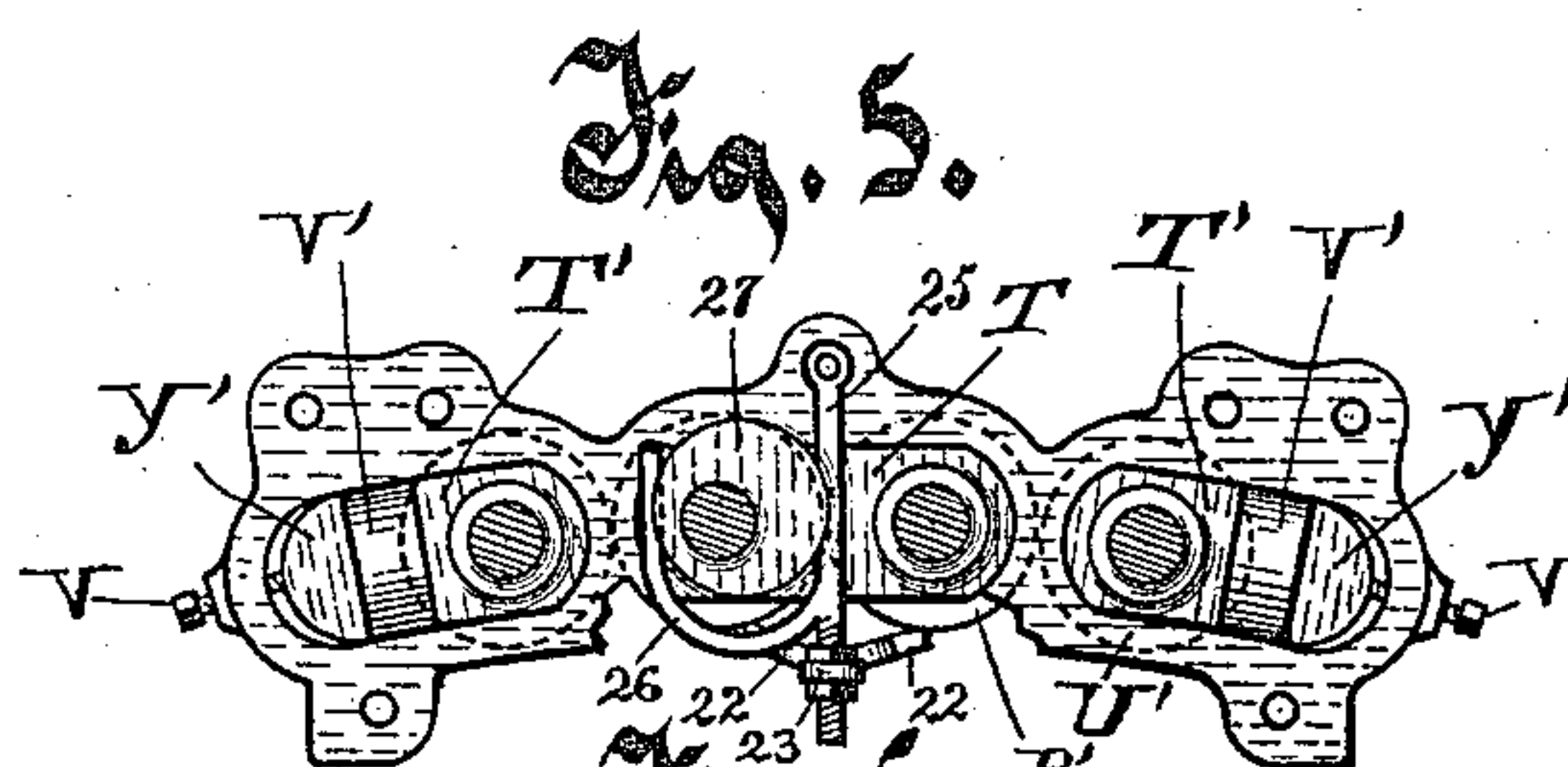
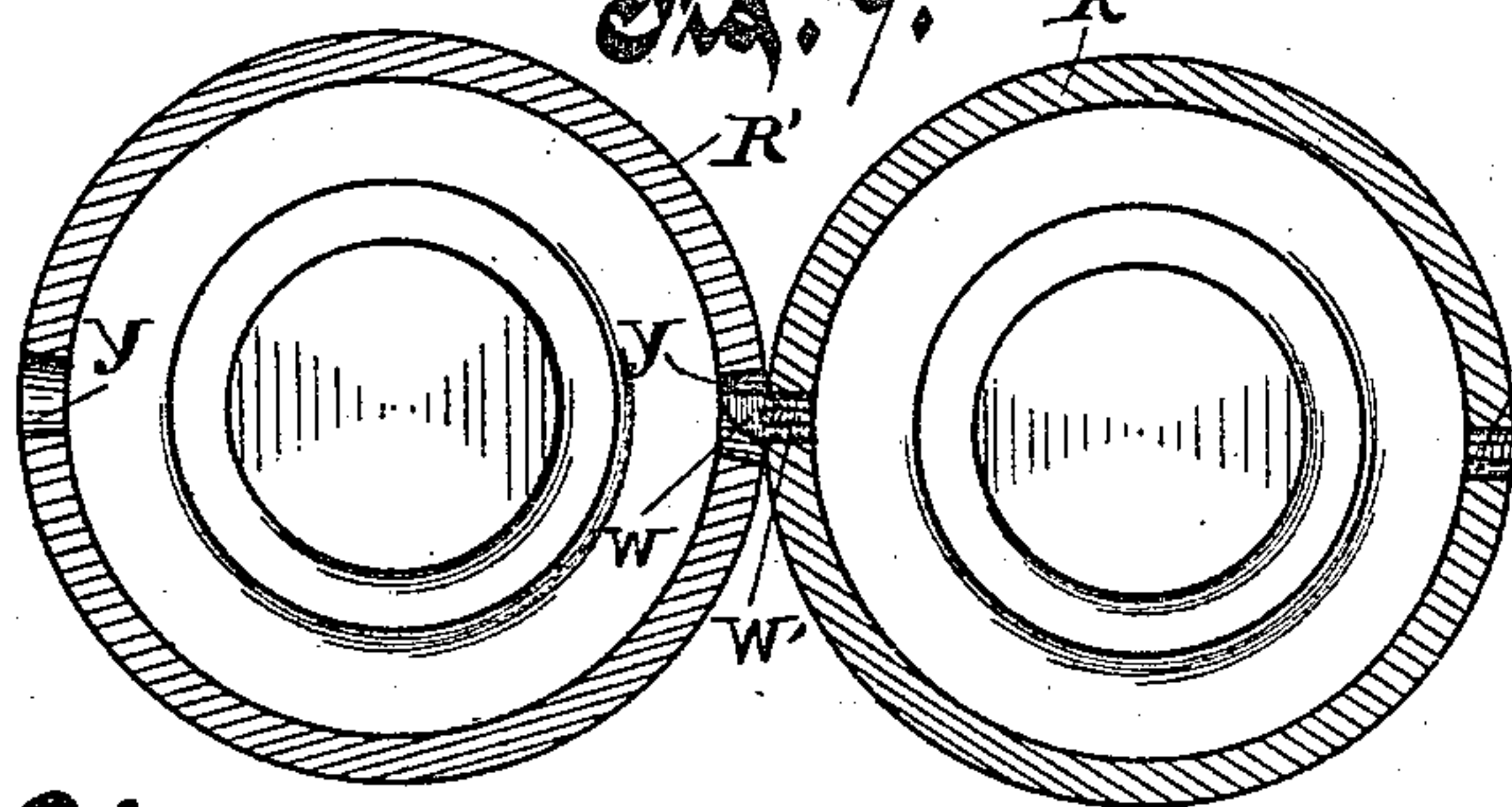
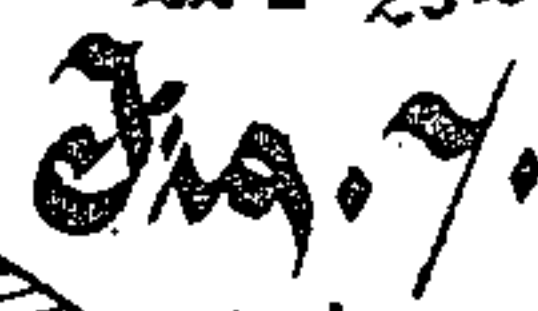
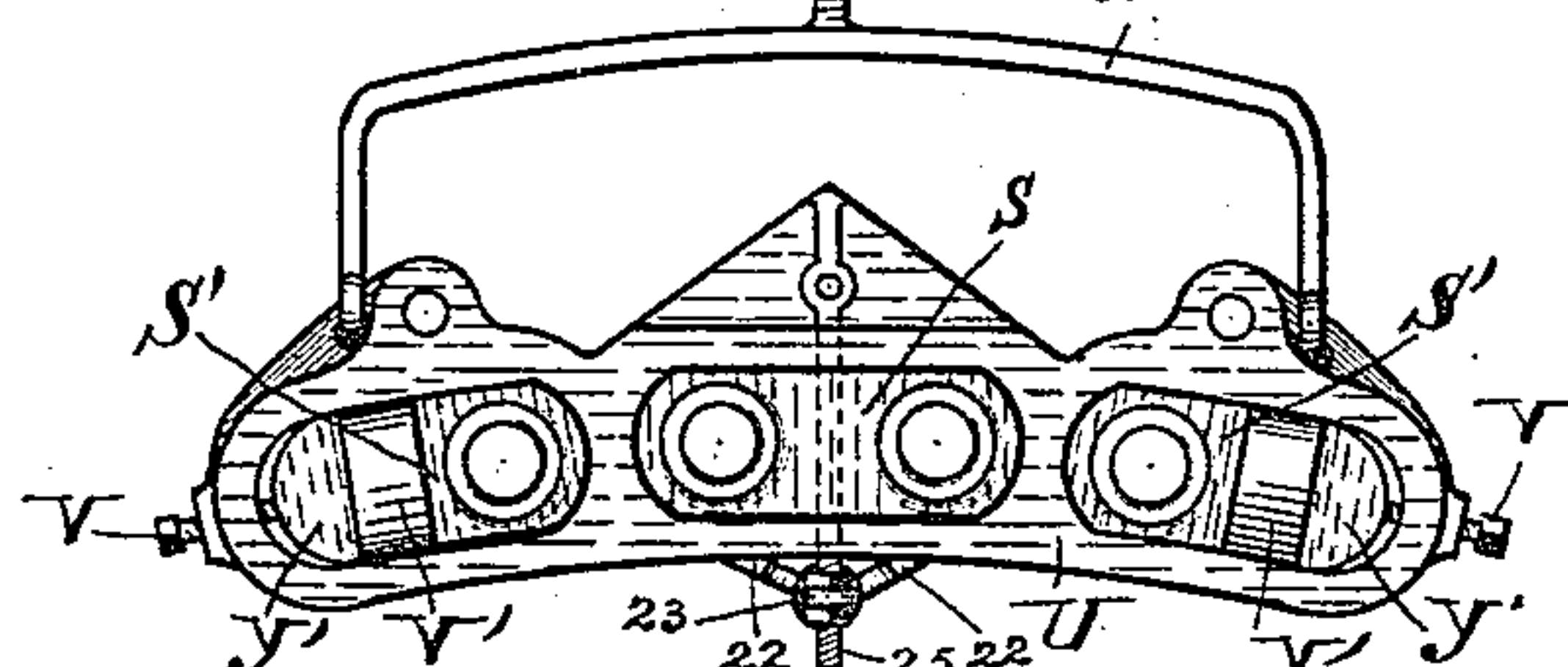
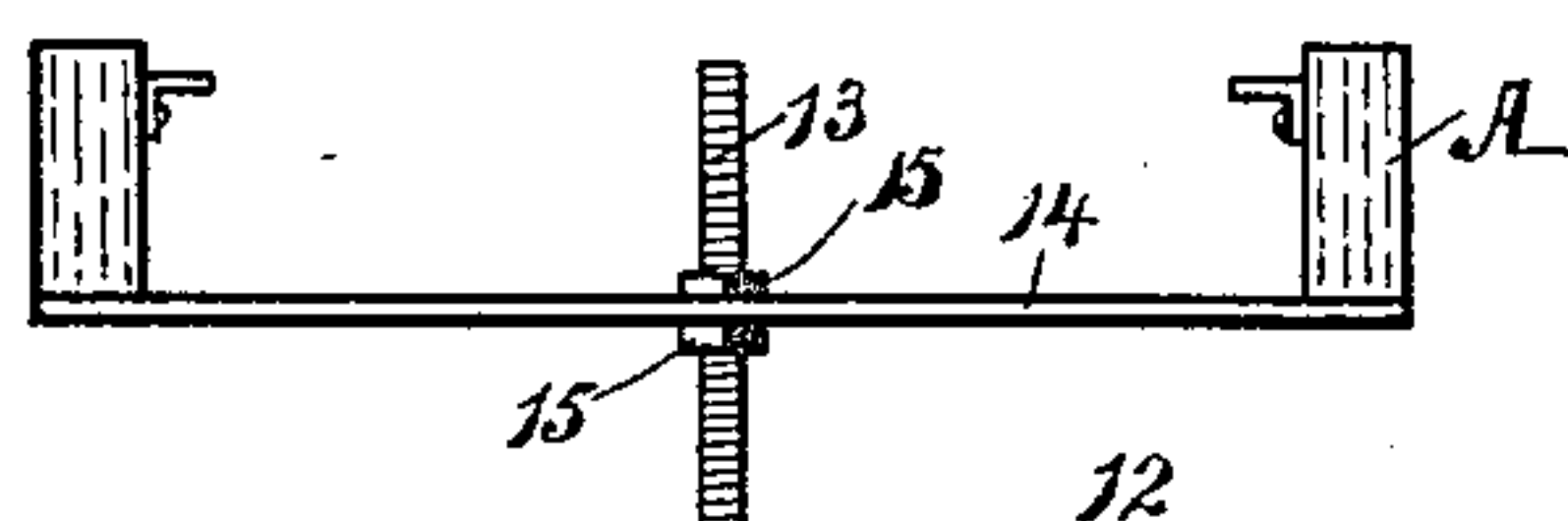
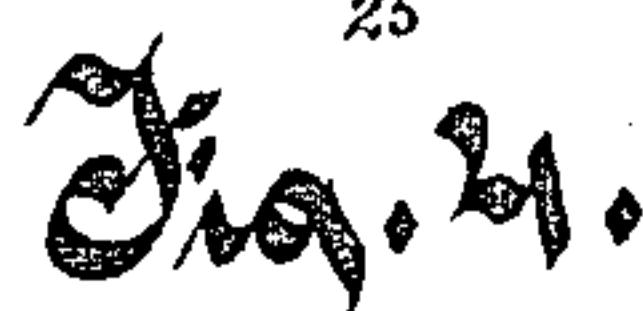
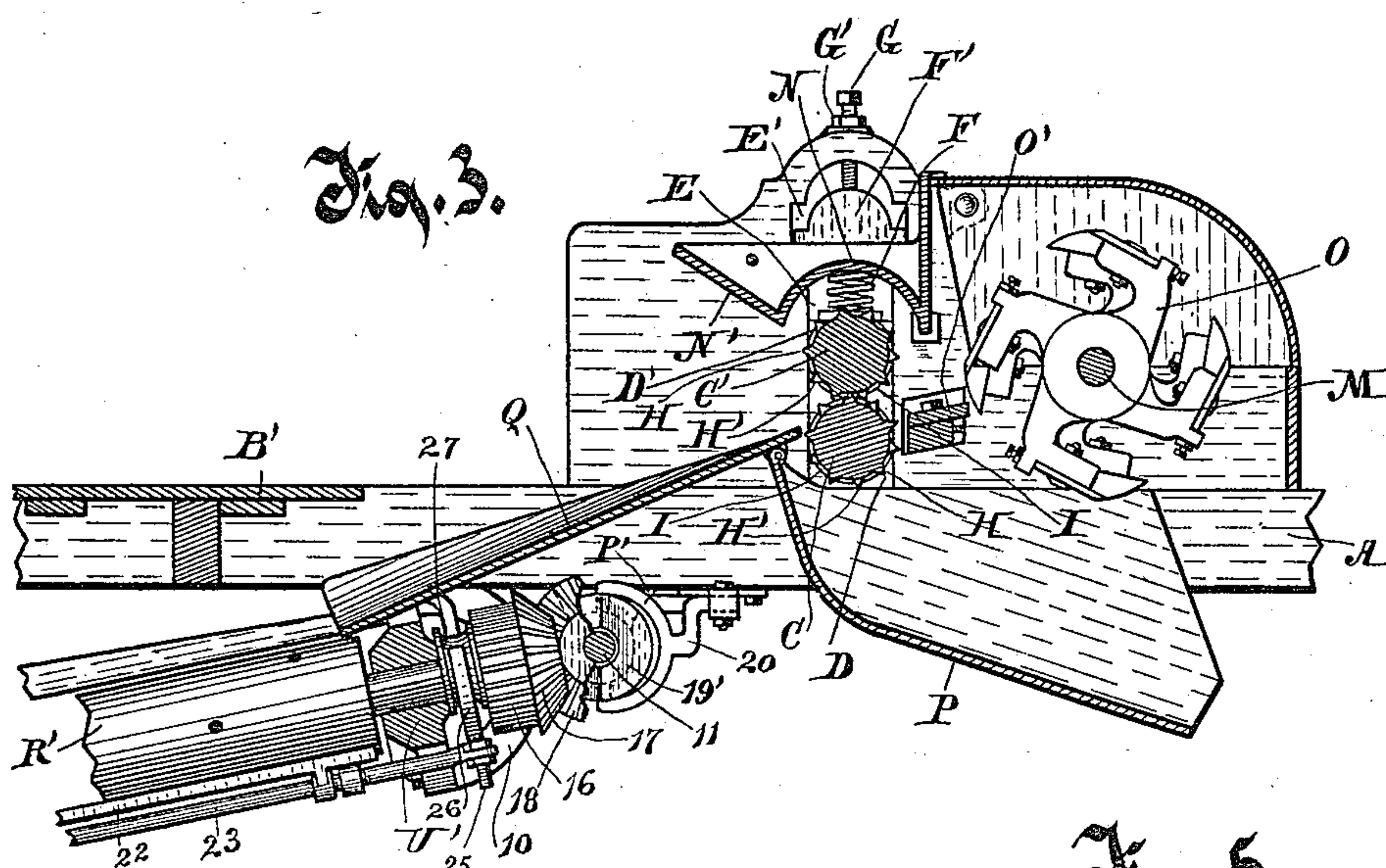
*William Gutenkunst*  
*Arthur V. Ruedich*  
Attorney.



4 Sheets—Sheet 3.

### COMBINED FEED CUTTER AND CORN HUSKER.

Patented Nov. 18, 1890.



Witnesses.

C. N. Keeney,  
Anna Faust.

**Inventor.**

William Guttenberg  
Cesar T. Benedict  
Attorney.

(No Model.)

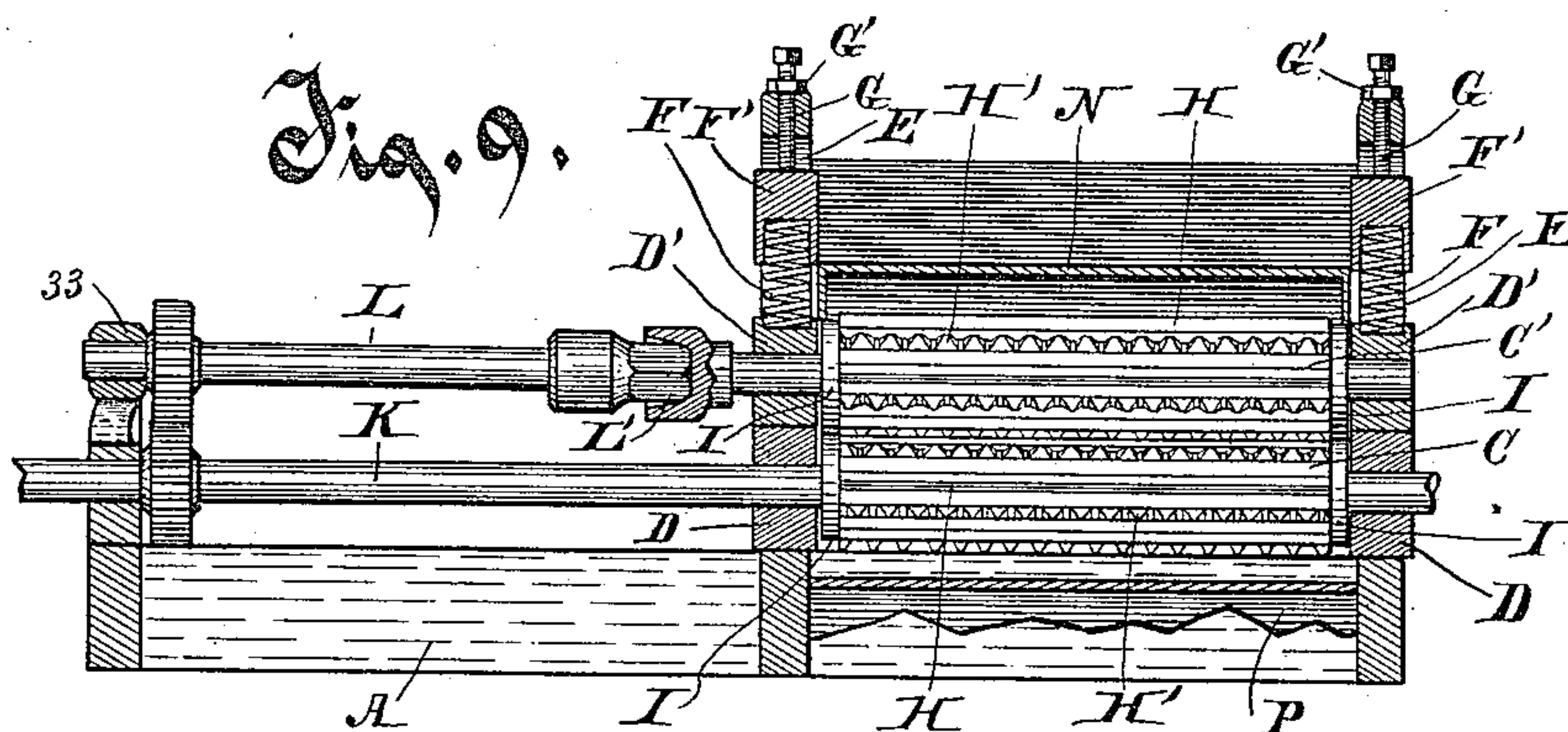
4 Sheets—Sheet 4.

W. GUTENKUNST.

COMBINED FEED CUTTER AND CORN HUSKER.

No. 440,826.

Patented Nov. 18, 1890.



Witnesses.

*C. H. Keeney.*

*Anna Faust.*

Inventor.

*William Gutenkunst*

*Curtis T. Benedict*

*Attorney.*



# UNITED STATES PATENT OFFICE.

WILLIAM GUTENKUNST, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE  
MILWAUKEE HAY TOOL COMPANY, OF WISCONSIN.

## COMBINED FEED-CUTTER AND CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 440,826, dated November 18, 1890.

Application filed May 29, 1890. Serial No. 353,533. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GUTENKUNST, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in a Combined Feed-Cutter and Corn-Husker, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in a corn-husker constructed in combination with a feed-cutter, which invention pertains to the devices for separating the ears of corn from the stalks and husking them and delivering them at one end of the machine, while the stalks are delivered at the other end of the machine.

In the drawings, Figure 1 is a top view of the main part of a machine in which my improvements are embodied, parts being broken away to show interior construction. Fig. 2 is a side elevation of the same portion of the machine, parts being broken away to show interior construction. Fig. 3 is a vertical section of a portion of the machine on line 3 3 of Fig. 1, parts being broken away and other parts omitted for the convenience of illustration. Fig. 4 is a detail of the means for supporting and adjusting vertically the front end of the husking-rollers. Fig. 5 is a detail of the means for supporting and shaking the rear ends of the husking-rollers. Fig. 6 is an under side view of the rear ends of the husking-rollers and related mechanism, with the means of supporting the rollers. Fig. 7 is an enlarged transverse section of two of the husking-rollers, showing the form of the teeth inserted in one roller and the apertures in the other roller for receiving them. Fig. 8 is a detail of one of the teeth of the husker, showing its form and method of insertion in the roller. Fig. 9 is a view of the feed-rollers and related mechanism.

The same letters and figures refer to identical parts in all the views.

A is the frame of the machine.

B is a removable feed-table, and B' is a removable apron supported on the frame above the husking-rollers, the apron being along-side of and practically a portion of the table,

from which apron the stalks are fed directly to the feed-rollers.

A pair of feed-rollers C and C' are journaled in blocks D D and D' D', movable vertically in slots E E therefor in the frame of the machine. The blocks are held yieldingly in position by the superimposed springs F F, inserted between the blocks D' D', and the blocks F' F', inserted movably in the slots E E, which blocks F' F' are held to their work by set-screws G G turning through the frame against them. These set-screws are provided with jam-nuts G' G' for locking them in position. The lateral ends of the blocks D, D', and F' are fitted and travel vertically in channels therefor in the vertical walls of the slots E, and these blocks may be successively removed from the slots E near the top of the slots, the slots being there widened, as shown at E' E', for that purpose. By this method of construction the blocks and the feed-rollers may be readily removed from the machine for cleaning or repairs. These feed-rollers C and C' are each provided with longitudinal radially-projecting ribs H H, and with longitudinal rows of teeth H' H', alternating with the ribs H H, which teeth H' H' are conveniently formed by serrating a rib similar to a rib H. These ribs and teeth are arranged on the two rollers at regular distances from each other, so that the ribs and teeth on one roller enter the intermediate spaces on the other roller, thereby loosely meshing with each other. The rollers are each provided with flanges or wheels I I, adapted to bear against each other and prevent the rollers from approaching each other more nearly than the proper prescribed distance. The longitudinal ribs H H have sharp or semi-sharp edges. The shaft K of the lower feed-roll is provided with a cog-wheel K', which meshes with a wheel on the shaft M, which has a band-wheel M' for receiving the power from the power-supply, and is also provided with a balance-wheel M''. The shaft L of the upper feed-roll is geared to the shaft K, and has a universal joint at L', whereby provision is made for the raising and lowering of the upper feed-roll as the cornstalks or other material passes between the rollers. The universal



joint L' is conveniently formed by constructing the shaft L in two parts, one part of which is faced at the end and is led into a correspondingly-faced socket in the other part, there being a certain amount of play between the faced part and the walls of the socket, and the shaft L being journaled at its outer end in a box 33, hinged on the frame, so as to permit the slight oscillating movement required to allow the upper feed-roller to rise and fall so much as is necessary. A shell or cover N is fitted and supported removably over the feed-rollers, which cover is constructed with a forwardly-extending and upwardly-projecting apron N', adapted to receive and guide the cornstalks to the feed-rollers. A cutter-head O, fixed on the shaft M, is located at the rear of the feed-rollers, and is provided with longitudinal knives, which have spirally-arranged cutting-edges passing immediately at the rear of and along the edge of the transverse shear-plate O', attached adjustably to the frame. This cutter-head may be removed from the machine when it is not desired to cut up the stalks.

A chute P, attached to the frame, is located beneath the feed-rollers and cutter-head, and is adapted to receive the cut feed and discharge it toward the rear of the machine. Another chute Q, hinged at its rear end just in front of the lower feed-roller, extends forwardly and downwardly, and is adapted to convey the ears of corn that have been broken from the stalks by the feed-rollers to the husking-rollers. This chute Q at its lower front end is formed into two channels adapted to deliver the ears at the outside of the two inner husking-rollers, for a purpose that will be understood hereinafter from the description of the husking-rollers. The lower front end of this chute Q rests on a part of the frame, and the chute may be swung upwardly on removing the apron B', so as readily to reach the driving mechanism of the husking-rollers for oiling or repairing them.

Two sets of cylindrical husking-rollers, consisting of a roller R and R' in each set, are located in the front part of the machine below the apron B', and are arranged near to each other in the same lateral plane and at an inclination downwardly toward the front. These husking-rollers are journaled at their respective ends in journal-blocks S and S' and T and T', supported, respectively, in the laterally-extending head-blocks U and U'. The journal-blocks S and T are fixed centrally in the head-blocks U and U', respectively, and carry the central husking-rollers R' R', which are arranged parallel with each other. The blocks S' S' and T' T' carry therein the outer rollers R R, and are adjustable laterally in the head-blocks U and U', whereby the rollers R R may be adjusted near to or farther from the rollers R' R', as may be desired, the adjustment being accomplished by the set-screws V V turning through the head-blocks against movable blocks Y' Y', that bear

against rubber cushions V' V', interposed between the journal-blocks and the blocks Y' Y', which cushion is adapted to permit the outer rollers R R to yield and move slightly away from the inner rollers R' and R' as the husks are carried downwardly between them. The rollers R R are provided with teeth W W, preferably arranged in spiral line about the rollers, which enter corresponding apertures Y Y in the rollers R' R'. The teeth W W are provided with cylindrical shanks faced on one side and are fitted and inserted in circular apertures therefor in the hollow rollers R R, and are secured in place by wedges W' W', driven into the apertures alongside the faced side of the shanks of the teeth. By this construction of the teeth and their shanks the shank may be readily removed from the aperture in the hollow roller when the tooth is broken off accidentally or otherwise by driving or punching the shank into the hollow chamber of the roller.

The rear head-block U' is provided with rigid brackets 10 10, which are pivoted on the brackets P' P' rigid to the frame, in which brackets the shaft 11 also has bearings. The front head-block U is supported by a yoke 12, hinged to the head-block near its lateral ends, which yoke 12 is provided with a central screw-threaded stem 13, which passes movably through a transverse bar 14 fixed on the frame. The stem 13 is provided with nuts 15 15, one above and the other below the bar 14, whereby the stem may be raised or lowered in the bar, as desired. By this means the inclination of the husking-rollers may be increased or lessened, as desired.

The journals of the rollers R R and R' R' at their upper rear ends are provided with gear-wheels 16 16 of the same size, which mesh with each other, whereby the rollers are given harmonious rotary motion, the two rollers R and R' of each set being rotated over inwardly toward each other. A journal of one of the rollers is provided with a beveled pinion 17, which meshes with a pinion 18, loose on shaft 11. The pinion 18 is provided with a hub 19, having projections which form one part of a clutch, the counterpart of which clutch 19' is feathered on the shaft 11, having endwise motion thereon and rotary movement therewith. The hub 19 and the counterpart 19' form a clutch, whereby the rotary motion of the shaft 11 is communicated, when the clutch is in engagement, to the rollers R and R'. A shifting-lever 20 is pivoted on the frame, the inner arm of which lever is made bifurcate and rides in a channel therefor in the part 19', and is adapted for throwing the clutch into and out of engagement. The shaft 11 is in mechanical connection with the lower feed-roller shaft K by means of a sprocket-chain 21, running on sprocket-wheels on the two shafts.

The rollers R and R', coacting with each other, are adapted to remove the husks and silk from the ears of the corn that are discharged onto them at their rear ends from the



chute Q, while the ears move by gravity down the incline of the rollers in the central groove formed by the curved surfaces of each set of rollers R and R', and the husks and silk are carried down between the two rollers of each set and dropped below on the conveyer, hereinafter to be described; but as a certain amount of the silk and strips of husk are liable to wind about the rollers, especially the two inner rollers R' R', two longitudinal bars forming scrapers 22 22, having dull knife-edges, are hinged on a rod 23, which rod is located centrally below the rollers R' R', the scrapers 22 22 being so constructed and arranged that their dull knife-edges bear loosely against the lower surfaces of the rollers R' R', being held yieldingly thereto by the springs 24, supported on the rod 23. The scraper-supporting rod 23, I suspend adjustably at both ends on rods 25 25, pivoted at their upper ends on the cross-heads U and U', respectively. These rods 25 25 at their lower ends are provided with screw-threads and with nuts, whereby the rod 23, through which the rods 25 25 pass, is secured adjustably vertically to the rods 25 25. Each of these rods 25 25 is provided with an arm 26, forming with the rod a socket, the sides of which bear against an eccentric 27, fast on the journal of a roller R'. This construction is adapted to vibrate the scrapers laterally equally at both ends for the purpose of more effectually freeing the rollers R' R' of all silk, husks, or other foreign material.

For carrying away the husks and cut feed a channeled conveyer-box 28 is secured to the frame below the husking-rollers, the feed-rollers, and cutter-head, in which conveyer-box an endless apron or conveyer 29 runs, being carried on the sprocket-wheels 30 and 30' at the respective ends of the box. The conveyer 29 is provided with cross-bars 29', which travel rearwardly on the bottom of the conveyer-box and carry the husks and cut feed along in that direction. The sprocket-wheels 30 30 are journaled in brackets 34 34, secured adjustably to the sides of the conveyer-box 28. The sprocket-wheels 30' 30' are fast on the shaft 32, which is journaled in arms 35, which are pivoted and adjustable in brackets 36 36, secured permanently to the frame. The arms 35 35 are each provided with a stud 37, which enters movably a lateral slot in the bracket 36, and a bolt 38, passing through the arm centrally of the stud 37, is adapted to secure the arm adjustably to the bracket 36. This novel method of supporting the shaft 32 is provided for the purpose of carrying the shaft outwardly and upwardly as may be desired for adjusting the tension on the conveyer 29 and on a sprocket-chain running from this shaft to an attached conveyer not herein shown or described.

In using this machine the cornstalks with the ears on them are fed over the apron B' to the feed-rollers, between which the stalks pass and are cut up by the knives on the cut-

ter-head, while the ears are broken from the stalks as they come to the feed-rollers by the action of the longitudinal semi-sharp ribs, the ears dropping onto the chute Q, and being discharged therefrom by gravity onto the husking-rollers, along which they are carried downwardly by gravity, while the husks are removed therefrom by the teeth in the rollers and are forced between the rollers and dropped on the conveyer 29, by which they are carried with the cut feed, also dropped onto the conveyer, from the chute P to the rear of the machine, and are there discharged either on the ground or on an additional conveyer, to be carried still farther to the rear of the machine.

If the machine is used for cutting stalks from which the ears have been removed, the husking mechanism should be thrown out of engagement with the feed-cutting mechanism by disengaging the parts of the clutch 19 and 19'.

My improvements relate to a machine of the character of the device shown in United States Patent No. 401,719, and still further shown and described in an application of August Rosenthal, of even date herewith, for improvements in his former device, and I make no claim to the features of the device which claims of novelty are made by him in said patent and application.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a corn-husker, two feed-rollers arranged parallel to each other, each feed-roller being provided with longitudinal semi-sharp ribs alternating with longitudinal rows of teeth, which interlock loosely with each other on the two rollers, substantially as described.

2. In a corn-husker, two feed-rollers arranged parallel to and one above the other, and blocks in which the rollers are journaled, the ends of the blocks being in channels in slots therefor in the frame of the machine, so formed that the blocks have vertical but not horizontal movement therein, in combination with other removable blocks F' F', fitted and movable vertically in the slots, springs interposed between the upper journal-blocks and the blocks F' F', and set-screws turning through a part of the frame against the blocks F' F', the slots in which the blocks are received and travel being widened near their upper ends, so as to permit the lateral removal of the blocks therefrom successively, substantially as described.

3. In a corn-husker having rollers for the husking of the corn, the combination, with a hollow roller provided with circular apertures, of insertible teeth having cylindrical shanks faced on one side and wedges to be inserted in the apertures against the face of the shanks, substantially as described.

4. In a feed-cutter and corn-husker having parallel feed-rollers and husking-rollers arranged at right angles to the feed-rollers, the combination, with a driving-shaft located parallel to the feed-rollers and between the feed-



rollers and the husking-rollers, to which latter it is geared, of husking-rollers journaled at both ends in cross-heads, the inner or upper of which cross-heads is hinged on the driving-shaft, substantially as described.

5 5. In a corn-husker, parallel husking-rollers journaled at their respective ends in cross-heads, the cross-head at one end being hinged so as to permit a vertical movement of the rollers at the other end, in combination with  
10 a yoke 12, hinged at its extremities to the outer cross-head and provided with a screw-threaded stem 13, passing movably through a part of the frame, and nuts turning thereon,  
15 whereby the yoke is made adjustable vertically in the frame, substantially as described.

6. In a corn-husker having parallel revolvable husking-rollers and vibrating scrapers, a scraper-supporting rod 23, suspended at each  
20 end on rods pivoted in the frame, which rods are each provided with an eccentric-embracing part, in combination with eccentrics fixed on the journals of a husking-roller and adapted to vibrate the scrapers at both ends and  
25 throughout their entire length parallel with the rollers, substantially as described.

7. In a combined feed-cutter and corn-husker having husking-rollers arranged at

right angles to the feed-rollers, an intermediate driving-shaft 11, geared to the driving  
30 mechanism of the feed-rollers, in combination with a pinion loose on the shaft meshing with a pinion on a husking-roller, and a clutch, one part of which is fixed to the pinion loose on  
35 the shaft and the other part of which is feathered to the shaft, and a shifting-lever adapted to throw the parts of the clutch into and out of engagement, substantially as described.

8. In a combined feed-cutter and corn-husker, parallel feed-rollers and a cutter-head  
40 located at the rear of the feed-rollers, in combination with husking-rollers located in front of and below the feed-rollers and at right angles thereto, the feed-rollers being geared to the husking-rollers through an intermedi-  
45 ate shaft parallel with the feed-rollers, which shaft is geared to the feed-rollers by a sprocket-chain running on wheels on the shaft and on the journal of a feed-roller, substantially  
50 as described.

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

WILLIAM GUTENKUNST.

Witnesses:

C. T. BENEDICT,

JOHN W. SUETTERLE.