

No. 616,370.

Patented Dec. 20, 1898.

C. C. SWAIN.
MOWING MACHINE.

(Application filed Sept. 27, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

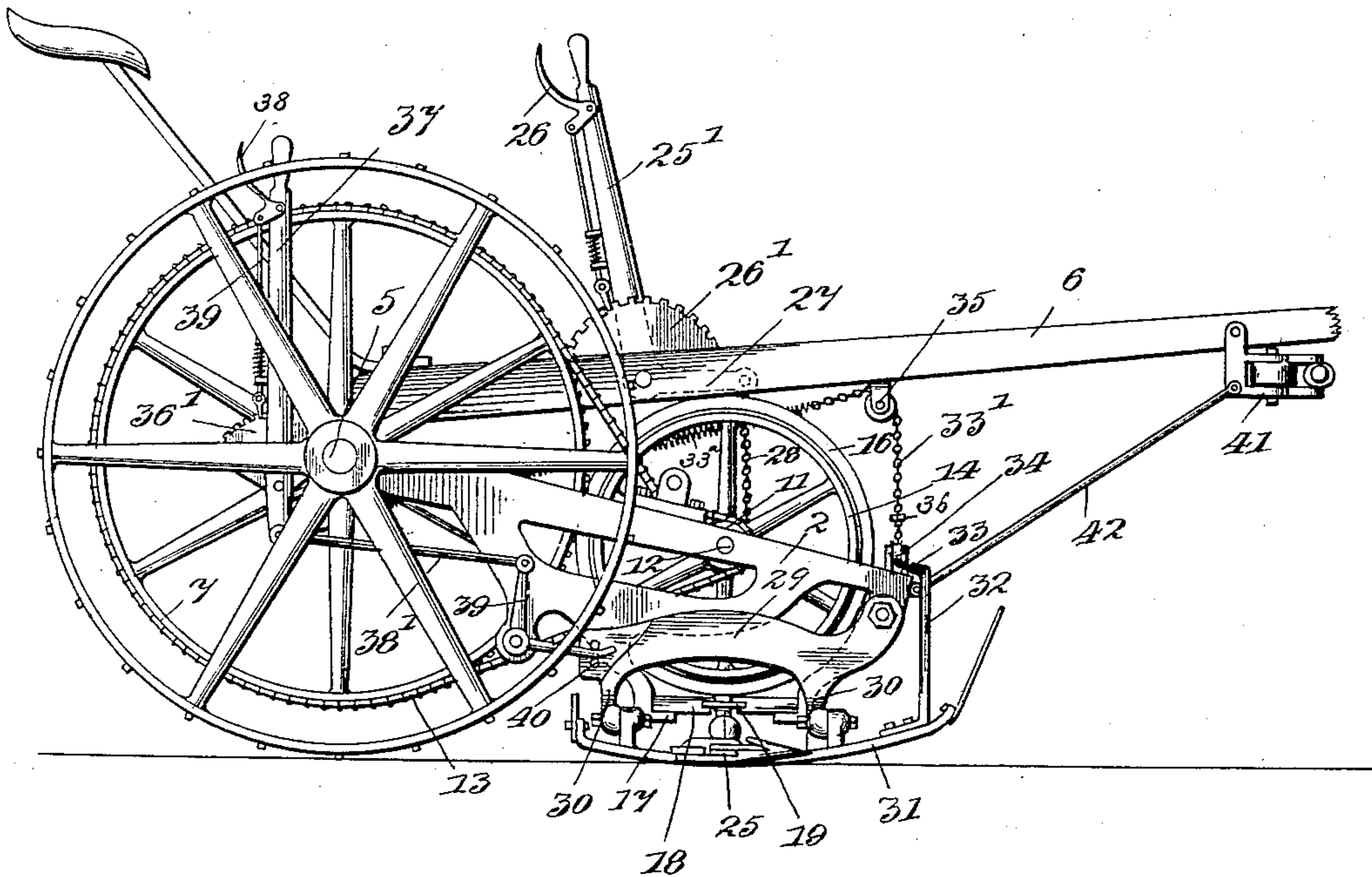
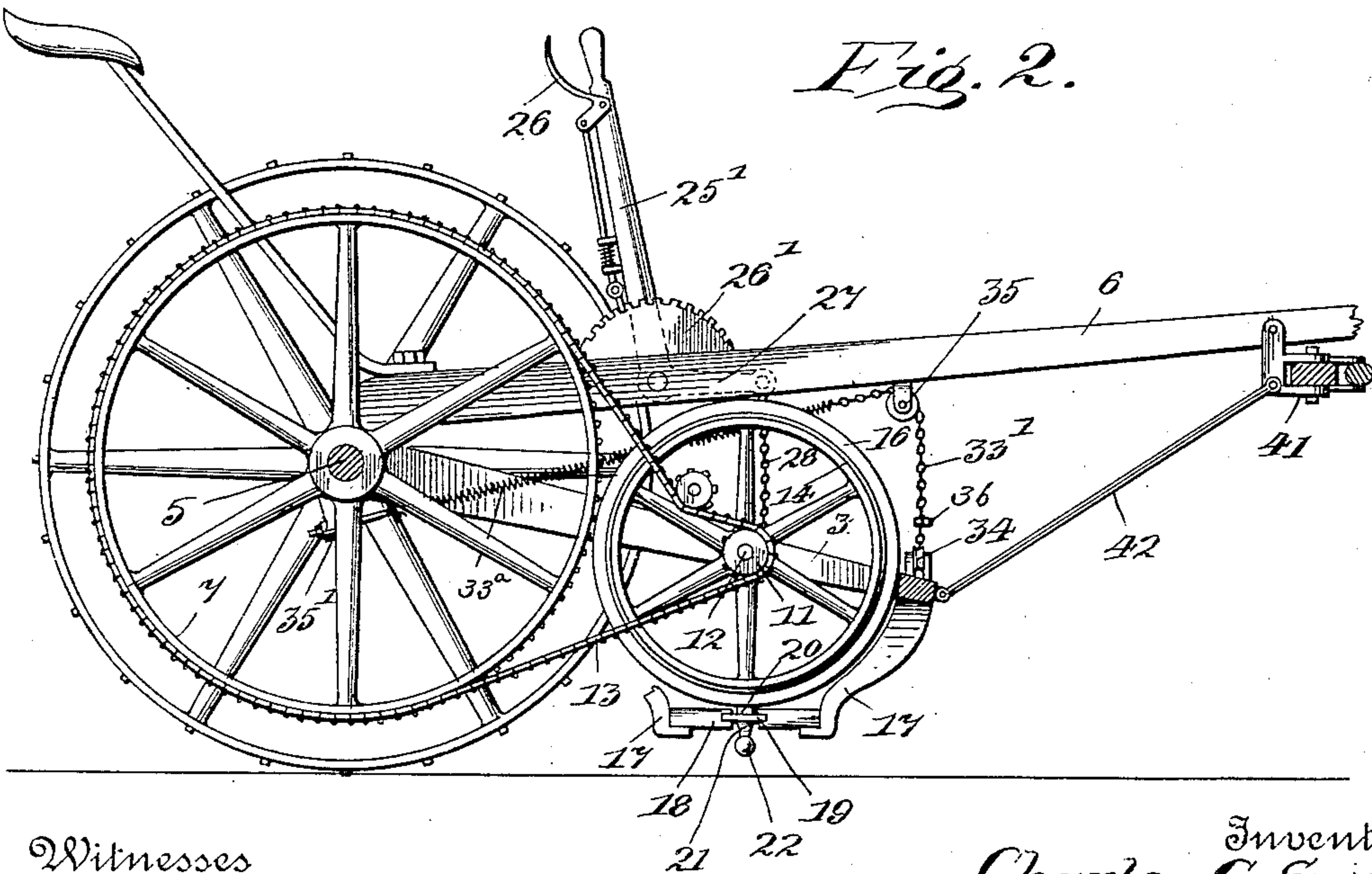


Fig. 2.



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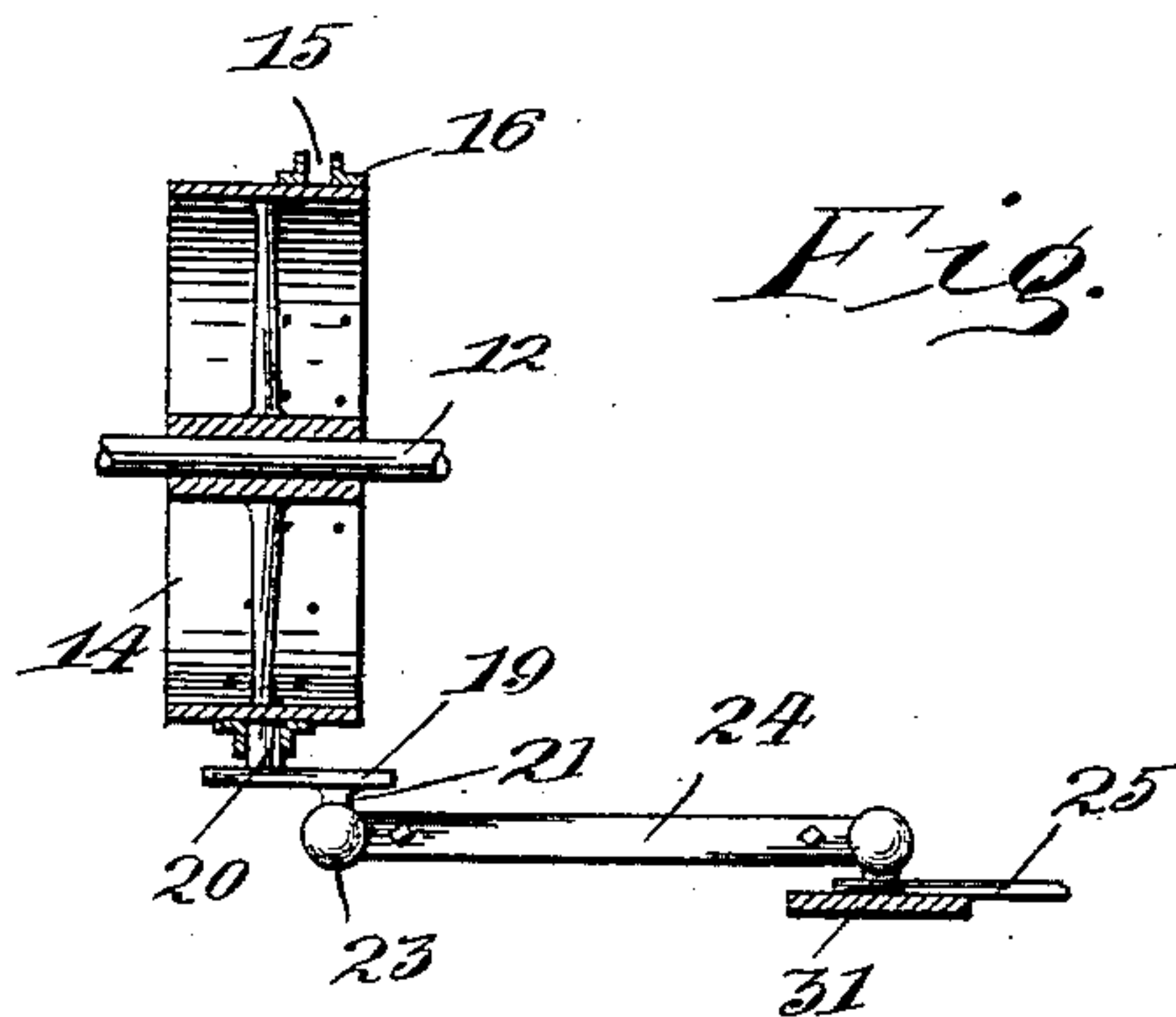
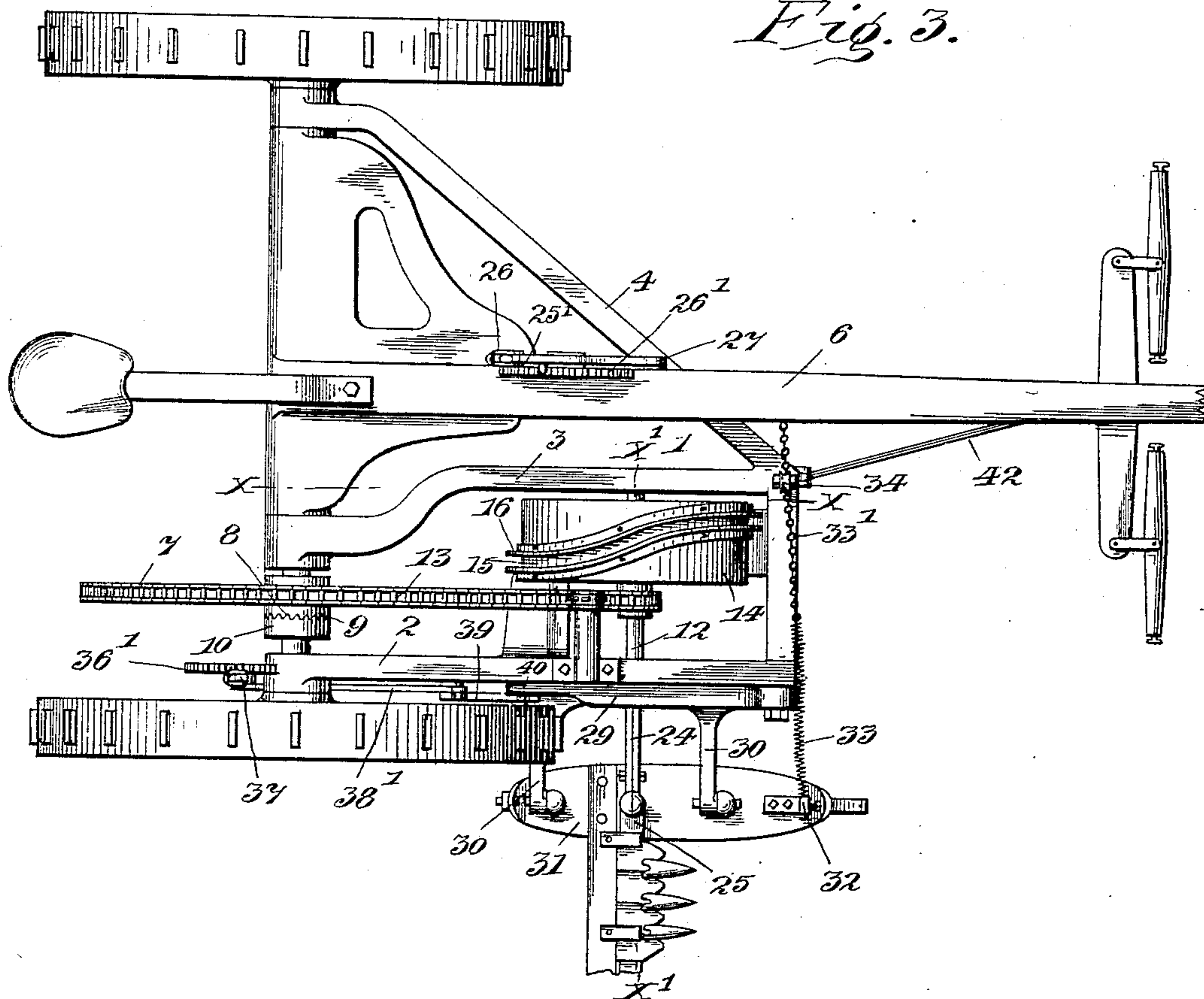
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3 Sheets—Sheet 3.

Fig. 5.

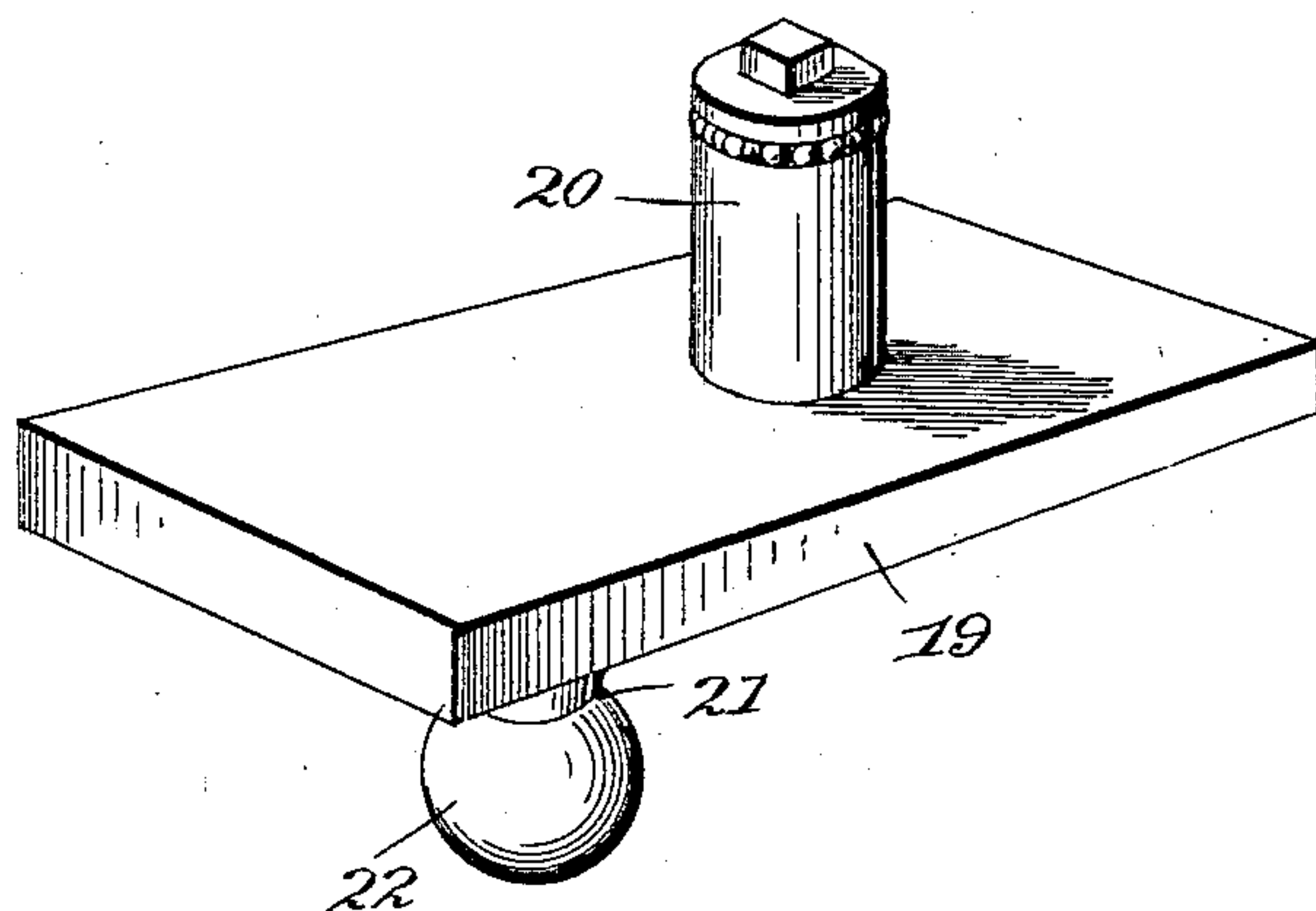
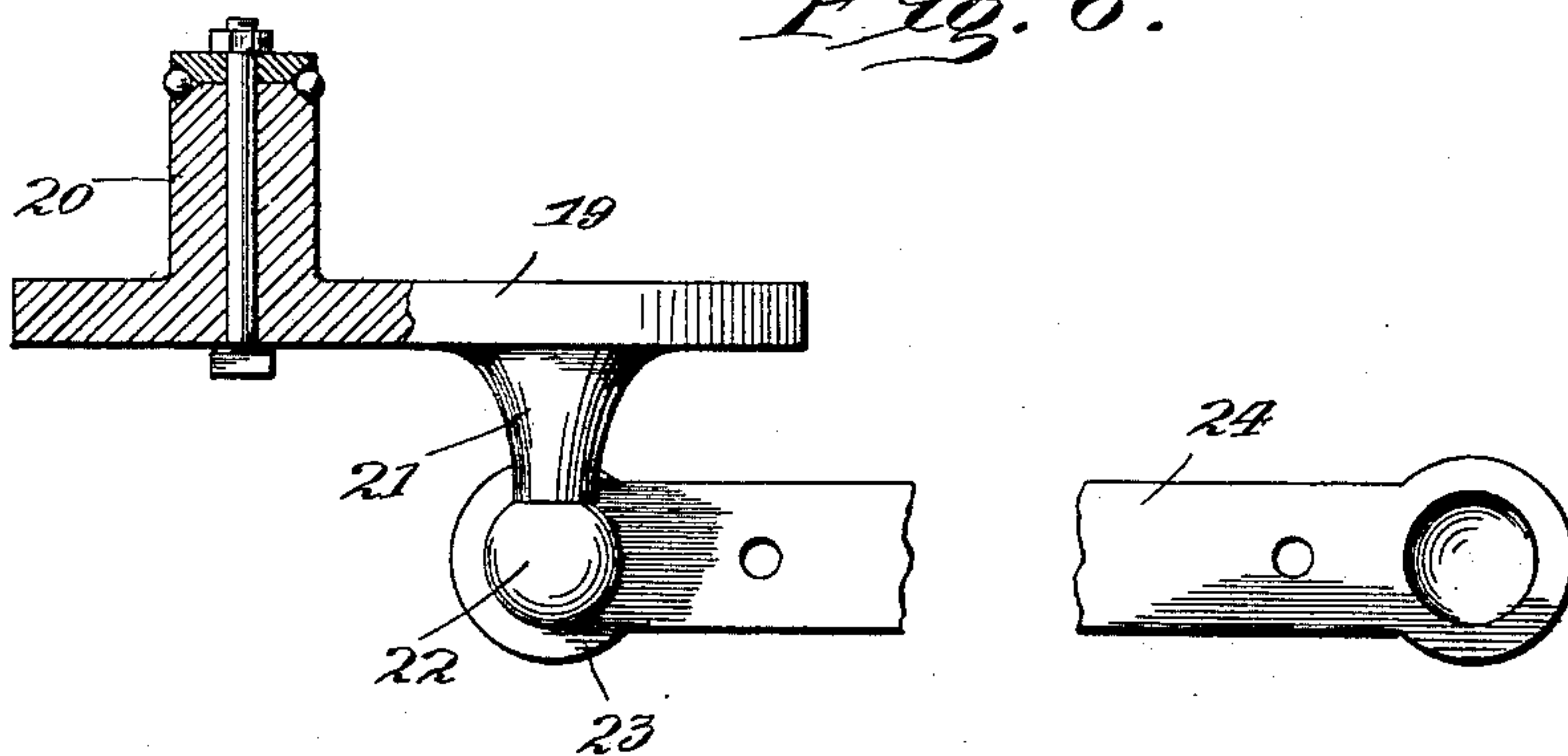


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES C. SWAIN, OF STOCKTON, CALIFORNIA.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 616,370, dated December 20, 1898.

Application filed September 27, 1897. Serial No. 653,220. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. SWAIN, of Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Mowing-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.

My invention relates to novel and useful improvements in mowing-machines.

The primary object of the invention is to dispense with the usual gearing by which the sickle-bar of the ordinary mowing-machine is reciprocated and provide in its stead a simple means for transmitting motion to said bar through the medium of sprockets and chains.

A further object is to provide an effectual but simple operative connection between the cam-wheel which is operated by said sprockets and chains and the sickle-bar whereby reciprocatory movement is transmitted to said sickle-bar.

A still further object of the invention is to improve machines of this character generally, producing in the concrete a machine that will be especially simple in construction, durable, economical, and efficient in operation.

With these and other objects in view, which will become apparent in the course of the following description, the invention consists in the novel combination and arrangement of parts that will be hereinafter fully described, and the points of novelty will be particularly pointed out in the claims.

I am enabled to accomplish the objects of my invention by the simple means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a mowing-machine constructed in accordance with my invention. Fig. 2 is a longitudinal section on the line *x x* of Fig. 3. Fig. 3 is a top plan view thereof. Fig. 4 is a vertical section on line *x' x'* of Fig. 3. Fig. 5 is a perspective view of the slide operated by the cam-wheel to reciprocate the sickle-bar; and Fig. 6 is a central vertical section of the slide-bar for reciprocating the cross-bar, the roller thereon being in section, illustrating the ball-bearings therein.

Referring to the drawings, the numeral 1

indicates the frame of the machine, which in the present instance is composed of longitudinal bars 2 and 3 and an oblique side bar 4, which bars are loosely mounted upon the axle 5 and are capable of rocking thereon, as is usual in machines of this character.

6 indicates a pole or tongue provided a short distance in front of the machine proper with the usual singletrees, secured at its rear end to a plate or casting sleeved upon the axle 5.

Loosely mounted upon the axle between the bars 2 and 3 is a sprocket-wheel 7, provided upon its hub with teeth 8, adapted to engage similar teeth 9 upon a collar 10, keyed to the axle. Said sprocket-wheel is adapted to be shifted into and out of engagement with the collar 10 for the obvious purpose of causing the said sprocket to revolve with the shaft or not, as may be desired. Passing over said sprocket-wheel and over a smaller sprocket-wheel 11, mounted on a transverse shaft 12, journaled in suitable bearings upon the bars 2 and 3, is a sprocket-chain 13, through which medium motion is transmitted from the larger sprocket-wheel to the shaft 12 for the purpose of driving a wheel 14, keyed to the shaft 12.

Provided upon the periphery of the wheel 14 is a cam-race 15, formed in the present instance of two parallel spiral flanges 16, secured to said wheel in such a manner that they can be readily removed and replaced when they become worn. Supported in arms 17, depending from the frame of the machine, is a slideway 18, which is adapted to come beneath the cam-wheel 14, and the numeral 19 indicates a sliding member provided with a lug or projection 20, extending into the cam-race. Said member 19 is provided on its lower side with an arm 21, having a ball 22 on the lower end thereof adapted to fit in a socket 23 at one end of a pitman 24, which has its other end connected by a ball-and-socket connection to the sickle-bar 25, from which construction it will be seen that when the cam-wheel is rotated the sickle-bar will be caused to reciprocate.

Secured to the pole in convenient position to be grasped by the hand of the operator is a lever 25', provided with the usual finger-lever 26 and bar leading therefrom to a sliding bolt adapted to enter one of the notches upon a segment 26', also mounted upon the

pole. Said lever in the present instance is provided with an arm 27, to which is secured a chain 28, having its lower end secured to the horizontal arm of the frame for the ob-
 5 vious purpose of lifting said bar and the cut-
 ter-bar and sickle-bar and securing them in
 any desired elevated position. Secured to
 the forward part of the frame by a pivotal
 connection at its forward end is a yoke 29,
 10 provided with depending arms 30, secured
 to the shoe 31 by ball-and-socket joint. Se-
 cured to the forward portion of the said shoe
 is an upright arm 32, to which is secured one
 end of a spring 33, which has its upper end
 15 connected with the lower end of a chain 33',
 which passes under a small pulley 34 on the
 frame and over a pulley 35 on the under side
 of the pole, from whence said chain extends
 rearwardly and has its end connected through
 20 a spiral spring 33^a with the end of a pendent
 lug 35'.

The numeral 36 indicates a stop or pro-
 jection which is provided upon the chain just
 back of or beyond the pulley 34 for the ob-
 25 vious purpose of providing a different ten-
 sion for the outer end of the finger-bar from
 that exerted upon the shoe. By this ar-
 rangement of the springs 33 33^a and chain
 33' with its stop 36 as the inner end of the
 30 cutting apparatus is lifted the outer end of
 the cutting apparatus remains on the ground,
 thereby throwing additional weight through
 the arm 32 on the chain, and the spring 33^a
 yields until the stop 36 comes in contact with
 35 the pulley 34, which prevents further yield-
 ing, and thereby throws the entire weight and
 strain of the outer end of the cutting appa-
 ratus on the spring 33 and which is of suffi-
 cient strength to cause the outer end of the
 40 cutting apparatus to be lifted with the in-
 ner end.

Suitably supported in proximity to the
 driver's seat is a segment 36', which has piv-
 oted thereto a lever 37, provided with the
 45 usual finger-lever 38, rod 39, and sliding
 spring-actuated bolt adapted to enter one of
 the notches in said segment. Pivotaly se-
 cured to the lower end of said lever is a link
 38', extending toward the forward part of the
 50 machine, where its end is connected with one
 arm of the bell-crank lever 39, the other arm
 of said lever extending between two pins 40
 on the rear end of the yoke, and it will be
 seen that when said lever is operated the
 55 yoke and the cutting apparatus connected
 therewith will be tilted.

Pivotaly secured to the frame at one end
 and similarly secured to the member 41 be-
 low the pole is a rod or link 42 for the obvi-
 60 ous purpose of equalizing the draft when the

team is hitched to the machine, said rod be-
 ing secured at its outer end to said member
 41 in proximity to the singletrees.

I do not desire to be understood as limit-
 ing myself to the precise construction of the 65
 various parts shown in the drawings, as many
 modifications involving mechanical skill will
 suggest themselves and be made without de-
 parting from the spirit of the invention.

Having thus described my invention, what 70
 I claim as new, and desire to secure by Letters
 Patent, is—

1. The combination with the transverse
 shaft in the forward portion of the pivotally-
 supported machine-frame, of a sprocket- 75
 wheel in gear with the sprocket on the main
 axle, a cam-wheel fast on said shaft, parallel,
 spiral flanges removably connected with the
 periphery of said wheel and suitably spaced to
 form a cam-race, and a slide having a ball-and- 80
 socket connection with the sickle-bar pitman
 and provided with an arm extending into said
 cam-race, whereby said sickle-bar is recipro-
 cated when the wheel is rotated, substantially
 as described. 85

2. The combination with the main frame
 of the machine, of a yoke pivotally connected
 thereto, a shoe hinged to said yoke, an up-
 right arm secured to the forward portion of
 the shoe and provided at its upper end with 90
 a spring, a chain or cord secured to the free
 end of said spring and passing under a suit-
 able guide-pulley on the frame, a stop or pro-
 jection on the chain beyond the guide-pulley
 for limiting the downward movement of the 95
 outer end of the cutting apparatus and a
 spring connecting the inner end of said chain
 with an arm rigid on the frame, substantially
 as described.

3. The combination with the main frame 100
 of the machine, of a yoke pivotally connected
 therewith, a shoe hinged to said yoke, an up-
 right arm secured to the forward portion of
 the shoe and provided at its upper end with
 a spring, a cord or chain secured to the free 105
 end of said spring and passing under a suit-
 able guide-pulley on the frame and over a
 second guide-pulley on the pole, a stop or
 projection on said chain intermediate said
 guide-pulleys and a spring connected to the 110
 free end of said chain and secured to a rigid
 arm on the machine-frame, for the purpose
 and substantially as described.

In testimony whereof I have signed this
 specification in the presence of two subscrib- 115
 ing witnesses.

CHAS. C. SWAIN.

Witnesses:

O. E. LITTLEHALE,
 E. L. WILHOIT.