

(No Model.)

J. H. WILLIAMS.
COMBINED COTTON CHOPPER AND SCRAPER.

No. 436,201.

Patented Sept. 9, 1890.

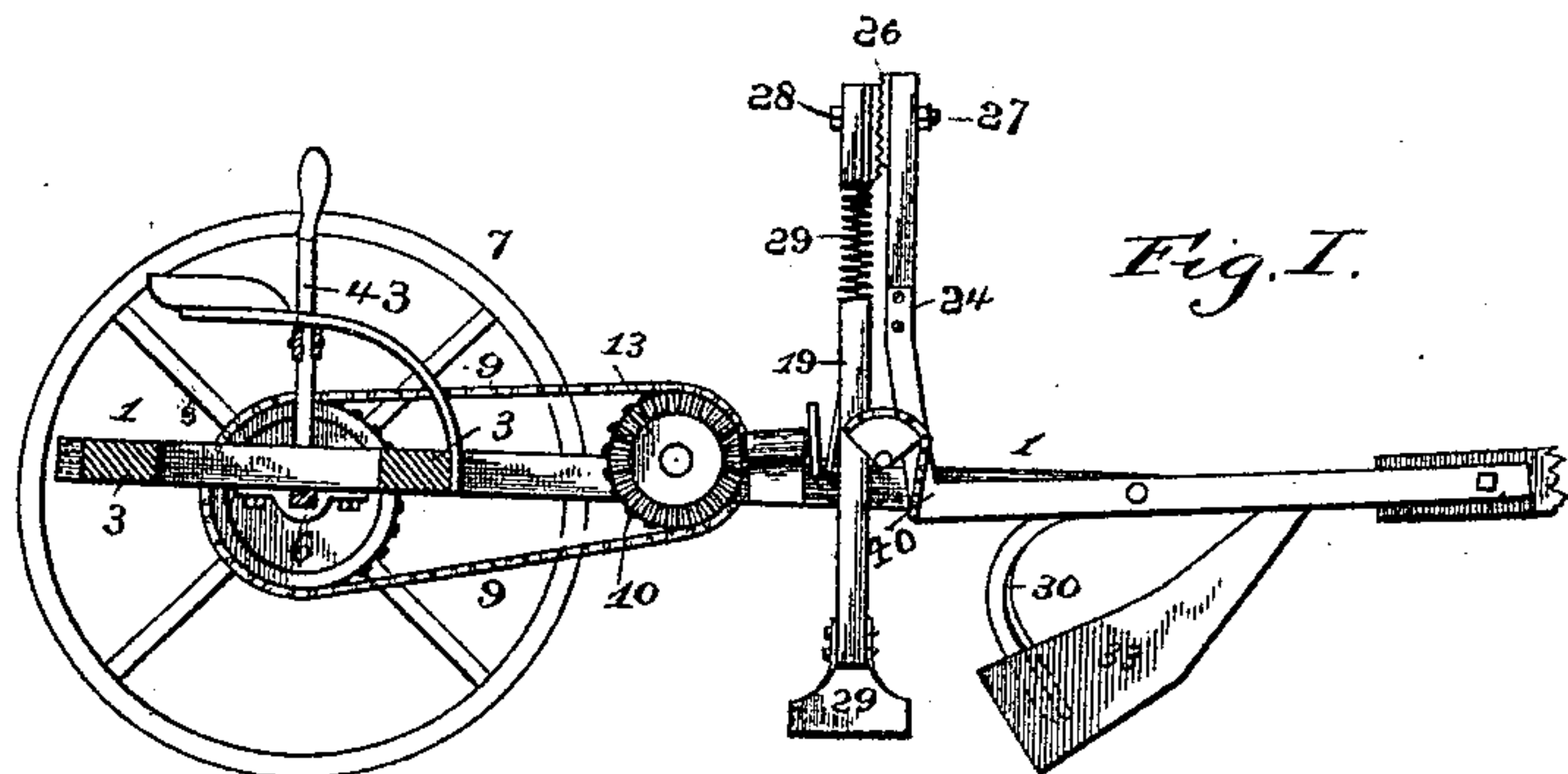


Fig. I.

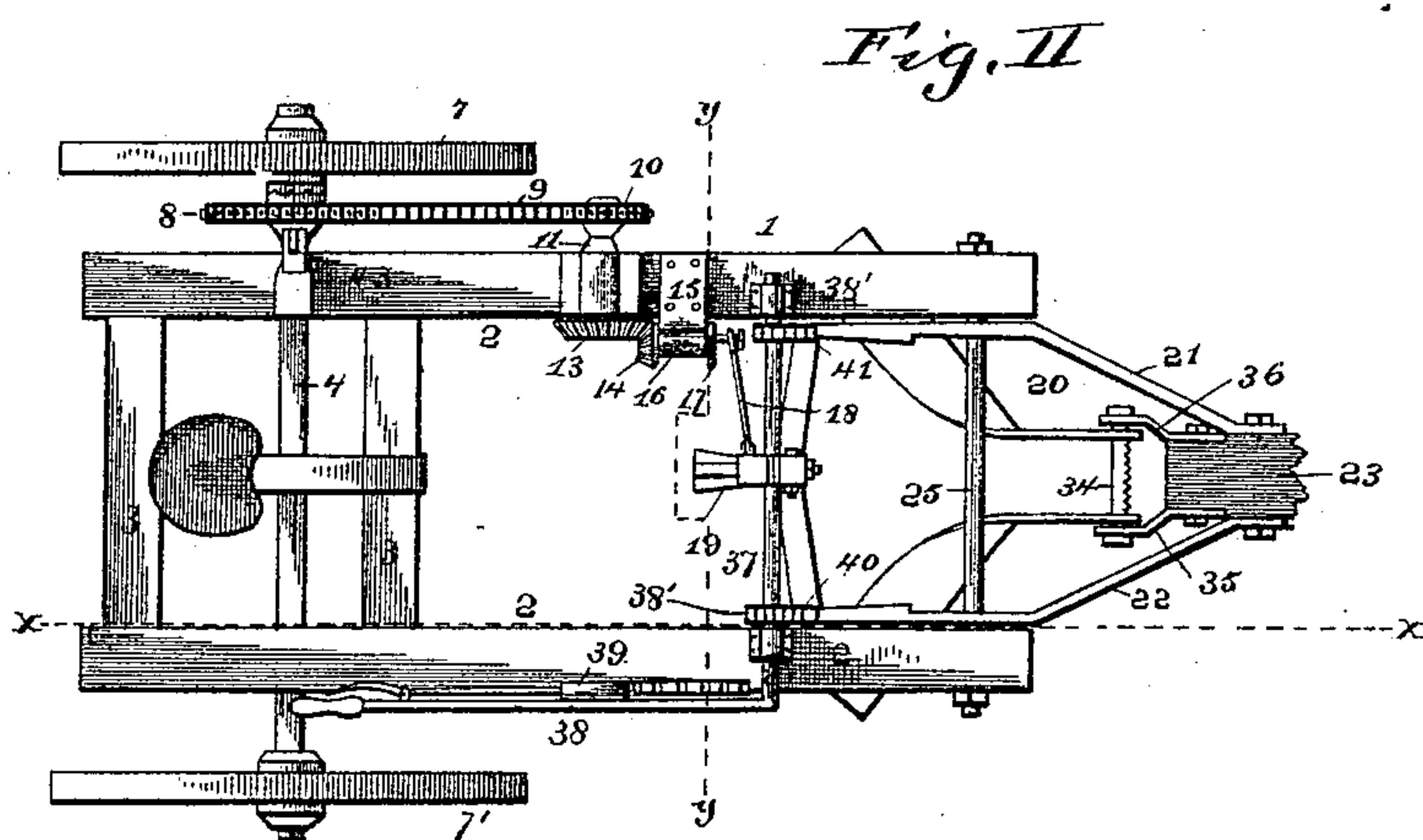


Fig. II.

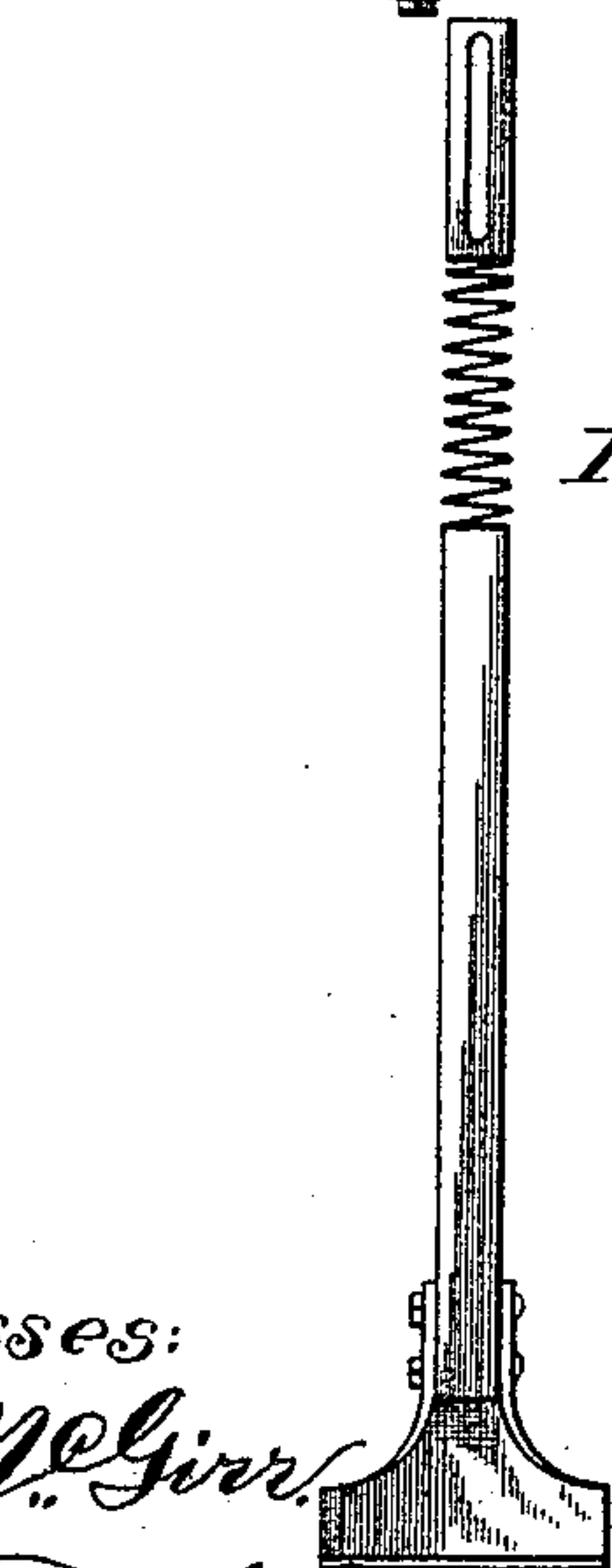


Fig. IV.

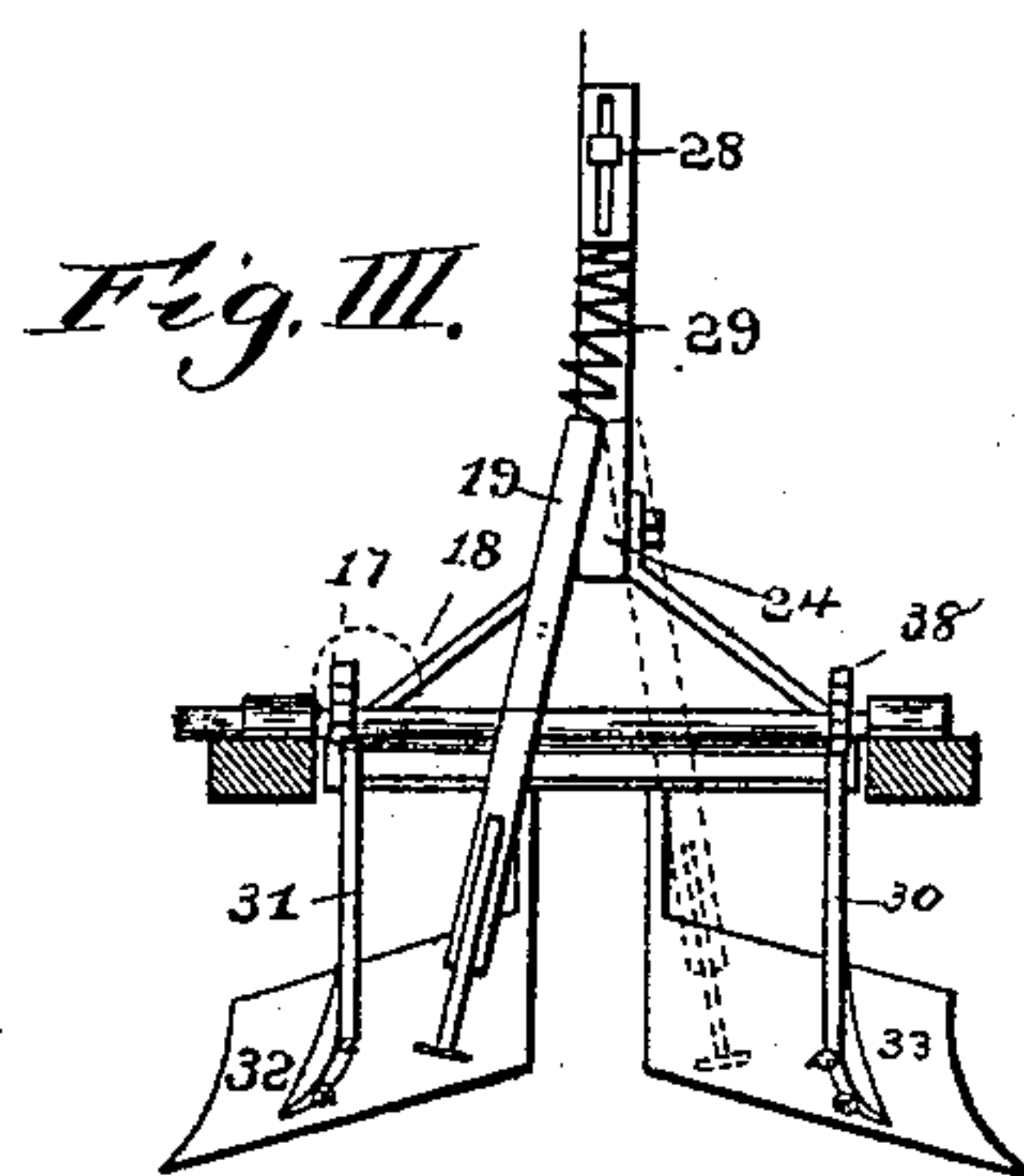


Fig. III.

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UNITED STATES PATENT OFFICE.

JAMES H. WILLIAMS, OF FAYETTEVILLE, ARKANSAS, ASSIGNOR OF ONE-THIRD
TO HORACE E. WILLIAMS, OF SAME PLACE.

COMBINED COTTON CHOPPER AND SCRAPER.

SPECIFICATION forming part of Letters Patent No. 436,201, dated September 9, 1890.

Application filed June 14, 1890. Serial No. 355,481. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WILLIAMS, a citizen of the United States, residing at Fayetteville, in the county of Washington and State of Arkansas, have invented certain new and useful Improvements in a Combined Cotton Chopper and Scraper; 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 improvements in combined cotton choppers and scrapers, and it has for its object to provide a simple and effective machine to facilitate the scraping and chopping out or bunching the cotton-plants.

With these ends in view and such others as pertain to my invention it consists of a main frame, an axle having carrying-wheels, and a sprocket-wheel which is connected by a drive-chain to a smaller sprocket-wheel journaled on a shaft resting on one of the side pieces of the main frame. On the inner end of this shaft is a bevel gear-wheel which meshes with a smaller bevel-wheel on a pinion-shaft having a wrist-pin or crank-disk on its other end, which actuates the pitman connecting the chopper-handle. In the forward end of this main frame is pivotally secured a supplemental frame having depending feet which support the rear ends of the scraper. The rear end of the supplemental frame supports a standard to which the chopper-handle is connected by means of a spring-connection intermediate of its length and by which the chopper-handle is capable of oscillation and reciprocation, as will more fully appear.

My invention further consists of the peculiar construction and arrangement of parts and in the combination of devices, as will be hereinafter more fully described and claimed.

To enable others to more readily understand, I have illustrated the same in the accompanying drawings, in which—

Figure I is a sectional view, partly in elevation, of my machine on the line *x x* of Fig. II. Fig. II is a top plan view. Fig. III is a transverse section, partly in elevation, on the line *y y* of Fig. II. Fig. IV is a detail view of the chopper.

Referring to the drawings, in which like figures of reference denote corresponding parts in all the figures, 1 designates the main frame of my improved machine, which is composed of the longitudinal side pieces 2 and the cross-pieces 3, bolted or otherwise firmly fastened together. This frame is supported by an axle 4, which is journaled near the rear end thereof by means of bearings 6 or other fastening devices, said axle having the carrying-wheels 7 7' at its ends.

On one of the cross-pieces 3 of the frame is placed a seat for the driver, which may be of any preferred style.

Between the carrying-wheel 7 and one of the side pieces of the main frame 1, I provide a sprocket-wheel 8 on the axle 4, which is connected by means of a drive-chain 9 to a smaller sprocket-wheel 10 on a shaft 11, journaled on a bearing on the side piece 2 of the main frame. The shaft 10 is provided on its other or inner end with a bevel gear-wheel 13, which meshes with a smaller corresponding wheel 14, rigid with the shaft 16, parallel with one of the longitudinal sides of the main frame and supported by an arm or bearing 15, secured to the frame. The other end of the shaft 16 carries a wrist-pin or crank-disk 17, to which the pitman 18 is attached. This pitman is pivotally connected to the chopper-handle 19 at a point intermediate of its length, and when the wrist-pin or crank-disk 17 is revolved by motion transmitted from the axle through the gearing and shafting the chopper-handle is caused to reciprocate back and forth and chop out the plants, thus leaving them in bunches or hills.

In the forward part of my machine I provide a supplemental frame 20, preferably made of metal and composed of the two pieces 21 22, arranged on opposite sides of and within the sides of the frame 1, said pieces 21 22 having their forward ends rigidly secured by bolts to the tongue 23 and the rear ends bent inward toward each other and then bent upward to form arms, to which is secured the upright standard 24.

In the main frame 1, near its forward end, is secured a rod or bar 25, on which the side pieces 21 22 of the supplemental frame are pivoted at points intermediate of their length

to enable said frame to be raised or lowered, as will presently appear.

On the opposing faces of the handle of the chopper 19 and the standard 24, at their upper
5 ends, I provide corrugated plates 26, which interlock to firmly secure the chopper-handle to the standard, and the plates are secured together by adjusting the nut 27 on the bolt 28, said bolt being fitted in suitable longitudinal slots in the ends of the chopper-handle and the standard, so as to raise or lower
10 the chopper-handle.

The chopper-handle is made in two pieces, which are connected together by means of a
15 coiled spring 29, which normally holds the chopper in proper position and permits it to have a free movement when operated by the pitman, and also allows it to oscillate or yield when it strikes an obstruction, which is especially advantageous when the ground is undulating, as the spring allows the chopper to adapt itself to the unevenness of the ground and to return it to its proper position.

On the end of the chopper-handle is secured the chopper-blade 29, which preferably
25 consists of a plate of steel or other suitable material having its edges sharpened and to which the handle 19 is secured in any suitable manner. By having all the edges of the chopper sharpened it will cut a plant when it swings in one direction, and also cut the same where it swings back again.

30 31 are two depending feet rigidly attached to the supplemental frame and to which feet the scrapers 32 33 are secured. These scrapers 32 33 are made of steel strips and bent or flared to one side for a part of their length, the lower edge of said bent parts being inclined outward and sharpened in a
40 manner similar to the mold-board of a plow. The forward parallel ends of these scrapers are bent upward and are hung on a notched bar 34, pivoted to two parallel supporting-arms 35 36, extending rearwardly from the
45 tongue 23 and secured rigidly thereto, whereby the scrapers can be raised or lowered with the frame 20 and they can be adjusted laterally with relation to each other, and the lower edge being sharp it cuts along the row and
50 also shields the plants.

Suitably secured to the main frame 1, between the chopper and standard 24, I arrange a rock-shaft 37, which extends across the main frame and is journaled on the side
55 pieces 2, said shaft being provided with a lever 38 and the ordinary detent 39, that engages a fixed segment. Near the sides of the main frame on the shaft 37 are two segments 38', rigidly secured on the shaft 37. To these
60 segments are secured two short chains 40 41, which are attached to the supplemental frame 20 at points in rear of the pivot thereof, and they are adapted to raise or lower the chopping and scraping devices when the lever 38 is lowered or elevated. When going from one field
65 to another at any time, when it is not desired that the machine shall chop or scrape, the

chopping and scraping devices can be lifted entirely free from contact with the ground and plants simply by depressing the lever to
70 lift the frame.

On the axle 4, between the carrying-wheel 7' and sprocket-wheel 8, I provide an ordinary clutch 42, operated by the lever 43, for throwing the apparatus in and out of gear. 75

In operation the machine is arranged to straddle a row of cotton-plants, and the chopper is set in motion by throwing the clutch 42 in gear with the axle. The operator adjusts the scraping and chopping devices by means
80 of the bolt 28 and lever 38. The scrapers operate to scrape the dirt from around the plants and cut off the grass, &c., and the chopper, as it moves forward and backward at each revolution of the wrist-pin or crank-disk, 85 chops out the plants, leaving the desired space between the hills.

I am aware that changes in the form and proportion of parts can be made without departing from the spirit or sacrificing the advantages of my invention, and I would therefore have it understood that I reserve the right to make such modifications as fairly fall within the scope of my invention. 90

Having thus fully described my invention, 95 what I claim as new, and desire to secure by Letters Patent, is—

1. In a combined cotton chopper and scraper, the combination, with the main frame and the axle, of a supplemental frame supported
100 by the forward end of said main frame, the reciprocating chopper having a yielding flexible connection with the main frame, gearing intermediate of the axle of the main frame and the chopper to reciprocate the latter, and
105 the diverging scrapers carried by the supplemental frame in advance of the chopper, substantially as described, for the purpose set forth.

2. In a combined cotton chopper and scraper, 110 the combination of the main frame, the carrying-wheels, the supplemental frame pivotally supported in the forward end of the main frame and having the standard which carries the chopper, and suitable gearing for
115 operating said chopper, substantially as described.

3. In a combined cotton chopper and scraper, a chopper consisting of a divided rod having its parts connected by a spring, substantially
120 as described.

4. In a combined cotton chopper and scraper, a chopper consisting of a blade, and a divided handle having its parts connected by a spiral spring, one of which parts is connected to the
125 standard on the supplemental frame by a bolt and clamps, substantially as described.

5. In a cotton chopper and scraper, the combination of the main frame, the supplemental frame pivotally connected to the main frame
130 and supporting a standard, the divided handle having one of its parts clamped rigidly to the standard, the depending feet carried by the supplementary frame, the scrapers at-

tached to said feet, and suitable gearing for operating the chopper, substantially as described.

5 6. In a combined cotton chopper and scraper, the bent scrapers rigidly secured to the supplemental frame and having the forward ends pivoted on the tongue of the machine and adapted to be raised or lowered by a suitable lever, substantially as described.

10 7. In a combined cotton chopper and scraper, the combination of a main frame, a supplemental frame pivotally supported on the main frame, the depending feet carried by the supplemental frame, a tongue, the scrapers 15 rigidly secured to the feet and pivotally connected to the tongue, a rock-shaft having connections with the supplemental frame and provided with a lever, a chopper carried by the supplemental frame, and mechanism for 20 operating the chopper, substantially as described.

8. The combination of a main frame, an up-

right standard supported thereon, a chopper having a yielding spring connection with said standard and free to reciprocate and oscillate 25 thereon, as described, and gearing operated by the axle of the machine and having connection with the chopper for imparting reciprocating motion to the chopper, substantially as described.

30 9. The combination of a main frame, a standard supported thereby, a divided chopper-handle having its parts connected by a spiral spring, the interlocking slotted clamping-plates bolted to the chopper-handle and the 35 standard, and mechanism for reciprocating the chopper, substantially as described.

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

JAMES H. WILLIAMS.

Witnesses:

BEN CORNELIUS,
MATIE WILLIAMS.