

**No. 688.937.**

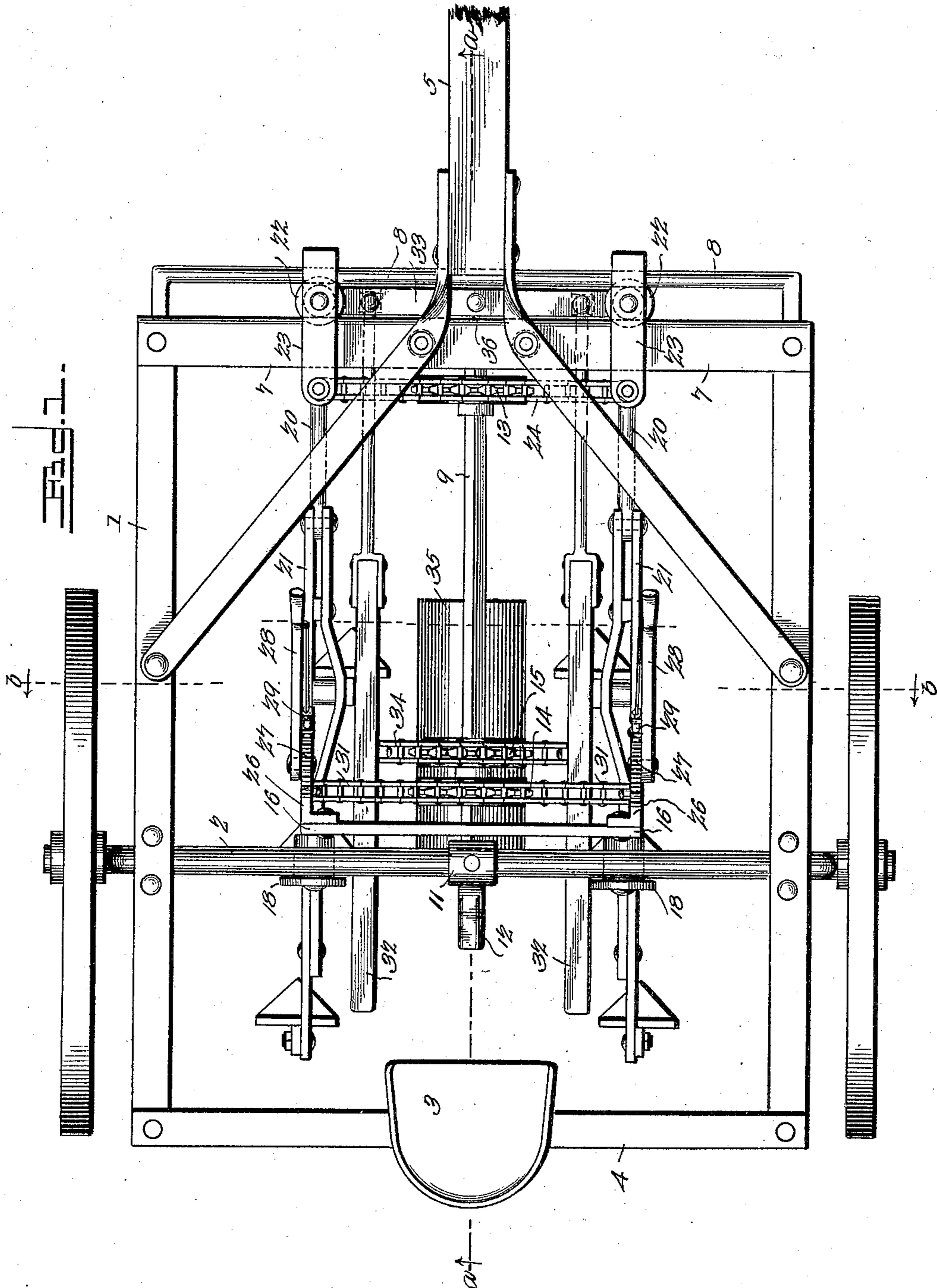
Patented Dec. 17, 1901.

**J. M. DONALDSON.**  
**SULKY CULTIVATOR.**

(Application filed Mar. 30, 1901.)

(No Model.)

**3 Sheets—Sheet 1.**



Witnesses

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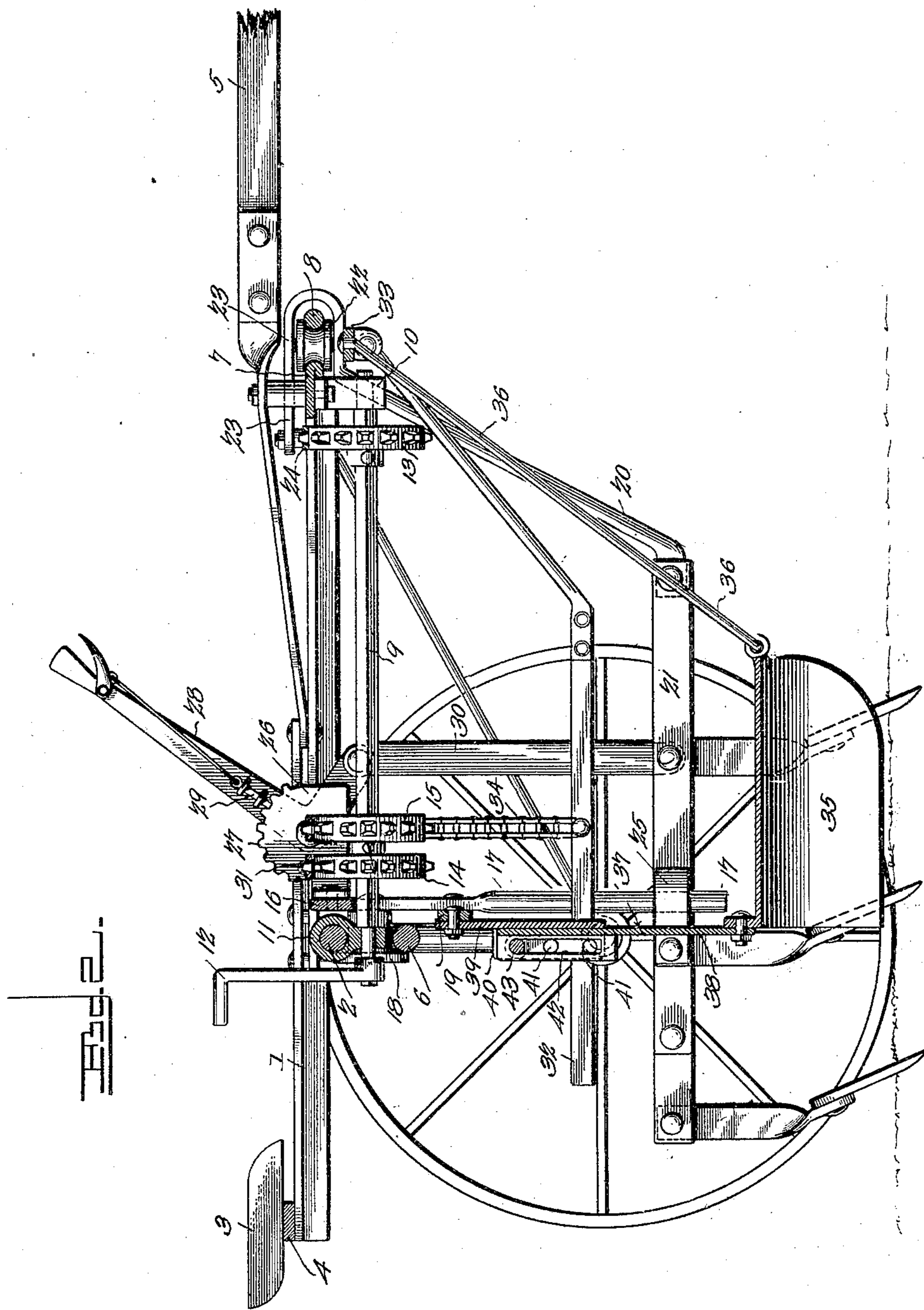
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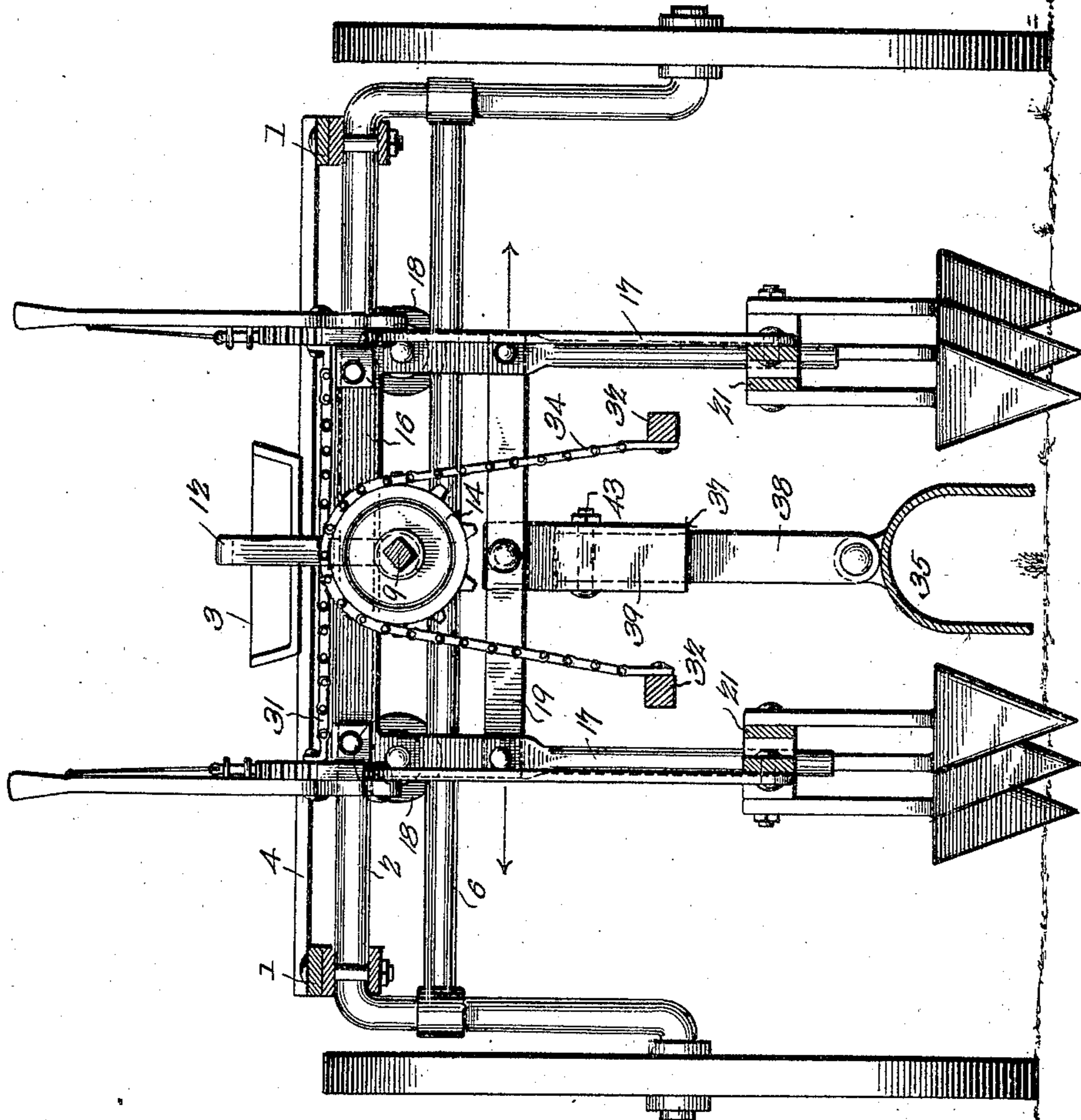
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# UNITED STATES PATENT OFFICE.

JAMES M. DONALDSON, OF MARENGO, IOWA.

## SULKY-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 688,937, dated December 17, 1901.

Application filed March 30, 1901. Serial No. 53,682. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. DONALDSON, a citizen of the United States, residing at Marengo, in the county of Iowa and State of Iowa, have invented a new and useful Sulky-Cultivator, of which the following is a specification.

My invention is an improved sulky-cultivator; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

The object of my invention is to effect improvements whereby the cultivating-plows are at all times retained parallel with each other and are adapted to be shifted longitudinally under the frame of the machine, whereby the plows may be readily guided under all conditions to avoid plowing up the growing plants.

A further object of my invention is to provide improved means for raising and lowering the plows.

A further object of my invention is to effect improvements in the construction of the fender which operates between the cultivating-plows and in the means whereby the fender may be vertically adjusted.

In the drawings, Figure 1 is a top plan view of a sulky-cultivator constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view of the same, taken on a plane indicated by the line *a a* of Fig. 1. Fig. 3 is a vertical transverse sectional view of the same, taken on a plane indicated by the line *b b* of Fig. 1.

The frame 1 of the sulky is here shown as rectangular, but may be of any suitable form, and is secured on the arched axle 2. The driver's seat 3 is supported on a cross-bar 4 at the rear end of the frame, and the tongue 5 is attached to the front end of the frame, either as here shown or by any other suitable means. A traveler-bar 6 has its ends attached to the vertical portions of the arched axle, and said traveler-bar is disposed at a suitable distance below the upper central portion of the axle. At the front end of the frame is a traveler-bar 7. A guard 8 is disposed in advance of said traveler-bar 7. A longitudinally-disposed shaft 9 at the center of the frame has its front end journaled in a suitable bearing 10, which in the form of my in-

vention here shown is secured to the under side of the traveler-bar 7, and the rear end of said shaft is journaled in a bearing 11, which is here shown as attached to the center of the arched axle. At the rear end of said shaft is a crank 12, by means of which it may be manually rotated. A sprocket-wheel 13 is fast on said shaft, near the front end thereof. A similar sprocket-wheel 14 is near the rear end of said shaft, and on the latter is a sprocket-wheel 15, disposed at a slight distance in advance of the sprocket-wheel 14. An arched frame 16, which is provided with depending vertical standards 17, is also provided with supporting-rollers 18, which operate on the traveler-bar 6. Thereby said arched frame is adapted to be moved transversely under the arched axle. Said arched frame has a cross-bar 19.

The draft-bars 20, to which are pivotally attached the front ends of the beams 21 of the gangs of cultivating-plows, are provided near their upper front ends with rollers 22, which operate on the traveler-bar 7 at the front end of the sulky-frame and in rear of the guard 8. In the form of my invention here shown the upper portions of said draft-bars are extended rearward over the said rollers 22, as at 23, and a sprocket-chain 24 is attached to the said portions 23 of said draft-bars. Said sprocket-chain engages the sprocket-wheel 13. The beams 21 of the gangs of cultivator-plows are provided near their rear ends with guide loops or clips 25, which slide vertically on the standards 17 or arched frame 16. Thereby the rear ends of said beams 21 may be raised and lowered. The arched frame 16 is provided at its upper side with forward-extending brackets 26, which are formed with rack-segments 27 and to which are fulcrumed bell-crank hand-levers 28. The latter are provided with detaining-dogs 29 of the usual construction, which in coaction with the segments 27 secure said hand-levers in any desired position. Links 30 connect the bell-crank levers 28 to the beams 21. Said levers, as will be understood, serve to raise and lower the rear ends of the beams 21 and to lock the same at any desired vertical adjustment to cause the cultivator-plows to operate at the required depth in the soil. To the brackets 26 are attached the ends of a sprocket-chain 31. Said

sprocket-chain engages the sprocket-wheels 14. From the foregoing it will be understood that by rotating the shaft 9, which may be done manually by the crank 12, the draft-bars 20, which carry the front ends of beams 21, and the arched frame 16, to which the rear portions of said beams are connected, may be shifted laterally either to the center of the sulky-frame or to either side thereof, and hence the gangs of cultivator-plows, while being maintained at all times parallel to each other and to the line of draft, may be shifted laterally in order to guide them and to avoid plowing under any of the growing plants which are being cultivated. The said draft-bars and said arched frame constitute laterally-shiftable supports for the front and rear ends of the plow-beams, which supports carry the plows with them when laterally shifted. It will be understood that when the gangs of plows are shifted laterally to one side of the cultivator-frame side draft is created, which may be availed of by the driver in directing the machine.

In order to enable the gangs of cultivator-plows to be shifted laterally as may be required by the feet of the driver to leave his hands free for the management of the team, I employ foot-levers 32, the front ends of which are pivotally connected to a cross-bar 33, which connects the front ends of draft-bars 20. To the said foot-levers are attached the ends of a sprocket-chain 34, which sprocket-chain engages the sprocket-wheel 15.

A fender 35, which is preferably of the form here shown and which is adapted to run astride of the row of growing plants between the gangs of cultivator-plows, has its front end connected to the cross-bar 33 by a draft-rod 36. The rear end of said fender is connected to the cross-bar 19 of arched frame 16 by a link 37. The latter is composed of a lower section 38 and an upper section 39, which are longitudinally adjustable. The upper section 39 is provided with rearward-extending side flanges 40, which embrace the sides of lower section 38 and are provided with adjusting-openings 41. The lower section 38 has a vertical slot 42 in that portion thereof which is between said side flanges 40. A pin or bolt 43, which connects said sections 38 39 together, is disposed in appropriate adjusting-openings 41 and operates in said slot 42. By this means the fender may be vertically adjusted as may be required.

Having thus described my invention, I claim—

1. In a cultivator of the class described, the combination of an arched axle, a transversely-disposed traveler-bar supported by said arched axle, a draft-frame attached to said arched axle, draft-bars adapted to be shifted laterally on said draft-frame, said draft-bars being connected together, plow-beams flexi-

bly connected to said draft-bars, a laterally-shiftable frame supported on said traveler-bar and having vertical guides for the rear portions of the said plow-beams, means to shift said draft-bars and laterally-shiftable frame, and thereby shift said plow-beams laterally, and means to raise and lower the rear ends of said plow-beams, substantially as described.

2. The combination of a sulky-frame, laterally-shiftable supports carried thereby and disposed one in advance of the other, plow-beams flexibly attached at their front ends to the front shiftable support, and connected to and adapted to move vertically with relation to the rear shiftable support, means to shift said supports laterally and thereby laterally shift the plows, a fender disposed between said plows, supports for said fender connected to said shiftable supports, and means to raise and lower said fender, substantially as described.

3. In a cultivator, of the class described, the combination of a sulky-frame, draft-bars adapted to be shifted laterally thereon, said draft-bars being connected to said sulky-frame, plow-beams having their front ends flexibly connected to said draft-bars, a shiftable frame connected to the sulky-frame and adapted to be shifted laterally thereon, said shiftable frame having vertical guide-standards and said plow-beams being connected to said vertical guide-standards and adapted to be raised and lowered thereon, means to simultaneously shift said draft-bars and said shiftable frame and thereby shift said plow-beams laterally, and means carried by said shiftable frame to raise and lower the rear ends of said plow-beams, substantially as described.

4. In a cultivator of the class described, the combination of a sulky-frame, draft-bars having their front ends connected thereto and adapted to be shifted laterally thereon, plow-beams connected to said draft-bars, a shiftable frame forming vertical guides for said plow-beams, connected to and adapted to be shifted laterally on said sulky-frame, a longitudinally-disposed shaft in fixed bearings with which said sulky-frame is provided, sprocket-wheels on said shaft, means whereby the latter may be rotated, and sprocket-chains with which said draft-bars and said shiftable frame are provided, said sprocket-chains being engaged by said sprocket-wheels, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES M. DONALDSON.

Witnesses:

JOSEPH BROWN,  
BENTLY B. BROWN.