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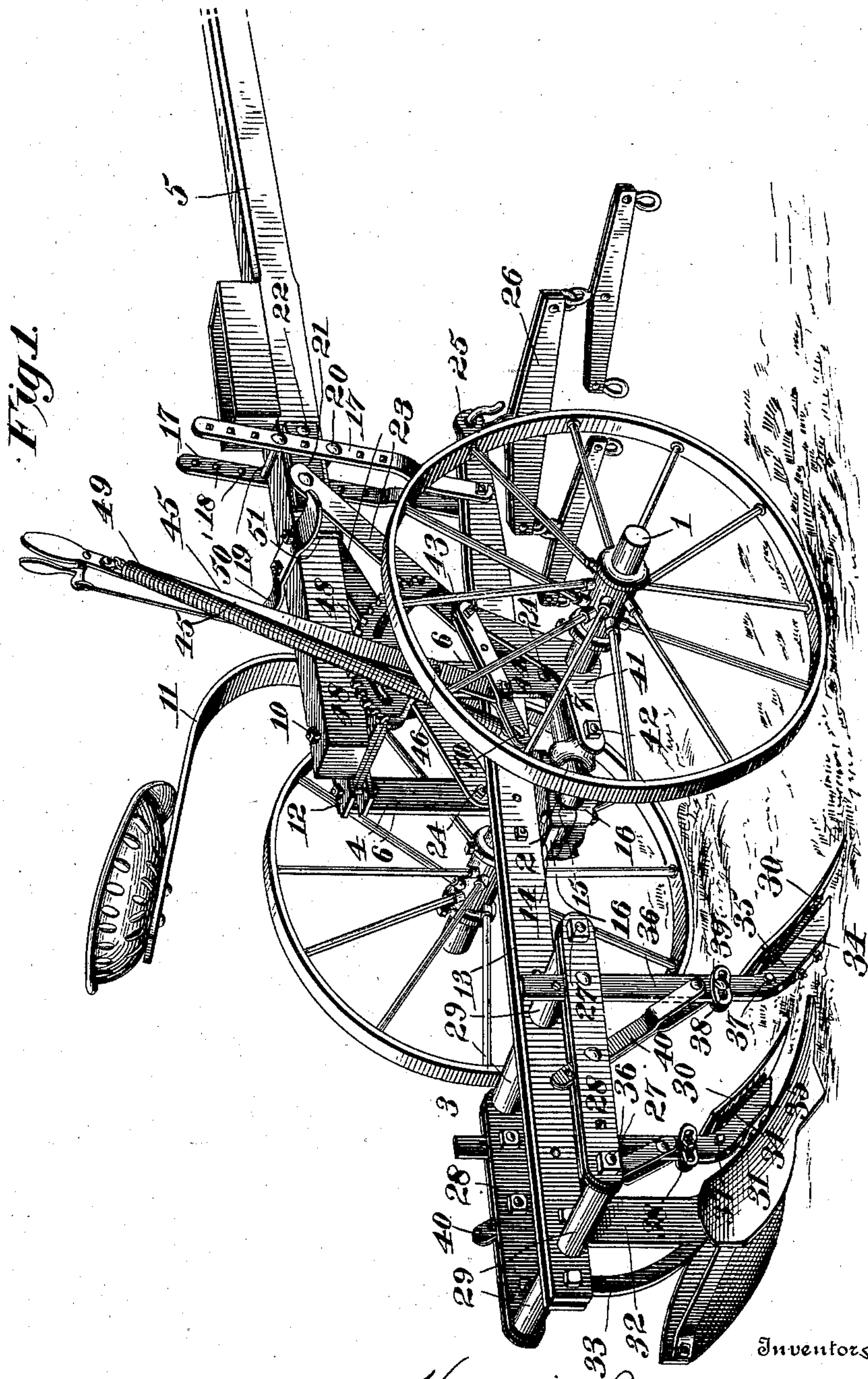
Patented Nov. 5, 1901.

H. DUSTMANN & W. H. HOLSCLOW.
CULTIVATOR.

(Application filed Jan. 31, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
Elmer Seavery
Fenton Stelt,

Inventors
Herman W. Dustmann
Wilford H. Holsclaw.
334 Max F. Smith & Lawrence
Attorneys

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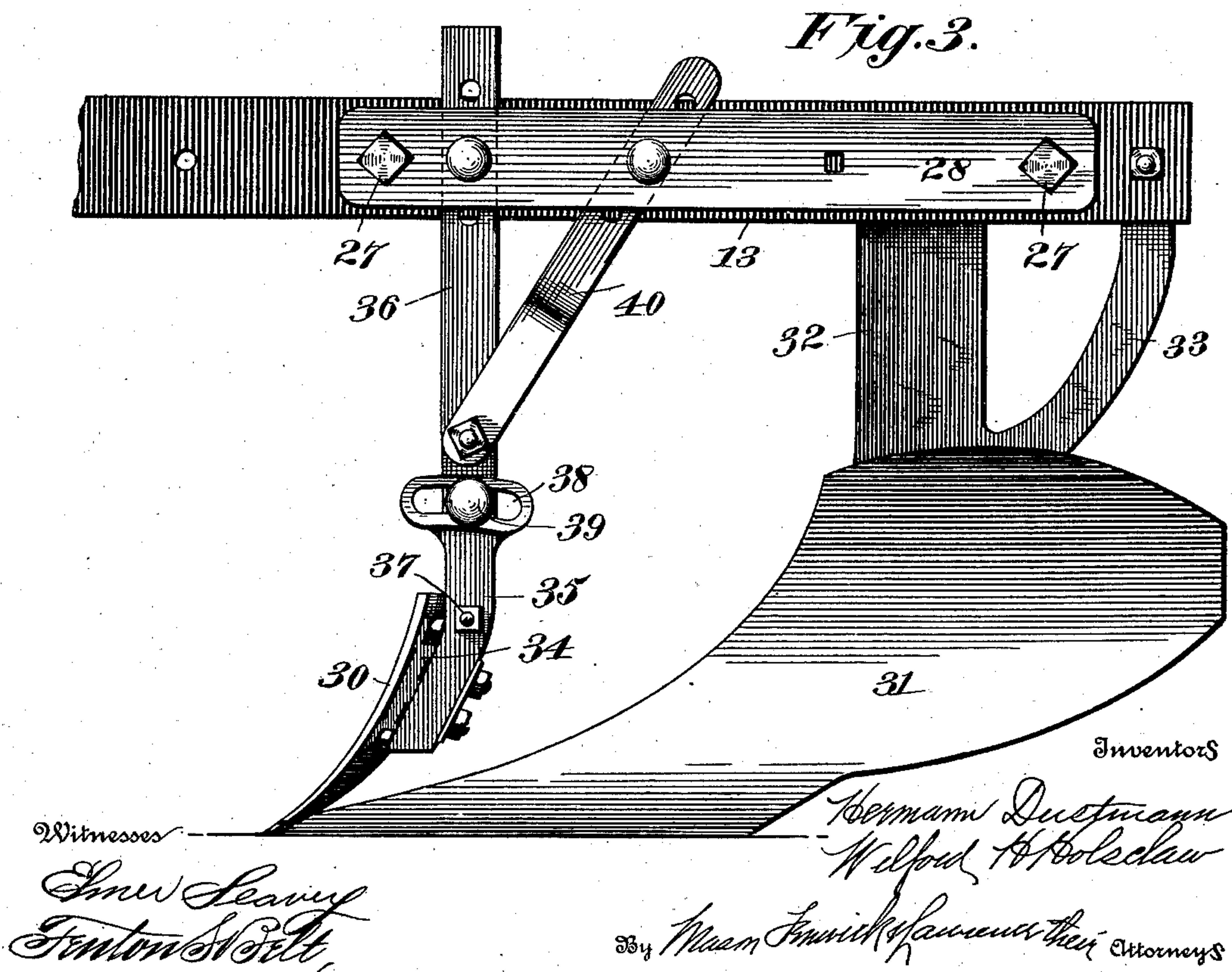
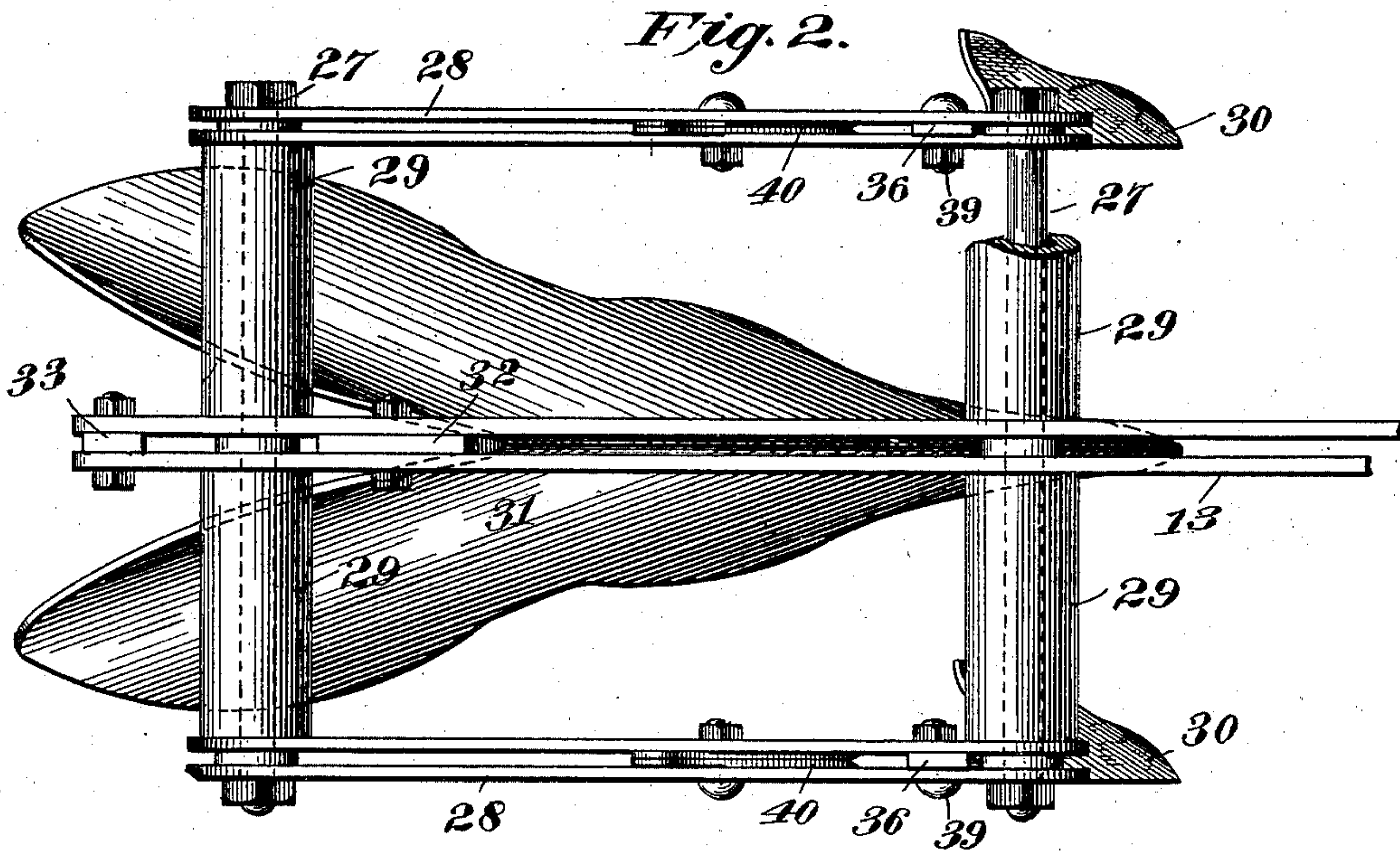
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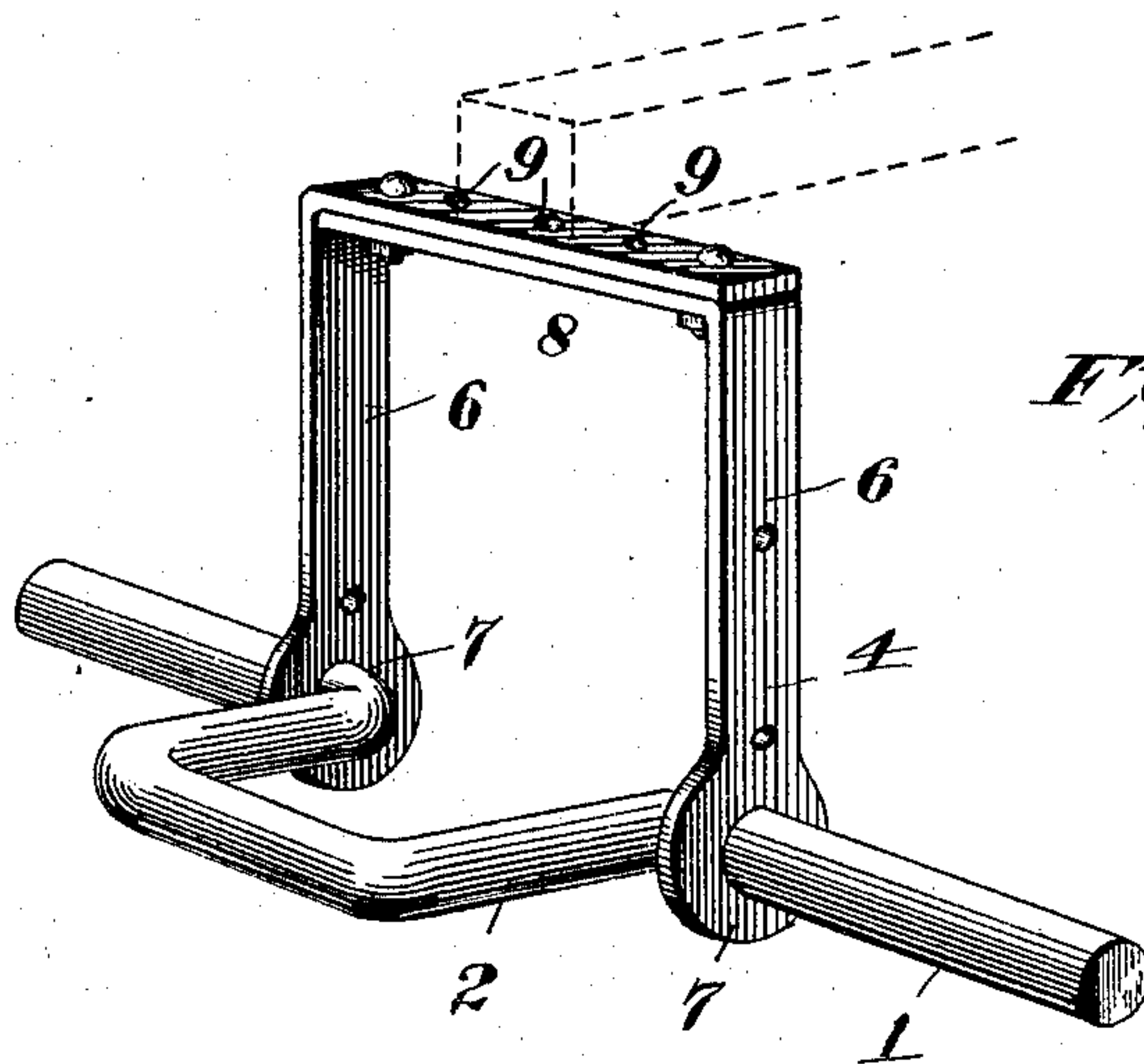
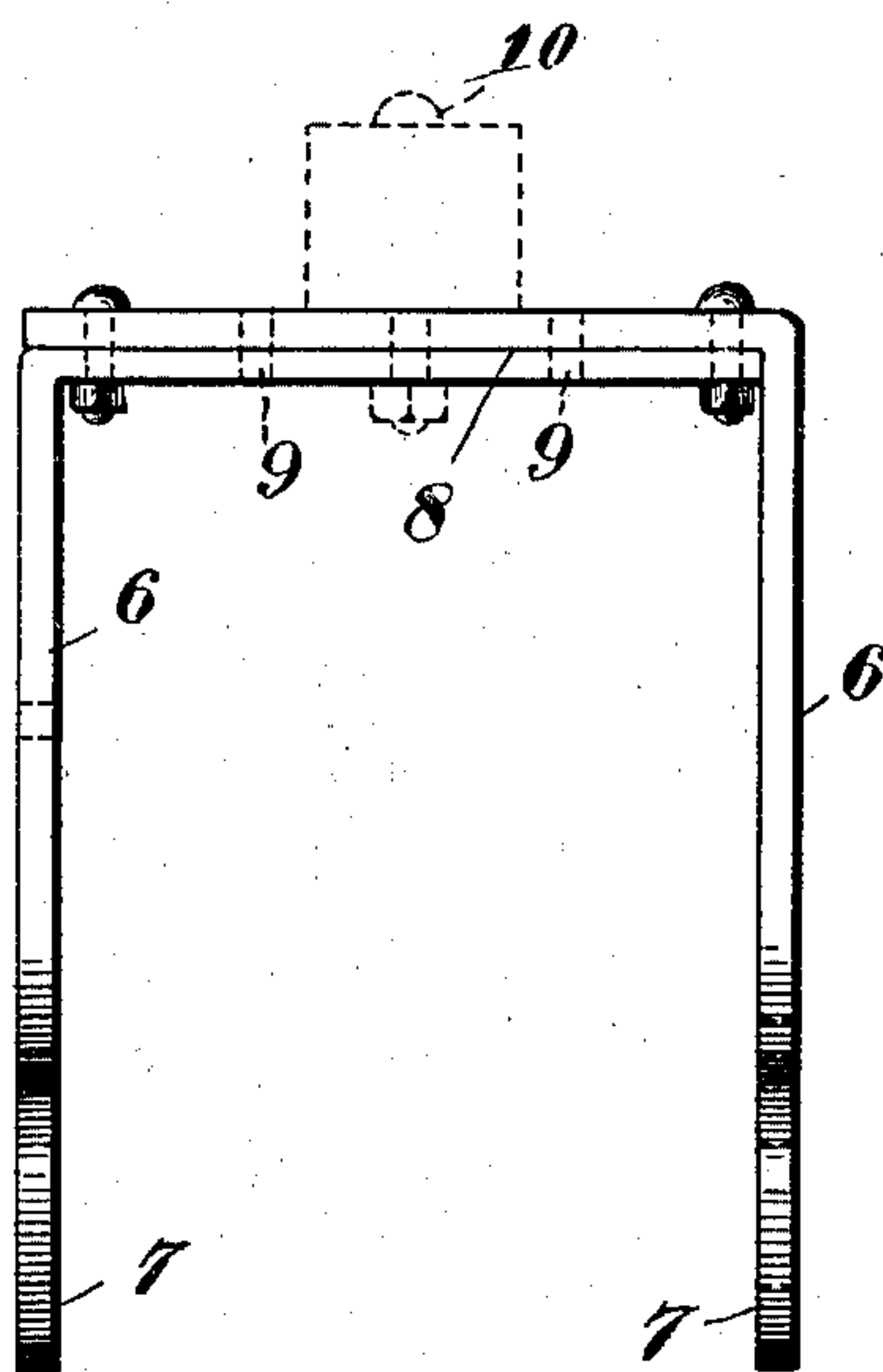


Fig. 4.

Fig. 5.



Witnesses

Emory Leary
Gordon St. Bell

Inventors

Hermann Dustmann
Wilford H. Holsclaw

By *Thos. Smuck* *Lawrence* their Attorneys

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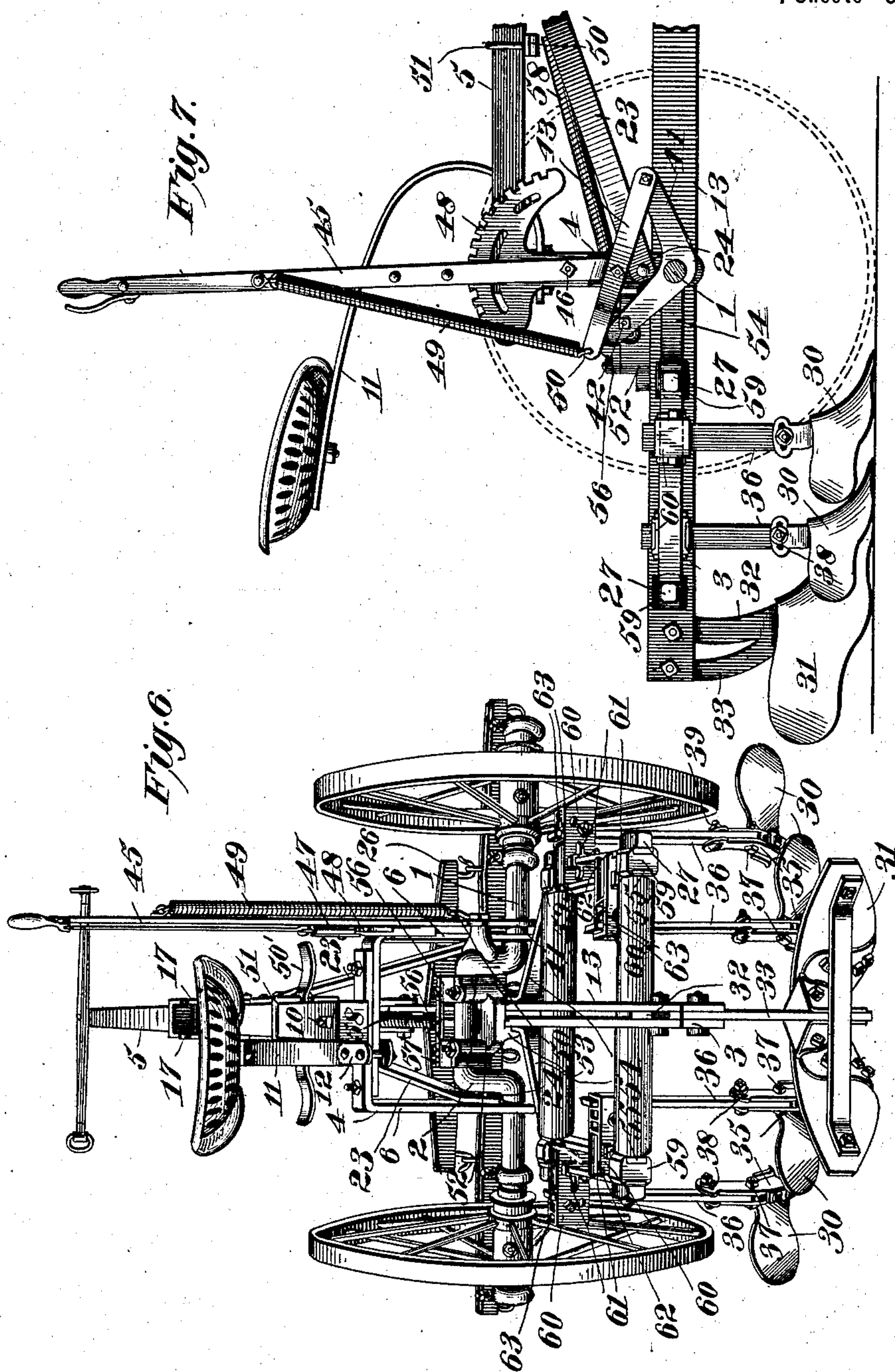
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4 Sheets—Sheet 4.



Witnesses
Emmet Leaver
Anton S. Felt,

Inventors
Hermann Dustmann
Wilford H. Holsclaw.
By *Wm. F. Fawcett* Attorney

UNITED STATES PATENT OFFICE.

HERMAN DUSTMANN, OF LAWRENCE, LOUISIANA, AND WILFORD H. HOLSCREW, OF LOUISVILLE, KENTUCKY, ASSIGNORS TO B. F. AVERY & SONS, OF LOUISVILLE, KENTUCKY, A CORPORATION.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 686,214, dated November 5, 1901.

Application filed January 31, 1901. Serial No. 45,482. (No model.)

To all whom it may concern:

Be it known that we, HERMAN DUSTMANN, residing at Lawrence, in the parish of Plaquemines and State of Louisiana, and WILFORD H. HOLSCREW, residing at Louisville, in the county of Jefferson and State of Kentucky, citizens of the United States, have invented certain new and useful Improvements in Cultivators; and we 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.

This invention relates to improvements in cultivators, and has for its object the production of a cultivator in which the frame carrying the cultivator-blades or burster-plow may be adjusted easily by the operator of the cultivator from his position upon the seat of the machine and one also in which the standards supporting the blades or plows of the device may be readily adjusted to different depths or different vertical positions with relation to the remainder of the machine.

It consists in a cultivator having suitable supporting-wheels, an axle, an arch mounted thereon and braced with respect to the pole, a frame pivoted to the said axle and movable with relation to the pole and arch, and means for adjusting the said frame, so as to raise or depress the rear end with respect to the ground being operated upon.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of the present invention, Figure 1 is a perspective view of a cultivator, illustrating the features of the invention. Fig. 2 is a top plan view of the rear end of the cultivator-frame. Fig. 3 is a side elevation of the same. Fig. 4 is a perspective view illustrating the manner of constructing the arch, which rests upon the axle of the machine. Fig. 5 is a rear elevation of the same. Fig. 6 is a perspective view of the cultivator provided with a different means of securing the standards to the cultivator-frame. Fig. 7 is a side ele-

vation of a portion of the same, the wheels being removed to better reveal the parts.

In embodying the invention in practical form the axle 1 is employed, which is provided with a central offset or crank-shaft portion, as 2, upon which the cultivator-frame 3 is pivotally supported. Above the crank portion 2 of the axle 1 is arranged an arch 4, adapted to support the tongue 5 of the machine. The arch 4 is made in a very simple manner and in a way to be easily applied upon the axle, comprising two separable parts 6 6, each of which is formed of a vertical portion having an enlarged lower end 7, provided with an aperture which may be slipped upon the axle 1. The upper ends of each of the pieces 6 6 are bent inwardly and made to lap upon each other, as seen at 8 in Fig. 4. These lapping portions are provided with a series of bolt-holes 9 9, through which rivets or bolts may be passed for holding the parts together. By providing these pieces with a series of bolt-holes the width of the arch may be adjusted, if desired. These bolt-holes also provide means for securing the rear end of the pole 5 in position, a bolt or rivet 10 securing the said pole to the said arch. The seat-standard 11 is also clamped to the said arch, as at 12, so as to hold the seat in proper position with relation to the machine.

The frame 3 of the cultivator is made up of a central beam 13, which is formed of two bars applied parallel to each other and spaced by suitable washers, so as to be adapted to receive between them the standards of cultivators or burster-plows, as may be desired. This beam 13 is secured to a casting 14, which is provided with bearings 15, adapted to engage the crank 2 of the axle 1. The said crank is held in position in the said bearings by means of bearing-plates 16 16, which are bolted to the casting 14, and thereby hold the said crank pivotally in engagement with the said bearings. It will thus be seen that by rotating the axle 1 the crank 2 will operate to lift or depress the cultivator-frame 3. The forward end of the beam 13 is extended some little distance beneath the rear end of the pole 5 and is connected with the said pole by

means of a yoke formed of side pieces 17 17, which are pivotally secured at their lower ends upon each side of the said beam 13. Each of the pieces 17 17 is provided with a series of apertures, as 18, through which bolts may be passed. One bolt, as 19, is preferably passed through a pair of openings, so as to rest upon the top of the pole 5, while a second bolt, as 20, is passed through a pair of openings, so as to engage the under side of the said pole. The yoke 17 affords a means for altering the relative positions of the beam 13 and the pole 5. Side wearing-plates 21 are preferably secured to the pole 5 to relieve the pole of undue wear at this point. A bolt 22 is also passed through the pole 5 in advance of the pieces 17 17, so that the head of the said bolt on one side and the nut on the other side of the pole 5 will limit the forward movement of the yoke. The required movement of the yoke is limited by the upper ends of the diagonal brace-bars 23, which are connected with the pole 5 by a suitable rivet or bolt at their upper ends and at their lower ends are secured, as at 24 24, to the arch 4. These brace-bars 23 therefore not only serve to limit the movement of the yoke, but also serve to brace the lower ends of the arch 4 with respect to the pole 5. Between the forward ends of the plates forming the beam 13 is secured an eyepiece, as 25, forming a clevis, into which the hook of a doubletree 26 may be secured. By this means the team for drawing the cultivator will be attached directly to the beam 13.

The construction of the frame forms an important feature of the invention. To the rear ends of the beam 13, which forms the central beam of the frame, are secured transversely-arranged bolts, as 27 27, which pass through the said beam and extend a suitable distance upon each side thereof. At their outer ends they engage and support side beams 28 28, which beams are spaced from the central beam by means of sections of gas-pipe or other tubes, as 29 29. This forms a simple and yet inexpensive means for properly spacing the side beams with respect to the central beam. The side beams 28 are preferably formed of two bars spaced apart by means of washers, so that the standards of the cultivator-blades may be bolted between the said blades, and thereby firmly secured to the beams.

As seen in Fig. 1 of the drawings, the cultivating means preferably comprises cultivating-blades, as 30, and a burster-plow, as 31. The burster-plow may be of any suitable construction and is provided with a standard 32, which is bolted at its upper end between the bars forming the beam 13. This standard is also provided with a brace-bar, as 33, which is secured between the bars of the beam 13 in the rear of the standard, so as to thoroughly brace the plow in position. The blades 30 are preferably of usual construction and are each secured to a casting 34, which is attached to a pivotal shoe or piece 35,

which is bifurcated at its upper end. The lower end of the blade-standard 36 preferably extends into the bifurcated portion of the shoe 35 and is pivotally secured thereto by a bolt 37. The upper bifurcated ends of the said shoe are preferably provided with segmental elongated slots 38, which are adapted to be engaged by a bolt 39, passing through the standard 36. By loosening said bolt the elongated blade 30 may be adjusted with respect to the standard 36. The standard 36 preferably extends upwardly between the bars forming the side beams 28 and is provided with one or more bolt-holes, so that it may be bolted in the said beam at any desired height. A brace-bar 40, having a bifurcated lower end, is pivotally secured to the standard 36 and at its upper end extends between the bars of the beams 28 28. The upper end of this brace-bar 40 is also provided with a series of apertures, so that the angle of the said standard 36 may be regulated with respect to the beam 28. The brace-bar 40 may be arranged in the rear of the standard 36, or when the said standard is placed near the rear end of the cultivator-frame the said brace-bar may be arranged in front of the standard, all within the scope of the present invention. If desired, in place of the burster-plow 31 a blade similar to 30, with its appropriate standard and brace-bar, may be employed instead, it being secured between the bars of the beam 13 in the same manner that it would be secured to the bars of the beam 28.

In order to raise and lower the cultivator, so that its blades and plow may go to greater or less depth in the ground or may be lifted entirely out of engagement with the same, a suitable means is provided for rocking the axle 1, and thereby raising and lowering the crank 2. To accomplish this purpose, a bell-crank lever, as 41, is pivotally secured upon the said axle 1, and one of its ends is pivotally attached, as at 42, by means of a suitable casting to the crank 2. Its other end is pivotally engaged by means of a bifurcated bar, as 43, which is also pivotally secured at 44 to the lower end of an operating handle or lever 45. The lever 45 is pivoted to the arch 4 at 46 and is provided with a spring-operated latch 47, which engages a segmental rack 48, also secured to the arch 4. The handle of the latch is arranged in suitable proximity to the handle of the lever, so that the operator of said lever can have the latch within complete control. In order to assist the operator in raising the crank 2, a spring 49 is secured near the upper end of the lever 45 and is attached to the rear end of the bar 43, as at 50, the rear end of the said bar projecting beyond the end of the lever 45. The weight of the cultivator is thus somewhat equalized, and this renders it easy for the operator to raise or lower the cultivator-frame. The lever 45 extends upwardly to a convenient position with respect to the seat. A suitable foot-rest may be at-

tached to the tongue 5 by using a bar 50' and bolting the same by means of a clip 51 to the said pole 5. This bar preferably extends a suitable distance upon each side of the pole 5 and is made concaved to more readily engage the feet of the operator.

As seen in Figs. 6 and 7 of the drawings, the arrangement of some parts of the device may be readily altered without departing from the spirit of the invention. As seen in these figures, the beam 13 may be secured to a casting 52, which is suspended below the crank 2 of the axle 1. In this instance the said casting is formed with a depending piece 53, which extends to one side of the beam 13 and is bolted thereto. The said bolt also passes through forwardly-extended brace-pieces 54, which are made by extending from each side one of the bars forming the side beams 55 of the cultivator. The cap-pieces 56 56 for holding the crank 2 in the bearings of the casting 52 are also connected by a cross-piece 57, to which an equalizing-spring 58 is attached, the said spring extending forward a suitable distance and being attached to the pole of the cultivator. Such a spring assists in lifting the weight of the cultivator-frame and aids the spring 49, heretofore described.

The mechanism for operating the axle 1 and the crank 2 is the same as heretofore described, and its action is also the same. As seen in Figs. 6 and 7, the side beams 55 55 of the cultivator-frame are spaced apart by spacing-blocks 59, so as to make the space between the bars of the said beams wider than those shown in Figs. 1 and 2 of the drawings. This arrangement of the bars of the said beams facilitates the use of blocks, as 60, for attaching the standards of the blades to the cultivator-frame. These blocks 60 are preferably castings and are provided with apertures 61, adapted to engage a slide upon one bar of each beam 55, while the ends of the said block are bifurcated, as at 62, and embrace the other bar of the said beam. The blocks are thus rigidly held in position upon the said beams. The blocks are made so as to extend a suitable distance to either side of the beam and are provided with vertical openings, as at 63, into which the upper ends of the blade-standards may be inserted. By having two or more of such openings the distances of the said standard from the said beams of the cultivator can be regulated as desired. A securing-bolt is passed through the said block for attaching the standard rigidly in the said opening. By the use of these attaching-blocks the standards may be arranged upon either side of the side beams and two or more standards may be carried by each of the said beams, as seen in Fig. 6. The employment of these blocks makes it possible to use a greater number of blades than with the construction heretofore described.

It will be seen from the above description that our improved cultivator may be made with great strength, and yet that the parts

are all exceedingly simple and may be cheaply manufactured. It will also be seen that the range of adjustment is large and that the position of the blades and burster-plow can be varied as may be found most suited to the work in hand.

What is claimed, and desired to be secured by Letters Patent, is—

1. A cultivator comprising an axle having a crank portion formed therein, a yoke mounted upon the said axle for supporting the tongue of the cultivator comprising separable pieces having integral bearings at their ends adapted to be slipped upon the ends of the axle after which the pieces are brought together in the middle and folded upon each other, means for securing them together, a pole attached to the said yoke, and a cultivator suspended upon the axle, substantially as described.

2. A cultivator, comprising an axle, a cultivator-frame pivotally secured thereto, a yoke adapted to straddle the beam of the cultivator-frame and support the tongue of the cultivator above the said beam, comprising separable parts having vertical portions provided with integral bearings in their lower ends which are placed on the opposite ends of the axle, the said parts being provided with inwardly-bent portions at their upper ends adapted to be brought together in the middle and be folded upon each other, and means for securing them together, a pole attached to the said yoke, and means for bracing the pole with respect to the yoke, substantially as described.

3. A cultivator comprising a suitable axle having a cultivator-frame pivotally secured thereto comprising a main draft-beam formed of a pair of spaced bars, side beams each formed of a pair of spaced bars and carried by the main beam, pipes or hollow washers for spacing the side beams with respect to the main beam, bolts for holding the parts together, and means for securing one or more standards of blades or plows between the spaced pairs of bars forming each of said beams, substantially as described.

4. A cultivator comprising an axle having a crank formed therein, a cultivator-frame pivotally suspended from the said crank and comprising a main beam and parallel side beams, the said main beam and the side beams being formed of pairs of bars, suitably spaced apart, blades having standards adapted to extend between the bars of each pair, and means for adjustably securing them therein, and means for raising and lowering the crank of the axle for adjusting the height of the said blades or plows, substantially as described.

5. A cultivator comprising an axle having a crank formed thereon, a frame pivotally secured to the said crank, means for adjustably securing the front end of the beam with respect to the pole of the cultivator, the said frame comprising a main beam and side beams parallel thereto formed of parallel bars

spaced with respect to each other, standards secured between the said bars, brace-bars for holding the standards in place and adjustably secured between the said bars, and
 5 blades or plows secured to the lower ends of the said standards, substantially as described.

6. A cultivator comprising a pole, an arch supporting the same, an axle for carrying the arch, said axle having a crank formed there-
 10 on, a cultivator-frame pivotally attached to the crank, the main beam of the said frame extending forward between the pole and yoke for pivotally securing the forward end of the beam with respect to the pole, comprising
 15 side pieces pivoted upon each side of the beam and having a series of apertures formed therein, bolts extending above and below the pole and engaging oppositely-arranged aper-
 20 tures in the side pieces, whereby the yoke is loosely secured to the said pole, and means for limiting the movement of the yoke with respect to the pole, and means for rocking the axle of the machine, whereby the rear
 25 end of the cultivator-frame may be raised or lowered at the will of the operator, substan-
 tially as described.

7. A cultivator comprising a pole, an arch supporting the same, an axle for carrying the arch having a crank portion formed there-
 30 in, a cultivator-frame pivotally secured to the crank, means for raising or lowering the crank comprising a bell-crank lever pivotally engaging the axle, one end of said lever be-
 35 ing secured to the crank, an operating-lever connected with the other end of the said bell-crank by means of a link or bar, the said oper-

ating-lever being pivoted to the arch, a rack adapted to control the position of the said operating-lever, and an equalizing-spring se-
 40 cured at one end to the handle of the lever and at the other end to a projection on the link or bar connecting the operating-lever with the bell-crank lever, substantially as de-
 scribed.

8. A cultivator comprising a pole, an arch
 45 secured thereto, an axle for supporting the arch and pole the said axle having a crank formed therein, a cultivator-frame having a bearing upon the crank, a spring connecting the said bearing with the pole for assisting
 50 in raising the crank, means for positively raising and lowering the crank comprising a bell-crank lever pivoted upon the axle, an operating-lever connected with the said bell-
 55 crank lever by means of a bifurcated link, a rack for controlling the position of the hand-operated lever, and a spring secured to the lever and connected with the said bifurcated link for further assisting in the raising of the
 60 crank, whereby the cultivator-frame may be elevated or depressed as desired, substan-
 tially as described.

In testimony whereof we hereunto affix our signatures in presence of witnesses.

HERMAN DUSTMANN.

WILFORD H. HOLSCLOW.

Witnesses as to Herman Dustmann:

WM. BLACK,

SIDNEY PRADOS.

Witnesses as to Wilford H. Holsclaw:

WM. BLACK,

E. E. PAINE.