

No. 653,162.

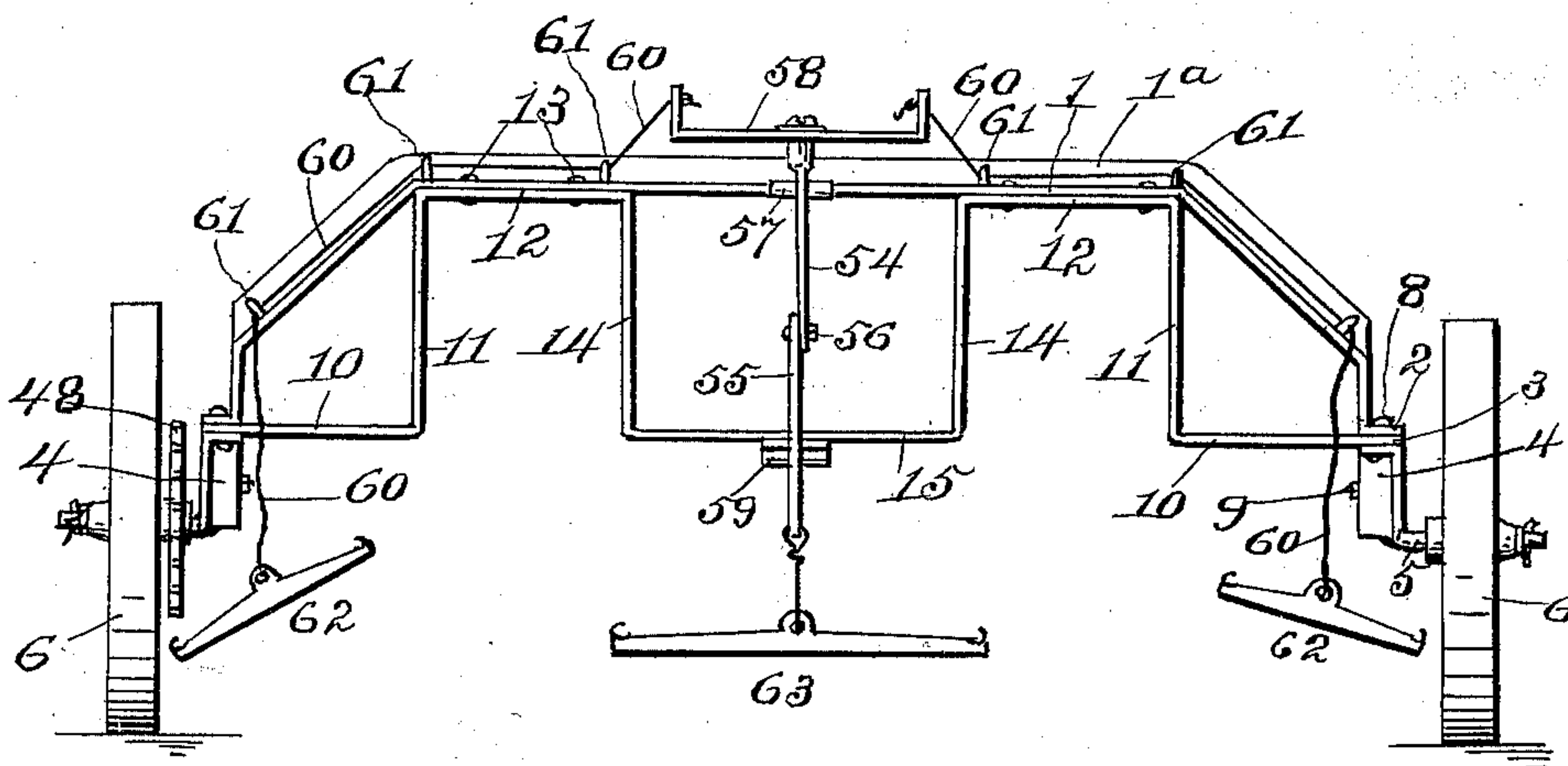
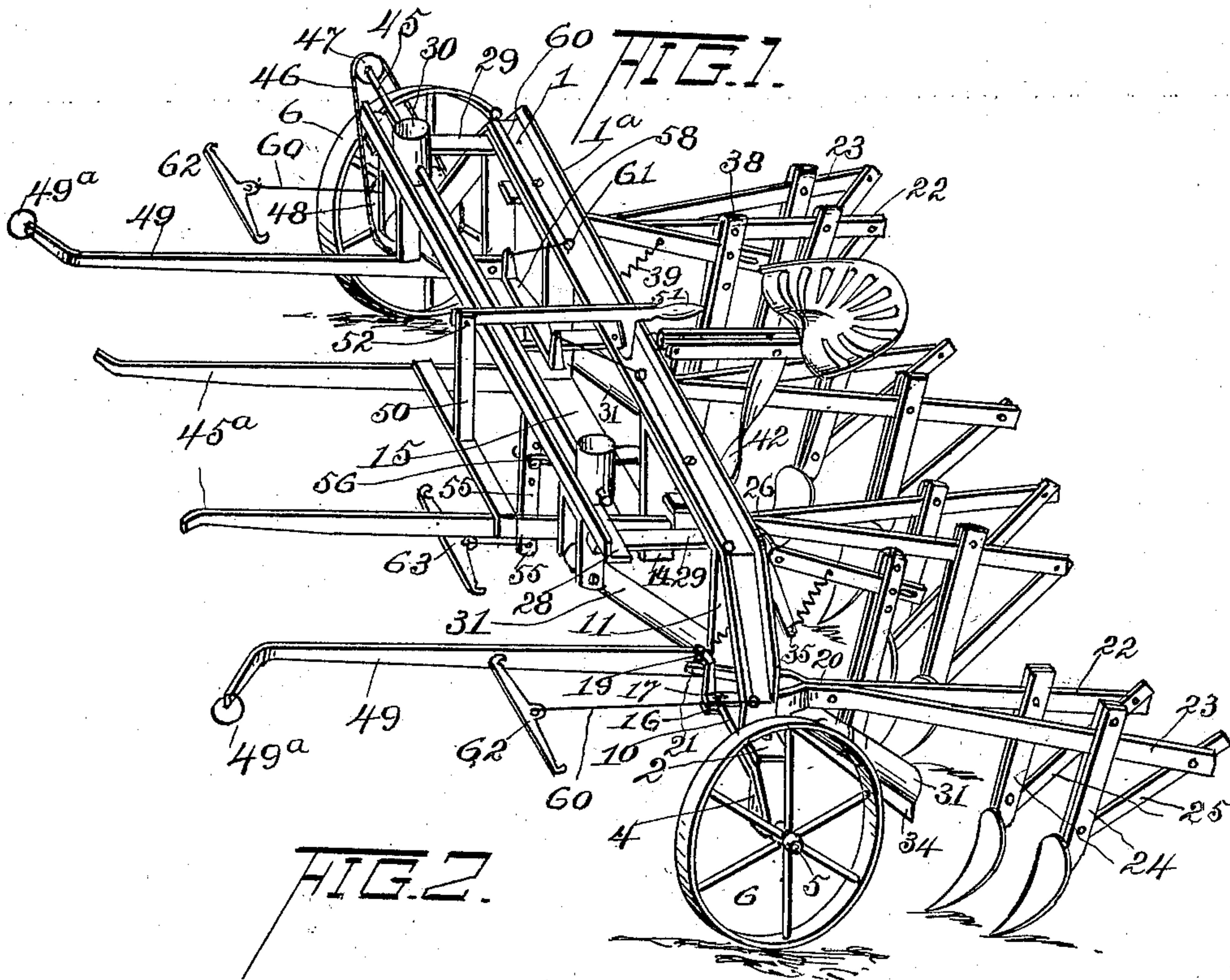
Patented July 3, 1900.

M. & C. ZÖLLNER.  
CULTIVATOR.

(Application filed Sept. 30, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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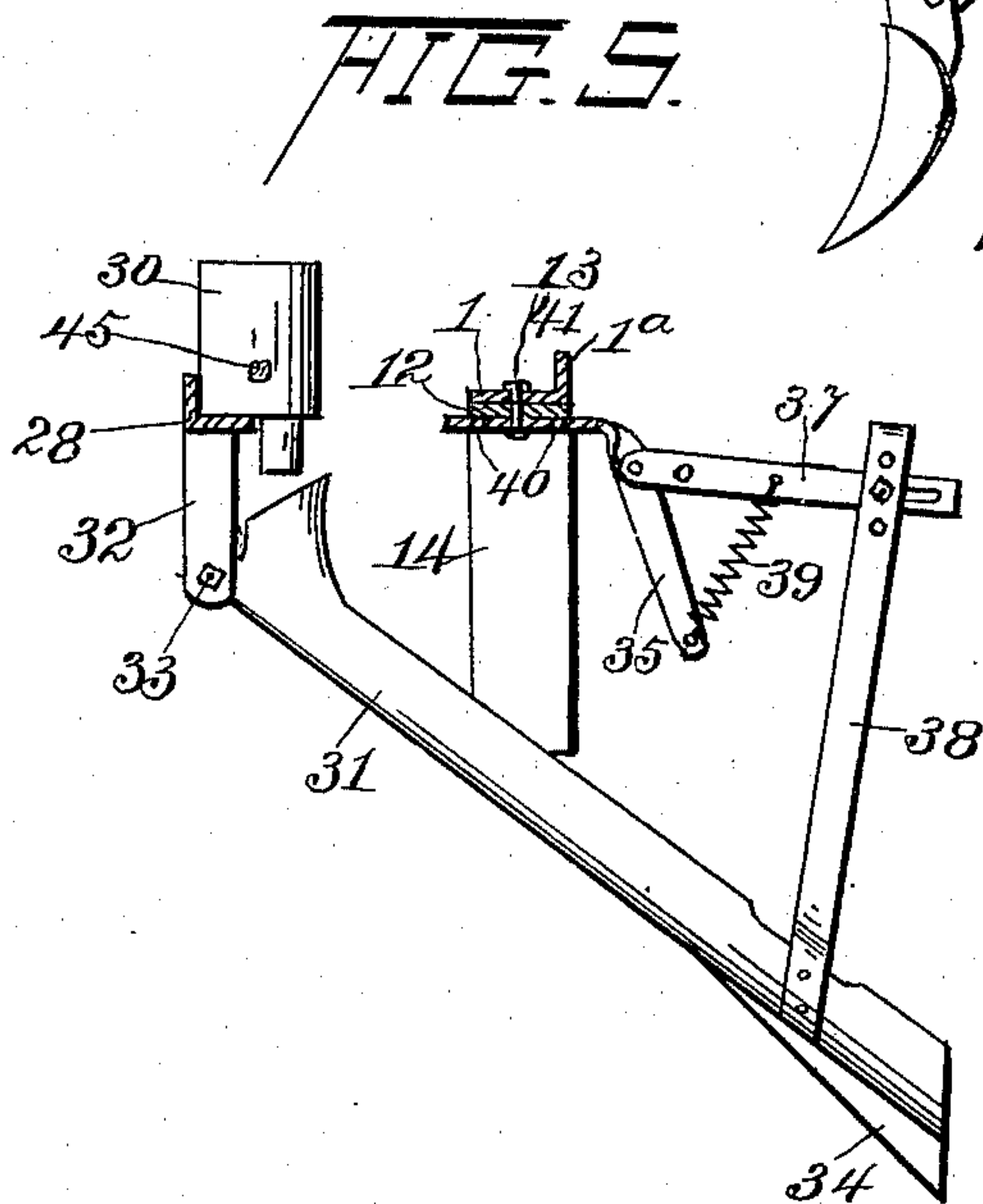
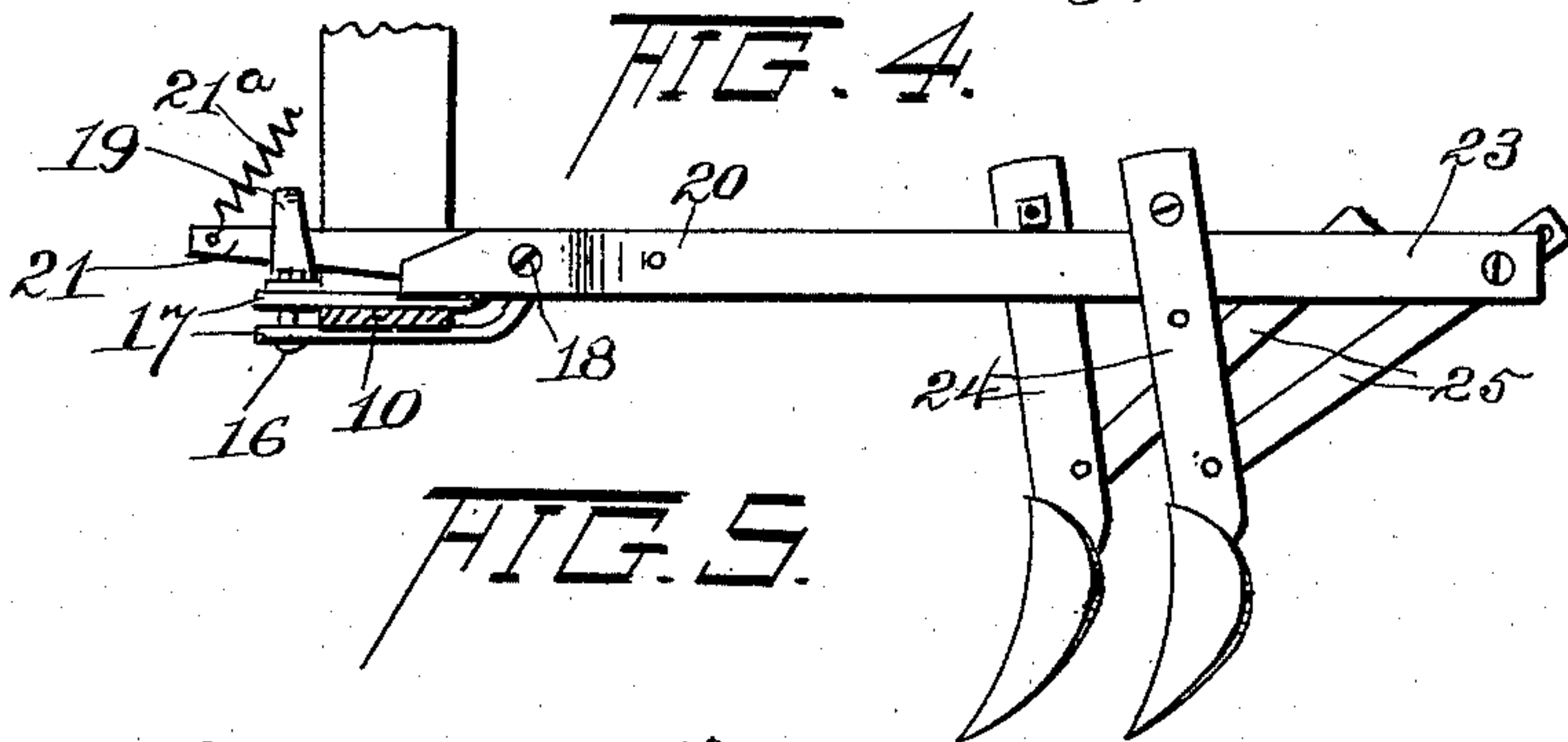
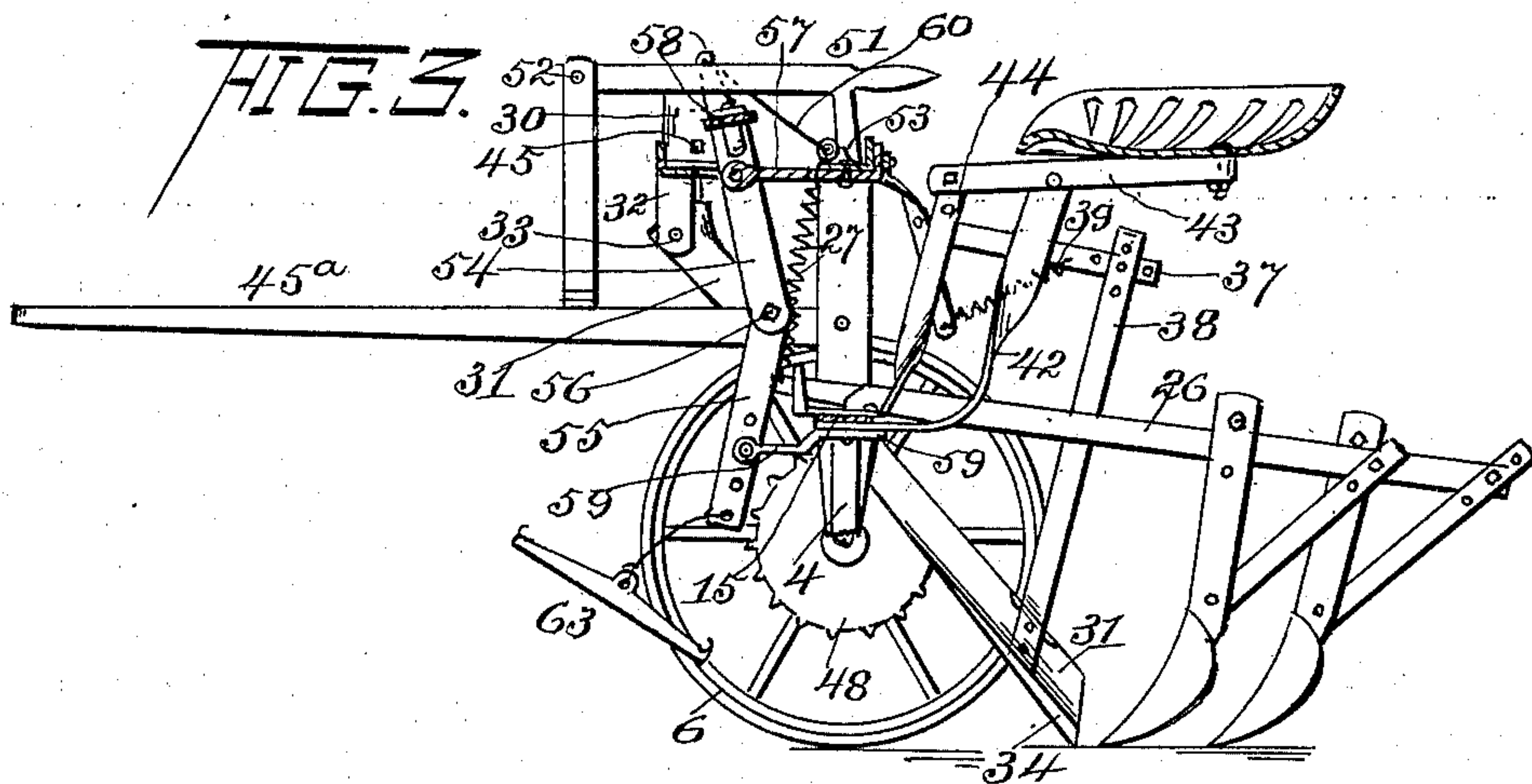
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

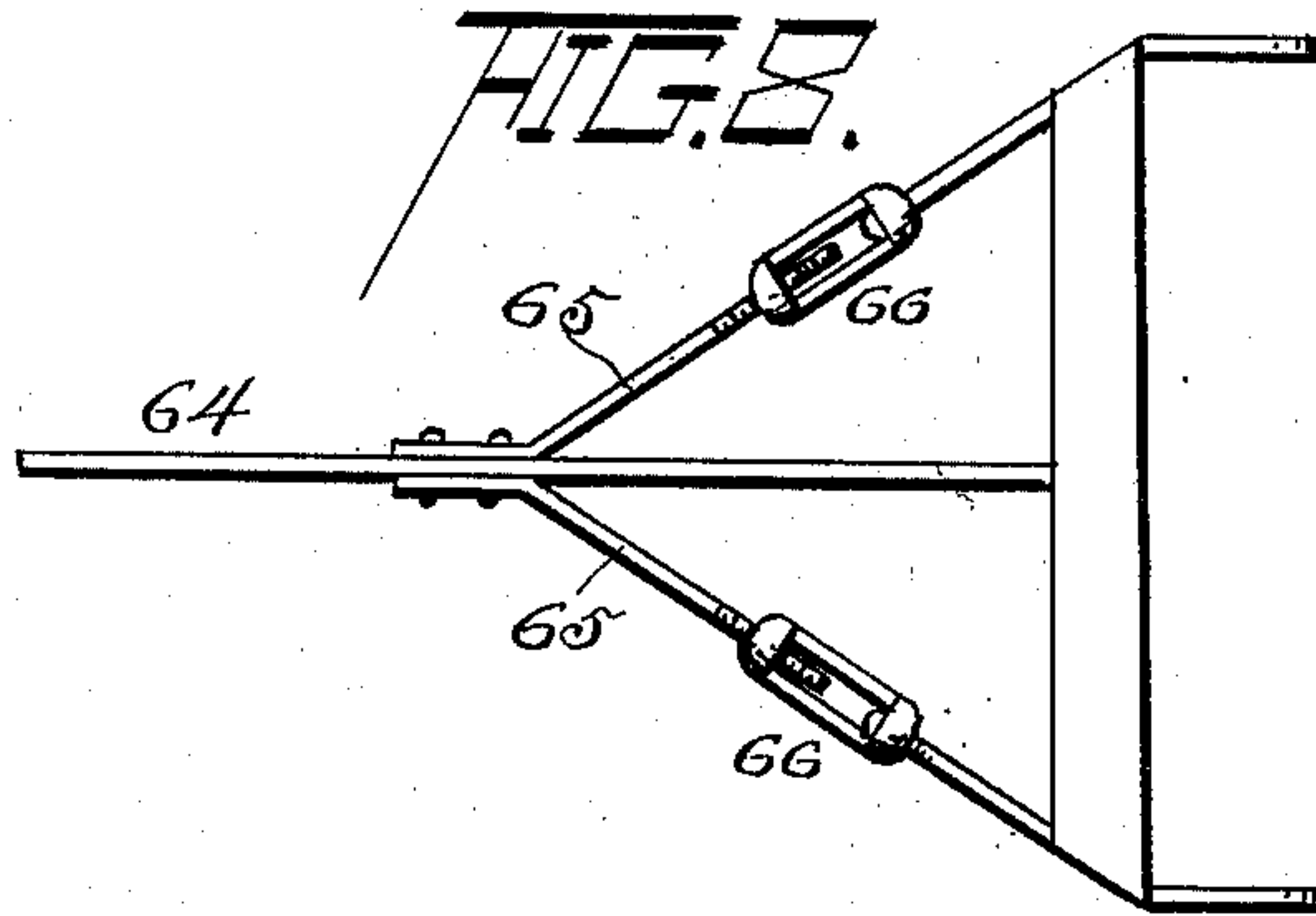
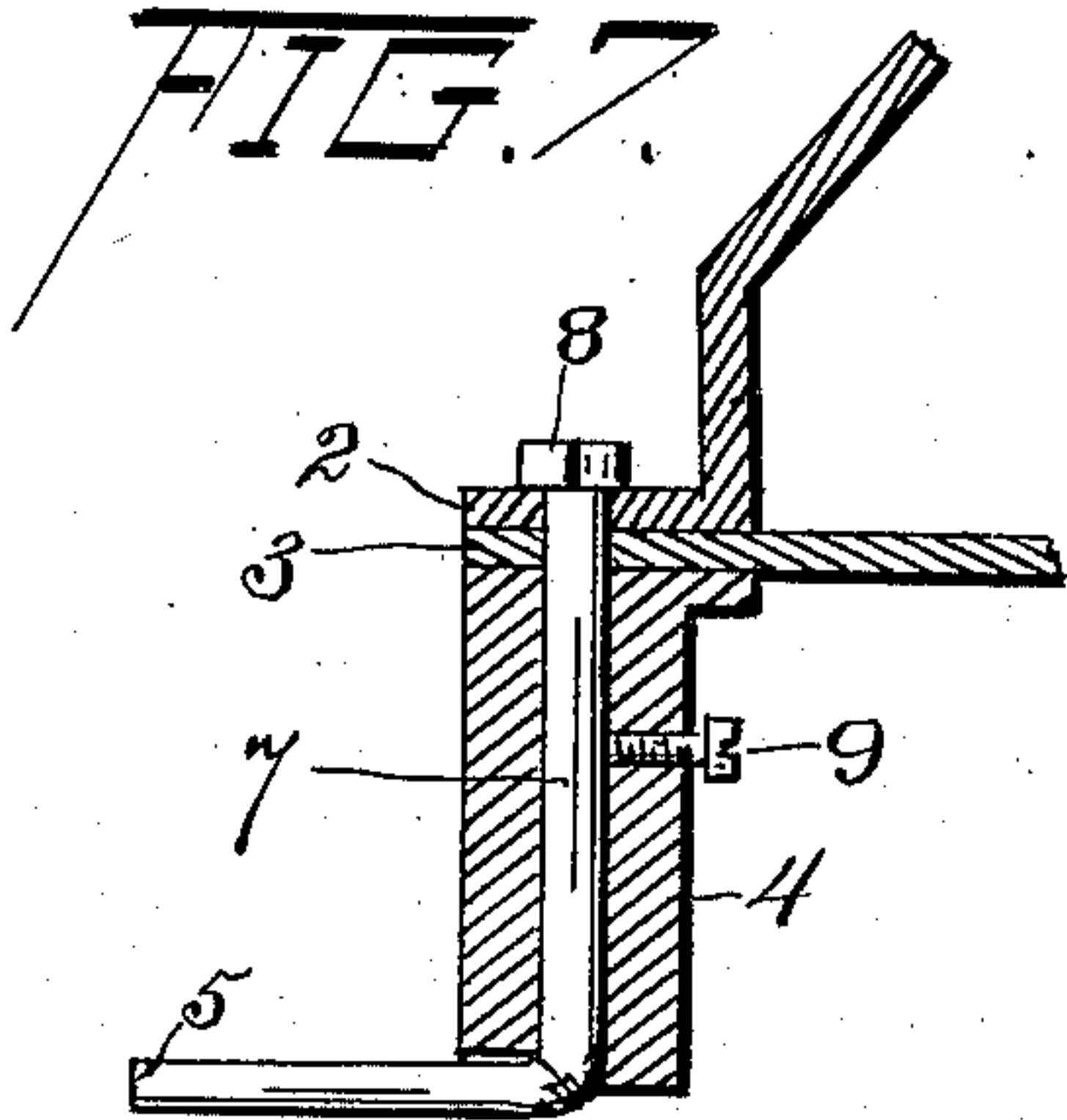
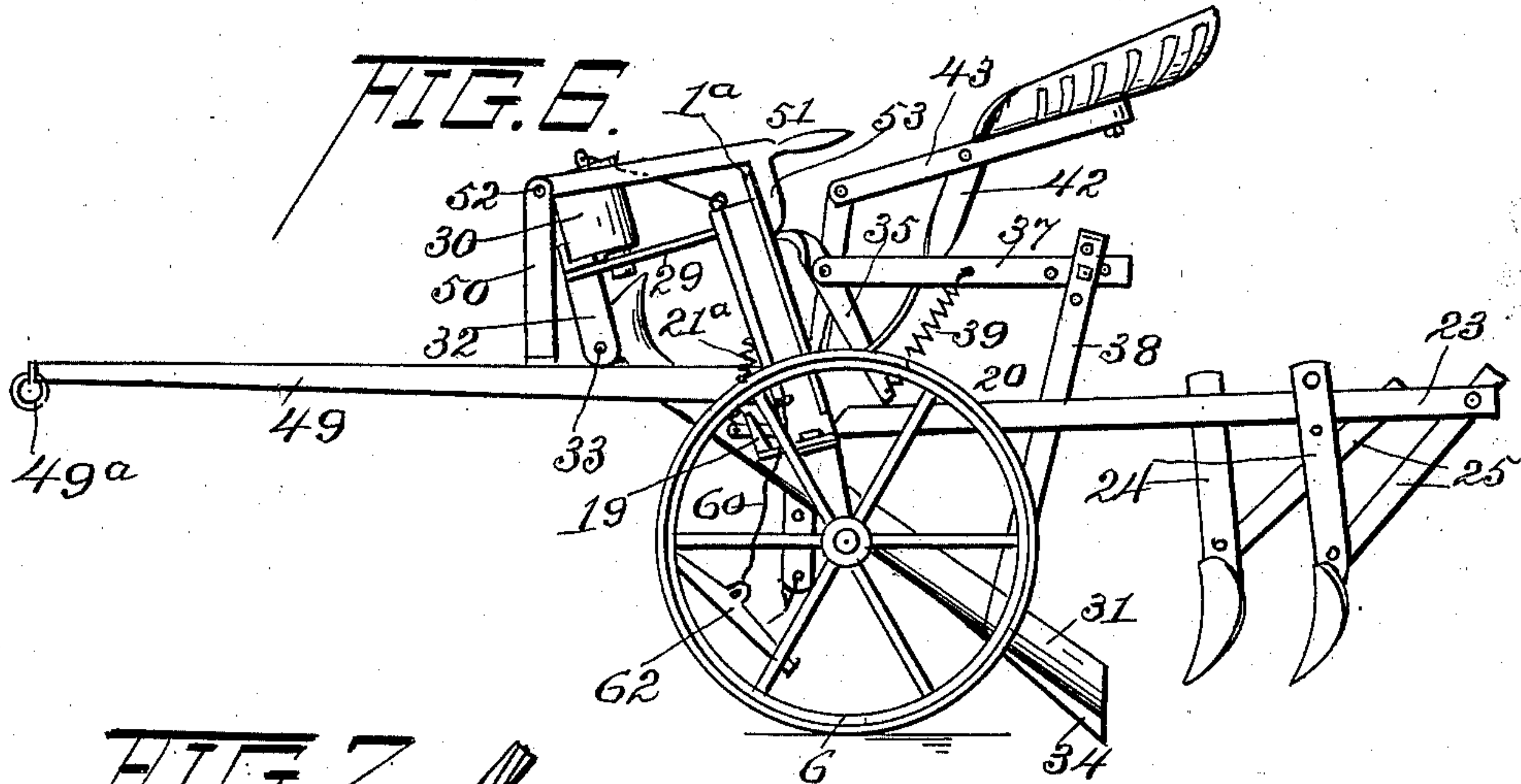
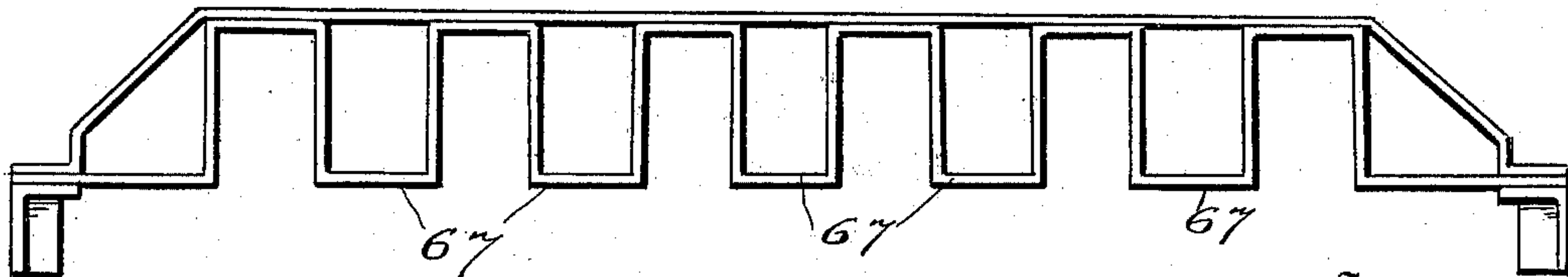


FIG. 9.



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# UNITED STATES PATENT OFFICE.

MATTHES ZÖLLNER AND CARL ZÖLLNER, OF BLACKLAND, TEXAS.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 653,162, dated July 3, 1900.

Application filed September 30, 1899. Serial No. 732,187. (No model.)

*To all whom it may concern:*

Be it known that we, MATTHES ZÖLLNER and CARL ZÖLLNER, citizens of the United States, residing at Blackland, in the county of Rockwall and State of Texas, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

This invention relates to wheeled cultivators, and is designed in some respects as an improvement on our Patent No. 615,775, dated December 13, 1898.

The object of this invention is to provide a seed-planter and cultivator of novel and peculiar construction and arrangement of parts, so that all the cultivator-beams and the seed-dropping tubes have a vertical spring tension and the frame carrying the cultivator implements may be tilted forward and held by special means from the shafts to raise the said implements from the ground, the wheel-axles acting as pivots in said tilting operation of the frame. It is also our purpose to provide a cultivator-frame to straddle two or more rows—one that may be drawn by one, three, or more horses—and to make such connections between the frame and plow-beams that the entire weight of the machine will be borne by the frame and wheels and not by the shafts or poles of the machine, and to provide means connected to the shafts for holding the frame, beams, and grain-tubes tilted forward, such tilting being effected without the driver leaving his seat on the machine.

Others special and novel details are provided in our machine, whereby perfection in construction and operation is produced.

In the accompanying drawings, forming part of this application, Figure 1 is a perspective view of the machine. Fig. 2 is a front view of the frame, the wheels, and the draft-equalizer. Fig. 3 is a central vertical longitudinal section of the machine. Fig. 4 is a detail view of one of the cultivator or plow beams and its controlling-spring. Fig. 5 is a detail view of one of the seed-tubes, means for hanging it, and one end of the seed-hopper bar. Fig. 6 is a side elevation of the machine held in tilted position. Fig. 7 is a detail section of the axle-box. Fig. 8 is a top view of the adjustable pole. Fig. 9

is a front view of a frame adapted to straddle six rows.

The same numeral references denote the same parts throughout the several views of the drawings.

The top 1 of the cultivator-frame is composed of angle-iron or has a vertical flange 1<sup>a</sup>. The ends of this frame portion are bent or turned downwardly to form an arch and terminate in an angle 2. The bottom of the cultivator-frame is composed of a single piece of iron, the ends 3 of which are, with the angles 2 of the top of the frame, bolted to the axle-boxes 4. The axles 5 are secured in the boxes 4 to permit the wheels 6 to have a slight pivot movement relative to the frame, so that the wheels will follow the angle of the plows. This pivot connection is made by means of an upward axle extension 7, which extends through the boxes 4, through the ends of the bottom portion of the frame, and through the angle ends of the top portion 1 of the frame, where said projections are secured by nuts 8. Set-screws 9 on the axle-box are operated to keep the projections 7 fixed in a desired position.

From the ends 3 the lower frame-iron is extended inward to form lower horizontal portions 10. From these portions the iron is bent upward at right angles to form vertical portions 11. From the top of these portions 11 the iron is bent to form top horizontal portions 12, to which the top 1 of the frame is secured by suitable bolts or rivets 13. Then the iron is bent downward to form a central hanger composed of vertical members 14 and a cross member 15. The said slanting or downwardly-bent portions of the top frame form end braces between the portions 10 and 11 and brace the two frame portions together, so that there is no liability of the frame swaying, and all flexibility is overcome.

Adjustably secured to the frame portions 10 by bolts 16 are plates 17, having a pivot 18, and an upwardly inwardly bent stop-piece 19. To these pivots 18 are pivoted the front forked arms of the outside plow or cultivator beams 20, one of said arms 21 being extended forward under the stop-piece 19, which prevents the said beams from dropping down too far. The upward movements of the



said beams 20 are controlled by springs 21<sup>a</sup>, having one end secured to the downwardly-bent ends of the frame-top 1 and the other end secured to the arm 21. The said beams  
 5 terminate at the rear in diverging wings 22 and 23, the latter being longer than the former and each being provided with a stock 24, to which a plow or other suitable cultivator is attached. The stocks are adjustably  
 10 hung from the beam-wings 22 and 23 by hangers 25.

The middle cultivator-beams 26 are of the same construction as the beams 20 and have the same character of stock-hangers and are  
 15 secured to the cross member 15 of the central hanger with the same means and same stop projections as the outside beams 20, and the beams 26 are controlled by spiral springs 27. All of the plow-beams being controlled by the  
 20 spiral springs, they are free to move vertically in accordance with the character of the ground upon which the machine is operated.

Connected to the top of the frame and standing in front of it is an angle-bar 28, supported  
 25 by arms 29. Seed-hoppers 30 are secured on the bar 28 and discharge into seed-tubes 31, pivoted at 33 to swing vertically on brackets 32. The discharge ends of the tubes are provided with guide-blades 34. The tubes are  
 30 flexibly hung by means of hangers 35, depending from the frame, pivoted levers 37 and 38, and spiral springs 39, so that the tubes may have a flexible movement over the ground. The said hangers 35 have holes 40, by means  
 35 of which and the bolts 41 they may be adjusted back and forth to vary the hang of the tubes, the same being covered by our application filed January 16, 1900, Serial No. 1,663.

The seat-post 42 is secured at one end to the  
 40 cross-member 15 of the central frame-hanger, and the other end is pivoted to the forward seat extension 43, the latter being adjustably pivoted to a vertical projection 44 from the cross member 15. By this arrangement the  
 45 seat can be adjusted to throw the weight of the driver more upon the cultivator-frame or more upon the cultivator-beams, as desired.

A seed feed-shaft 45 is operated through the seed-hoppers by the chain 46 and sprocket-  
 50 wheels 47 and 48.

The tilting of the frame is accomplished by having the outer shafts 49 pivoted to the vertical frame portions 11, the inner shafts 45<sup>a</sup> being pivoted to the vertical members 14 of  
 55 the central frame-hanger and an upward projection 50 from the inner shafts having a hand-lever 51, pivoted at 52 and provided with a hook 53, so that when the driver rises from his seat and pulls the said lever the  
 60 frame will tilt forward to permit the hook 53 to be hooked over the rear of the top or vertical frame-flange 1<sup>a</sup>. The driver in rising from his seat stands upon the cross member 15, his position thus assisting the forward tilt  
 65 of the frame and beams as he leans forward. The outer shafts 49 have rings 49<sup>a</sup> for other

draft attachments, such as single or double trees.

It is essential that the draft be equalized in this form of cultivator, so that the machine  
 70 may be more perfectly operated and the plows not thrown from the rows by unequal draft. We therefore provide a draft-equalizer which comprises the levers 54 and 55, pivoted together at 56, the former being pivoted to a  
 75 plate 57, adjustably secured to the frame-top 1, and has a yoke 58 swiveled thereto, and the latter is pivoted to a plate 59, adjustably secured to the under side of the cross member 15 of the central frame-hanger. From the  
 80 yoke 58 extends ropes, cables, or chains 60 through eyes 61 (or pulleys in lieu thereof) on the top and downwardly-bent frame portions. The ropes 60 have singletrees 62 attached, and the lever 55 has a like singletree 63 at-  
 85 tached, so that a perfectly-equal draft is accomplished, the same being covered by our application filed January 16, 1900, Serial No. 1,664.

In lieu of the shafts we may employ a pole  
 90 64, having side members 65, provided with turnbuckles 66 for adjusting the pole to the right and left of the machine, so that the horses may travel at an angle to the machine.

Referring to Fig. 9, the bottom portion of  
 95 the frame is bent into a series of hangers 67, for the purpose of attaching plow-beams, one or two beams to each hanger.

It is obvious that many slight changes may be made in the practical application of the  
 100 machine to effect the best results without departing from the spirit of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—  
 105

1. A cultivator-frame composed of two parts, the top part having ends terminating in angles, and the bottom part being formed into vertical and horizontal portions which  
 110 terminate at and are secured to the said angles, said top part having downwardly-slanting members which form braces between certain of the said vertical and horizontal portions.

2. A cultivator-beam having a forked front  
 115 end, one of the forks being longer than the other, and diverging rear wings adapted to carry a plow or other cultivator.

3. The combination, with the cultivator-frame, of the cultivator-beams having a forked  
 120 front end pivoted to the frame, a spring attached to the extended end of the fork forward of the said pivot and connected to the said frame to give the beams flexibility, and the stops engaged by said extended fork ends  
 125 to control the downward movement of the beams.

4. The combination, with the frame, and the axles attached thereto to form a tilting  
 130 pivot for the frame, of means for holding the frame tilted, comprising the shafts having an upward projection, a hand-lever pivoted to



the said projection, and a hook on the said lever adapted to engage the top of the frame, as set forth.

5 The combination, with the frame, and the pivoted plates adjustably secured to the frame and provided with stop projections, of the cultivator-beams having rear diverging wings, and a front fork pivoted to said plates to move vertically, one member of the said  
10 fork being extended under the said stops to control the downward movement of the beams, and a spiral spring having one end attached to the end of the extended fork member and the other end secured to the frame, to control  
15 the upward movement of the beams.

6. The combination, with the frame, the seat-post secured to the frame, and the seat having a forward extension to which the top end of the post is pivoted, of a vertical projection having one end secured to the frame 20 and the other end adjustably pivoted to the said extension, substantially as set forth.

In witness whereof we hereunto set our hands in the presence of two witnesses.

MATTHES ZÖLLNER.  
CARL ZÖLLNER.

Witnesses:

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W. H. LOWE.