

No. 610,148.

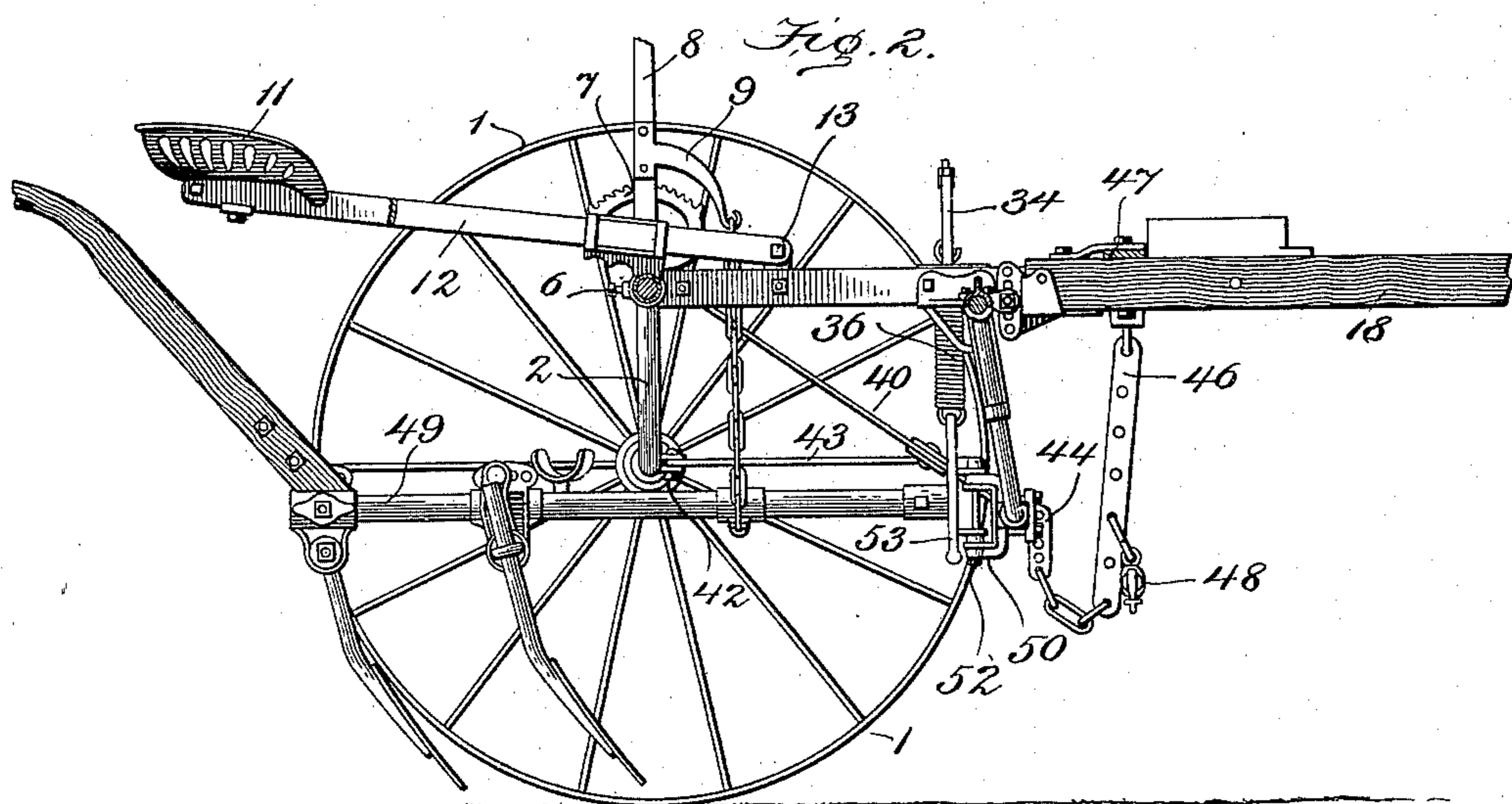
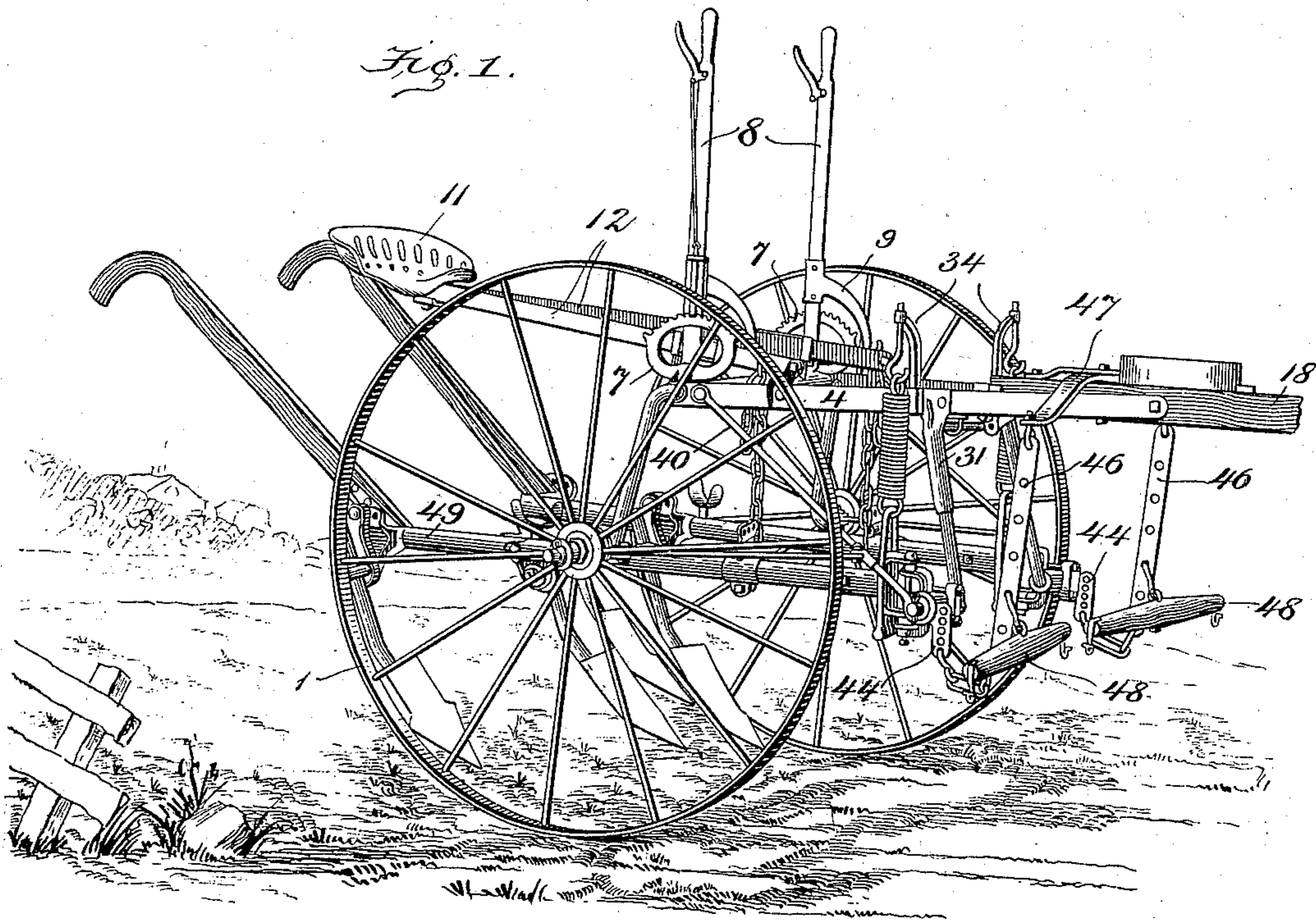
Patented Aug. 30, 1898.

J. D. SCHOFIELD.  
CULTIVATOR.

(Application filed Dec. 15, 1897.)

(No Model.)

4 Sheets—Sheet 1.



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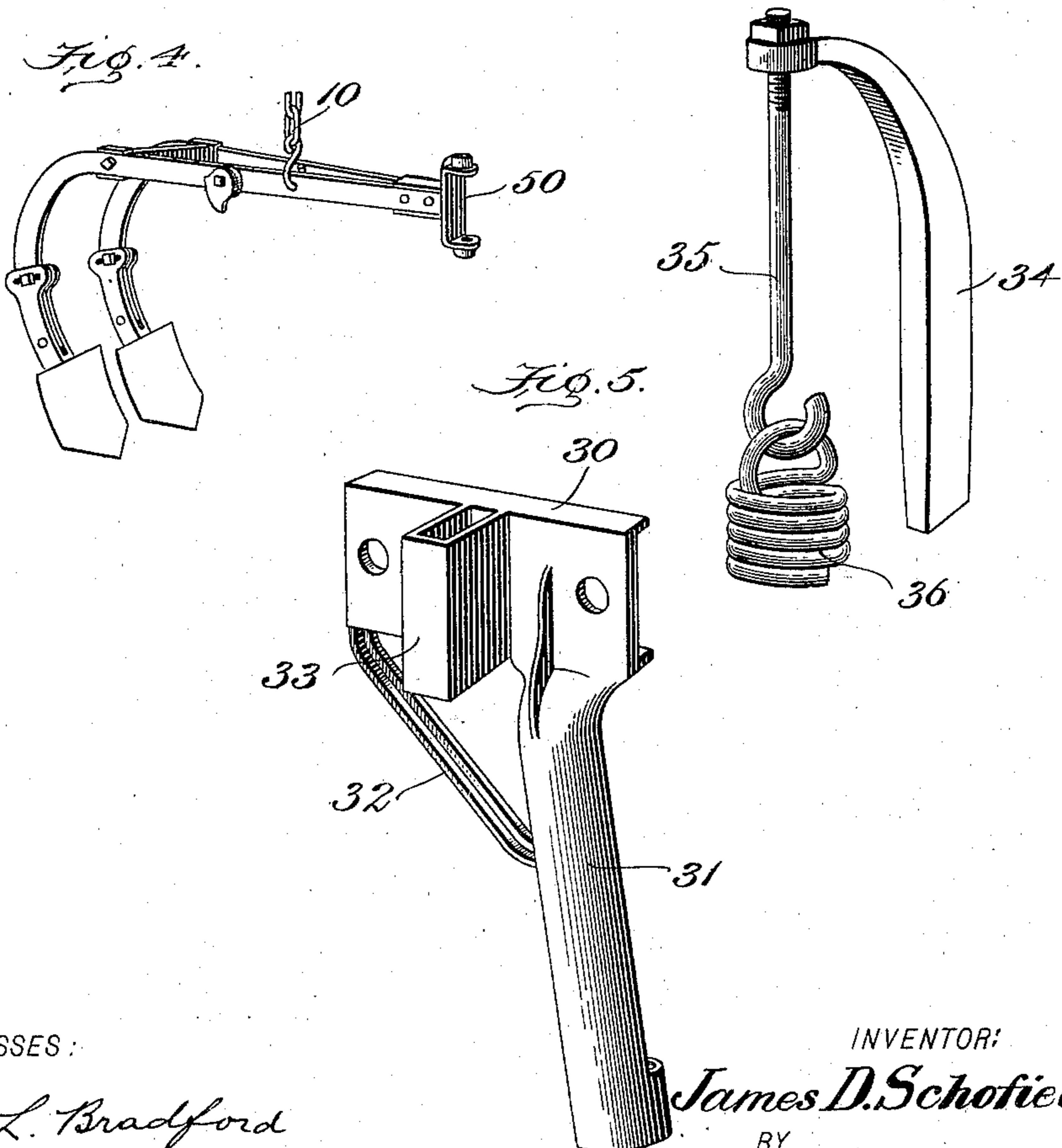
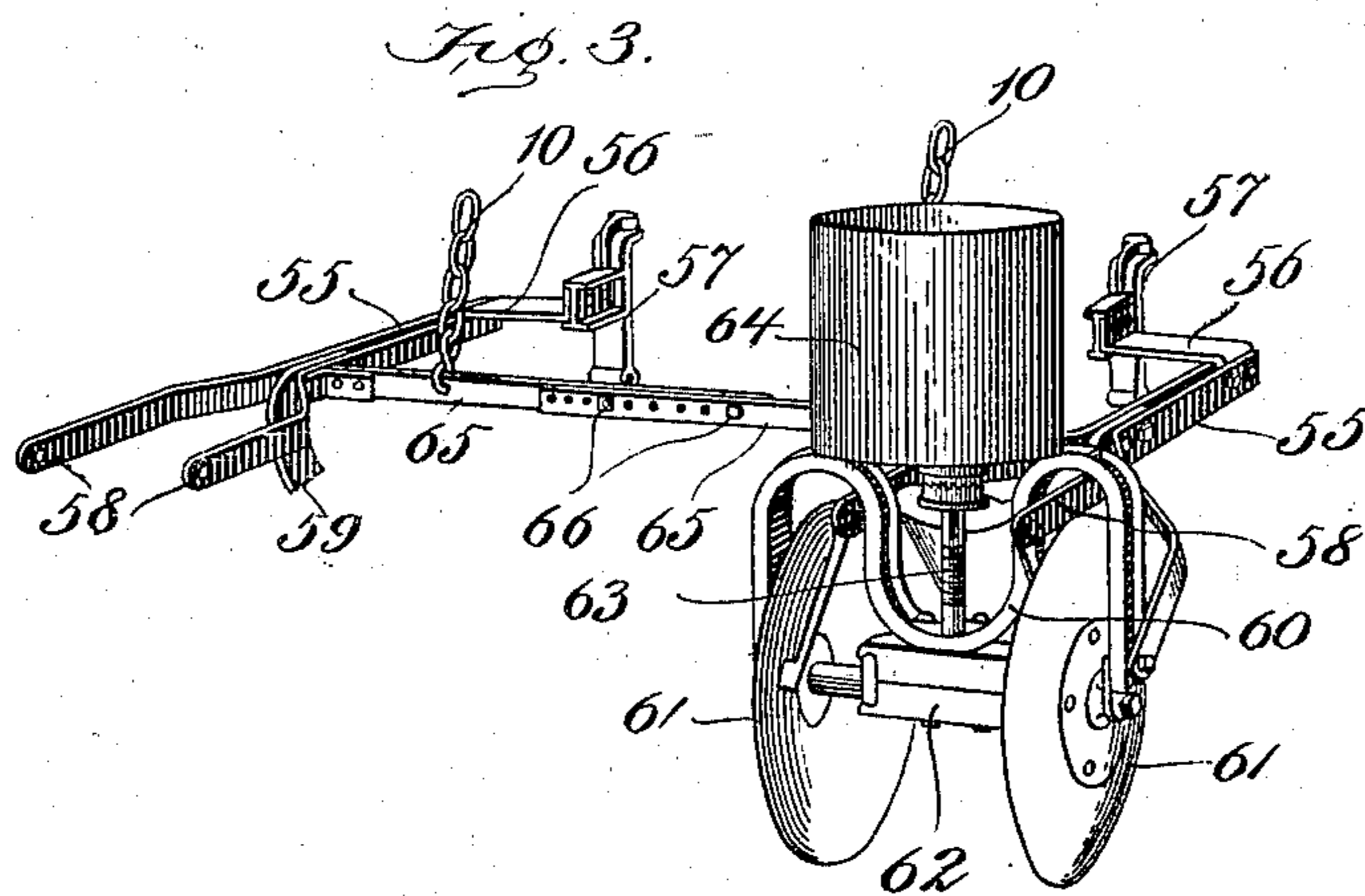
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4 Sheets—Sheet 2.



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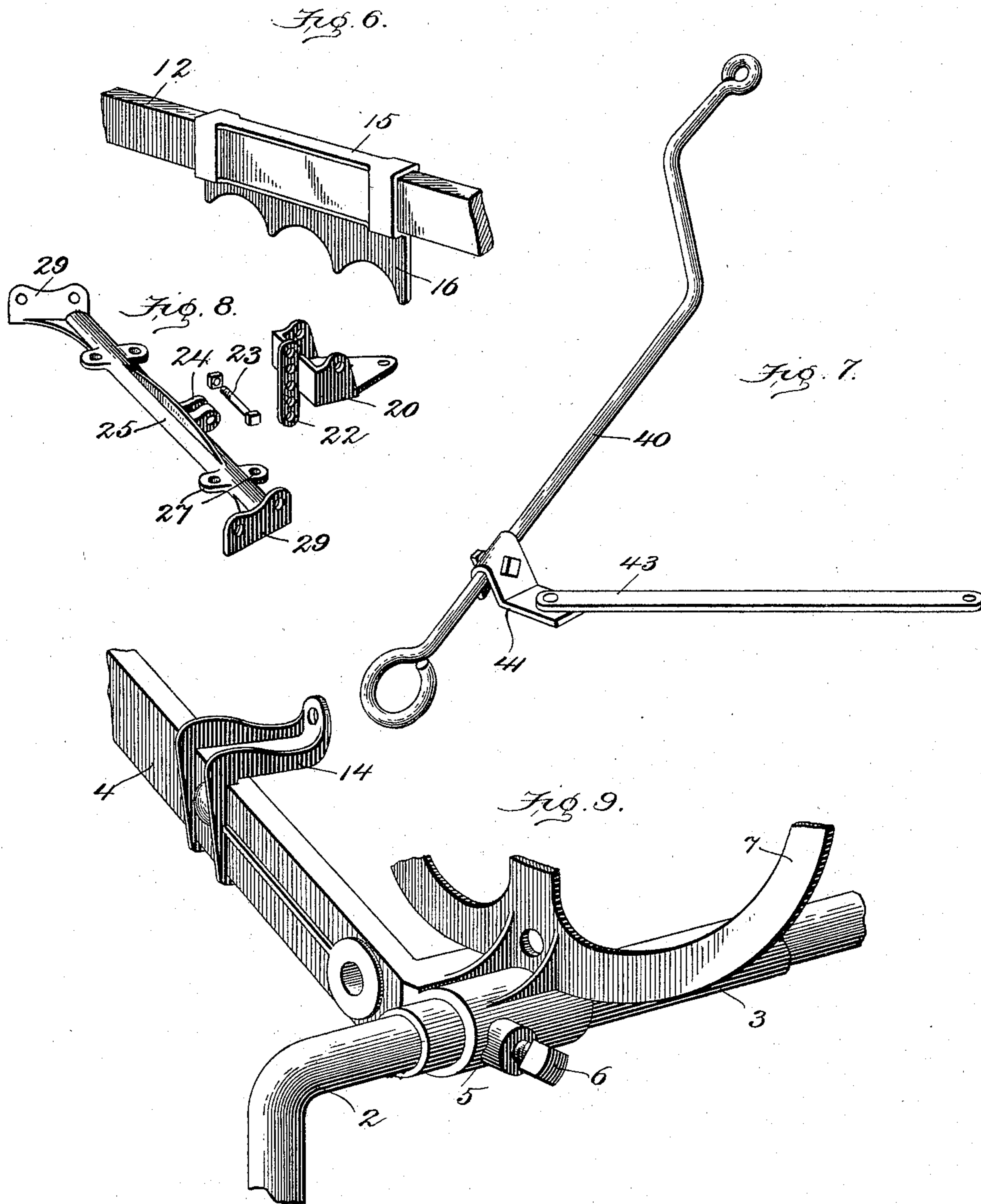
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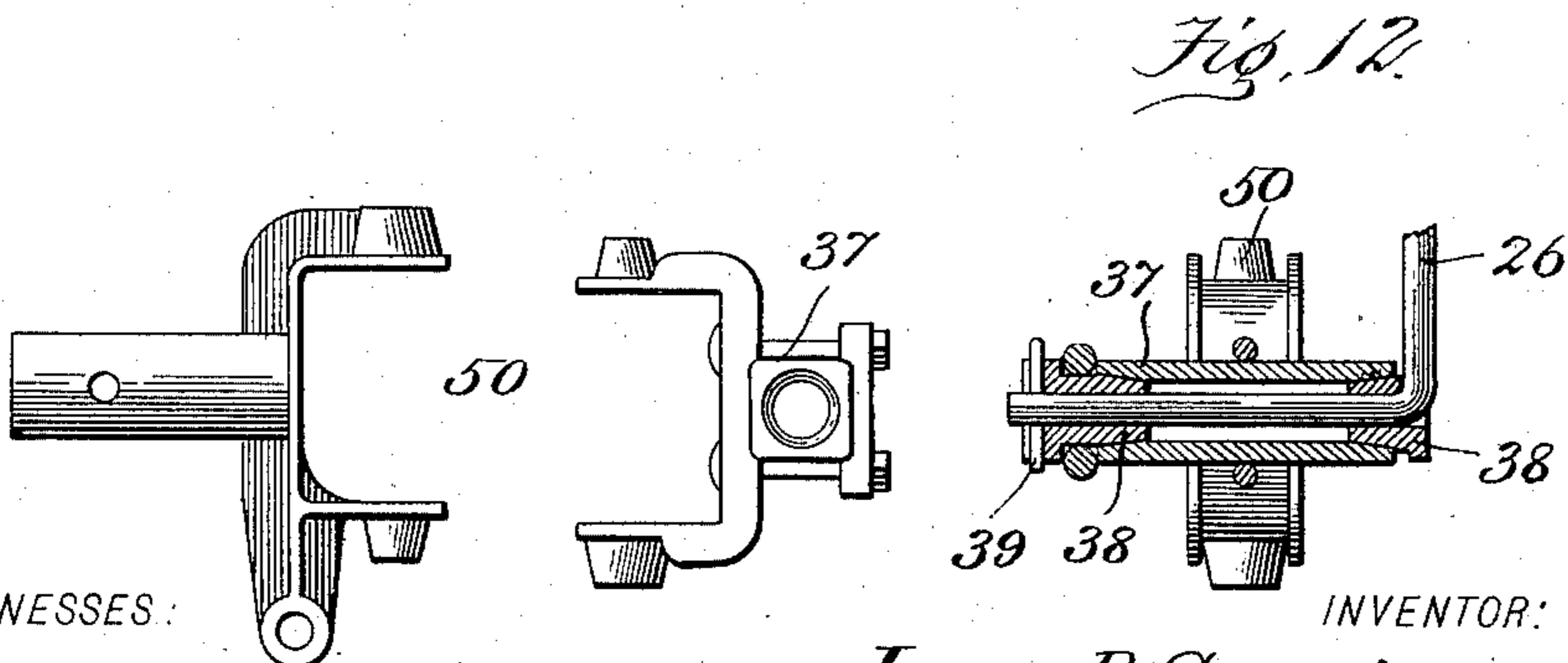
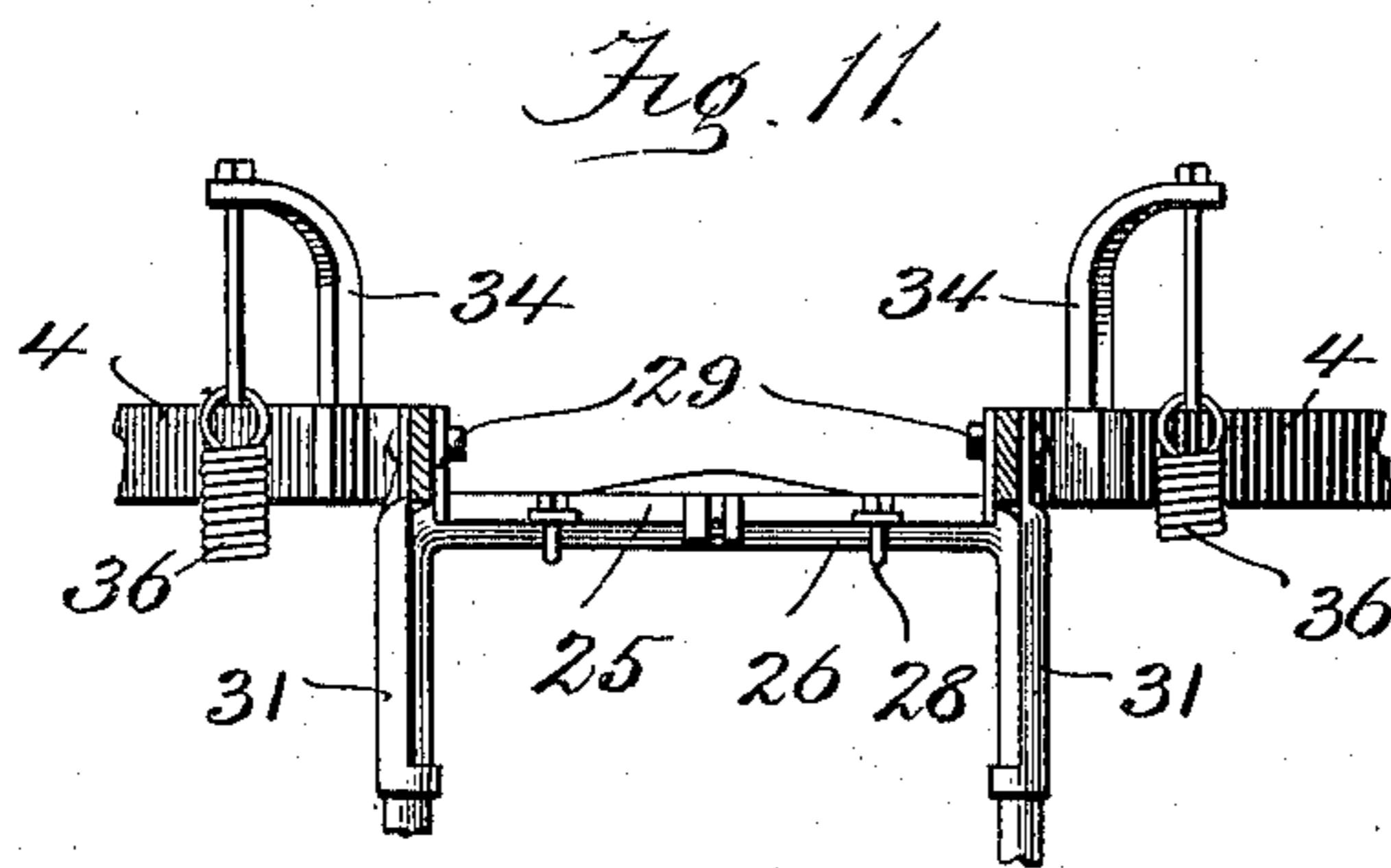
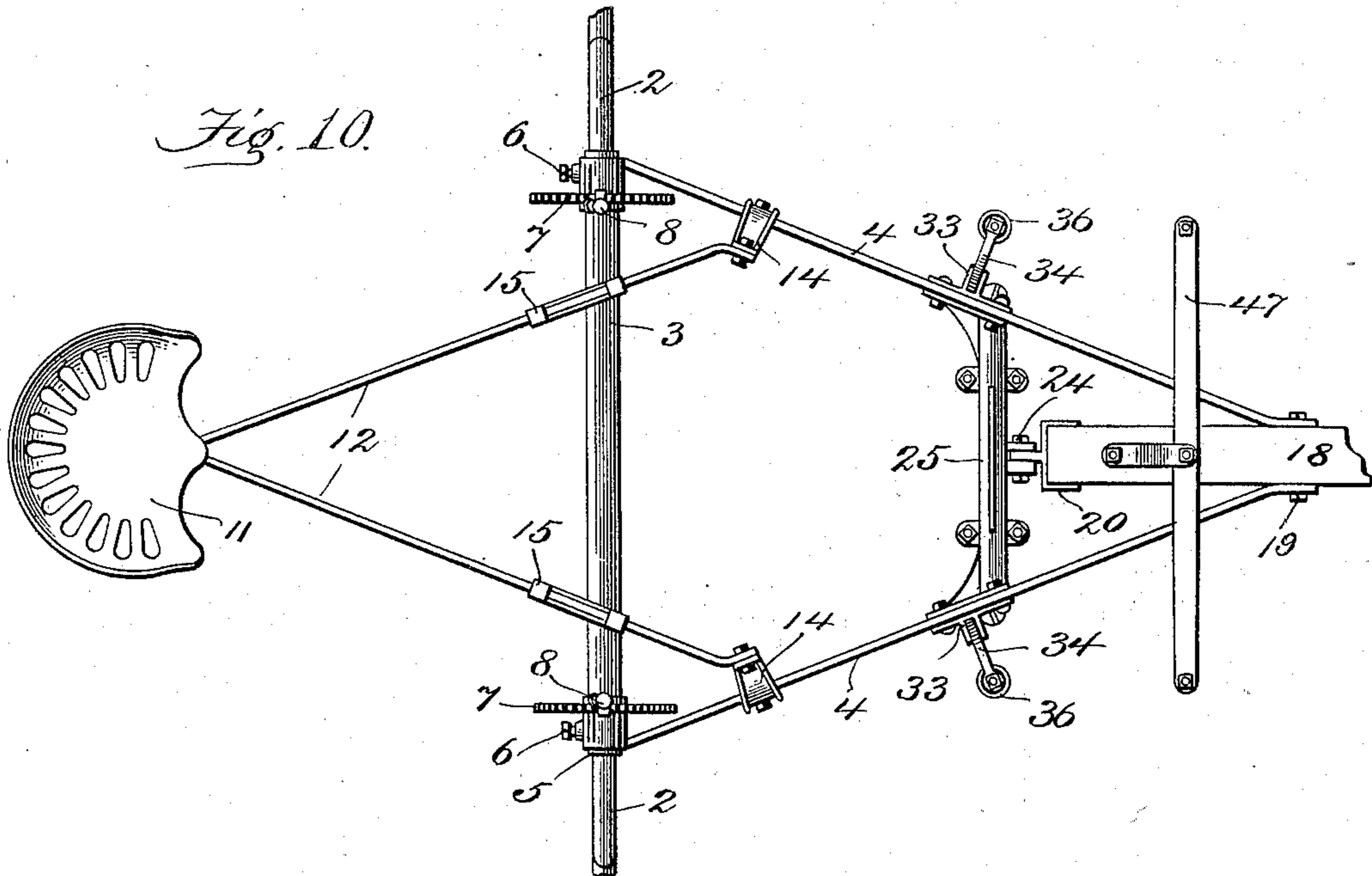
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4 Sheets—Sheet 4.



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*Fig. 13*

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# UNITED STATES PATENT OFFICE

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## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 610,148, dated August 30, 1898.

Application filed December 15, 1897. Serial No. 662,038. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES DROMMOND SCHOFIELD, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Cultivators; 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 cultivators of the "straddle-row" or "sulky" style.

The main object of my invention is to produce a new and improved cultivator of this class, the same being generally improved in regard to its structure and various details, all as will hereinafter appear, and which is also arranged, constructed, and adapted to combine with various styles and arrangements of cultivator-shovels, whereby it is adapted for various kinds of cultivation, as may be dictated by the character of the soil, locality, and vegetation to be cultivated, and also to simultaneously open furrows and plant and cover seed of various kind, whereby by its presence the farmer is enabled to follow various kinds of agricultural pursuits with the single machine and its attachments.

Various other objects and advantages of my invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a cultivator embodying my invention, the same being shown as for cultivating corn, cotton, &c., and as provided with what I term a "Texas gang," so named because of its popularity and particular adaptation in the State of Texas and vicinity. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a perspective view of the planter attachment that may be employed in connection with the cultivator-frame for the purpose of transforming the machine into a planter for successfully planting in rows or drills cotton, corn, sorghum, &c. Fig. 4 is a similar view of one member or section of what is popularly known as a "Western gang," so named because of its popularity in most of the

Western States, and which, in conjunction with its companion, may be attached to my cultivator-frame. Fig. 5 illustrates in perspective the disjointed parts composing the spring-standard support and its socket and the part upon which it is formed. Fig. 6 is a perspective view of one of the swinging adjustable seat-bars and its adjustable block. Fig. 7 is a perspective view of one of the braces employed between the head-blocks, side bars, and cranks of axle. Fig. 8 illustrates in perspective the disjointed parts composing the front brace and the adjustable coupling for connection thereto for adjusting the draft-pole. Fig. 9 is a perspective view of the rear end of one of the side beams and parts supported thereby. Fig. 10 is a plan view of the cultivator-frame. Fig. 11 is a transverse section of the same immediately in advance of the front transverse brace. Fig. 12 is a transverse section through one of the head-blocks. Fig. 13 illustrates in side elevation the disjointed members composing the beam-clevis.

The two ground-wheels 1 may be journaled on the lower journals with which the two independent crank-sections 2, composing the crank-axle, are provided and in which they terminate at their outer ends. Between their cranked portions the two crank-sections are connected by a coupling-sleeve 3, so that the two crank-sections, and therefore the ground-wheels, may be adjusted in and out, the axle-sections being secured in any of their relative adjustments by means hereinafter described or otherwise.

The two side beams 4 may be and preferably are formed of metal. These two side beams 4 converge toward their front ends and are formed with inwardly-disposed rear terminals, formed integral with each of which is an eye 5, which forms the coupling by which the sleeve 3 and the axle 2 may be secured to the side beams. Set-screws 6 may enter each eye 5 and serve to secure the axle-sections in their adjusted positions.

Each eye 5 may have either secured to it or formed integral a curved locking-sector 7, and at the side of each sector a lifting-lever 8 may be fulcrumed on the eye 5. Each lifting-lever is provided with a lifting-arm 9, that may ter-

minate in a hook for engaging with the lift-chains 10, that are in the usual manner connected to the cultivator-beams hereinafter referred to. Each of these lifting-levers is furthermore provided with an ordinary form of spring-actuated locking-pawl for engagement with the adjacently-located toothed locking-sector 7.

The support for the seat 11 for the driver or operator in this instance consists of two seat-bars 12, which are bolted or otherwise secured together at their rear ends and are gradually diverged toward their front ends, at which latter points they are pivotally bolted, as at 13, to short inwardly-disposed standards 14, secured to the side beams 4 of the cultivator-frame. As perhaps best illustrated by Figs. 6 and 10, it will be seen that each seat-bar 12 is provided with a sliding sleeve 15, on the under side of which is formed a stepped or notched flange 16, the steps or notches of which are arranged in different planes. By adjusting these sleeves 15 similarly on the seat-beams, so as to cause the different steps or notches to be brought above and in supporting position upon the coupling-sleeve of the rear cranked axle, it will be obvious that the seat 11 will be vertically adjusted to suit the driver or operator. The front ends of the seat-bars being pivoted at 13 permits of the seat and its supporting-bars to be swung forward and over upon the machine when not in use and the machine is used as a walking-cultivator.

Attention is now directed more particularly to Figs. 8 and 10. The two side beams 4, it will be observed, converge and at their front ends embrace the opposite sides of a draft-pole 18, at which point a pivotal connection is effected by a transverse bolt 19, such connection being at some distance in advance of the rear end or heel of the pole. Securely bolted to the rear end or heel of the draft-pole is a metallic heel-plate 20, the same being of such shape as to fit snugly the end, bottom, and opposite sides of the pole. Formed integral with the rear wall of the heel-plate is a vertical flange 21, the same being provided with a series of holes 22, any one of which may be bolted by a bolt 23 to a pair of perforated ears 24, that project forward from the cross-bar 25, that is interposed between the side beams 4, immediately in rear of the draft-pole. The cross-bar 25 is concaved on its under side to receive the arched draft-yoke 26 and is provided with perforated ears 27, through which clips 28 are passed for securing said draft-yoke in position. The opposite ends of the cross-bar have cast thereon angular end securing-plates 29, which bear against the inner faces of the beams 4 and are bolted thereto. It will be obvious that by removing the bolt 23 the draft-pole may be tilted or adjusted to any height desired and the cultivator-frame always remain level, which is most desirable.

In Fig. 5 I have illustrated in detail an angular casting 30, one of which is located on each beam 4. These castings are bolted to the beams 4, and depending from each casting is a depending sleeve 31, each sleeve embracing one of the terminals of the yoke 26. These sleeves are strengthened by inclined braces 32, located between the sleeves 31 and the castings 30. The castings 30 are also formed each with a vertical socket 33, and in each socket is removably seated a curved standard 34, from the upper outwardly-curved end of which depend hooks 35, in each of which is supported one of the pair of beam-supporting springs 36.

The ends of the arched yoke 28 are outwardly disposed each to loosely receive a cylindrically-bored head-block 37, in the opposite ends of which bored cones 38 are located. Pins 39 may be passed through the extremities of the arched draft-yoke 28 for the purpose of securing the head-blocks and their cones in place.

Inclined brace-rods 40 are bolted at their upper ends to the side beams and at their lower ends receive the outer cones 38. Clips 41 may be located in the brace-rods 40, and similar clips 42 may be located on each of the cranked axle-sections, those clips 40 and 41 at the same side of the machine being connected by intermediate braces 43, pivoted at their ends to the clips, so that a direct draft applied to the head-blocks is transmitted to the frame or side beams 4 and axles, and the pivotal connection mentioned permits of a relative adjustment of the ground-wheels.

The head-blocks 37 are provided at their front sides with the vertical flanges 44, perforated to receive the draft-chains 45, which at their front ends are connected to the usual loosely-suspended draft-links 46, that hang from the doubletree 47, pivoted upon the draft-pole. These draft-links are provided each with a series of holes, and removably and therefore adjustably connected thereto are the two singletrees 48.

Any style of cultivator-beams—as, for instance, that shown in Figs. 1 and 2 and indicated as 49—may be connected by the usual coupling 50 to the head-blocks, and the same may be either flat or pipe style, as preferred, and provided with any preferred number and arrangement of shovels. In Figs. 1 and 2 I have illustrated what I term the “Texas gang,” so named by reason of its popularity in that State. Again, in Fig. 4 I have illustrated and indicated by 51 what I call the “Western gang,” so designated for its popularity throughout the West. The numerous styles, however, may be varied at will, and I have merely illustrated two, because they are those most generally used. In any case it will be apparent that a ready connection may be effected to the head-blocks by merely removing and replacing the clevis-bolts 52. The lifting-chains 10 are then connected, as

are also the lifting-springs 36, to the stirrups 53.

In addition to employing this machine as a cultivator, I also contemplate employing the same as a one or a two row planter of the latest type.

Referring now more particularly to Fig. 3, it will be seen that I have illustrated in detail a two-row-planter attachment. In said figure, 55 designates a pair of compound beams having front inwardly-disposed ends 56, to which are connected the clevis members 57 for coupling with those of the cultivator-frame. Each compound beam 55 is spread at its rear end, as at 58, and at its juncture supports a shovel-carrying standard 59 for opening the furrows. Any style of planting mechanism may be supported on each beam; but in the present instance I have illustrated one style of my disk planter. A doubly compoundly curved yoke 60 is bolted to the rear spreading terminals of each beam 55 and is in turn supported by the covering-disks 61. Through suitable gearing operated by said disks and contained in the gear-case 62 motion is imparted to the feed-shaft 63 and to the feed mechanism (not shown) contained within the hopper 64. For the purpose of regulating the distance apart of the planted rows I may provide any means for accomplishing this object. In this instance I connect the two beams 55 by overlapping bars 65, to which I attach the draft-chains 10. These bars are perforated and adjustably secured together by bolts 66.

It is thus apparent that I have produced an agricultural apparatus or machine which, under the general name of "cultivator," is adapted by simple means to be transformed into a machine for cutting stalks, a four or six shovel gang-cultivator, or a single or double row planter. It is further apparent that by adjusting the draft-pole up or down the machine is adapted to operate in conjunction with any shovel sweep or gang, will run lightly regardless of weight of operator, and is readily adjustable to entirely relieve the horses' necks.

Having described my invention, what I claim is—

1. In a cultivator, the combination with the cultivator-frame, the adjustable crank-axle and ground-wheels, of the front arched draft-yoke, the head-blocks carried thereby, the inclined braces connecting the head-blocks and cultivator-frame, and braces pivotally connecting the inclined braces and the crank-axes.

2. In a cultivator, the combination with the cultivator-frame, the adjustable crank-axle and ground-wheels, of the front arched draft-yoke, the head-blocks carried thereby, the inclined braces connecting the head-blocks and cultivator-frame, clips located on the crank-axes and the inclined braces, and braces pivoted at their ends to the clips at each side of the machine.

3. In a cultivator, the combination with the opposite side beams, and an arched draft-yoke, of castings secured to the beams and provided with depending sleeves embracing the depending terminals of the draft-yoke.

4. In a cultivator, the combination with the opposite side beams, and an arched draft-yoke, of castings secured to the beams and provided with depending sleeves embracing the depending terminals of the draft-yoke, said castings being provided with sockets, curved standards located in the sockets, lifting-springs depending from the standards, and beams coupled to the ends of the arched draft-yoke and connected to the lifting-springs.

5. In a cultivator, the combination with opposite side beams, an intermediate cross-bar, an arched draft-yoke connected thereto, of castings secured to the side beams and provided with depending sleeves receiving the depending terminals of the draft-yoke.

6. In a cultivator, the combination with the opposite side beams, the intermediate cross-bar terminating in end securing-plates bolted to the beams and having its under side longitudinally concaved, and an arched draft-yoke located therein and clipped to the cross-bar, of opposite castings bolted to the side beams and provided with depending sleeves receiving the depending terminals of the arched yoke-frame, and braces between said sleeves and castings.

7. In a cultivator, the combination with the opposite side beams, the draft-pole pivoted between its ends between the front ends of said beams, the angular heel-plate casting bolted to the rear end or heel of the draft-pole and provided with a vertical flange having a series of bolt-holes, of a cross-bar connecting the side beams and having a pair of perforated lugs to embrace the flange of the heel-plate, and a connecting-bolt.

8. In a cultivator, the combination with the frame and the transverse axle, of a pair of seat-bars pivoted at their front ends to the frame, a seat supported upon the rear ends of the bars, and a pair of sliding sleeves mounted on the bars, each sleeve having a vertical flange provided with steps or notches located in different planes and adapted to engage over the axle.

9. In a cultivator, the combination with the cast-metal side beams terminating at their rear ends in the integral alining eyes and the toothed sectors, of the sleeve located in and connecting the eyes, the divided axle located in the sleeve, the lifting-sleeves fulcrumed at the sides of the sectors and carrying locking-pawls and lifting-arms, the cultivator-beams, and the lifting-chains connected to the lifting-arms and beams.

10. In a cultivator, the combination with the upper framework and the arched draft-yoke, of the head-blocks mounted on the terminals of the yoke-frame and having the ends of their bores flared, the bored cones located

in said ends, means for securing said cones in position, and beams connected to the head-blocks.

11. In a cultivator, the combination with  
5 the frame, arched axle, and arched draft-yoke terminating in outwardly-disposed ends, bored head-blocks located on said ends, cone-bearings located on said ends and fitting the  
10 ends of the bores of the head-blocks, inclined braces bolted to the frame and terminating at their lower ends in eyes engaging the outer cones, and braces connected to the brace-rods and to the arched axle.

12. The combination with a cultivator com-  
15 prising an arched draft-yoke, head-blocks for the same, and a member of a draft-clevis for each of the blocks, of opposite beams provided at their front ends with companion clevis members, planting mechanisms mount-  
20 ed on said beams, and an adjustable connection between the said beams.

13. The combination with a cultivator-frame, comprising lift-levers, head-blocks, clevis members, and an arched draft-yoke, of beams provided at their front ends with com- 25 panion clevis members, planting mechanisms supported by the beams, and lift-chains for the same connected to the lift-levers.

14. The combination with a cultivator-frame comprising clevis members, of a pair 30 of beams having their front ends inwardly disposed and provided with companion clevis members and carrying planter mechanisms, perforated bars overlapping each other and extending from the beams, and bolts for the 35 same whereby they are adjustably connected.

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

JAMES DROMMOND SCHOFIELD.

Witnesses:

E. G. EISENLOHR,  
J. C. HAMBERLIN.