

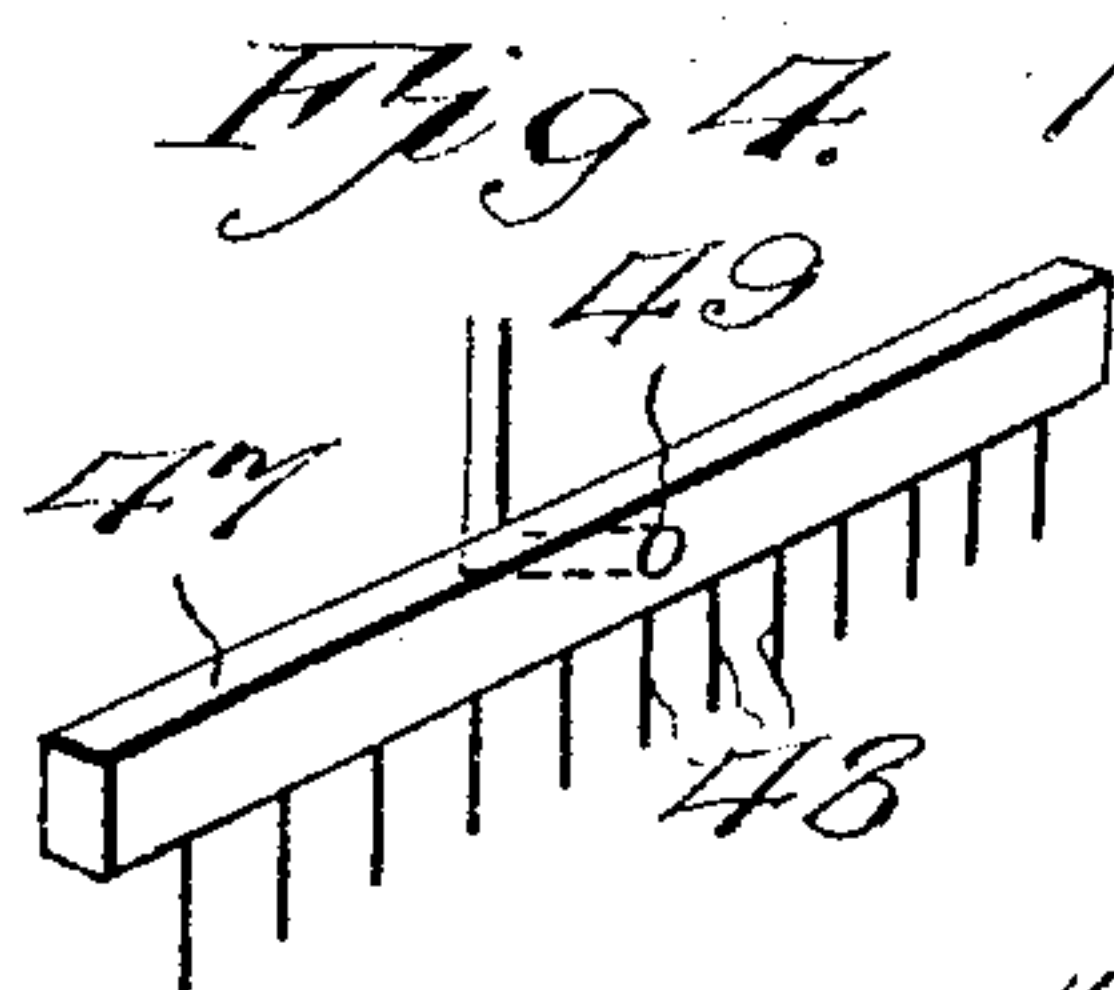
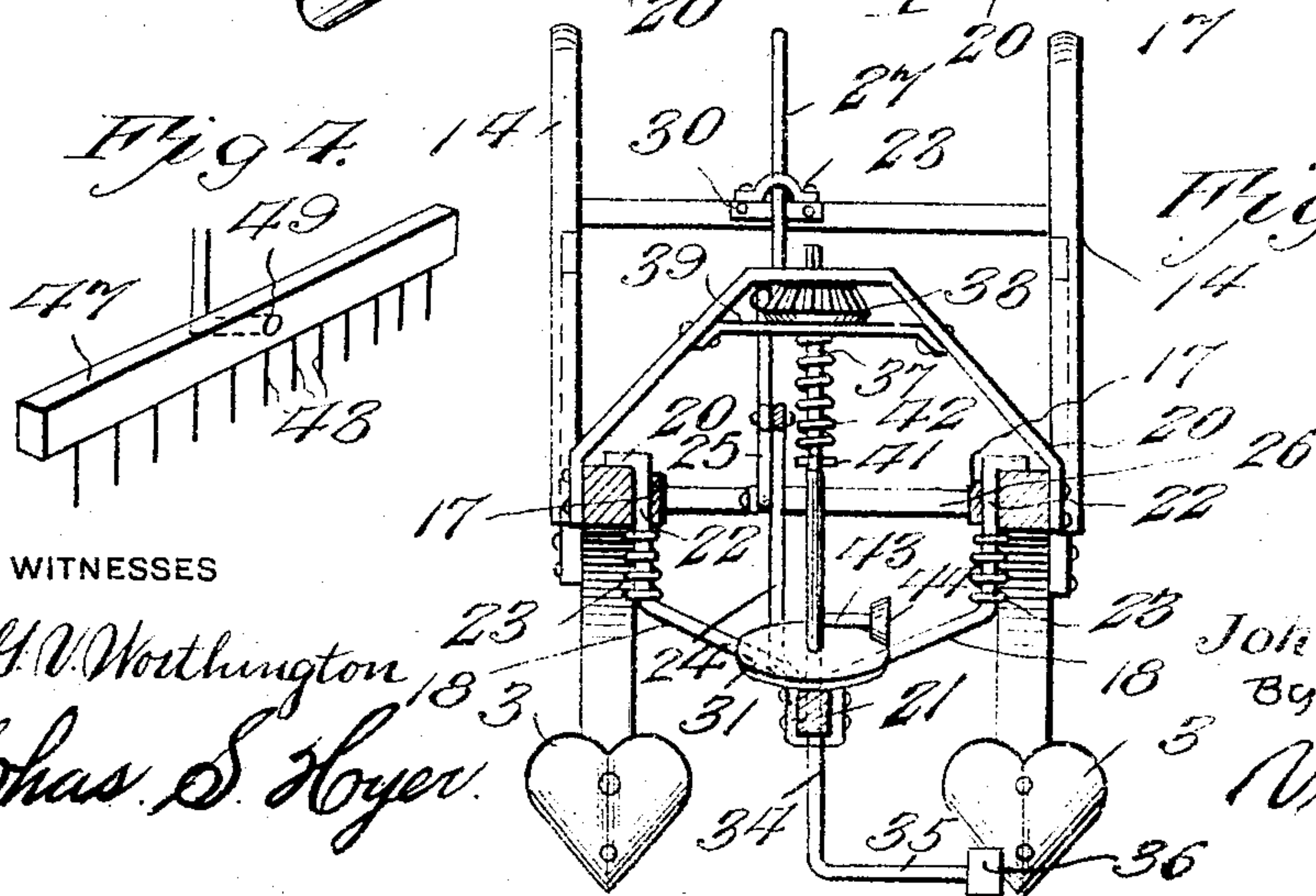
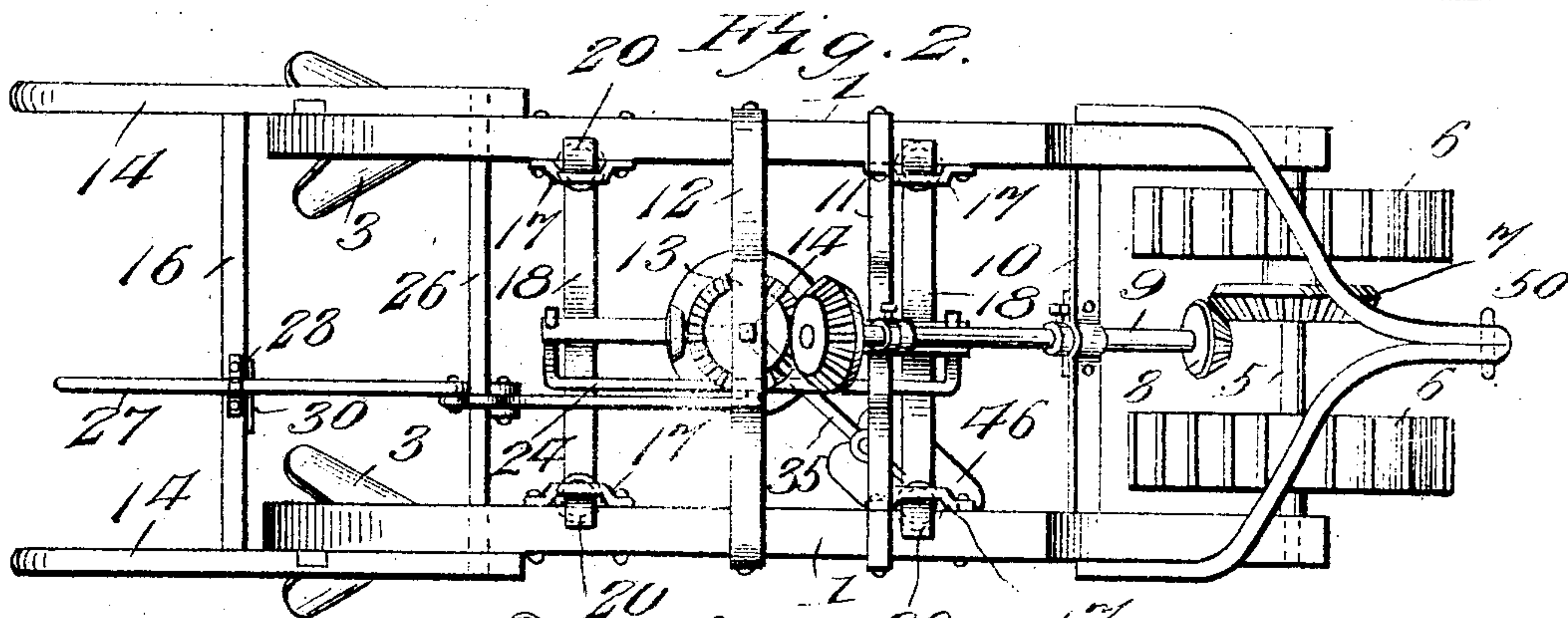
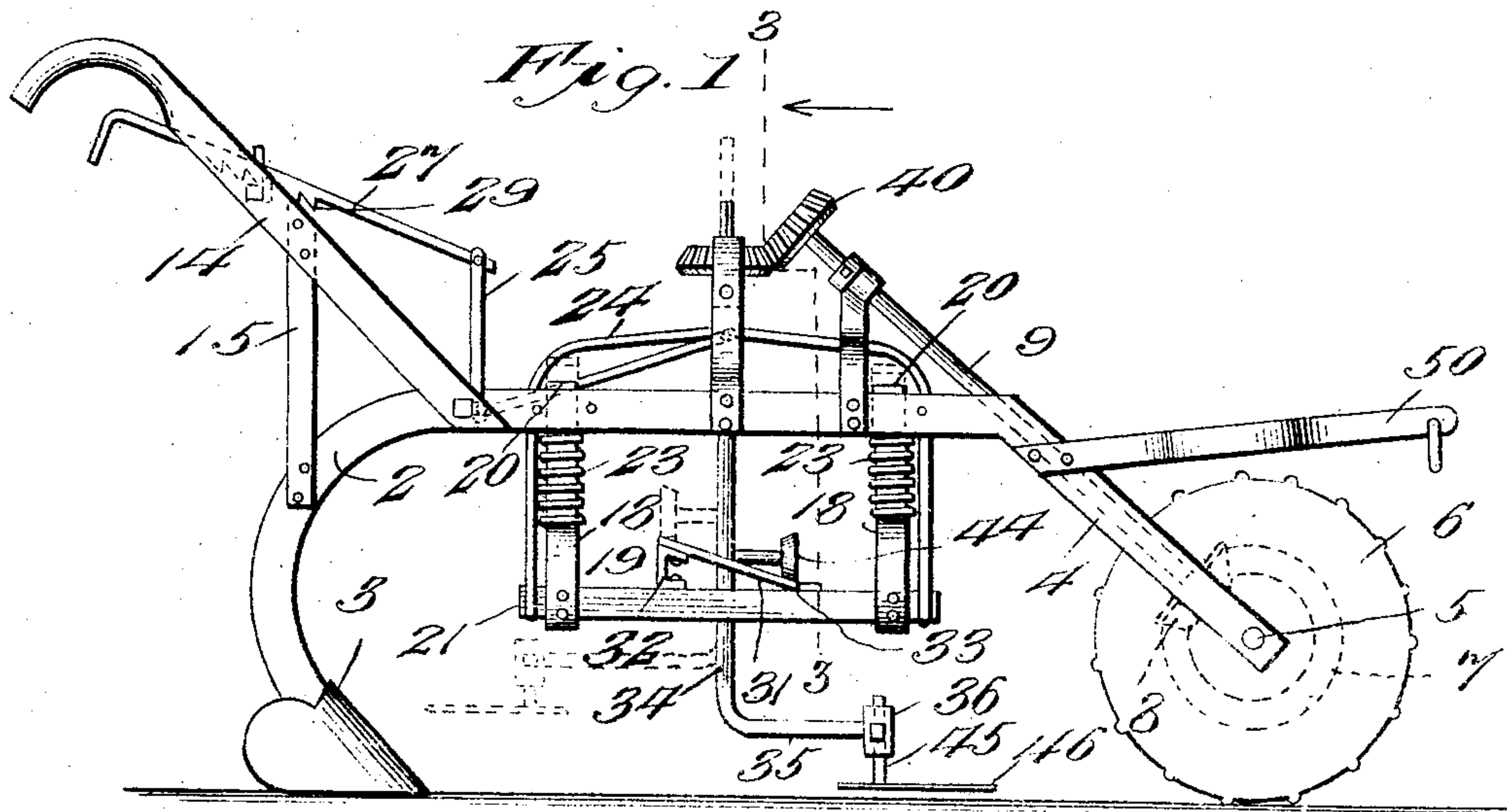
No. 765,056.

PATENTED JULY 12, 1904.

J. WALTHALL.  
COTTON CHOPPER AND CULTIVATOR.

APPLICATION FILED JULY 9, 1903.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN WALTHALL, OF ISRAEL, TEXAS.

## COTTON CHOPPER AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 765,056, dated July 12, 1904.

Application filed July 9, 1903. Serial No. 164,849. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WALTHALL, a citizen of the United States, residing at Israel, in the county of Freestone and State of Texas, have invented new and useful Improvements in Cotton Choppers and Cultivators, of which the following is a specification.

This invention relates to cotton choppers and cultivators; and the primary object of the same is to produce a simple and effective machine of this class embodying an organization of elements and adjustable features, as well as interchangeable parts, whereby cotton chopping and cultivating operations may be positively carried on in an expeditious manner.

The invention contemplates the use of a vertically-adjustable frame having a vertically-movable shaft disposed therein provided with a projecting device bearing on an incline to alternately raise and lower the said shaft without disturbing its rotation, the shaft having on its lower end a horizontally-disposed chopping-hoe adapted to be replaced by a harrow attachment.

The invention also consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a cotton chopper and cultivator embodying the features of the invention and showing the operation of the hoe in dotted lines. Fig. 2 is a top plan view of the machine. Fig. 3 is a section on the line 3 3, Fig. 1. Fig. 4 is a detail perspective view of a harrow attachment for the machine to replace the chopper and constructed in the form of a rake.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates opposite frame bars or beams having their rear extremities 2 curved downwardly for the reception of shovels or other plow attachments. The forward extremities of the bars or beams 1 are inclined downwardly and forwardly, as at 4, and in the lower ends the opposite terminals of an axle 5 have bearing, and on the axle are trac-

tion wheels or rollers 6. The drive-gear 7 is also disposed on the axle 5 and is continually held in mesh with a pinion 8 on the lower end of an inclined drive-shaft 9, projecting rearwardly and having bearing in suitable boxes secured to the center of a bearing-strap 10, terminally attached to the downwardly-inclined forward extremities of the bars or beams 1 and also in the center of an upper bearing-arch 11, arranged at a suitable elevation above the upper edges of the bars or beams. Extending across and above the bars or beams 1 in rear of the arch 11 is a bearing-arch 12, having an upper flat top 13, through the center of which a square opening 14 is formed, the said opening being in vertical alinement with the center of the machine. To the rear extremities of the bars or beams 1 handles 14 are secured and rigidly held by uprights 15 and a cross-bar 16.

On the inner opposing sides of the bars or beams 1 are pairs of transversely-alined guides 17, through which the hanger-bars 18 of a vertically-adjustable frame 19 are freely movable, the hanger-bars having angular stops 20 at their upper ends to bear on the upper edges of the bars or beams 1 and limit the downward movement of the said frame. The frame 19 comprises a lower center bar 21, around opposite extremities of which the hanger-bars are bent and secured, said hanger-bars extending upwardly and outwardly at angles of inclination and then vertically straight, as at 22, for movement through the guides 17, the vertically-straight portions of the hanger-bars below the guides being surrounded by springs 23, which always tend to force the frame 19 as an entirety downwardly into normal position. The frame 19 also includes a longitudinally-disposed arched tie-rod 24, having its ends passed around the ends of the center bar 21 outside of the points of attachment of the hanger-bars to the said center bar. The frame 19 is freely movable between the bars or beams 1, as will be understood from the construction just explained, and to effect this movement or adjustment of the frame a bell-crank lever 25 is secured on a transversely-extending fulcrum-



rod 26, held by the bars or beams 1 in rear of the frame, the longer arm of the said bell-crank lever being attached to the center of the top part of the rod 24 and the shorter member of said lever projecting upward and secured to the front extremity of a shifting lever 27, movable in a clip 28, secured on the cross-bar 16 and having teeth 29 to engage the upper edge of a stop-plate or analogous device 30, also secured to the bar 16. By adjusting the lever 27 so the different teeth 29 will be brought into engagement with the plate 30 the frame 19 as an entirety may be held at any desirable elevation in relation to the bars or beams 1 for a purpose which will be presently set forth.

On the center bar 21 is an incline 31 of disk-like form, held at opposite points by fastening devices 32 and 33 to the said bar. Rotatably extending upwardly through the center bar 21, the incline 31, and the arch 12 is a shaft 34, having a lower horizontally-disposed extremity 35 with a terminal socket 36. The upper extremity of the shaft 34 is formed with an elongated square portion 37, freely movable through the opening 14 in the center of the arch 12 and through a bevel-pinion 38, held under the flat top 13 of said arch 12 by a supporting-strap 39, attached at its opposite terminals to the upper part of the said arch. The strap 39 is at such distance below the upper flat top 13 of the arch 12 that the pinion 38 will be free to rotate, but will always be held in mesh with a corresponding bevel-pinion 40 on the upper end of the drive-shaft 9. The upper square portion 37 of the shaft 34 is freely slidable through the pinion 38, and at the lower terminal of said square portion of a stop collar or shoulder 41, between which and the strap 39 a spring 42 is arranged and surrounds the shaft to cause the latter to have a normally depressed position. Extending outwardly from the shaft 34 is an arm 43, carrying a beveled roller 44, which is continually maintained in contact with the upper surface of the incline 31. Removably mounted in the socket 36 of the shaft 37 is the shank 45 of a horizontally-disposed hoe 46; but in place of this hoe, which is removable from the socket, may be substituted the harrow attachment illustrated by Fig. 4 and consisting of a head-bar 47 with depending harrow-teeth 48 and a central inclined opening 49 to receive a correspondingly-bent shank (indicated by dotted lines in Fig. 4) and adapted to be secured in the socket 36. The harrow attachment is held at an angle to the lower extremity of the shaft 34, so as to approach and operate in conjunction with the cotton-plants and ridges at about a "quarter" or at such angle as to effectively carry on the harrowing operation.

The machine is intended to be drawn by suitable draft-animals or any other means and has a centrally-projecting draft-tongue

50, formed by bending a metal bar and connecting the ends thereof to the forward downwardly-inclined extremities 4 of the bars or beams 1.

When the machine is propelled over the ground in operative relation to cotton-plants and the ridges in which they stand, the traction wheels or rollers 6 set the gear 7 in operation, which actuates the shaft 9 and causes the shaft 34 to rotate through the medium of the pinions 8 and 40 and the pinion 38. As the shaft 34 rotates the roller 44 travels over the incline 31, and by this means the said shaft 34 is elevated gradually against the resistance of the spring 42 and subsequently depressed, also in a gradual manner, so as to cause the hoe 46 to perform its function in relation to the plants and to operate only at such intervals along the ridge or row in which the plants may be disposed to thin out a surplus growth. By adjusting the frame 19 the hoe 46 can be positioned to effectively operate in conjunction with the cotton-plants and render it adaptable for operation on ridges having different elevations. At any time the harrow attachment shown by Fig. 4 may be substituted for the hoe, and the shovels or other plows 3, following in the rear, will complete the cultivating operation in an obvious manner.

When the machine is being transported from one point to another and it is not desired to have the hoe or harrow attachment operate in conjunction with the ground-surface, the frame 19 may be elevated to such an extent as to elevate the hoe or harrow attachment to its maximum point of vertical adjustment, so that it will entirely clear the ground-surface or plant growth over which the machine may move.

The improved machine will be found exceptionally useful for the purpose for which it has been devised, and to accommodate different uses changes in the proportions, dimensions, and minor details may be resorted to without departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. In a cotton-chopper, the combination with frame-bars, and a transverse arch connecting the same, of a vertically-movable frame supported by said bars, and means normally maintaining the frame in its lower position, said frame comprising a lower longitudinal center bar, a longitudinally-disposed arch, and an inclined disk on the bar; a gear-wheel rotatably supported by the arch first named, a vertically-movable rotatable shaft provided at its lower portion with means for riding upon the disk, and formed with an upper squared portion working through corresponding openings therefor in said transverse arch and the gear-wheel, a cultivator device held by the lower extremity of said shaft, and



means engaging the said gear-wheel for rotating the shaft in the propulsion of the machine.

2. In a cotton-chopper, the combination  
5 with frame-bars, and a transverse arch connecting the same, of a vertically-movable frame supported by said bars, and means normally maintaining the frame in its lower position, said frame comprising a lower longitudinal center bar, a longitudinally-disposed  
10 arch, and an inclined disk on the bar; a gear-wheel rotatably supported by the arch first named, a vertically-movable rotatable shaft provided at its lower portion with means for riding upon the disk, and formed with an upper squared portion working through corresponding openings therefor in said transverse arch and the gear-wheel, a cultivator device held by the lower extremity of said shaft,  
15 means engaging the said gear-wheel for rotating the shaft in the propulsion of the machine, and hand-operated devices for raising said frame to elevate the cultivator device from the ground.

25 3. In a cotton-chopper, the combination with frame-bars, a transverse arch connecting

the said bars, and an axle supported by the forward ends of the bars and provided with traction-wheels, of a vertically-movable frame also supported by the bars, and springs normally maintaining the frame in its lower position, said frame comprising a lower longitudinal center bar, together with a longitudinally-disposed arch, and an inclined disk on the bar; a gear-wheel rotatably supported by  
30 the arch first named, a vertically-movable rotatable shaft provided at its lower portion with means for riding upon the disk, and formed with an upper squared portion working through corresponding openings therefor  
35 in said transverse arch and the gear-wheel; a cultivator device held by the lower extremity of the shaft, and rotatable connections operated from the said axle to engage said gear-wheel for rotating the shaft in the propulsion  
40 of the machine over the ground.

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

JOHN WALTHALL.

Witnesses:

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JIM PICKARD.