

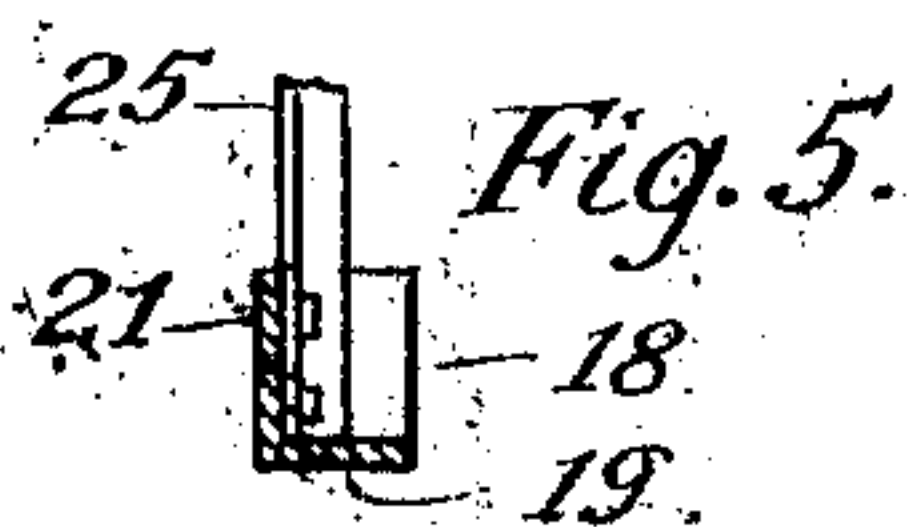
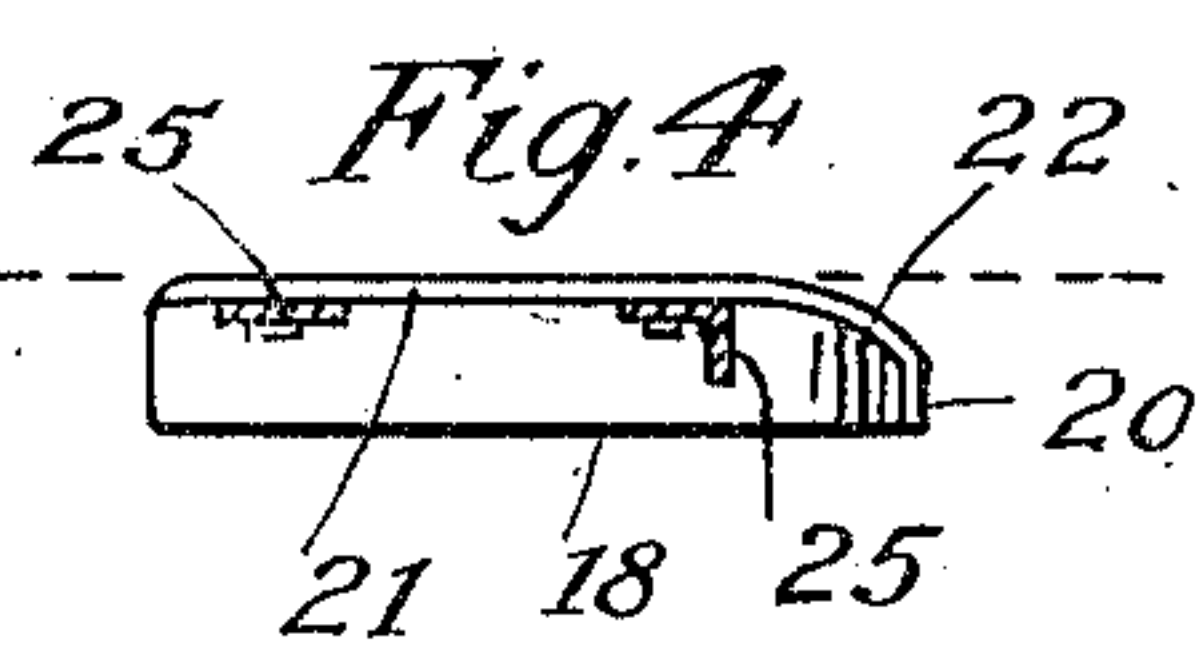
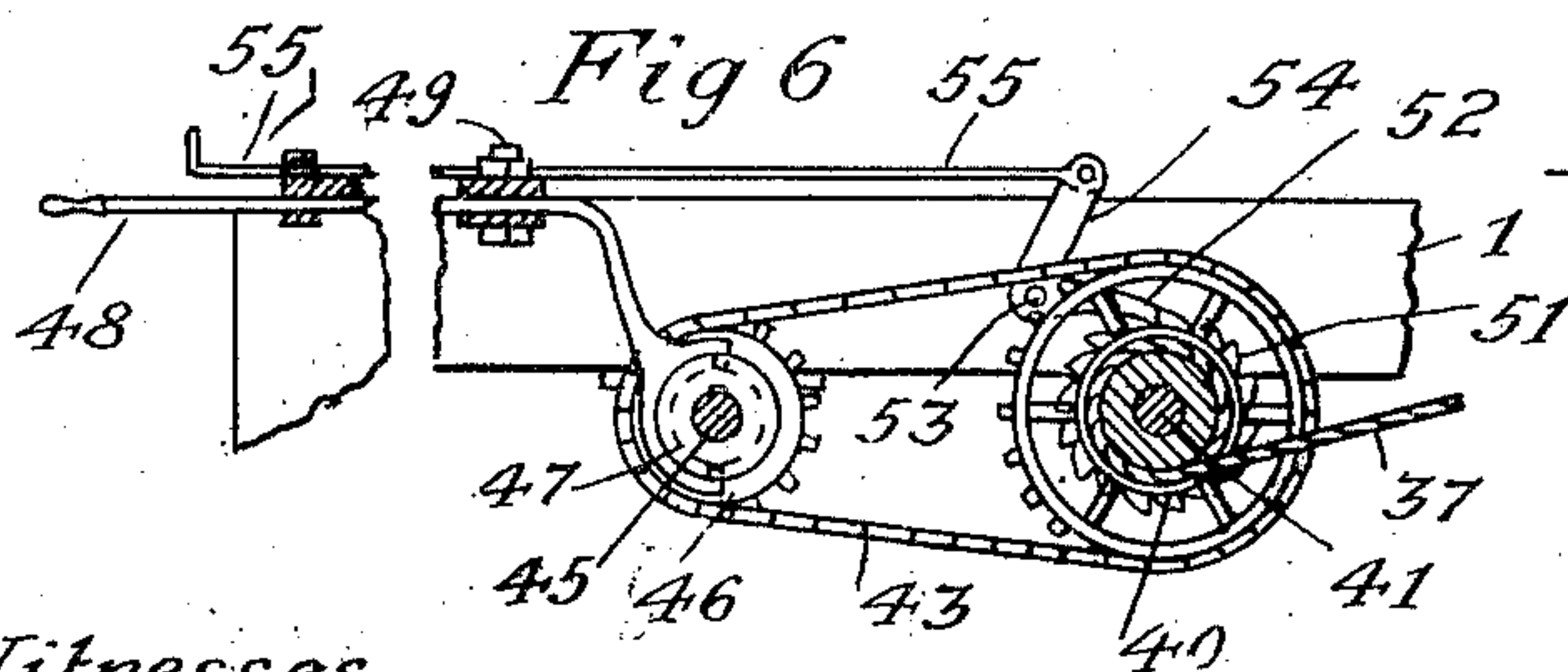
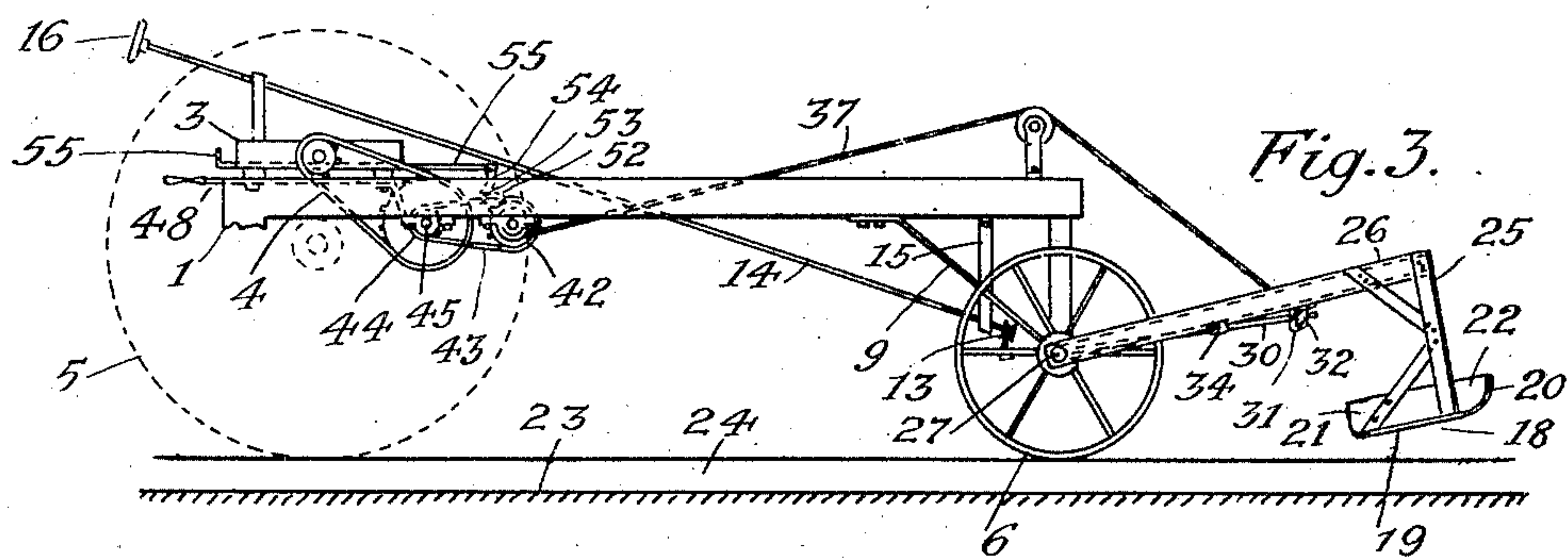
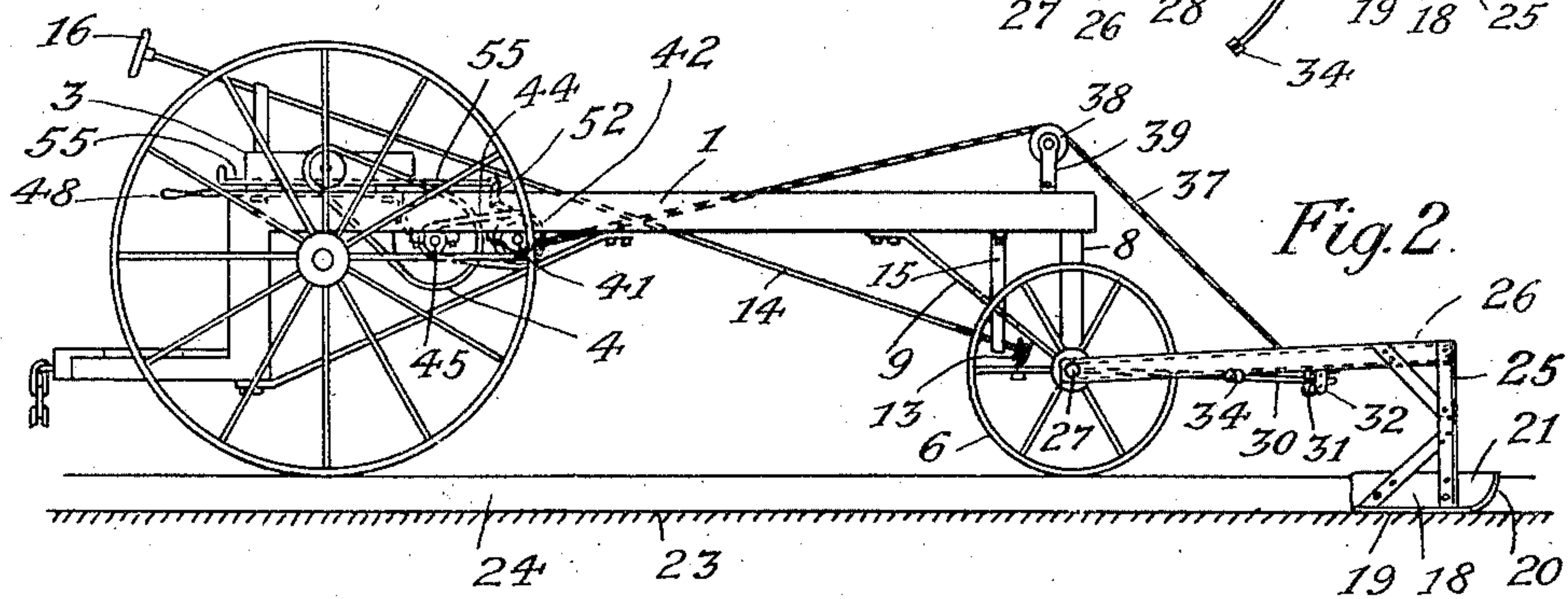
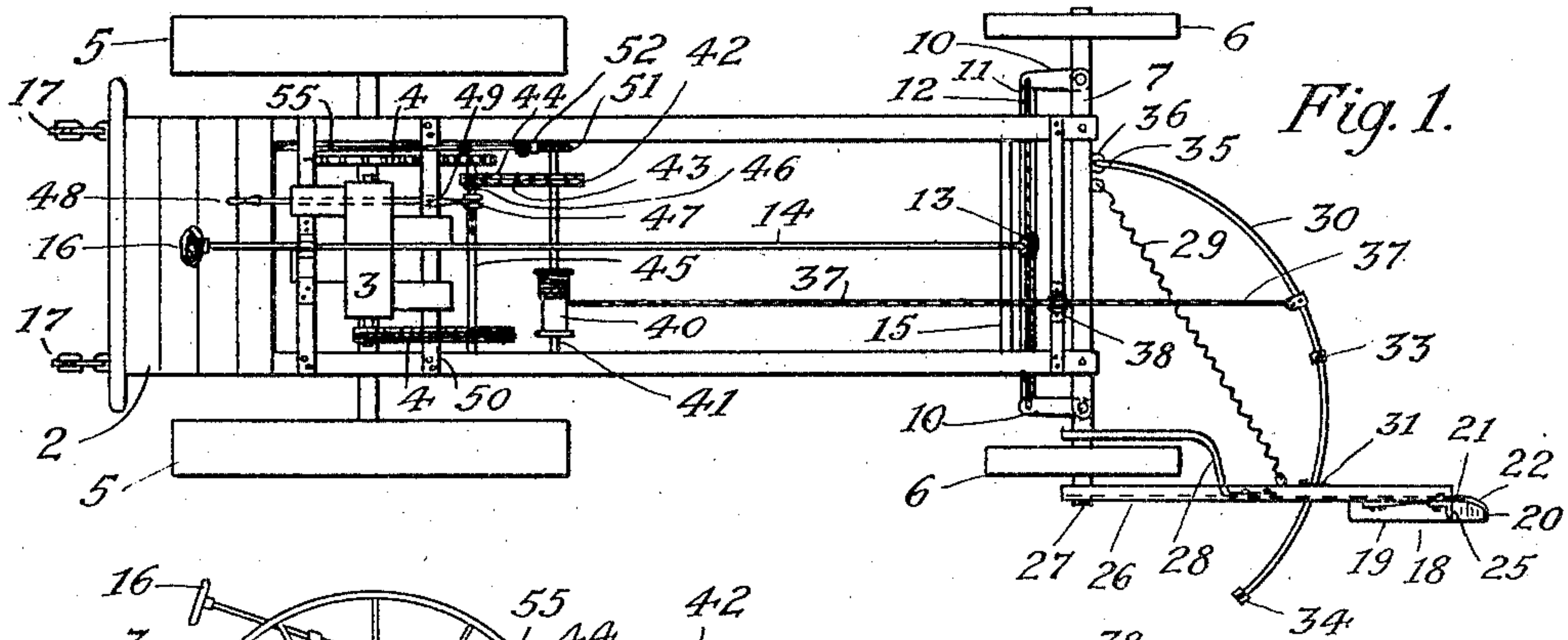
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GUIDING DEVICE FOR PLOW MOTORS.

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UNITED STATES PATENT OFFICE.

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GUIDING DEVICE FOR PLOW-MOTORS.

963,490.

Specification of Letters Patent.

Patented July 5, 1910.

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To all whom it may concern:

Be it known that we, EDWIN M. WHEELLOCK, residing at Minneapolis, in the county of Hennepin, EMERY F. WHEELLOCK, residing at Northfield, in the county of Rice, and DICKINSON O. WHEELLOCK, residing at Minneapolis, in the county of Hennepin, State of Minnesota, all citizens of the United States, have jointly invented certain new and useful Improvements in Guiding Devices for Plow-Motors, of which the following is a specification.

Our invention relates to traction engines or motors used in plowing; and its object is to provide means for guiding the motor to cause it to travel at a proper distance from and along the side of a previously formed furrow. This object we accomplish by means of a shoe or similar device supported a suitable distance in front of the motor and adapted to contact with the unplowed side of a furrow and thereby guide the motor.

Our improvement is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view and Fig. 2 a side elevation of an engine or motor embodying our improvement, showing the guide-shoe in operative position in a furrow and engaging the land-side thereof; Fig. 3 is a view similar to Fig. 2, but showing the guide-shoe raised above the surface of the ground; Figs. 4 and 5 show details of the shoe; and Fig. 6 is a detail view of part of the mechanism for raising and lowering the shoe.

We have selected for the purpose of illustration, and have shown in the drawings in somewhat diagrammatic form, an explosive-engine motor, which is the type of motor we prefer to use for plowing, but our improvements are adapted to be used in connection with motors of other types.

In the drawings 1 designates the main frame of the motor, 2 the platform for the operator, 3 the explosive engine, 4 the driving-gear, 5 the rear wheels, 6 the front wheels, 7 the divided front axle, which is preferably suspended from the frame 1 by hangers 8 and stayed by braces 9; 10 the angular arms pivoted to the axle 7, and 11 the equalizer for the pivoted members of the front axle. To the arms 10 are fastened the ends of a cable or chain 12 which runs around a pulley 13 on the end of an operat-

ing rod 14 which is journaled in a hanger 15 and extends rearward and has a hand-wheel 16 in convenient position for an operator on the platform 2 to turn it for steering the motor. A gang of plows (not shown) may be connected to the motor frame in the customary way by the chains 17, or rods, or other suitable means, to enable the motor to draw the gang for plowing. All of these parts may be of any usual or suitable construction.

To guide the motor and plows in proper direction with relation to the previously plowed ground, and to relieve the operator of the strain and labor of giving constant attention to the steering devices while plowing, we provide a guide-shoe 18 arranged a short distance in front of the motor and adapted to bear against the land-side of a furrow.

The shoe may be of any suitable shape and construction. As shown in the drawings, it consists of a flat base 19 having its front portion 20 upwardly curved, and an upright side 21 rising from the base and having its front portion 22 rounded or beveled. The base 19 is adapted to slide on the furrow bottom 23, while the side 21 is adapted to contact with the land-side 24 of the furrow to prevent the motor from moving away from the furrow; and the operator can, by setting the steering-gear in position to give the motor a slight tendency to move in that direction, obviate any tendency of the motor to move in the opposite direction, or toward the plowed ground. Such guide-shoe is not only an aid to the operator in steering the machine, but in effect is made to serve as a positive and practically automatic guide for the machine during the plowing along the side of a previously formed furrow.

It is preferable to provide the shoe with a relatively wide tread, as shown; but, if desired, the base 19, or tread, may be dispensed with, in which case, under some conditions, it would be desirable to hold the shoe in suspension to prevent it from cutting too deeply into the furrow bottom.

The shoe may be suspended by a braced arm 25 from the front end of a carrier-bar 26, the rear end of which is journaled on a projecting portion 27 of the spindle of one of the steering wheels 6. The bar is stayed by a brace 28 pivotally connected to the

axle-arm 10 between the wheel and frame; and it may be also yieldingly stayed by a coil-spring 29 connecting it with the axle 7.

For raising and lowering the shoe its carrier 26 is supported on a curved support 30, which preferably consists of a piece of gas-pipe. To enable the carrier 26 to adjust itself along its support as required when the direction of travel of the steering wheels is changed, anti-friction rollers 31 supported from the carrier bar by a pair of hangers 32 engage the upper and lower surfaces of the support 30 and allow the carrier to move freely thereon in lateral direction between the stops 33 and 34 provided on the support to prevent movement beyond proper limits. To enable the support 30 to be operated for raising and lowering the guide shoe it is connected by an eye 35 on its inner end with an eye-bolt 36 secured to the front of the fixed axle 7; and a cable 37 fastened to the support near its middle is made to run on a pulley 38 mounted on a standard 39 at the front of the frame 1 and extends to a drum 40 on a transverse shaft 41 journaled on the under side of the main frame. A sprocket-wheel 42 on the shaft 41 is connected by a chain 43 with a sprocket-wheel 44 loose on the shaft 45 of the motor driving mechanism but provided with a friction disk 46 on its side adapted to be engaged by a friction clutch member 47 splined on the shaft 45; and a clutch-shifter 48, pivoted at 49 to a cross-bar 50, enables the operator at will to start and stop the cable winding mechanism to raise and lower the guide shoe devices. To hold the latter in their adjusted positions a ratchet 51 provided on the shaft 41 is engaged by a dog 52 pivoted at 53 to the frame and having an arm 54 which is connected to a sliding rod 55 by means of which the operator can move the dog to and from locking engagement with the ratchet. By means of these devices the operator is enabled to utilize the power of the engine to lift the guide shoe from the ground, and the locking devices will hold it in elevation until the locking dog is again freed by the op-

erator, when the shoe will gravitate to the ground.

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

1. The combination with a plow motor, of a guide-shoe arranged in advance thereof in a furrow and having its working side beveled or rounded at the front and adapted to bear against the land-side of the furrow, a carrier therefor pivotally connected to the axle of a steering wheel, a vertically movable support on which the carrier may move freely in lateral direction, and means for raising and lowering such support and with it the carrier and shoe, substantially as set forth.

2. The combination with a plow motor, of a guide-shoe arranged in advance thereof in a furrow and having its working side beveled or rounded at the front and adapted to bear against the land-side of the furrow, a carrier therefor pivotally connected to the axle of a steering wheel, a vertically movable support on which the carrier may move freely in lateral direction, and controllable connections between such support and the motor driving mechanism for raising and lowering the former and with it the carrier and shoe, substantially as set forth.

3. The combination with a plow motor, of a guide-shoe arranged in advance thereof in a furrow and having its working side beveled or rounded at the front and adapted to bear against the land-side of the furrow, a carrier therefor pivotally connected to the axle of a steering wheel, a vertically movable support on which the carrier may move freely in lateral direction, and a spring for yieldingly holding the shoe to contact with the land-side of the furrow, substantially as set forth.

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