(No Model.) 2 Sheets—Sheet 1.

F. W. GORDON.

GANG PLOW.

No. 603,136. Patented Apr. 26, 1898.

Fig 1

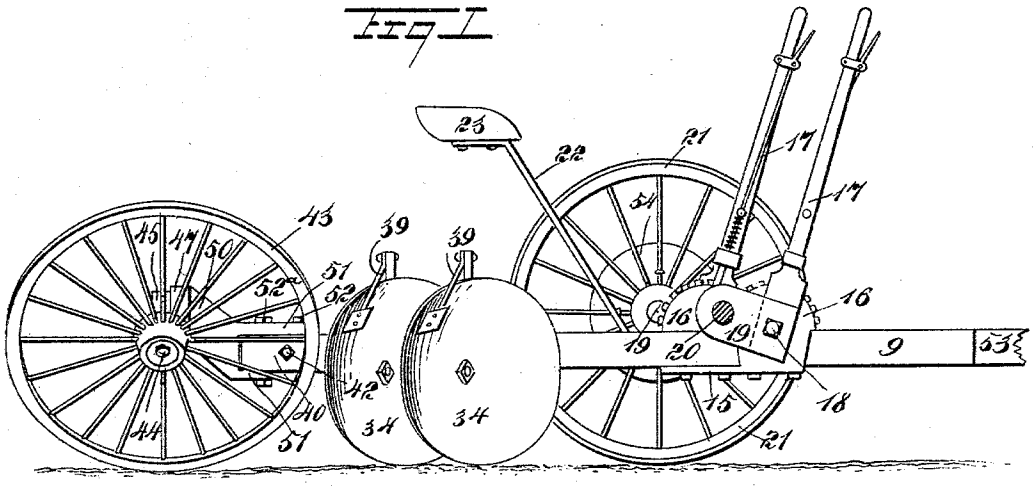


Fig 2

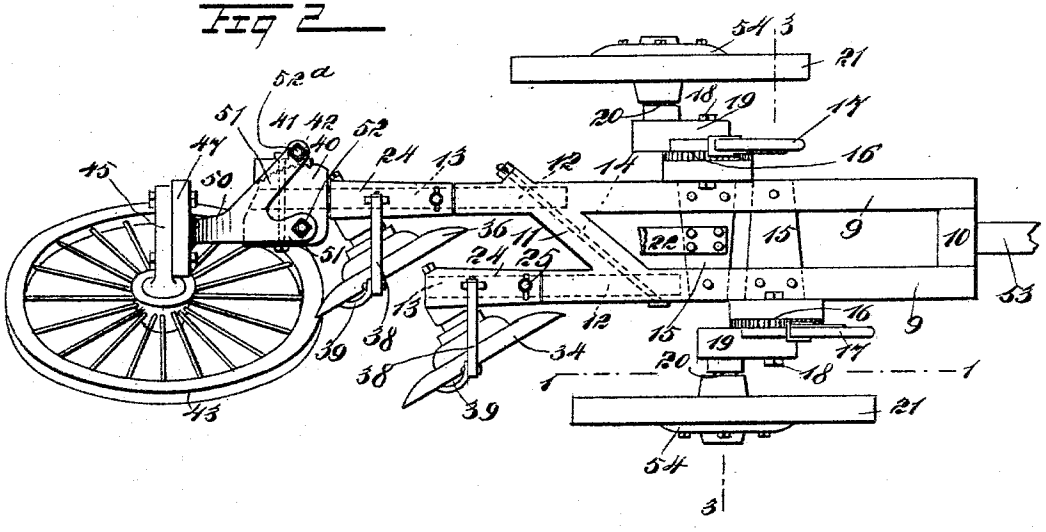


Fig 2A



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(No Model.) 2 Sheets—Sheet 2.

F. W. GORDON.

GANG PLOW.

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Fig 3

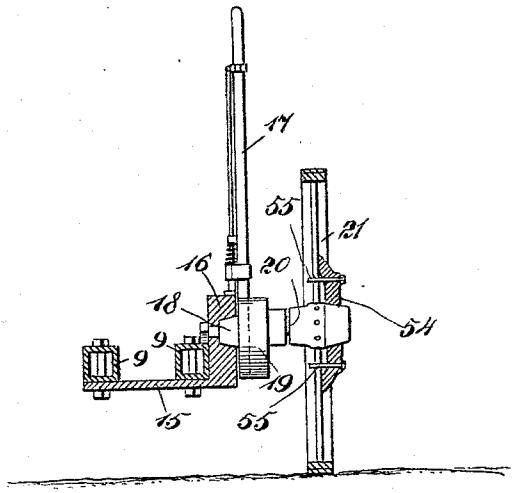


Fig 7

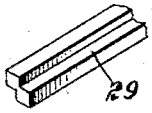


Fig 4

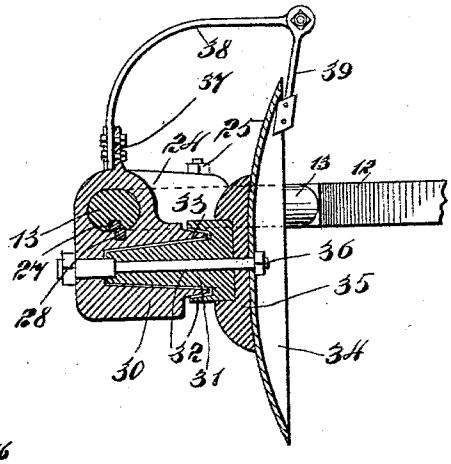


Fig 6

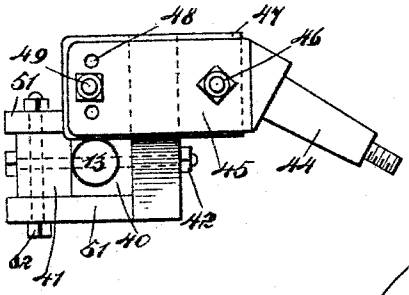
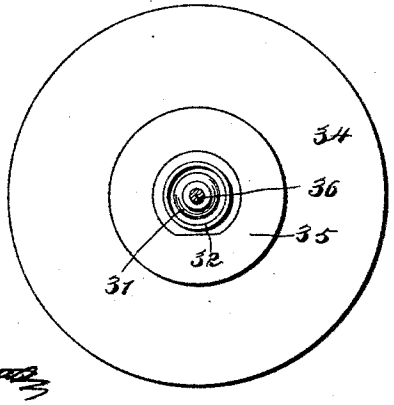


Fig 8



Fig 5



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UNITED STATES PATENT OFFICE.

FREDERICK W. GORDON, OF VALLEY VIEW, TEXAS.

GANG-PLOW.

SPECIFICATION forming part of Letters Patent No. 603,136, dated April 26, 1898.

Application filed February 3, 1897. Serial No. 621,850. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. GORDON, of Valley View, in the county of Cooke and State of Texas, have invented a new and Improved Gang-Plow, of which the following is a full, clear, and exact description.

The invention relates to an improvement in that class of gang-plows which employ disks turning in the soil and serving to form the furrows therein.

The invention consists in certain peculiar features of construction and combinations of parts, as will be fully described hereinafter and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation on the line 1 1 of Fig. 2. Fig. 2 is a plan view. Fig. 2ª is a detail perspective of a part to be hereinafter described. Fig. 3 is a sectional view on the line 3 3 of Fig. 2. Fig. 4 is a detail section taken through one of the disks and means for mounting the same. Fig. 5 is an elevation of one of the disks separated from the means for mounting it and showing the conical trunnion or plug of the disk in end elevation. Fig. 6 is a rear elevation of the means for mounting the guide-wheel. Fig. 7 is a fragmentary perspective of a key which I employ, and Fig. 8 is a partial section of a portion of the frame.

The frame has two longitudinal beams 9, joined at their front ends by a cross-beam 10 and having their rear portions connected by a diagonal beam 11. The beams 9 are hollow and receive in their square interiors the squared front ends 12 of the spindles 13, (for details of which see Fig. 8 and for the assembled position of which see the dotted lines in Fig. 2.) A diagonal tie-rod 14 runs through the beam 11 and through the ends 12 of the spindles 13. The beams 9 have their rear ends out of transverse alinement, and the spindles 13 are of different lengths, so that the right-hand spindle will terminate at a point forward of the termination of the left-hand spindle.

Bolted to the under side of the beams 9 and running transversely between the two are two plates 15, the opposite ends of which carry ratcheted segments 16 and have the hand-levers 17 fulcrumed thereon at the points 18. In rigid connection with the lower end of each lever 17 is a rearwardly-projecting arm 19, to which the spindles 20 of the gage-wheels 21 are respectively connected. By these means the gage-wheel 21 may be raised or lowered with reference to the frame of the machine and the depth at which the disks operate in the ground may be regulated. Each gage-wheel 21 is provided with a ballast-disk 54, which is removably held thereto by clips 55. These ballast-disks serve to weight the wheels and cause them to hold the plow-disks in proper engagement with the ground. If the condition of the soil does not require such downward pressure, the disks 34 may be readily removed and for the moment dispensed with. A spring-arm 22 projects upwardly and rearwardly from the rear plate 15 and carries a seat 23, whereon the driver of the plow may rest.

Each spindle 13 is round at the portions of the spindles that are rearward of the beams 9. Mounted on each spindle 13 and directly adjacent to the rear ends of the beams 9 are the means for carrying the disks. The disks are two in number and are duplicates of each other, as well as are the means for mounting them. Each of these means consists in a sleeve 24, having a vertical bolt 25 passing through transversely-alined slots in the upper and lower sides of the sleeve. The bolts 25 are held rigidly in openings 26 of the spindles 13, (for one of which openings see Fig. 8.) By these means the sleeve 24 may be turned on the spindles 13. Each spindle 13 is provided on its lower side with a square keyway 27. Each sleeve 24 is provided at the lower portion of its bore with a square keyway 28. Sliding in these keyways is a key 29. (See Fig. 7.) This key has a cross-sectional form characterized by two squares diagonally disposed with reference to each other. When the lower of these squares is at the left side of the vertical center of its spindle 13, the corresponding sleeve 24 will occupy the position shown in Fig. 4. When the lower of the squares defined by the cross-sectional form of the key 29 is at the left of the center of the corresponding spindle 13, the sleeve 24 will be held in a different posi-

tion with reference to the spindle 13, such position throwing the axis of the disk to downward inclination, and thus making it possible to regulate the manner in which the disk engages the earth.

Each sleeve 24 carries at its bottom a transversely-disposed and tapering socket 30, through which the conical trunnion or plug 31 extends. The plug 31 has an annular flange 32, embracing a similar projection 33, carried by the socket 30. By these means the bearing of the plug 31 with the socket 30 is kept free from grit or other impurities. A concavo-convex disk 34, with a centrally-recessed hub-block 35, is secured to the plug 31 by a bolt 36, running through the socket and through the block, the block 35 receiving the left-hand end of the plug 31 within the recess in the block. Each sleeve 24 has a lug 37 projecting upwardly therefrom and carrying an overhanging arm 38, to which a scraper 39 is fixed. The scrapers 39 project downwardly and respectively engage the concave sides of the disks 33 at points near the peripheries thereof, whereby to keep the disks clear.

The rear end of the left-hand spindle 13 projects beyond its sleeve 24 and carries an approximately-segmental block 40. The curved side of the block 40 is provided with ratchet-teeth adapted to coact with similar teeth on a triangular block 41. A transverse bolt 42 passes through the blocks 40 and 41 and through the rear portion of the left-hand spindle 13, by which means the parts 40 and 41 are rigidly connected with their corresponding spindle. The block 41, as shown in Fig. 2ª, has a longitudinal slot to permit the block 41 to be adjusted on the bolt 42. The blocks 40 and 41 carry the guide-wheel 43 of the machine, which guide-wheel is journaled on a diagonal spindle 44, carried by a plate 45, through which a pivot-bolt 46 passes to the plate 47. The left-hand portion of the plate 45 has a series of openings 48, with which the adjusting-bolt 49 may have connection. The bolt 49 passes to the plate 47, and by means of the bolts 46 and 49 and the openings 48 the plate 45 may be adjusted on the plate 47 to regulate the inclination of the spindle 44. The plate 47 is carried by a bracket 50, the forward portion of which is formed with two pairs of vertically-alined arms 51. The pairs of arms 51 respectively embrace the left-hand portion of the plate 40 and the plate 41. The arms 51, which embrace the block 40, have a bolt 52 passing through them and through the block, while the arms 51, which embrace the block 41, have a bolt 52ª passing through them and running vertically against the outer face of the block 41. The bracket 50 is thus mounted to swing or wag freely on a vertical pivot 52, and by adjusting the block 41 along the curved edge of the block 40 the rightward movement of the bracket may be limited to limit the rightward movement of the guide-wheel 43. The axis of the guide-wheel accordingly, therefore, is adjustable both on a vertical and horizontal pivot.

The plow is adapted to be drawn by horses through the medium of a tongue 53, projecting from the cross-beams 10. In operation the attendant, through the manipulation of the levers 17, regulates the depth at which the disks 34 enter the ground. The disks are thus adjusted in a manner to suit the condition and character of the soil which is being tilled, as will be understood. The staggered position of the guide-wheel 43 causes the wheel to evenly support the rear portion of the frame and at the same time to run in line laterally removed from the line in which the disks 34 run and therefore not to interfere with the work of the disks on the soil.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a spindle having a keyway, a member to turn on the spindle and also having a keyway, and a key with two diagonally-disposed parts respectively capable of running in the keyways of the spindle and of the said member whereby to hold the said member in two positions with reference to the spindle, substantially as described.

2. The combination of a spindle, a member turning on the spindle, the spindle and member having keyways, and a key having portions respectively capable of fitting within the keyway of the spindle and of said member whereby to hold the member in two positions relative to the spindle, substantially as described.

3. The combination of a spindle having a keyway, a member capable of turning on the spindle, and also having a keyway, and a spindle with two parts of duplicate cross-sectional form and of angular relation to each other, the said parts of the key respectively running within the keyways, and the key being capable of holding the said member at various positions with reference to the spindle, substantially as described.

4. The combination of a spindle having a square keyway, a member mounted to turn on the spindle and also having a keyway, and a key the cross-sectional form of which is that of two squares with diagonal relation to each other, and the key being capable of having its squares respectively run in the keyways whereby to hold the said member in either of said two positions with reference to the spindle, substantially as described.

5. The combination of a frame, a plow-disk carried by the frame, a wheel forward on the frame, means for varying the position of said wheel with reference to the frame, and a guide-wheel rearward in the frame.

6. The combination of a frame having two rigidly-joined beams, a spindle projecting rearward from each beam, a disk for each spindle and means for holding the disks re-

spectively at the sides of the spindles, the said means being adjustable axially on the spindles, to adjust the disks.

7. The combination of a beam, a spindle projected longitudinally from the beam, a wheel carried by the end of the spindle, and a disk carried at one side of and on the spindle.

8. The combination with a support, of two blocks, one of which is held on the support and the second of which is adjustable on the first, and a bracket one portion of which is pivotally mounted on the first block and a second portion of which is pivotally connected to the second block.

9. The combination of a frame formed of two longitudinal beams, means rigidly connecting the beams, a spindle projecting from the rear of each beam, a sleeve rockably mounted on each spindle at points rearward of the beams, cultivating-tools carried by the sleeves, and means for supporting the frame.

10. The combination of a frame, a spindle projecting from the rear of the frame, a sleeve rockably mounted on the spindle at a point rearward of the frame, a cultivating-tool carried by the sleeve, means for supporting the forward portion of the frame, a guide-wheel rearward of the frame, and means for mounting the guide-wheel on the spindle at a point rearward of the sleeve.

FREDERICK W. GORDON.

Witnesses:
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W. W. HOWETH.