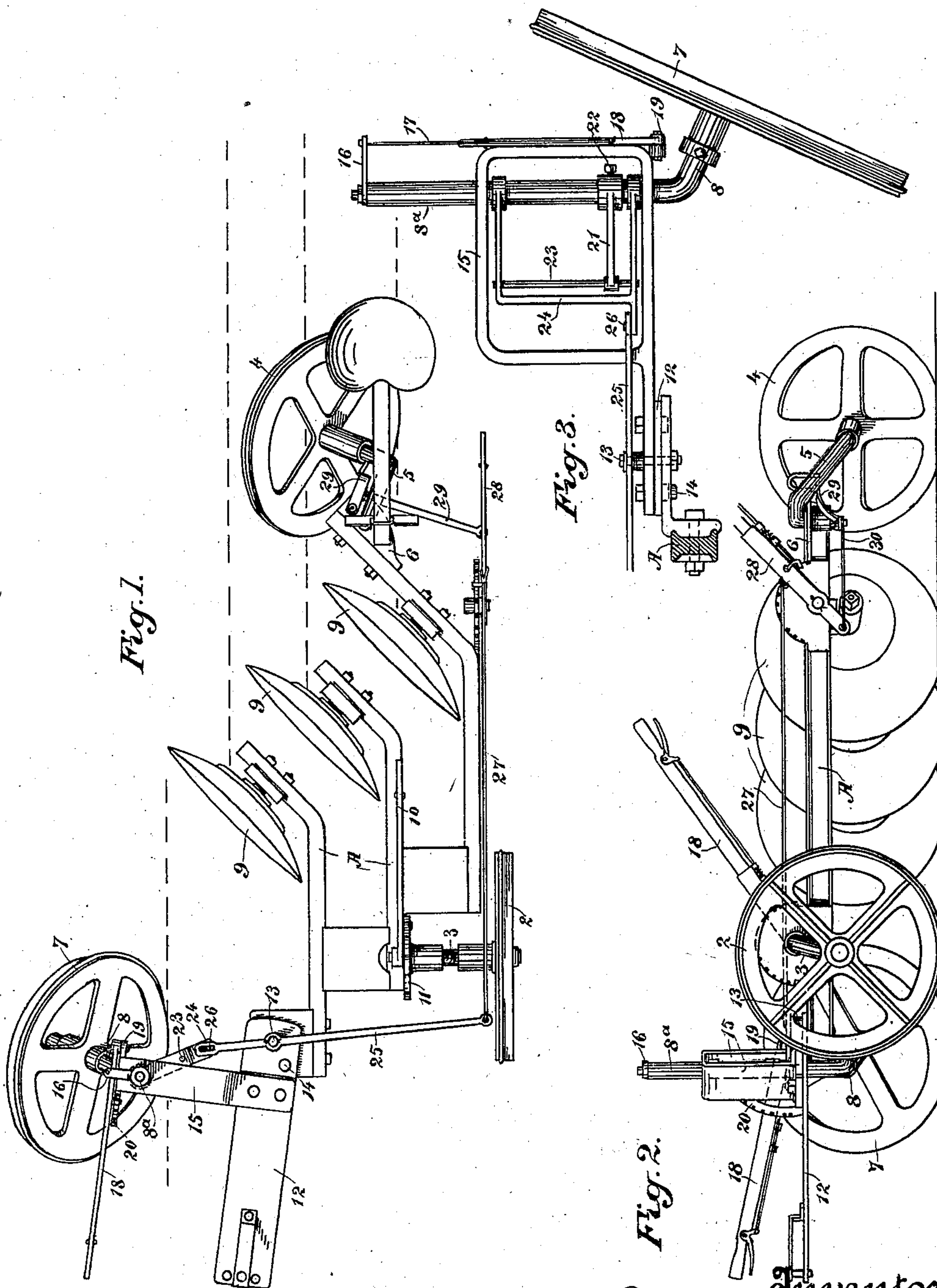


F. M. MECUM.
DISK PLOW ATTACHMENT.

(Application filed Feb. 27, 1902.)

(No Model.)



Witnesses,
J. H. Starnes
J. F. Alscheck

Inventor,
Francis M. Mecum
By Dewey Strong & Co
attys

UNITED STATES PATENT OFFICE.

FRANCIS M. MECUM, OF CHICO, CALIFORNIA.

DISK-PLOW ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 702,022, dated June 10, 1902.

Application filed February 27, 1902. Serial No. 95,949. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. MECUM, a citizen of the United States, residing at Chico, county of Butte, State of California, have invented an improvement in Disk-Plow Attachments; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in that class of plows in which concavo-convex disks are journaled and revoluble upon a suitable frame.

My invention consists in a means for changing the lines of travel of the bearing-wheels, whereby the plows may be held up to their work and made to cut furrows of greater or less width or to regulate the cut in land of variable quality.

It also comprises a connection of said wheels with a swinging draft-pole, whereby the wheels are turned in unison with the movement of the pole, and a means for multiplying the rate of movement of the wheels with relation to that of the pole.

My invention also comprises connections by which the raising and lowering of the frame are effected and details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of plow. Fig. 2 is a side elevation. Fig. 3 is a detail of the device for operating the front portion of the plow.

A is the main frame, made of channeled or angle iron or otherwise suitably constructed for strength and rigidity.

2 is a bearing and guide wheel mounted upon a crank-axle 3 at the left side of the frame, and 4 is a similar bearing-wheel mounted upon a bent angularly-placed axle 5, which axle is swiveled and turnable in a bracket 6, attached to the rear portion of the main frame.

7 is a third bearing-wheel upon the right and at the front of the machine. This wheel is also mounted upon a bent or angularly-placed axle 8, and this axle, as well as the axle 5, is so bent that the wheels 4 and 7 stand at an angle, bracing against the action of the disk plows 9, which are journaled upon shafts standing at an angle with the direction of travel of the plow. These wheels 4 and 7 are designed to travel in furrows pre-

viously made by the plows and by their angular position to prevent the plows from crowding to one side, and the wheel 2 is intended to travel upon the land or unplowed portion. By means of a pawl-carrying lever 10 and a segmental rack 11 the crank-axle 3 may be turned and the frame correspondingly raised or lowered with relation to the bearing-wheels.

My invention consists in combining with a plow having the above-described features a mechanism and connections by which the wheels 4 and 7 may be turned in unison to change their line of travel, and thereby hold the plows in any desired relation with the land in which they are at work, and also in such a connection of this mechanism with a pivoted and swinging pole that one of these wheels is turned by and in unison with the movement of the pole.

It further consists in such a connection of the wheel 7 that its rate of turning is greater than the rate of movement of the pole; and it also consists in such a connection of the spindle of the front wheel 7 with the lever 18 that the front portion of the frame will be raised and depressed and its movements controlled by the operation of the single lever 18.

The pole 12, to which the draft-team is attached, is pivoted, as shown at 13, and it may be held stationary and prevented from turning by means of a pin 14 passing through it and the frame. When the pin is removed, the pole will swivel or turn upon its pivot or pivot-bolt 13 by any movement of the team from one side to the other.

The shaft or axle 8, upon which the front wheel 7 turns, stands at an angle or incline, as previously stated, and it is bent so as to form a vertical portion 8^a. This portion of the shaft extends up through a bracket or frame 15, in which it is turnable and slidable, the first movement being for the purpose of changing the direction of travel of the wheel 7 and the second for raising and lowering this portion of the frame with relation to the standard 8^a and wheel. This latter movement is effected as follows: To the top of the standard 8^a is fixed an arm 16. This arm is connected by a rod 17 with a pawl-lever 18, suitably fulcrumed, as at 19, and by moving this lever, which is fulcrumed to the main

frame, it will raise this frame, and the yoke or bracket 15, sliding upon the standard 8^a, will allow the frame to be raised or depressed with relation to the bearing-wheel 7. A segmental rack, as at 20, serves to hold the lever 18 at any desired point of adjustment.

In order to turn the standard 8^a, and with it the angular wheel-shaft 8 and the wheel 7, I have shown an arm 21, which is firmly secured to the standard 8^a by a set-screw 22 or other equivalent fastening. The opposite end of this arm is perforated and slidable upon a rod 23, the upper and lower ends of which are fixed in a bent yoke 24, which lies within the bracket or yoke 15. Both ends of this yoke 24 are perforated to loosely fit the standard 8^a, which is slidable through this yoke as well as the bracket or yoke 15. This yoke 24 forms a lever and may be turned within the bracket 15 by a power applied to any part of it projecting away from the standard 8^a. This power is here shown as applied by means of a lever 25, connected with the lower part of the yoke 24, as shown at 26, and this lever is fulcrumed upon the pivot 13, about which the pole 12 is turnable.

When the pole 12 is fixed by means of the bolt, as at 14, the wheel 7 and the wheel 4 are turnable in unison as follows: The outer end of the lever 25 is connected by a rod or chain 27 with a hand-lever at 28, which lever is fulcrumed to a part of the main frame convenient to the hand of the operator, who may be riding upon the seat of the plow. The swiveled wheel-shaft 5, upon which the wheel 4 is journaled, is controlled by a lever 29, fulcrumed, as shown, and connected by a chain or rod 30 with the lever 28. One rod, as 27, may be connected with the lever above its fulcrum, and the other, as 30, may be connected with the lever below its fulcrum, so that the movement of the lever 28 in either direction will pull the connecting-rods 27 and 30 in opposite directions, and thus change the direction of travel of the wheels 4 and 7. The connection between the lever 25 and the yoke 24 may be made by slotting the lever longitudinally and connecting with the yoke by means of a pin upon the yoke which is slidable in the slot. When the pole 12 is released from the locking-pin 14 and allowed to turn by the movement of the team, it will turn with it the yoke or bracket 15, which is fixed rigidly to it and projects to one side, and while the lever 28 is held in a fixed position by means of its pawl and ratchet it will be manifest that the lever 25 will also be held stationary. This lever being thus held stationary, the yoke 24, which is carried with the bracket 15, will be given an independent movement with relation to the lever 25, so that the connecting-pin 26, sliding in the slot in the end of the lever 25, will act to turn the standard 8^a, the shaft, and the wheel 7 faster than the pole turns by reason of the multiplication of speed caused by a peculiar con-

nection of the lever 25 and the lever-yoke 24. This movement will then change the line of travel of the wheel 7 with considerable rapidity and is useful where the plow encounters ground of varying hardness, in which the plows are liable to be thrown in or out and to make an irregular furrow. This tendency can be entirely corrected by changing the angle of travel of this wheel, this movement being independent of any changes which may be effected by the movement of the lever 28, and which changes are communicated to both the wheels 4 and 7.

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

1. The combination with a disk plow of front and rear bearing and guide wheels, inclined axles upon which said wheels are turnable, said axles being swiveled and turnable with relation to the main frame, lever connections with each of said axles and connections between said levers and a single hand-lever whereby both wheels are turned simultaneously and in the same direction.

2. The combination with a disk plow and the frame thereof of front and rear bearing-wheels, axles swiveled and turnable in the main frame upon which said wheels are journaled, oppositely-moving levers by which said axles are turnable to change the direction of travel of the wheels, a hand-lever, connections between the first-named levers and said hand-lever at points above and below the fulcrum of the latter whereby both wheels are actuated therefrom and in the same direction, and means for holding the hand-lever at any point of adjustment.

3. The combination in a disk plow of inclined front and rear bearing and guide wheels, means by which the line of travel of said wheels is simultaneously changed in the same direction, the bearing-wheel mounted upon the crank-axle upon the left side of the plow, means for raising and lowering the frame thereon, a bracket in which the standard of the inclined front bearing-wheel is slidable and a lever and connections with said standard whereby the front portion of the frame may be raised and lowered.

4. In a disk plow front, inclined rear and side bearing-wheels, means for raising and lowering the frame with relation to the front wheel consisting of a yoke fixed to the front of the frame, a vertical standard slidable therethrough bent at the lower end to form an angular shaft upon which the front wheel is journaled, a horizontal arm projecting from the upper part of the standard, a lever fulcrumed to the frame and a rod connecting the lever with the outer end of the horizontal arm of the standard, and means for holding the lever at any point of adjustment.

5. A disk plow and the frame thereof, a pole pivoted to the front and having a removable locking-bolt, a yoke fixed to and pro-

jecting to one side of the pole, a front bearing-wheel having an angularly-disposed shaft and vertical standard swiveled and turnable in the bracket, a lever-arm projecting from the standard and a second lever pivoted upon the frame and connections whereby said lever acts to turn the front wheel and its standard.

6. The combination with a disk plow and the frame thereof of a pivoted swinging draft-pole, a bracket fixed to and projecting from one side thereof, a front bearing-wheel having an inclined axle and a vertical standard turnable in the bracket, a lever-arm projecting from the standard, a second lever-arm and a slidable connection between it and the standard-lever, said second lever carried upon the main frame and acting to turn the bearing-wheel and its standard with greater speed than the movement of the pole by which it is actuated.

7. The combination with a disk plow and frame thereof of a pole pivoted to the front having a fixed yoke or bracket projecting to one side, a bearing-wheel having a vertical standard turnable in the outer end of the bracket, a lever-arm projecting from the standard, a jointed connection between said lever-arm and the fixed portion of the frame whereby the turning of the pole acts to turn

the standard and its wheel faster than the movement of the pole.

8. The combination with a disk plow and the frame, front rear and side bearing and guide wheels of a pole pivoted and turnable at the front of the frame, a bracket fixed to and projecting to one side of the pole, a vertical standard bent to form the axle of the front bearing-wheel said standard being turnable and slidable within the bracket, a yoke interior to the bracket, through the ends of which the standard is also slidable, a lever-arm fixed to the standard between the top and bottom of the yoke, a vertical rod fixed to the outer part of the yoke upon which the outer end of the lever-arm is slidable whereby the frame may be raised and lowered, and means by which the frame may be raised and lowered with relation to the bearing-wheel, and a lever fulcrumed upon the pole-pivot having a jointed connection with the yoke interior to the bracket.

In witness whereof I have hereunto set my hand.

FRANCIS M. MECUM.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.