

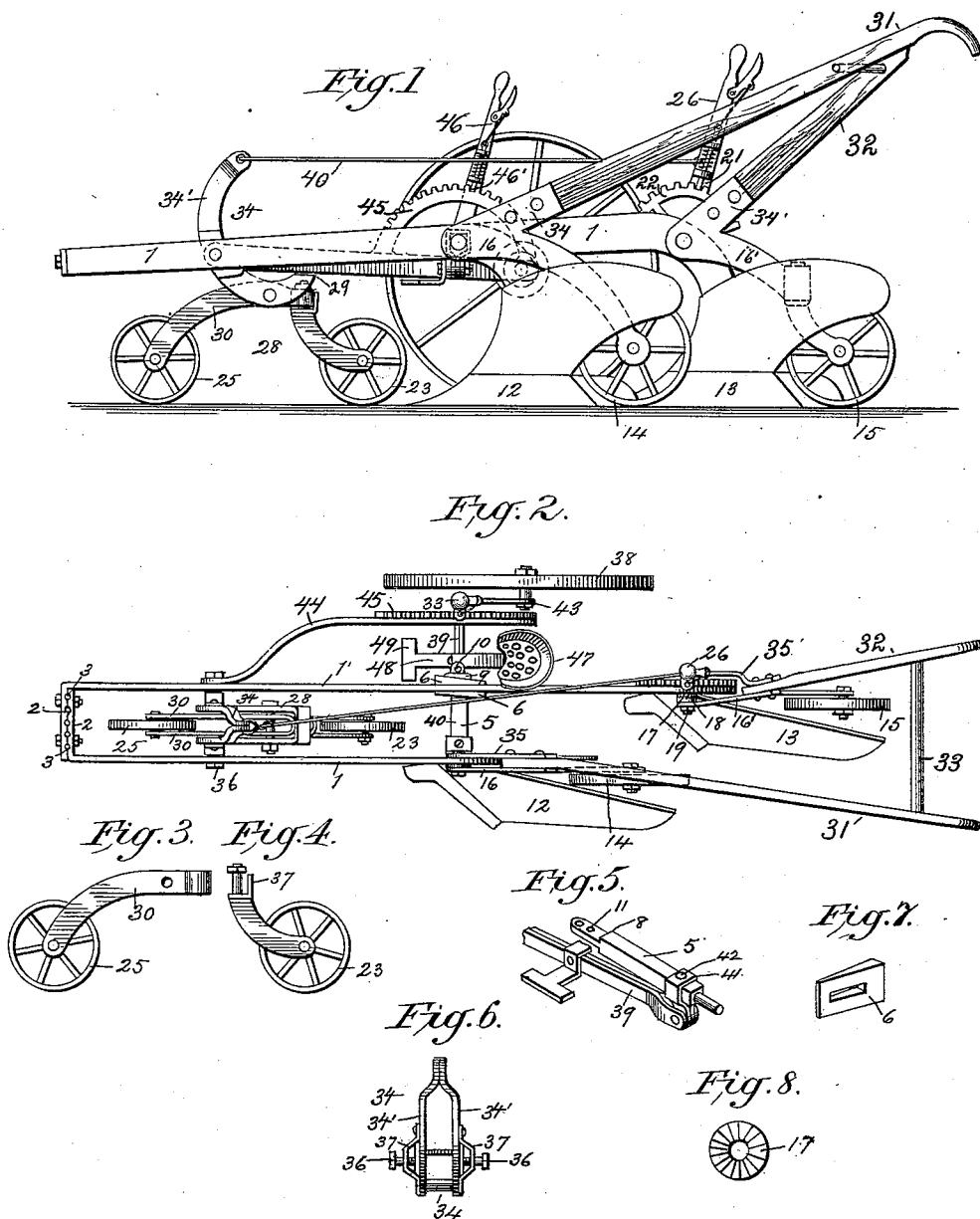
(No Model.)

A. M. FITCH.

COMBINED RIDING AND WALKING GANG PLOW

No. 484,000.

Patented Oct. 11, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

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COMBINED RIDING AND WALKING GANG-PLOW.

SPECIFICATION forming part of Letters Patent No. 484,000, dated October 11, 1892.

Application filed July 27, 1891. Serial No. 400,847. (No model.)

To all whom it may concern:

Be it known that I, ASA M. FITCH, a citizen of the United States, residing at Seymour, in the county of Jackson and State of Indiana, have invented certain new and useful Improvements in a Combined Riding and Walking Gang-Plow; 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 generally to wheel-plows, and particularly to combined walking and riding gang-plows in which vertically-adjustable pivoted trucks are employed at the forward portions of plow-beams for permitting the truck-wheels to pass over the usual obstacles encountered in plowing, for raising the plows proper out of the ground and carrying them from one field or place to another, and for regulating the depth of cut of said plows as desired, all of these results being effected without the slightest strain upon the framework or several parts of the plows, and in which, consequently, plowing is effected with equal ease and accuracy on rough and smooth ground and on hillsides, in which furrow-wheels are employed in the rear of the plows proper for running upon the bottom of the furrows of the surface of the ground, and for steadying and supporting said plows while being turned and moved from one field and place to another, and for forming fulcrums for raising said plows from the furrows or surface of the ground, and in which a land-wheel is employed for distributing the weight of the driver so as to hold the plow firmly to the ground, for preventing the plow from tipping over when employed on hillsides, and for securing an easy and natural passage to the plow.

The objects of my invention are, first, to provide a gang-pLOW with parallel and adjustable plow-beams, by means of which the distance between the plows proper may be regulated as desired; second, to provide improved means for attaching and operating the trailing furrow-wheels; third, to provide new and novel changes in the construction of the front truck, and, fourth, to provide improved mechanism for tilting the front truck. These objects are accomplished by the novel and

improved construction and arrangement of parts hereinafter to be described, and particularly pointed out in the claims.

In the drawings accompanying and forming a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, Figure 1 represents a side elevation of my improved combined riding and walking gang-pLOW, showing the attachment of the handles to the hangers of the rear trailing furrow-wheels and the hand-operated lever for manipulating the front truck. Fig. 2 represents a plan view of the same, showing the improved mechanism for attaching the plow-beams in front, the coupling-bar, and the wedges, which are designed for regulating the distance between the plow-beams, and consequently the width of the furrow-strips cut by the plows, the attachment of the land or saddle wheel axle to the cross-bar, the brace at the front of the plow-beam, and the pivoted attachment of the cradle or crane lever to the plow-beams. Fig. 3 represents a detail side elevation of the front wheel and the hanger of the front truck. Fig. 4 represents a detail side elevation of the rear caster-wheel of the front truck. Fig. 5 represents a perspective view of the coupling-bar for the plow-beams and the axle which gives support to the lever carrying the land-wheel. Fig. 6 represents a detail front elevation of the cradle or crane lever, showing the screw-threaded bolts which serve as trunnions or journals in the plow-beam. Fig. 7 represents a detail perspective view of one of the slotted and adjustable wedges. Fig. 8 represents a detail side elevation of one of the disks having radial teeth for the vertical adjustment of the hanger of the rear trailing furrow-wheel.

Referring to the drawings, the reference-numerals 1 and 1' indicate the beams of the plow, which are straight and nearly parallel to each other and which are bent inwardly at right angles to their body portions at their front ends 2, which are overlapped and provided with the adjusting-bolts 2' and formed with the registering semicircular grooves 3, which when in alignment form vertical channels for the attachment of a suitable clevis, which is thus rendered laterally adjustable for regulating the line of draft of the plow.

The plow-beams are connected together near their mid-length by the coupling-bar 5, said beams being rendered adjustable thereon by the slotted wedges 6, which are arranged on each side of one of the beams, and through the slots therein is passed the flattened portion of the connecting-bar 7. One of these wedges is driven between the shoulder 8 on the coupling-bar 5 and the inner side of one of the plow-beams, while the other is driven in between the outer side of said beam and the washer 9 on the outer end of said connecting-bar. This washer is held firmly against the outer wedge by the tapered key 10, which is driven through the slot 11, which is formed in the outer flattened portion of said connecting-bar. The adjustment of these wedges fixes the distance apart of the plow-beams, and, consequently, regulates the width of strip cut by the plows 12 and 13.

The trailing furrow-wheels 14 and 15 are suspended from the rear portions of the plow-beams by the right-angled hangers 16 and 16', one of which 16' is rendered vertically adjustable by the ribbed or toothed disk 17, which has a square extension fitting into a correspondingly-shaped opening (not shown) in the plow-beam 1'. Teeth formed on the surface of the hanger-arm mesh with said ribbed disk 17, and as said hanger-arm and said disk are capable of being rigidly attached together by means of the bolt 19, which passes through the square portion of the disk 17, the hanger 16, and other parts yet to be described, it is evident that the height of the furrow-wheel 14 may be varied, as required.

As shown, the furrow-wheel 15 is mounted upon a short arm projecting from the lower end of the hanger 16', and this is the preferred arrangement when the plow is used as a walking-plow; but when the plow is used as a riding-plow said wheel may be mounted with a swivel connection similar to that shown in Fig. 4 upon said lower end of the hanger 16'.

The trailing furrow-wheels 14 and 15 serve to carry a portion of the weight of the plow, the rider, and the soil upon their journals, and thus diminish the wear upon bottom of the plowshares, which is customary with ordinary plows, and cause most of the wear of the plowshares to come upon their upper surfaces, which at all times serves to keep said shares in proper condition. Said trailing furrow-wheels also serve to aid in transporting the plow from place to place, when by means of devices yet to be described the weight of the plow is thrown upon said wheels and the rear caster-wheel of the front truck.

The plow-handles 31 and 32 are secured together by the rod 33 and are bolted at their inner ends to arms 34 and 34', projecting from the hangers 16 and 16', in each case being further supported by braces 35 and 35', coming from the sides of the plowshares opposite to that at which the hangers are at-

tached and bolted to said plowshares by the same bolts which secure the hangers. Bolt 19, securing the hanger 16', the ribbed disk 17, and the handle-brace 35, further firmly secures the segmental rack 22 and forms a pivot for the hand-lever 26, which is provided with a spring-actuated pawl 21, engaging with said segmental rack, and used in a manner hereinafter to be described.

The front truck is composed of the two wheels 23 and 25, carried by the hanger 30, which is pivoted at the lower end of the cradle or crane lever 34. The rear caster-wheel (shown in detail in Fig. 4) is carried by a curved arm which is joined to the hanger 30 with a swivel connection and is provided with a vertically-extending lip 37, which serves to limit the horizontal motion of the caster-wheel by locking with the cap 29 on the rear end of the crane-lever 34. The cradle or crane lever 34 is formed of the two curved bars 34', which are connected at their upper ends where the front end of the coupling-bar 40 is attached, the rear end of said bar being secured to the hand-lever 26, and said crane-lever is securely held in place between the plow-beams 1 and 1' by the screw-threaded bolts 36, which pass through the plow-beams 1 and 1' and are journaled in the brackets 37, secured to the outer sides of the curved bars 34'.

When plowing is in progress and it is desired to pitch the plow forward upon its point and compel it to enter the ground, the hand-lever 26 is thrown forward, which transfers the weight from the rider end of the plow to the front end and causes the desired effect to take place. The reverse action, or when the hand-lever 26 is moved rearward, throws the crane-lever 34 backward, brings the cap 35 thereof down upon the caster-hanger 36, lifts the caster-wheel 25 from the ground, and thus transfers all of the weight of the front end of the plow upon the swiveling caster-wheel 23, which acts as a fulcrum during the operation. The operation of turning the plow is very much facilitated by the action of said caster-wheel 23 on account of the swiveling motion of the same.

The land-wheel 38 is eccentrically journaled upon the annular extension 43 of the hand-lever 46, which is pivotally secured on the outer end of the swinging axle 39, which axle is hinged at its inner end to an adjustable sliding clip 41, held in place on the coupling-bar 5 by the set-bolt 42, and at its outer end is held by the bent arm 44, secured at its front end to the plow-beam 1' by the bolt 36. A segmental rack 45 is secured upon the arm 44 in such a position as to be engaged by the spring-actuated pawl 46', attached to the hand-lever 46. This mode of attachment of the land-wheel 38 distributes the weight of the driver upon the plow and said land-wheel permits of the up-and-down movement of said wheel and its load when passing over rough and uneven surfaces or when plowing

on hillsides, and thus prevents any disturbance in the steady and uniform movement of the plow, and at the same time furnishes sufficient weight upon the plow to steady its movement and hold it to the ground.

The seat 47 of the driver is made in one piece with the downwardly-inclined spring-bar 48 and the foot-rest 49 and is bolted, and thus firmly secured to the axle 38.

Having thus fully described my invention, its construction and operation, what I claim as new, and desire to secure by Letters Patent, is—

1. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams having overlapping and channeled front ends for regulating the width of the line of draft, of means for laterally adjusting said beams, substantially as described.

2. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams, of trailing furrow-wheels suspended from the rear portions of said beams and right-angled hangers, one of which is vertically adjustable, substantially as described.

3. In a combined walking and riding gang-plow, the combination, with two parallel and laterally-adjustable plow-beams, of trailing furrow-wheels and right-angled hangers attached to the rear portions of said beams, one of said hangers being provided with a ribbed or toothed disk locking with the correspondingly-ribbed surface of the hanger, thus making said hanger vertically adjustable, substantially as described.

4. In a combined walking and riding gang-plow, the combination, with two parallel and laterally-adjustable plow-beams having overlapping and channeled front ends for regulating the width of the line of draft, of trailing furrow-wheels suspended from the rear portions of said beams and right-angled hangers, one of which is vertically adjustable, substantially as described.

5. In a combined walking and riding gang-plow, the combination, with two parallel and laterally-adjustable plow-beams, of a front truck pivotally secured to said beams, means for operating the same, and trailing furrow-wheels suspended from the rear portions of said beams provided with right-angled hangers, one of which is vertically adjustable, substantially as described.

6. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams, of a front truck consisting of a front wheel and a rear caster-wheel pivotally secured to said beams, a crane-lever, and means for operating the same, substantially as described.

7. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams, of a front truck consisting of a front wheel and a rear caster-wheel pivotally secured to said beams, a crane-lever, and means for operating the same, said means consisting of a connecting-bar and an adjustable hand-lever, substantially as described.

8. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams, of a front truck consisting of a front wheel and a rear caster-wheel pivotally secured to said beams, the rear caster-wheel being provided with means for limiting its horizontal movement, the crane-lever, and means for operating the same, substantially as described.

9. In a combined walking and riding gang-plow, the combination, with two parallel plow-beams, of trailing furrow-wheels suspended from the rear portions of said beams and right-angled hangers, one of which is vertically adjustable, a front truck pivotally secured to said beams, means for operating the same, and a land-wheel eccentrically mounted on an axle, substantially as described.

10. In a combined walking and riding gang-plow, the combination, with two parallel and laterally-adjustable plow-beams, of a front truck pivotally secured to said beams and means for operating said truck, trailing furrow-wheels, and a land-wheel eccentrically mounted on a swinging axle, one end of which is pivotally attached to a clip, which is adjustably mounted on the coupling-bar between the plow-beams and the other end of which is held in position by a supporting-rod coming from the front portion of the plow, substantially as described.

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

ASA M. FITCH.

Witnesses:

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LESLIE P. BYRNE.