

J. & G. ARMSTRONG.
Improvement in Gang-Plows.

No. 130,177.

Patented Aug. 6, 1872.

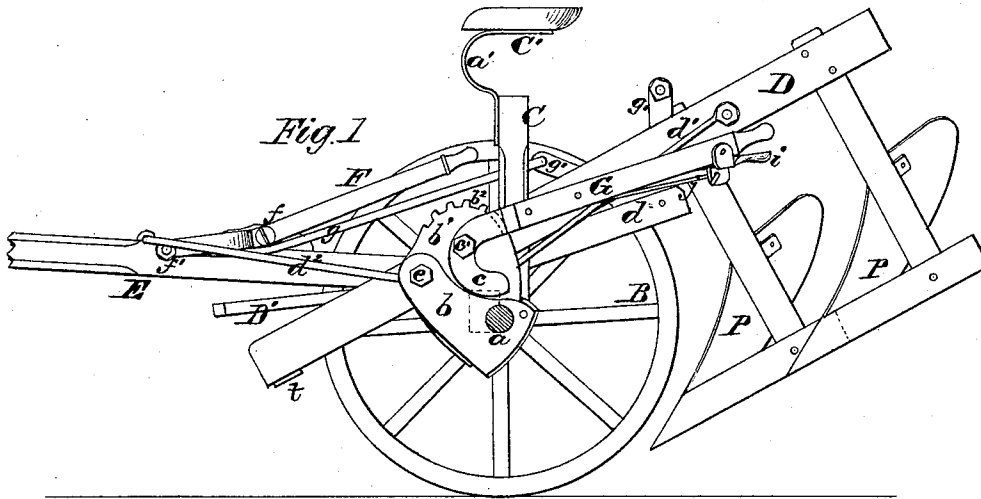
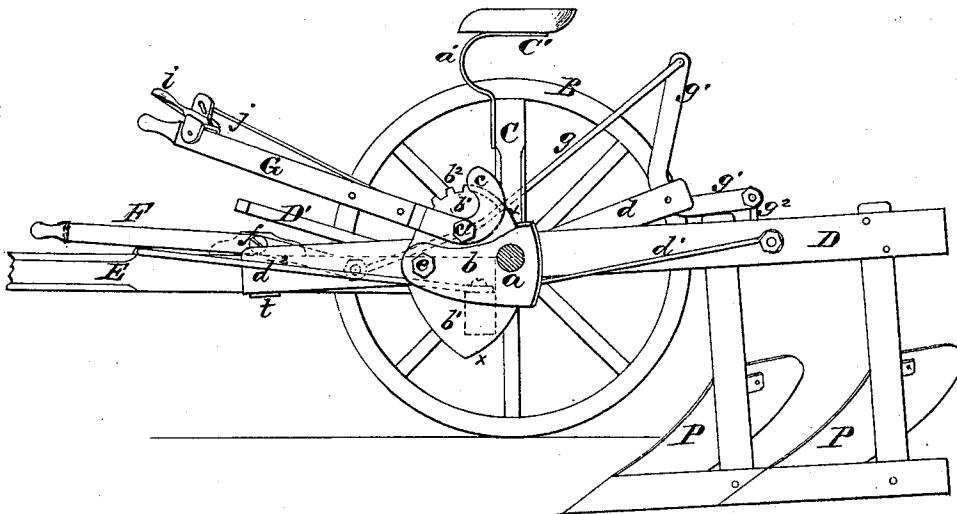


Fig. 2



Witnesses,
R. J. Campbell,
J. H. Campbell.

Inventor,
James Armstrong
George Armstrong
by
Marion, Fenwick & Lawrence

J. & G. ARMSTRONG.
Improvement in Gang-Plows.

No. 130,177.

Patented Aug. 6, 1872.

Fig. 3

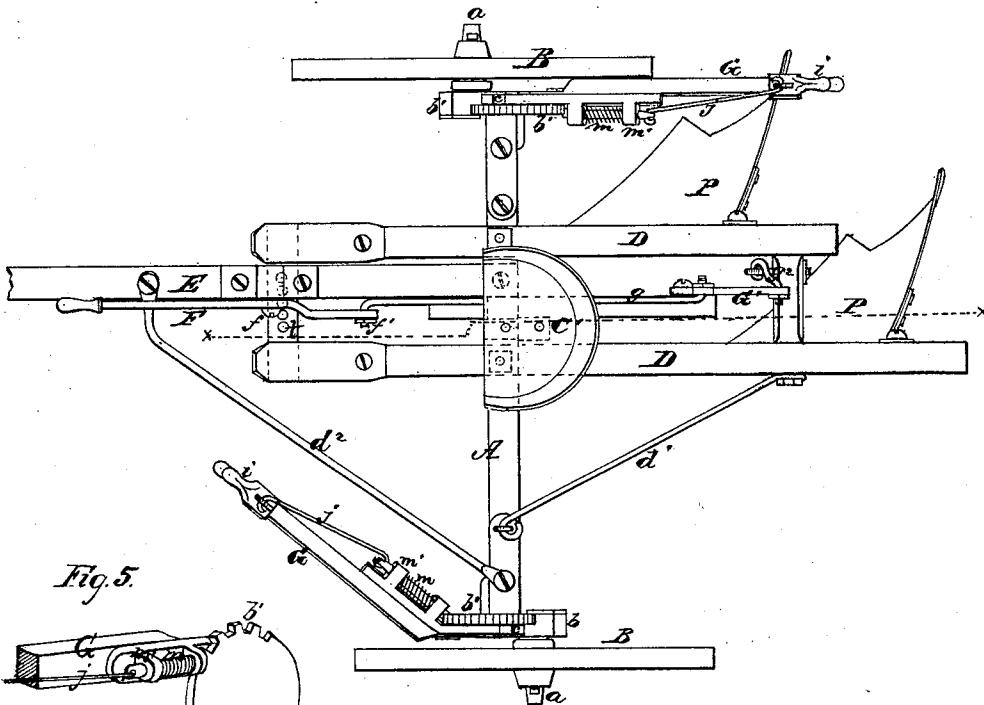


Fig. 5

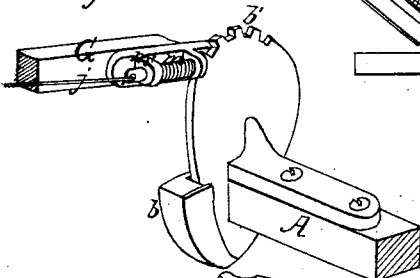
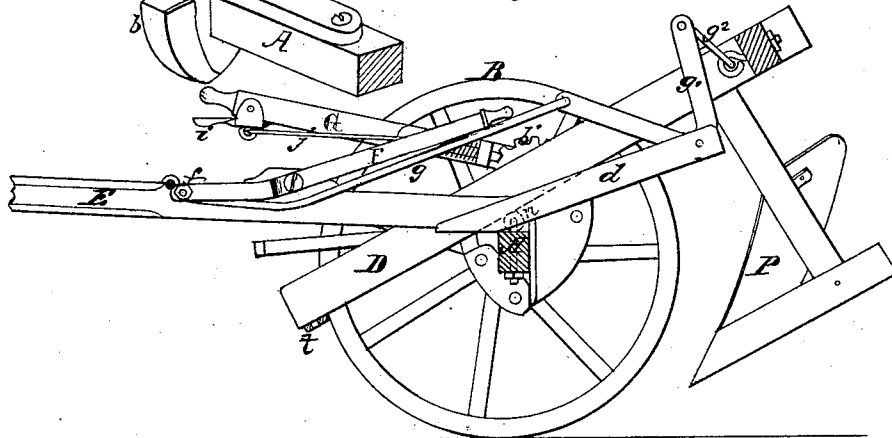


Fig. 4



Witnesses:
R. G. Campbell,
J. N. Campbell.

Inventor
James Armstrong
Geo. Armstrong
by
Wm. H. Smith & Co.

UNITED STATES PATENT OFFICE.

JAMES ARMSTRONG AND GEORGE ARMSTRONG, OF ELMIRA, ILLINOIS.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. 130,177, dated August 6, 1872.

To all whom it may concern:

Be it known that we, JAMES ARMSTRONG and GEORGE ARMSTRONG, of Elmira, in the county of Stark and State of Illinois, have invented a new and Improved Gang-Plow; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification.

The objects of our improvements are, first, to enable an attendant, while riding on the machine, to adjust either or both ends of the axle-tree and maintain the same in a horizontal position, either while plowing or traveling on a level road; second, to combine with plow-beams which are hinged on top of the axle-tree, and which extend forward and in rear thereof, and with a tongue or pole which is rigidly secured on the axle-tree, a self-locking lifting device, by which the attendant, while riding on the machine, can raise or lower the plows without changing the position of the axle-tree, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents the axle-tree of two transporting-wheels, B B, on the ends of which axle-tree castings b^1 b^1 are rigidly secured. Each casting b^1 is a vertical segment having teeth b^2 on its upper edge, and presenting a rear curved edge, x , which is guided by a groove formed in an oscillating casting, b . This casting b has the axle a secured to it, on which turns the wheel B. To the front end of the oscillating casting b the segment b^1 is pivoted at e . To the segment b^1 , above the casting b , a hand-lever, G, is pivoted at c' , so as to vibrate forward and backward. The lower end of the lever G terminates in a cam, c , the lower edge of which impinges against the upper concave edge of the oscillating casting b , and thus supports the axle-tree upon this casting. To the lever G a spring-bolt or latch, m , is applied, so as to engage with the teeth on segment b^1 . This bolt is guided by eyes m' , and is connected to a key-handle, i , by means of a rod, j , which handle is pivoted to the lever G in such relation to the handle of this lever that when the attendant grasps the latter he will necessarily grasp the key-handle and withdraw the bolt

from the rack b^2 on segment b^1 . When the bolt m is released from the segment b^1 the joints e c' are free to articulate, and by vibrating the lever G the end of the axle-tree can be raised or depressed by virtue of the action of cam c on the oscillating segment b . The raising and depressing devices for the axle-tree are constructed alike on both ends of the axle, with this simple exception: On the land-side of the machine the metallic portion of the lever G is bent at an obtuse angle so as to form an elbow, which inclines this lever inward and brings the handle thereof in convenient proximity to the driver's seat C'. The plow-beams D D are secured together fore and aft by cross-bars so as to be parallel to each other, and near their rear ends the plows P P of suitable construction are secured. These beams D D are connected to the axle-tree A on the furrow side of the center thereof by means of eyebolts, n , or other suitable articulating joints, which will allow the beams to vibrate vertically independently of the axle-tree A. On the upper sides of the beams D D, near their front ends, are inclined foot-supports, D' D', on which the attendant applies his weight while raising the plows P P free from the ground by the aid of the hand-lever F. The pole or tongue E is secured rigidly to the top of the axle-tree A and between the plow-carrying beams D D. To this tongue or pole E a fulcrum-bar, d , is rigidly secured, which extends in rear of the axle-tree a suitable distance, and has pivoted to it an angular lever, g^1 , which vibrates in a vertical plane. One arm of this lever is connected by a link, g^2 , to the rear cross-bar of the plow-beams D D, and the other end of this lever is jointed to the rear end of a connecting-rod, g , the front end of which is bent upward a little and pivoted to the short arm of the lever F at f' . This lever F has its fulcrum f on the pole E, which point (f) is so arranged, relatively to the point f' and to the point of attachment of the rod g to the lever g^1 , that when the lever F is drawn fully back it will automatically lock the plows in the elevated position shown in Figs. 1 and 4. The plow-beams are braced to the axle-tree A on their land-side by means of a diagonal rod, d^1 , and the draft-pole is braced to the axle-tree A by means of a diagonal rod d^2 . The driver's seat C' is mounted on a spring

a' , which is secured to the upper end of a standard, C, which standard rises from the axle-tree A between the plow-beams D D. The cross-plate t , which connects the front ends of the plow-beams together, is perforated at several points for allowing the attachment of a double-tree or evenner to this plate by means of a clevis in different holes, to suit the desired width of cut.

It will be seen from the above description, first, that the attendant, while riding on the machine, can raise or depress the plows by means of the levers G G, keeping at the same time the axle-tree horizontal. These levers being terminated by cams c , the latter support the axle-tree upon the concave edges of the vibrating castings $b b$, to which the short axles $a a$ are applied, and thus afford a powerful purchase, which enables the attendant to make the adjustment with very little expenditure of power. The spring-bolts lock the parts at any desired point of adjustment, and these bolts are released from the segments b^1 in the act of grasping the levers. Second, that the plow-beams are pivoted on top of the axle-tree so as to vibrate freely up and down without tilting the axle-tree and without changing the position of the driver's seat; and while this is the case the driver can employ his own weight to advantage for assisting him in raising the plows while he uses the lever F, which latter

when drawn back will lock itself in the position explained.

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

1. The pole or tongue E rigidly fixed to a vertically-adjustable axle-tree, A, plow-beams D D, which are hinged on top of said tree and which extend in front and rear thereof, in combination with the locking-lever F, rod g , lever g^1 , and link g^2 , substantially as described.

2. The foot-stands D' on plow-beams D D, which are hinged to the axle-tree A, in combination with a pole, E, which is rigidly secured to said tree, and with the lifting-lever F, rod g , lever g^1 , and link g^2 , substantially as described.

3. The toothed segment b^1 made fast on the axle-tree A, and the grooved and pivoted guiding-plate b receiving the rear edge of the segment b^1 , and having the axle a secured to it, in combination with the locking-lever G pivoted to segment b^1 , and having a cam, c , on its lower end, which acts on the upper edge of the said guide-plate b , substantially as and for the purpose described.

JAMES ARMSTRONG.

Witnesses: GEORGE ARMSTRONG.

JAMES H. MILLER,
DAVID J. WALKER.