T. M. NICHOL.

Gang-Plow.

No. 162,094. Patented April 13, 1875.

Fig. 1

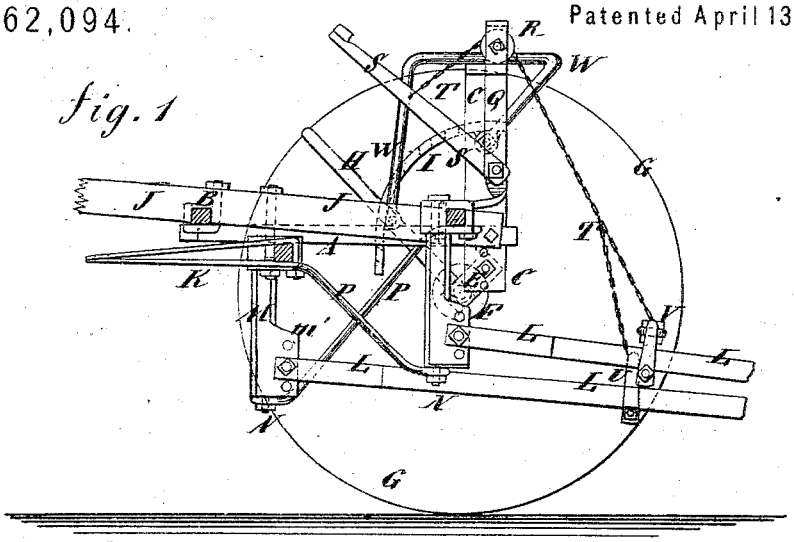


Fig. 2

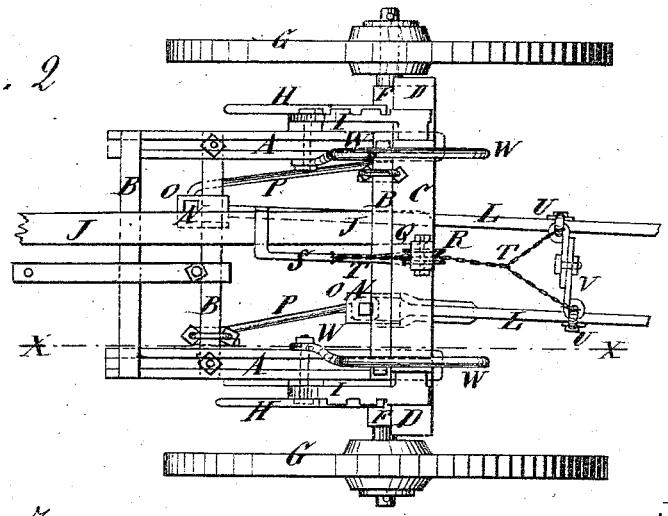


Fig. 3

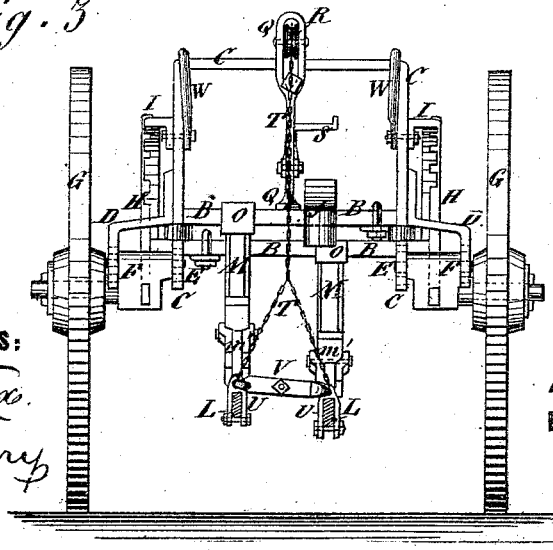
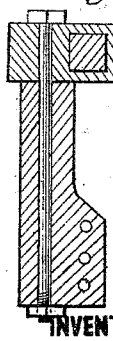


Fig. 4



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# UNITED STATES PATENT OFFICE.

THOMAS M. NICHOL, OF SPARTA, ILLINOIS.

## IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **162,094**, dated April 13, 1875; application filed October 24, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS M. NICHOL, of Sparta, in the county of Randolph and State of Illinois, have invented a new and useful Improvement in Gang and Sulky Plow, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *x x*, Fig. 2. Fig. 2 is a top view of the same. Fig. 3 is a rear view of the same, the plow-beams being shown in section. Fig. 4 is a detail longitudinal section of one of the swiveled draft-blocks.

Similar letters of reference indicate corresponding parts.

The invention will first be fully described, and then pointed out in the claims.

A are the side bars of the main frame, which are slotted longitudinally, and are connected and held in their proper relative positions by three cross-bars, B. The cross-bars B are secured to the side bars A by bolts, which pass through holes in the ends of the said cross-bars, and through the slots of the said side bars, so that the cross-bars may be adjusted upon the side bars, as may be required. C is a bar of flat iron, which is bent twice at right angles, and its ends are passed down through the rear ends of the slots in the side bars A, and are securely bolted to said side bars. To the bent bar C, a little above the side bars A, are bolted or riveted the upper ends of the bars or lugs D, which are bent twice at right angles, and between their lower ends and the ends of the bent bar C are pivoted by a bolt, E, the ends of the blocks of the crank-axles F, upon the other ends of which are formed the journals upon which the wheels G revolve. To the crank-axles F are rigidly attached the lower ends of the levers H, the upper ends of which project into such a position that they may be conveniently reached and operated by the driver from his seat. I are curved bars, the lower ends of which are bolted to the side bars A, and their upper ends are bolted to the vertical parts of the bent bar C. The outer edges of the curved bars I are notched to receive the levers H, and hold them securely in any position into which they may be adjusted.

By this construction, by operating the levers H, the axles F may be adjusted to cause the machine to run level upon sliding ground, or when one of the wheels G is running in a furrow.

J is the tongue, which is secured by hook-bolts to the three cross-bars of the frame A B. K is the draw-bar, which is made in U-form, is passed around the central cross-bar B, and is secured to it by a bolt, so that by loosening the said bolt, the said draw-bar may be slid along the said cross-bar to adjust the point of draft attachment, as may be desired. L are the plow-beams, the forward ends of which are forked or slotted vertically to receive the flange *m'*, formed upon the rear side of the lower ends of the swiveled blocks M, the said flanges *m'* having several holes formed through them to receive the bolt by which the plow-beams are secured to them, so that the points of attachment may be raised and lowered to adjust the plows to run deeper or shallower in the ground, as may be required.

This manner of attaching the plow-beams allows their rear parts to have a free vertical movement.

N is a long bolt, that passes longitudinally through the blocks M, and also through the forward parts of the blocks O, to swivel the said blocks M to the said blocks O, and thus give the rear ends of the plow-beams a free lateral movement. The blocks O have transverse holes formed through their rear parts to receive the cross-bars B, so that the plows may be adjusted closer together or farther apart, or to take and leave land by sliding the said blocks O upon the said cross-bars B. The block O of the rear plow is placed upon the rear cross-bar B, and the block O of the forward plow is placed upon the central cross-bar B.

The blocks O may be secured in place when adjusted by set-screws, or other convenient means.

The draft strain upon the blocks M and bolts N is sustained by the braces P, the lower ends of which are connected with the lower ends of the said bolts N. The upper ends of the braces P are connected with the cross-bars B by clips, so that they can be conveniently adjusted to correspond with the adjustment of the blocks O. To the middle part of the rear cross-bar B is attached the lower end of

a bar, Q, which passes up through a hole in the middle part of the bent bar C, and has a pulley, R, pivoted to its upper end, just above the said bent bar C. To the lower part of the bar Q is pivoted the end of a lever, S, the forward end of which projects into such a position that it may be reached and operated by the driver from his seat. To the forward part of the lever S is attached the end of a chain, T, which passes over the pulley R. The rear end of the chain T is branched, and the ends of its branches are attached to clips U, which are secured to the rear parts of the plow-beams L, so that the plows may be raised from the ground when desired by operating the lever S. To the clips U are pivoted the outer ends of two bars, V, which overlap, and are secured to each other by a bolt. The bars V are slotted longitudinally, or have a number of holes formed through them to receive the securing-bolt, so that they may be readily lengthened or shortened, as the plows are to be farther apart or closer together.

By this construction the plows will be held at the same distance apart, and each plow will be allowed to rise independently of the other.

W are rods, the lower ends of which are bolted to the side bars A, a little in front of the bent bar C. The rods W project upward to the height of the bent bar C, are bent to the rearward at right angles, cross the ends of the horizontal part of the bent bar C, are bent downward, and forward at an acute angle, and their ends are bolted to the upright parts of the bent bar C.

The rods W are designed to receive the driver's seat, and enable it to be slid forward or back, so that the driver can conveniently reach and operate the lever S with his foot, whether he be tall or short.

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

1. The combination, with crank-axles F, of the bent bar C, lug plates D, and bolts E, as and for the purpose described.

2. The combination, with the swiveled plow-beam holders or blocks M, of blocks O and braces P, having a lateral adjustment, as and for the purpose set forth.

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