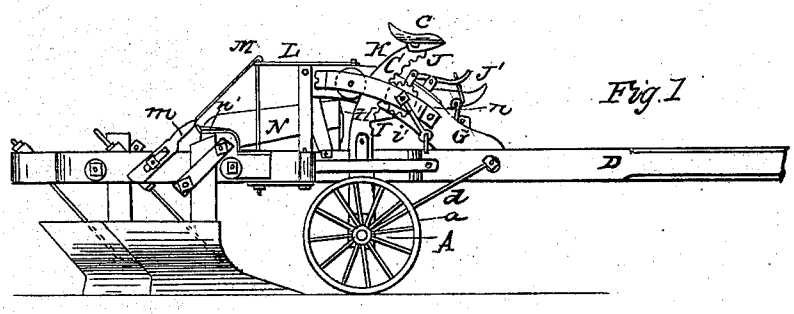
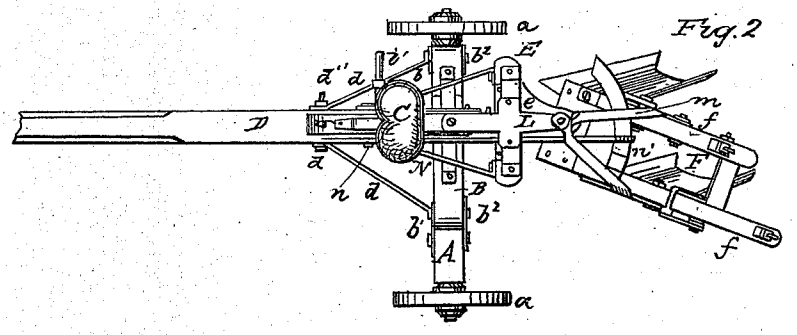
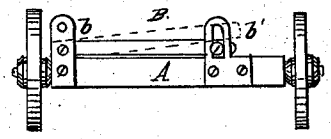
D. A. SEARS.

Gang Plow.

No. 105,600. Patented July 19, 1870.







Witnesses.
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UNITED STATES PATENT OFFICE.

DELOS A. SEARS, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **105,600**, dated July 19, 1870.

To all whom it may concern:

Be it known that I, DELOS A. SEARS, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Gang-Plows; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to that class of gang-plows which are provided with means for elevating and depressing the plows; and consists in certain details of construction which will be fully described hereinafter.

In the drawing, Figure 1 represents a side elevation of my improved machine; Fig. 2, a plan view of the same, and Fig. 3 a front view of the main and supplemental axles.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and operation.

A represents the axle of the machine, which is supported, in the usual manner, by the carrying-wheel *a a*. B represents a supplemental axle or beam, which rests upon the main axle, and is secured thereto by means of the irons $b\,b^1$ and bolts b^2.

It will be observed that the irons *b* are provided with holes to receive the bolt; but the irons b^1 are slotted.

C C represent curving standards rising from the beam B, the tops of which are secured by a bolt, and upon which rests the seat *c*. These standards are securely bolted to the beam, and also additionally secured by suitable braces.

D represents the tongue, which is secured to the axle by means of the rods *d d*, which are loosely secured to the bolt *d'*, in order to permit the pole to rise and fall when necessary. The rear end of the pole passes through between and extends beyond the curving standards C C, the latter serving as guides to steady its vertical movements.

E represents a cross-beam, attached to the rear end of the pole D by mortising and suitable braces, to which are bolted, above and below, the castings *e e*. These are nearly triangular in shape, and to their apexes is connected the plow-frame proper by means of a king-bolt, as shown. The tongue and plow-frame are practically a single frame, hinged or jointed by means of the king-bolt.

The plow-frame F may be constructed in any proper manner. I preferably employ the beams *f f*, united in front by means of bearing-plates, and in rear by means of a cross-beam. The plow-standards are attached thereto in any of the well-known ways.

For the purpose of elevating the plows the following devices are employed: G represents a rearwardly-curving standard, which is connected with the vertical standard H, and forms a frame for the support of the elevating devices. I represents a pinion journaled in the bearing-plate *i*, which is provided with a crank, *i'*. This pinion engages with teeth formed in the front edge of one of the curving standards C. J represents a dog, provided with teeth, and so located as to engage with the pinion I when in position, and which is kept in place ordinarily by means of the spring J'. K represents a friction-roller located behind the curving standard C, as shown. L represents an arm, which extends rearward from the end of the standard G, and supports the upper end of the king-bolt. M represents a forked brace, the upper end of which is also attached to the king-bolt. Its arms *m m* are slotted and secured to the sides of the plow-frame, as shown. By means of this construction the pitch of the plow may be adjusted at will.

N represents a lever, pivoted at the point *n*, the rear end of which rests ordinarily in a socket or recess in the iron *n'* on the plow-frame. The front end of the lever extends forward into such position as to render it capable of being readily operated by the foot of the driver. When this lever is in its usual position, the plow-frame is rigidly connected to the front part of the machine, and is prevented from moving laterally. By disconnecting the lever, however, the plow-frame is free to swing upon the king-bolt.

The operation is as follows: After the team is attached to the machine, the operator takes his place upon the seat, and, pressing one foot upon the front end of the spring-dog, disengages its teeth from connection with the pinion. The crank is then revolved, and the

plows elevated from the ground by means of the pinion engaging with the teeth upon the standard C. The team may now be started for the field. When the desired position is reached the plows are lowered by an operation similar to the one described, excepting that the crank is revolved in a contrary direction. The machine is then ready for work. In passing over the field no change is made in the position of the parts (unless it be desired to change the depths of the plows, which may be readily accomplished, even while the team is moving, by operating the crank as before described) until the corner of the field is reached, at which point the driver places his foot upon the lever N and frees its rear end from its socket in the plow-frame. The team may now be turned one-quarter round, while the plows remain stationary, and upon making a new start the plows will draw immediately into line, and thus cut a perfectly square corner. The lever rests upon the bearing-plate *n*, and falls into place itself without attention when the proper point is reached. When the plow has reached the starting-point again, the wheel upon the side which is plowed must be lowered to run in the furrow. This is accomplished by removing the bolt from the iron *b*, and by permitting the wheel to drop into the furrow. The beam B is again secured in its new position by the bolt.

The plows are made level, if out of line, by adjusting the other end of the beam B in the slotted irons b^1. Of course, colters may be used with this, if desired.

I do not limit myself to any particular material or any special size; but,

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

1. The combination of the curving standards C, having the seat thereon, with standards G H, rack and pinions I, and dog J, as and for the purpose described.

2. The combination of lever N with the bearing-plate *n*, constructed as described, for the purpose set forth.

3. The combination and arrangement of the axle A with the wheels *a a*, brace B, standards C, tongue D, beam E, plow-frame F, standards G H, rack and pinion I, dog J, brace M, and lever N, as described, for the purpose set forth.

This specification signed and witnessed this 5th day of April, 1870.

DELOS A. SEARS.

Witnesses:

G. W. FORD,

D. C. LITTLEFIELD.