

United States Patent Office.

JAMES W. SURSA, OF SAN LEANDRO, CALIFORNIA.

Letters Patent No. 101,539, dated April 5, 1870.

IMPROVEMENT IN GANG-PLOWS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES W. SURSA, of San Leandro, in the county of Alameda and State of California, have invented a new and useful Improvement in Gang-Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

My invention relates to that class of gang-plows which is so constructed that the plows may be raised or lowered together with the frame by means of a lever operated in any suitable manner; and

The improvement consists in the combination and arrangement of parts as hereinafter specified.

In the accompanying drawing—

Figure 1 represents a vertical longitudinal section through the line *x x* of fig. 2.

Figure 2 is a view of the bottom or under side of the plow, looking from the horizontal line *y y* of fig. 1 in the direction of the arrow.

Similar letters of reference indicate corresponding parts.

A and B represent two beam timbers, to the back ends of which the plows are attached, as seen in the drawing. In this example of my invention two plows are shown, but I do not limit myself to that or any other particular number.

C is the tongue, the rear end of which is rigidly confined between the forward ends of the beam-timbers A and B.

The timbers A and B are connected by the cross-tie D, so that those timbers and the tongue form a rigid and substantial frame-work.

E represents the axle with which this frame-work is connected by means of the transverse rod F.

G and H are the wheels.

I J represent the arms which are attached to the axle on which the wheels revolve. These arms are placed upon opposite sides of the axle, so that the arm J is seen in dotted line. They curve upward from the hubs of the wheels and rise above the axle, so that the rod F passes through them.

K is a strong strap of iron which spans the two timbers A and B, with its ends extended down so that the rod F passes through them, and thus a connection is formed between the axle and the frame, which connection is a hinge which allows the axle with the wheels to play on the rod F, for purpose to which I will presently refer. It will be noticed that this connection is made to one edge of the axle, (which is broad,) and that the arms project from the opposite edge, so that, when the axle swings or is moved on its hinge, the arms I J describe arcs of circles, the center of which is the rod F.

The position of the axle is controlled by means of the lever L, the lower end of which lever is connected

with the end of the rod F, as seen at *m*, with a brace-piece, *n*, connected with it and extending down on to the side of the axle, as seen at *o*, where it is acted upon by a spring, *p*, for keeping the lever in proper position.

R is the driver's seat, which is supported from the strap K.

S S represent the plows.

T is a flanged arc of a circle, securely fastened to the beam-timber B, with a series of notches in its flange for holding the lever in any desired position.

It will be seen that this lever L is at all times under the control of the driver, so that he can manage the plows as he may desire while operating it.

U U represent coulters, which are attached to the axle, and are placed on a line with the land-sides of the plows in the ordinary manner. When the lever is thrown forward and the sides of the axle are vertical the plows will be raised clear of the ground, and the wheels will stand on a level with each other. The coulters U U will be thrown into nearly a horizontal position. In this manner the gang-plow is arranged for moving to or from the field to be plowed.

When the lever is thrown back (as seen in the drawings) the plows are dropped as when at work; the sides of the axle are horizontal or parallel with the frame, and the coulters stand vertical. The arms of the wheels being one on one side and one on the other side of the axle, it will be seen that when the axle is in this position one of the wheels will be higher than the other; and this feature of my invention is an important one, as one wheel must necessarily run on the unplowed ground, while the other will run in the furrow. The difference in the height of the wheels will of course be equal to the thickness of the axle, and the proper variation will be maintained at whatever depth the plows may be running.

V is the clevis which is attached to the end of the tongue C, formed with a series of draft holes which extend both above and below the center of the tongue.

By this clevis the line of draft may be varied to suit the depth which it is desired to run the plow.

This plow being governed to run at any required depth by simply working a single lever, renders it far superior to the other gang-plows as regards simplicity, while its other advantages commend it to the especial notice of the agricultural community.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

In combination with the axle E, lever L, plows S, and frame of the plow; the colter *u*, all arranged substantially as and for the purpose specified.

J. W. SURSA.

Witnesses:

G. B. MASTICK,
GEO. T. VINCENT.