2 Sheets--Sheet 1.

E. J. SPRAGUE.

Gang-Plow.

No. 162,709. Patented April 27, 1875.

Fig 1

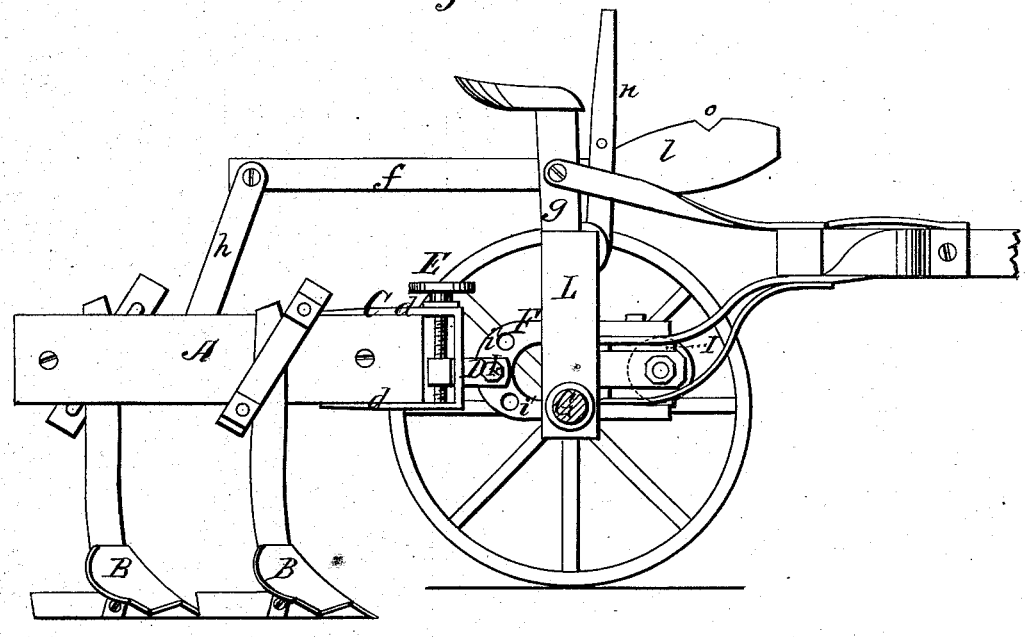
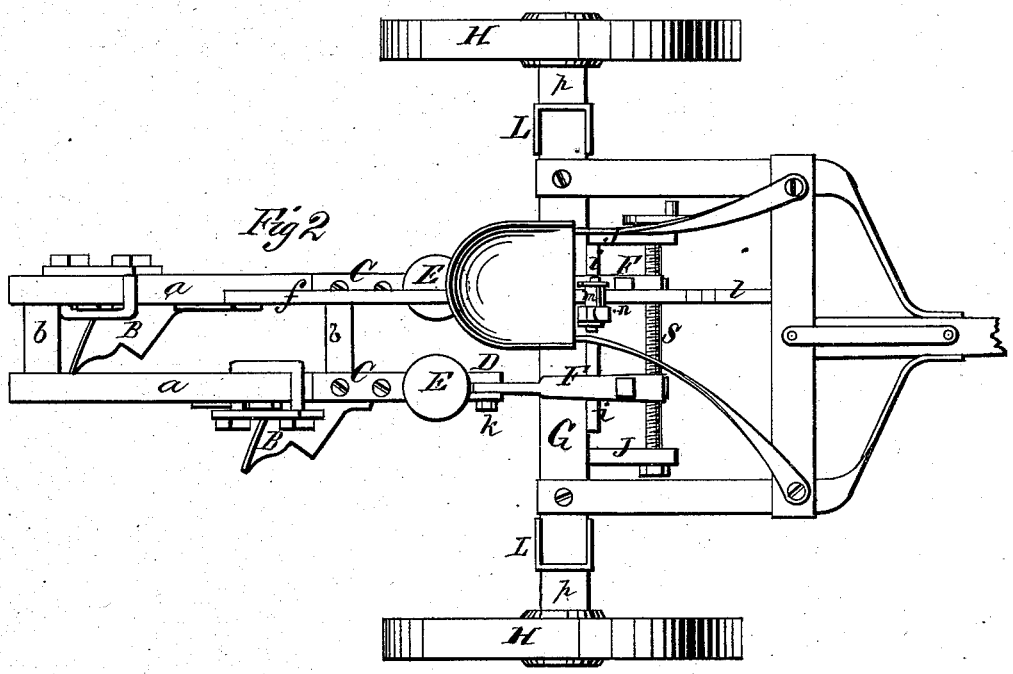


Fig 2



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2 Sheets--Sheet 2.

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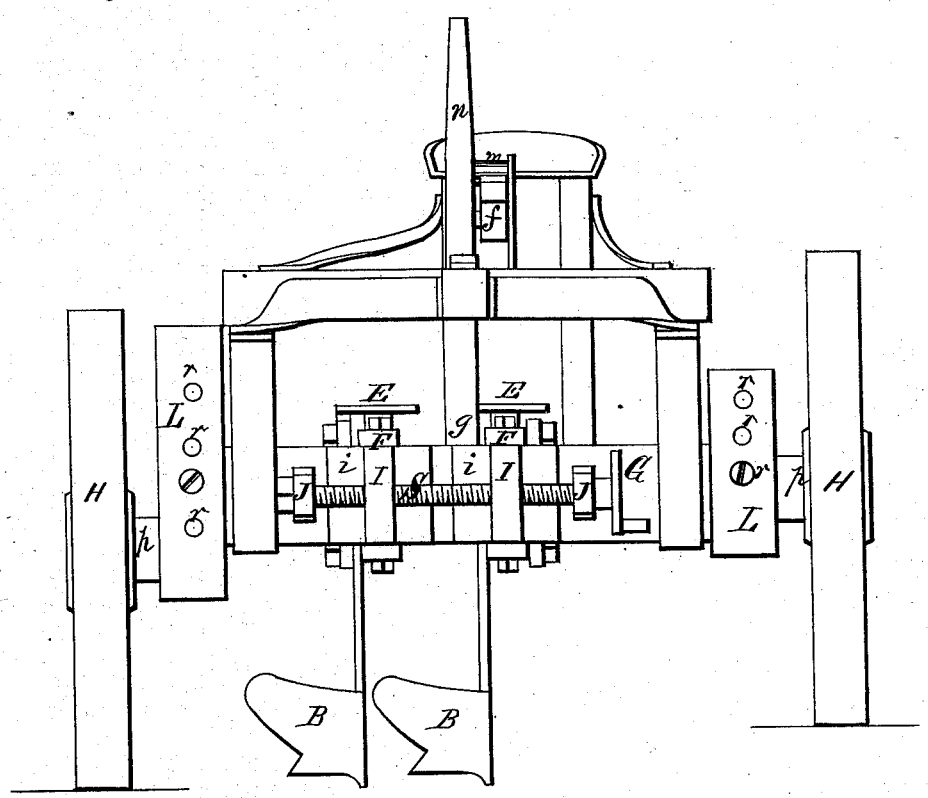
Fig 3



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UNITED STATES PATENT OFFICE.

ELWOOD J. SPRAGUE, OF CASADAGA, NEW YORK.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **162,709**, dated April 27, 1875; application filed January 2, 1875.

To all whom it may concern:

Be it known that I, ELWOOD J. SPRAGUE, of Casadaga, in the county of Chautauqua and State of New York, have invented a new and valuable Improvement in Gang Plows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side view of my plow, and Fig. 2 is a plan view of the same; Fig. 3 is a front elevation.

This invention has relation to gang-plows which are attached to frames capable of vertical vibration for the purpose of raising them from the ground; and the nature of the invention consists in the combination, with clip-loops applied upon and extending rearwardly from the axle of two transporting-wheels, and with loops rigidly secured upon the front ends of a frame carrying a gang of plows, of connecting-links adjustably pivoted to the clip-loops and vertically adjustable on the frame-loops, whereby a double adjustment of the gang-plow frame is obtained for the purpose of increasing or diminishing the depth of penetration of the plows into the ground, and whereby the frame is made capable of vertical vibration on the axle for the purpose of disengaging the plow from the ground when desirable.

It furthermore consists in combining loops loosely applied upon the axle-tree, and lugs or arms rigidly secured thereto, and projecting out horizontally therefrom, with an adjusting-screw passing through screw-threaded perforations in the said clip-loops and lugs, whereby the said loops are capable of being adjusted laterally upon the axle-tree for the purpose of increasing or diminishing the distances apart of the furrows, all as will be hereafter more fully explained.

In the annexed drawings, A designates a rectangular frame, consisting of two longitudinal bars, *a*, and two transverse brace-bars, *b*, as shown in Fig. 2, supporting a gang of plows, B B, in connection with which I propose to show the application and construction of my improvements in this class of implements. C designates strong metallic loops rigidly secured in any suitable manner to the front ends of bars *a* of the plow-frame, the same being preferably of rectangular form, and each provided with a vertical slot cut in their front walls, through which slots are passed metallic links D of suitable dimensions and strength, as shown in Fig. 1. These links have the front ends bifurcated, and their rear ends are provided with a vertical screw-threaded perforation, through which and through vertical perforations in legs *d* of the said loops are passed thumb-screws E, for a purpose hereinafter made clear. F F′ designate U-shaped loops, which are passed from the rear over an axle, G, of two transporting-wheels, H, and are secured, by means of bolts and nuts, to metallic T-shaped blocks I, having broad flat bases *i*, which bear against the front surface of the axle-tree, as shown in Fig. 2. These blocks are each provided with screw-threaded perforations, through which and through perforations in metallic arms J, rigidly secured in a horizontal position to, and projecting from, axle G, is passed an adjusting-screw, S, by means of which the loops F, and with them frame A, are adjusted to or from the transporting furrow-wheel, for the purpose of increasing or diminishing the distance apart of successively made sets of furrows.

The depth of penetration of the plows is regulated in the following manner, to wit: Where the depth to be obtained is inconsiderable in relation to the usual penetration of the plows, an actuation of adjusting-screws E will cause the links to descend in the slot in the front end of loops C with the desired effect, but where this penetration is to be materially increased or diminished it becomes necessary to remove a bolt, *k*, passing through perforations in the bifurcated end of links D, and perforation *i* of loops F, to detach the said links, and to re-attach them to an upper perforation or to a lower one of the said loops, according as the penetration is to be increased or diminished. *f* designates a lever, having its fulcrum upon a standard, *g*, erected upon axle G, and sustaining the driver's seat, and it is connected with frame A by means of an arm, *h*, pivoted to the said frame and to the weight end of the said

lever. The power end of this lever extends a certain distance in front of the driver's seat, and terminates in an enlargement, *l*, having a notched convex upper edge, as shown in Fig. 1, and this enlargement is engaged under an anti-friction wheel, *m*, upon a second lever, *n*, having its fulcrum upon the seat-standard above mentioned, below that of lever *f*. This latter lever is prevented from all displacement by means of a metallic strap rigidly secured to the lower part of lever *n* and to the shaft of wheel *m*, as shown in Fig. 2. When the power end of lever *n* is thrust down it will depress the power end of lever *f*, elevating its weight end, bearing along with it the frame A, which vibrates vertically upward, raising plows B from the ground. In this manner the implement may be driven from the field or turned in a furrow with but little exertion of the draft animals, the said frame being held in an elevated position by the engagement of pulley *m* in a notch, *o*, of lever *f*. With a view to maintaining axle-tree G in a horizontal position transporting-wheels H are applied upon spindles *p*, which are rigidly secured to strong metallic boxings, L, constituting three sides of a hollow rectangle, which boxings are adjustably secured upon the ends of axle-tree G by means of perforations *r* in the legs of the boxings, and a bolt or bolts passing through them and through a corresponding perforation or perforations in the ends of the axle-tree. In plows of this description one of the wheels is designed to run in the furrow last made.

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

1. The combination, with the loops F laterally adjustable on axle G, and the supporting-lugs J, of the adjusting-screw S, substantially as specified.

2. In a gang-plow the combination, substantially as described, of the clip-loops F, extending rearwardly from the axle G, the slotted loop *c* secured upon the front ends of the plow-frames, the adjustably-connecting links D, and the vertically-adjustable screw E, all operating substantially as and for the purpose set forth.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

ELWOOD J. SPRAGUE.

Witnesses:

JAMES M. BEEBE,

GEORGE H. WILLIAMS.