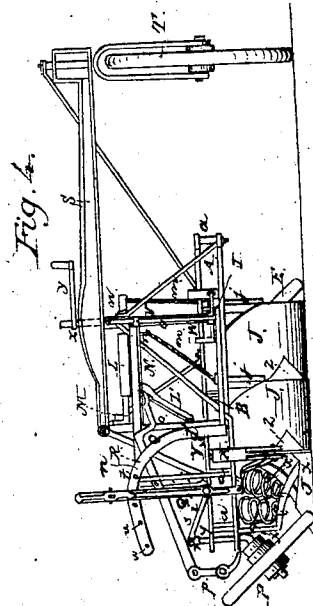
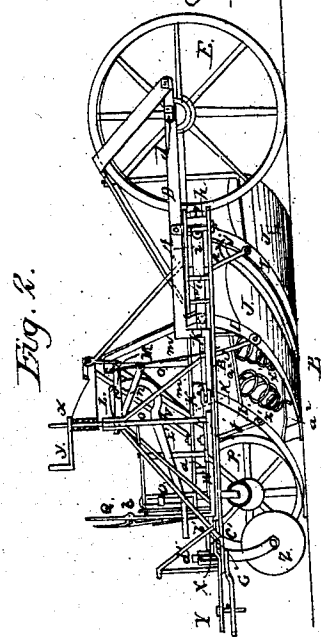
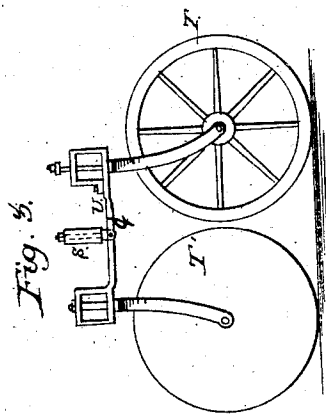
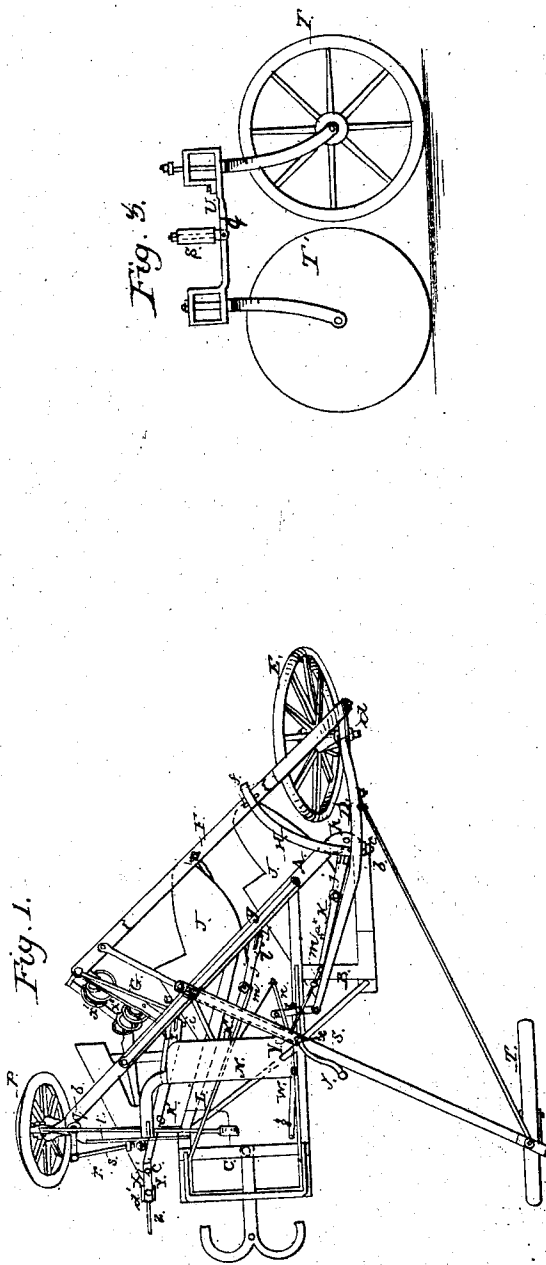


KINGSTON & GORE.

Wheel-Plow.

No. 18,343.

Patented Oct. 6. 1857.



UNITED STATES PATENT OFFICE.

SAMUEL L. KINGSTON AND DAVID GORE, OF PLAINVIEW, ILLINOIS.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. 18,348, dated October 6, 1857.

To all whom it may concern:

Be it known that we, SAMUEL L. KINGSTON and DAVID GORE, of Plainview, in the county of Macoupin and State of Illinois, have invented certain new and useful Improvements in Gang-Plows; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of our improvement. Fig. 2 is a side view of the same. Fig. 3 is a detached view of the wheels, which may be applied to the transverse beam of the frame, when required. Fig. 4 is a front view of our improvement.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain new and useful improvements in gang-plows, whereby the difficulties attending the operation of those hitherto constructed are surmounted and a thoroughly practical implement obtained.

The invention consists in the peculiar construction of the frame of the machine, and the manner in which the several shares are attached thereto, so that said shares may with the greatest facility be adjusted both vertically and laterally, and the furrows plowed the desired depth and width, and the shares also allowed to be moved in a vertical direction independently of the frame, so that they may pass over obstructions.

The invention also consists in a peculiarly-constructed mold-board, as hereinafter described, whereby the sward is raised and turned with greater facility than usual.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A A represent two bars, which are secured one above the other and at a proper distance apart by means of short uprights *a*. The ends of the bars A are curved or bent around so as to form acute angles with the other or main portion, as shown at *b b*, Fig. 1. To the ends of the lower bar A the ends of a zigzag bar, B, are attached, and a projecting frame, C, is attached to the bar B, the draft-pole being attached to the outer end of said frame C.

By referring to Fig. 1 it will be seen that the bars A A are in an oblique position relatively with the line of draft.

To one of the angles of the bars A a lever, D, is attached. This lever is attached to a rod or bolt, *c*, which passes vertically through the bars A and is allowed to turn freely therein. The outer end of the lever D has the axis *d* of a wheel, E, secured to it. The axis *d* is inclined, and its opposite end is attached to a bar, F, which is parallel with the bars A, and the end of the bar F opposite to the end which is attached to the axis *d* has an arm, G, pivoted to it. This arm G is attached to the inner end of a bar, I*, which passes through a vertical rod, *e*, which passes through the bars A A.

To the lever D, at about its center, a segment-bar, H, is attached. This bar H works through a guide, *f*, attached to the bar F.

Between the two bars A A two vertical rods or bars, *g' h*, are placed. These rods or bars are similar to the bar *c*, to which the arm G is attached. The three rods or bars *e g h* are placed at equal distances apart. In each of these rods or bars a bar, I, is fitted. These bars I are curved downward, and are so bent and forked or provided with branch bars as to form a frame for the mold-boards or shares J, which are firmly secured to them.

To the upper end of each bent bar I a horizontal bar, K, is attached by a pivot, *i*, and rods *j*, the lower ends of which are attached to the bars I and pass through the bars K, the upper ends of the rods *j* having screw-threads formed on them and each provided with a nut.

The back ends of the shares J are hooked or suspended to the bar F, and the front ends of two of the horizontal bars K are connected by chains *m* to arms *n*, attached to a bar, L, fitted and allowed to turn on a rod, M, which is secured horizontally between uprights *o o*, attached to the frame. The bar L has a lever, L', attached to one end of it, said lever passing underneath and projecting in front of the driver's seat N. A lever, O, is connected by a link, *p*, with the lower bar A at its angle opposite to the angle where the lever D is attached. The inner end of this lever O passes over the outer end of the lever L'.

To the lever O the upper end of a rod, *q*, is attached. The lower part of this rod is bent or curved at an inclination corresponding to that of the axis *d*, and a wheel, P, is placed on the lower part of the rod *q*. The rod *q* is allowed to turn freely, and an arm, *r*, is attached

to its upper end, said arm being pivoted to a rod, *s*, which is attached to a vertical lever, *Q*, which is provided with a catch, *t*, which is a pin made to catch into either of a series of holes, *u*, in a curved or segment bar, *R*, the catch retaining the rod or axis *q*.

To the upper ends of the two uprights *o o* a horizontal bar, *S*, is attached. The outer end of this bar *S* is supported by a swivel-wheel, *T*, as shown in Figs. 1 and 4, or the swivel-wheels *T'* may be employed, as shown in Fig. 3, the wheels *T'* being screwed to the ends of a bar, *U*, which is connected to the bar *S* by a joint, *v*, at its center. The application of the two wheels would be preferable in undulating or uneven ground, as the shares would not be affected thereby.

Through the bar *S* the upper end of a vertical rod, *V*, passes. The upper end of this rod has a screw-thread cut on it, and a nut, *x*, is fitted thereon, a lever or handle, *y*, being attached to the nut. The lower end of the rod *V* is attached to the bar *B*. (See Figs. 2 and 4.)

The inner end of the lever *D* is connected by a link, *z*, with a lever, *W*, and the bar *K* of the outermost share *J* is fitted in a loop or hook, *a'*, on said lever, as shown clearly in Figs. 1 and 2.

To the front end of the bar *K* of the innermost share *J* a clevis, *X*, is attached by a screw-rod, *b'*, the upper end of which has a nut, *c'*, upon it.

Y is a rod, the upper end of which passes vertically through the clevis and has a nut, *d'*, upon it. The lower end of the rod *Y* is forked, and a circular colter, *Z*, is fitted in said fork.

We would remark that instead of the usual mold-board two spirals, *x' x'*, may be employed, which will rotate as the implement is drawn along and the sward is pressing against them. These spirals, acting on the screw principle, serve to assist the raising and turning of the sward.

The spirals *x' x'* are of taper or conical form, and are fitted between bars *a² a²*, adjoining the share, the upper and lower ends of the spirals being provided with proper journals, so as to allow of their easy rotation. The spirals may be formed by bending metal rods of the requisite size in spiral form. By this improved feature of the machine its draft is very much decreased, especially in clayey land and land containing moisture; and consequently heavy.

By turning the nut *x* it will be seen that the bar *B* and shares *J* will be raised and lowered, and the depth of the furrows may be regulated as desired, and by moving the lever *W* the lever *D* and bar *F* will be actuated and the

shares *J* will be moved laterally, so that the width of the furrows may be regulated as desired.

The driver, by depressing the end of the lever *O*, may temporarily raise the frame and shares *J* to allow them to pass over obstructions.

The machine is readily guided and turned by merely moving the lever *Q*, the movement of the lever causing the swivel-wheel *P* to be turned in any desired position to guide the implement.

By having the colter fitted in the forked rod *Y*, and having said rod fitted in the adjustable clevis *X*, as shown, the colter may be adjusted laterally, as circumstances may require.

By having the wheels *P E* inclined the lateral pressure of the wheels against the earth is avoided. If the wheels were vertical, this side pressure, caused by the resistance made by the sward in being turned over by the several shares, would create great friction. The wheel *E* especially would create great friction, as that wheel adjoins or runs in contact with the landside, and would, if vertical, bear against it from top to bottom. The obviating of the friction consequent upon the side pressure is an important feature of the invention.

We are aware that series of shares have been arranged in gang-plows so that they could be adjusted vertically and laterally, and we therefore do not claim a series of shares thus arranged, irrespective of the means employed for operating them; neither do we claim a swivel-wheel for guiding and turning the machine, irrespective of the manner in which it is arranged and applied to the machine; nor do we claim a rotary colter simply; but,

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

1. Attaching the bar *F* to the bars *A* by means of the lever *D* and arm *G*, and having the ends of the bars *K* connected by chains *m* to arms *n*, connected to a bar, *L*, to which a lever, *L'*, is attached, the lever *O* being attached to one end of the bar *A* and to the rod *q*, as shown, and the screw-rod *V*, attached to the bar *B* and passing through the bar *g*, whereby the shares may be adjusted vertically and laterally, and also raised temporarily when necessary, as herein shown and described.

2. A mold-board constructed of conical wire rollers *x' x'*, arranged as shown or in an equivalent way, for the purpose of raising and turning the sward, as set forth.

SAMUEL L. KINGSTON.
DAVID GORE.

Witnesses:

SAMUEL BROWN,
ROBERT CROSS PULLMAN.