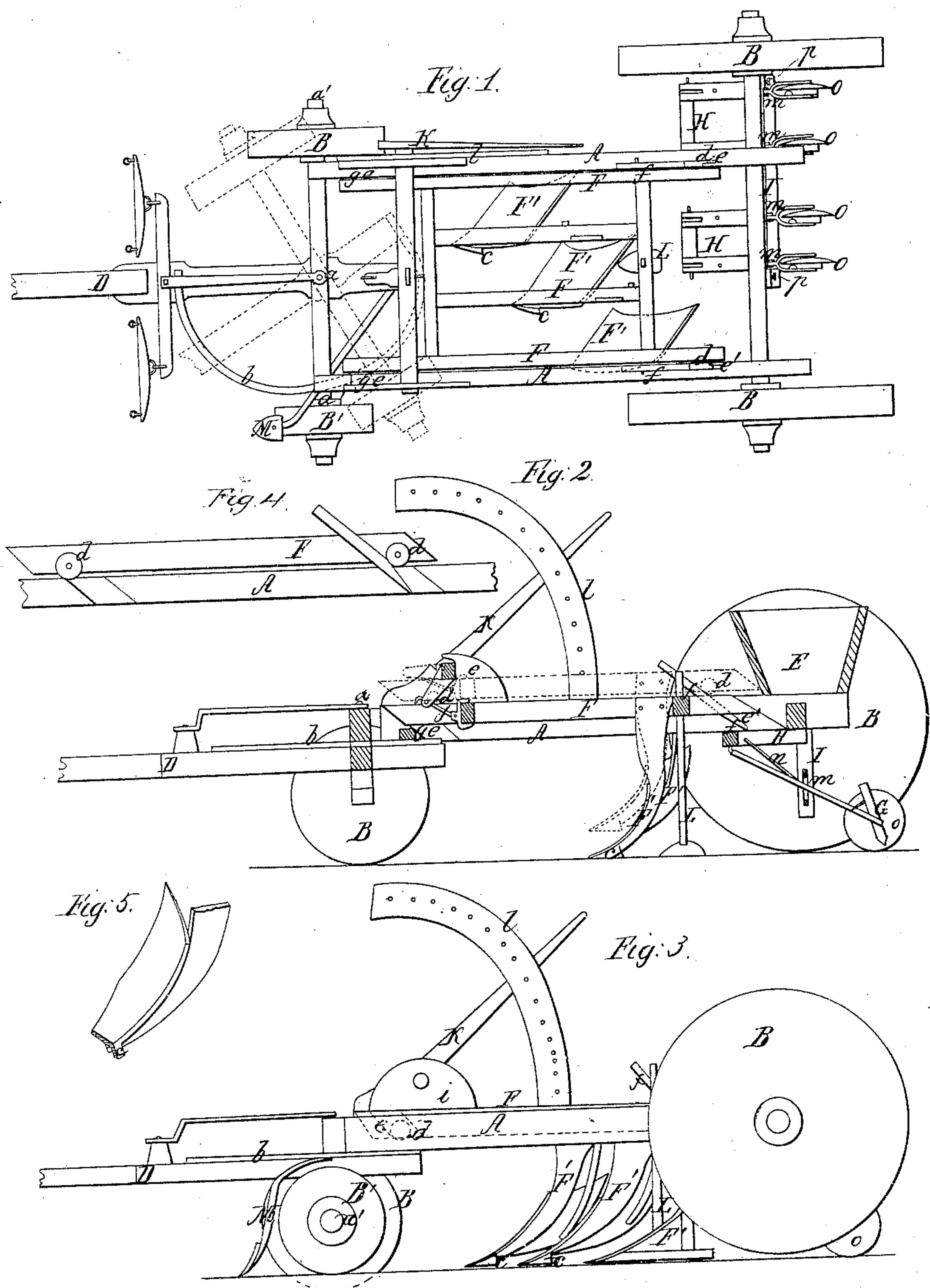


J. LEE.
 PLOW.

No. 18,698.

Patented Nov. 24, 1857.



UNITED STATES PATENT OFFICE.

JOEL LEE, OF GALESBURG, ILLINOIS.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. 18,698, dated November 24, 1857.

To all whom it may concern:

Be it known that I, JOEL LEE, of Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Improvement in Seed-Planter 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 drawings, forming part of this specification, in which—

Figure 1 is a plan or top view of a seed-planting gang-plow. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a side view of the same. Fig. 4 is a detached view of a portion of the adjustable plow-frame and the supporting frame or carriage. Fig. 5 is a transverse section of the point of one of the plow-shares.

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

My invention relates to improvements in several parts of the seed-planting gang-plows now in use, and is designed to render such plows practicable in such soils as are adapted for their use.

The first part of my invention consists in providing the plow frame with a series of friction-wheels on its sides, and having said wheels run up on incline planes of the carriage frame, so that by depressing a lever the plows can be raised out of and above the ground to any extent desired or necessary with the greatest ease and convenience, and also by letting the lever free they will, by their gravity and the forward motion of the team, automatically descend or adjust themselves so as to plow at any desired depth.

My invention consists, second, in constructing the plowshare on the left side at its point with a thin flange or guard, which stands out oblique to a vertical line from the left side of the standard, in combination with the front truck, when constructed so that it is capable of turning or passing underneath the plow and carriage frames, whereby, as the front truck passes underneath the frames and has assumed a position at right angles to the hind truck in order to turn the plows, all liability, when the team advances, of the plows lifting out of the soil is avoided, the oblique flange or guard taking a firm hold upon the soil and preventing the plows rising, and even when the truck is turning what may be termed a "square corner."

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

A represents the carriage or truck frame; B B' B' B', the front and hind trucks; D, the tongue; E, the seed-hopper, and F the plowshare-frame; G G, the drill-tubes; H H, the frames to which they are attached; I, an adjusting-standard of the tubes G; K, an adjusting-lever of the plowshare-frame; L, a subsoil-plow, to be used in planting corn to subsoil just in the bottom of the furrow. M is the clearing-shovel of the near-side wheels. The front axle is pivoted at its center *a* to the frame A, and the left or near-side wheel B' is made of smaller diameter than the off-side one, B, so that it, with the axle, may turn in underneath the frames, a circle-plate, *b*, being provided, so as to steady the frame as the truck turns.

The plowshares F' are arranged on the frame F in such a manner that they stand one slightly forward of the other, and each may have an oblique flange or guard, *c*, at its point, said guard or flange serving to hold the shares down and enabling them to cut their way round while the whole machine turns a square corner, and while the front truck is standing at right angles to the hind truck.

The plow-frame is fitted loosely within the frame A, and has four small friction-wheels, *d d d d*, on its sides, two on one side and two on the other. These wheels fit in incline grooves *e e'* of the frame A, and run up over incline planes *f f*, formed by movable pieces, and over incline planes *g g*, formed by the bottom of the grooves *e e*.

The adjusting-lever K has its fulcrum resting in bearings *i i* of the frame A, and is attached to the front end, near the center of the plowshare-frame F, by a link, *j*. This lever is also arranged in close relation to a curved adjusting-bar, *l*, and can be confined on said bar by a pin in any position it may be desired to set the plows for plowing.

The hopper E is arranged on top of the rear part of the frame A, above the drill-tubes, and may be provided with any approved seed-distributor.

The seed-drill tubes are each pivoted, by means of an arm, separately to frames H H, which are fixed to the bottom of frame A, the arms of the tubes passing through oblong ver-

tical slots *m* of the standard *I*, and being held down by flat springs *n*, so that they may give and rise when any obstruction comes in the path of the tubes. They are passed through the standard, so that the tubes may be adjusted to plant at different depths by the set-screws *p* and slots of the standard.

The tubes have each an edged wheel, *o*, attached to one of their sides, being made flat on one side, so that said wheel shall bear close, and thus be cleared by the front of the tubes of obstruction, and yet be capable of turning. The edges of the wheels stand below the point of the tubes, and are arranged directly upon the tubes, as shown, so that the weeds shall be cut up or depressed into the soil far enough not to have a chance to interfere with the entrance of the tubes and the deposit of the seed into the soil. The wheels thus arranged act upon the weeds just at the place of planting, and thus prevent them rising and catching on the tubes, as when the wheels are placed in front of the tubes. The wheels thus arranged also escape over stones without requiring the machine to move a considerable distance, as when a long guard or sword is arranged in front of the tubes.

This improved operation of the wheels, in connection with the other improved features specified, enables me to provide the farmer with a very perfect seed-planting gang-plow, which can be controlled with great ease and convenience.

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

1. The peculiar arrangement consisting of friction-wheels *d*, incline planes *f g*, and lever *K*, for adjusting the plow-frame to any required position, substantially as set forth.

2. The peculiar arrangement consisting of the flange or guard *c* and pivoted axle *a a'*, for allowing the turning of the front truck to a position at right angles, or nearly so, to the hind truck, so that the machine may turn a square corner without liability of lifting the plow-shares out of the ground, substantially as set forth.

JOEL LEE.

Witnesses:

JOHN S. HOLLINGSHEAD,
J. F. WOLLARD.