2 Sheets—Sheet 1.

J. J. FLETCHER & J. W. SURSA.

Gang-Plow.

No. 218,250. **Patented Aug. 5, 1879.**

Fig. 1.

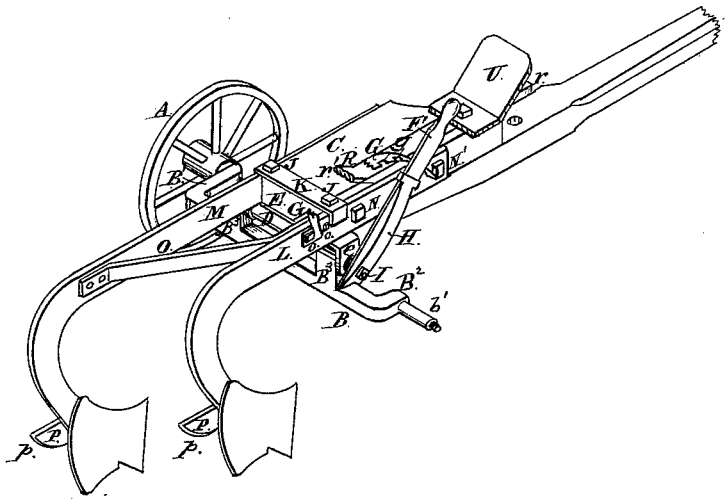
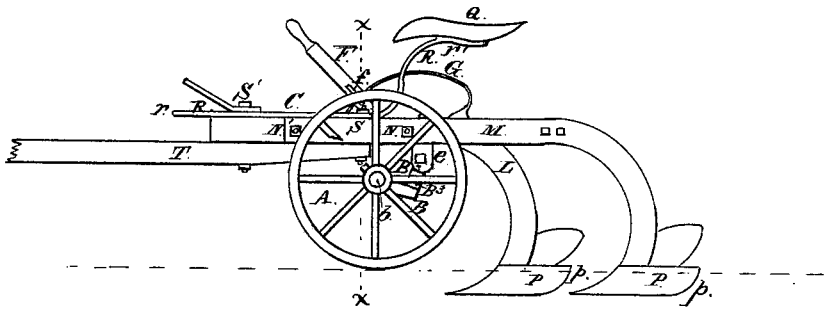


Fig. 2.



Witnesses:
Geo. H. Knight.
Walter Allen

Inventors:
John J. Fletcher
James W. Sursa
By Knight Bros.
Attys

2 Sheets—Sheet 2.

J. J. FLETCHER & J. W. SURSA.

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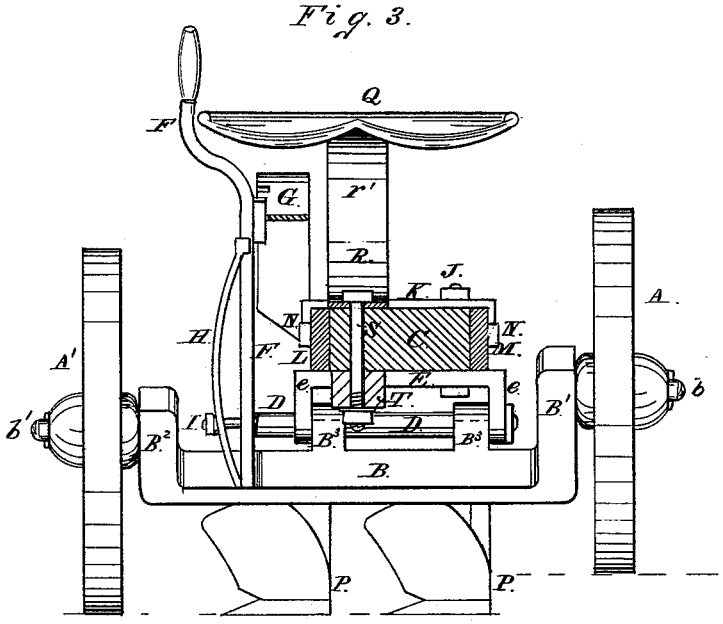
Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN J. FLETCHER AND JAMES W. SURSA, OF VENICE, ILLINOIS.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **218,250**, dated August 5, 1879; application filed November 4, 1878.

To all whom it may concern:

Be it known that we, JOHN J. FLETCHER and JAMES W. SURSA, both of Venice, Madison county, in the State of Illinois, have invented a new and useful Improvement in Gang-Plows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention consists in the manner of hanging the crank-axle to the body—namely, by means of strap-arms, which engage around a transverse shaft, to whose end the hand-lever is connected.

The invention also relates to the combination of a solid body, a rigid plow-beam, and a removable plow-beam, to permit of the plow being changed from a single to a double plow, or vice versa, at will, said beams being secured together by an inclined brace-bar, and to the solid body by through-bolts.

In the drawings, Figure 1 is a perspective view with the furrow-wheel removed. Fig. 2 is a side view, showing the near or land side of the implement. Fig. 3 is a transverse section at *x x*, Fig. 2, (enlarged,) showing the parts to the rear of the section plane in elevation.

A is the land-wheel, turning upon the spindle *b* of the crank-arm B^1 of the axle B. The furrow-wheel A′ turns on a spindle, *b′*, upon an arm, B^2, at the other end of the axle B. The crank-axle B is connected to the body C by means of links or arms B^3 extending from the axle and secured to a shaft, D, turning in bearing-lugs *e e* upon the ends of a bar fastened to the bottom of the body in a transverse position. On the end of the shaft D is a hand-lever, F, thrust inward against a rack, G, by a spring, H. The spring H is held upon the end of the shaft D by a tamper-nut, I, so as to adjust the tension. The rack G has a number of notches, *g*, with any of which the hand-lever may be made to engage to hold it (the lever) in position.

Part of the rack G is shown broken away in Fig. 1 to give a view of the parts beneath. The hand-lever engages with the notches *g* by means of a lug, *f*. The bolts J J, by which the bar E is attached to the frame, extend vertically through the body and through a bar, K, on the top of the same. The ends of the bar K are turned down, so as to form cleats, engaging over the top of the plow-beams L and M. The chief attachment of the plow-beams to the body is by horizontal transverse bolts N N′, which extend through the frame and through both beams. The bolt N′ passes through the fore end of the rack-bar G, and serves to secure it to the body. The beams are connected together behind the body by an inclined brace-bar, O, whose rear end is fixedly attached to the plow-beam M, and its fore end is attached to the beam L by screw-bolts *o o*, one of which also passes through the rear end of the bar G, and serves to secure it to the beam L. The land-sides P P of the plows are curved at the rear ends, *p*, like sleigh-runners, so that the implement may be backed after striking any obstruction, and the plows will ride over objects that they may come in contact with in their backward movement. The seat Q is supported on a spring-bar, R, the front portion of which lies longitudinally upon the top of the frame, and is secured by vertical bolts S S′, which pass through the bar R, the body C, and also through the tongue T. The front end, *r*, of the bar R forms the strap for the top of the double-tree pin, and the rear end, *r′*, projects upward and backward and supports the seat, which is riveted fast to it. The foot-rest U is fastened to the top of the bar R by the vertical bolts S′.

When using the plow the depth of the furrows is regulated by the position of the axle B, and the axle is adjusted to position by a simple movement of the hand-lever F, the lever being moved forward to lift the frame and the plows, and vice versa.

Our double-crank axle enables us to lift the plows by a simple movement of a lever, and by this means the plows may be made to run shallower or lifted above the surface of the ground; but it will be obvious that in adjusting the plows for the desired depth of furrow the relative altitude of the two wheels must be made to vary, because the land-wheel runs upon the surface of the ground and the furrow-wheel runs along the bottom of the furrow last made. To accomplish this the crank-

arms B^1 and B^2 are made of different lengths, which will readily be seen, to accomplish the desired result. When the lever F does not press into the notches *g* with the required force, the nut I is screwed up on the shaft D to increase the tension of the spring H.

Our gang-plow may be readily converted into a sulky-plow by disconnection of the beam M, and this is done by simply removing the bolts *o o* and the nuts of bolts N and N′; then the rear plow can be removed.

When shipping the implements or storing them in quantity, the tongue, the plows, and the seat may be removed by the removal of the six bolts *o o*, N N′, and S S′, so that the construction allows of the implement being taken apart and put together without skilled labor. Ordinarily, when shipping, the tongue and seat only are removed from the body, and it will be seen that to detach these parts it is only necessary to remove the two bolts S and S′.

We are aware that axles having cranks of unequal lengths have already been employed in the construction of various agricultural implements; and we are also aware that gang-plows have already been constructed with a removable plow-beam, so as to adapt such plows for use with either single or double shares. Such features we do not broadly claim; but

What we do claim, and desire to secure by Letters Patent, is—

1. The axle B, having cranks of unequal length, and provided with the arms B^3, in combination with the plow-frame having the cross-bar E, with ears *e*, and lever F, substantially as shown and described.

2. The combination of the solid body C, rigid plow-beam L, and the removable plow-beam M, the latter being adapted to be entirely removed from the body to form a single plow, said beams, when in use, being secured together by the inclined brace-bar O, and to the sides of the solid body by through-bolts N N′, as shown and described.

JOHN J. FLETCHER.
JAMES W. SURSA.

Witnesses:
SAML. KNIGHT,
GEO. H. KNIGHT.