3 Sheets—Sheet 1.

I. R. GILBERT.

Sulky-Plow.

No. 218,516. **Patented Aug. 12, 1879.**

Fig. 1.

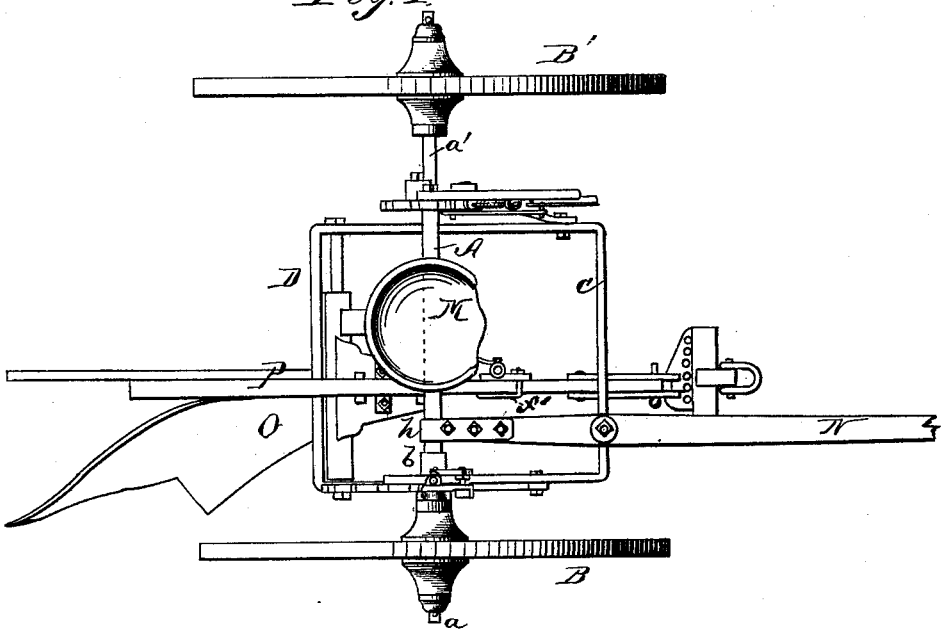

Fig. 2.

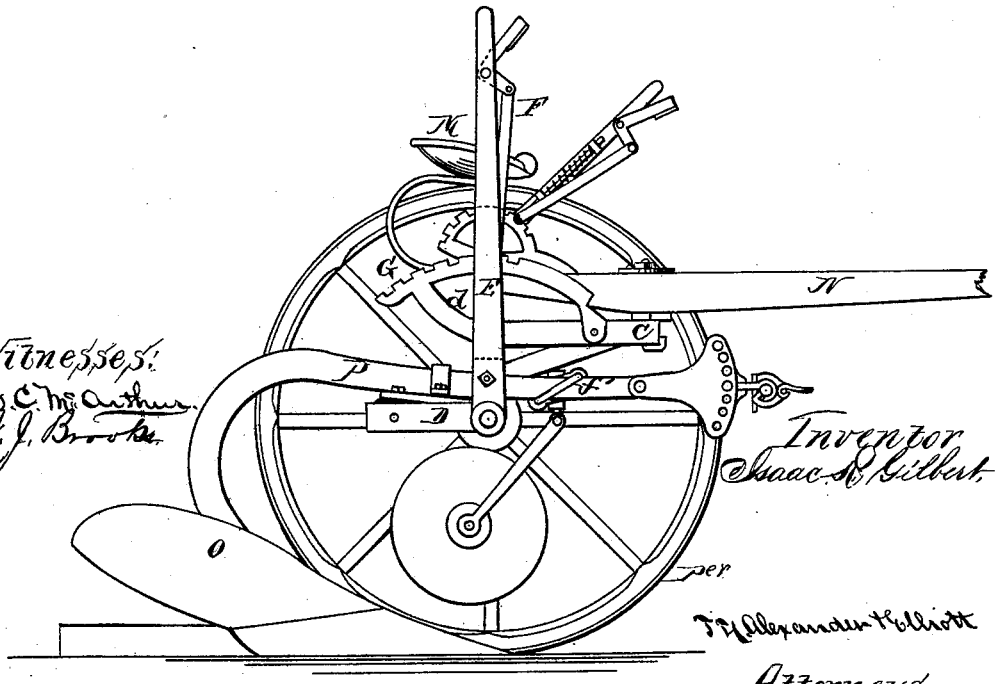

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Fig. 6.

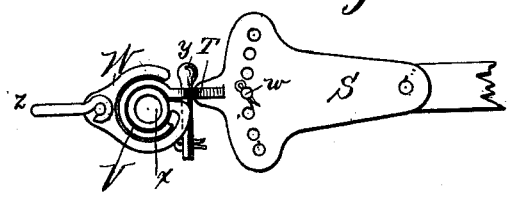


Fig. 5.

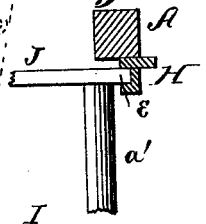
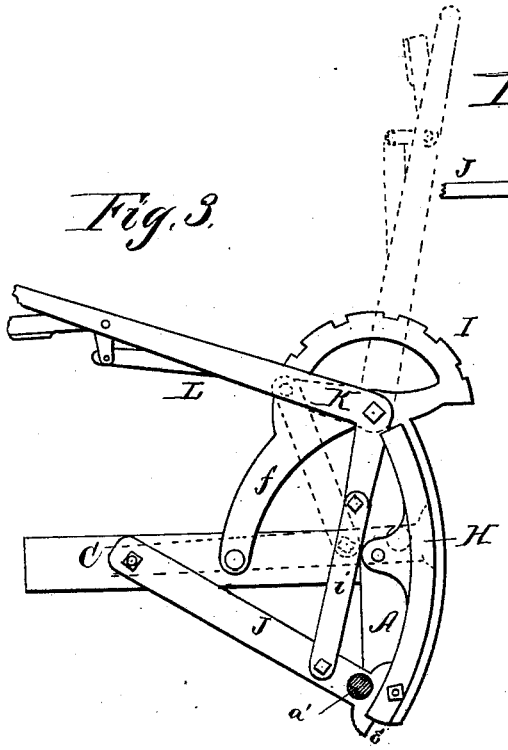


Fig. 3.



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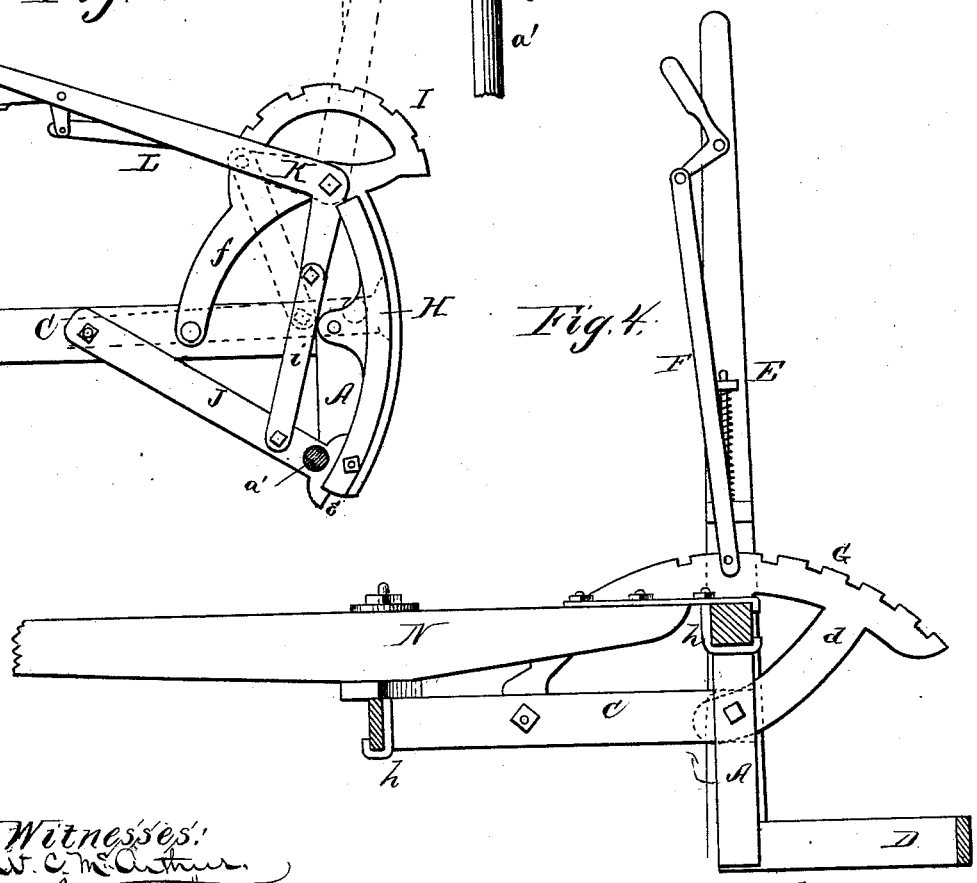

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Fig. 8.

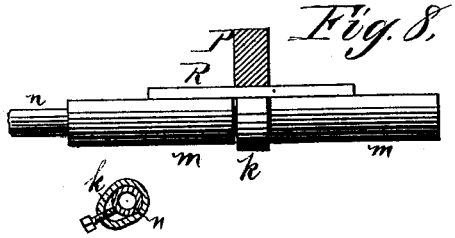


Fig. 7.

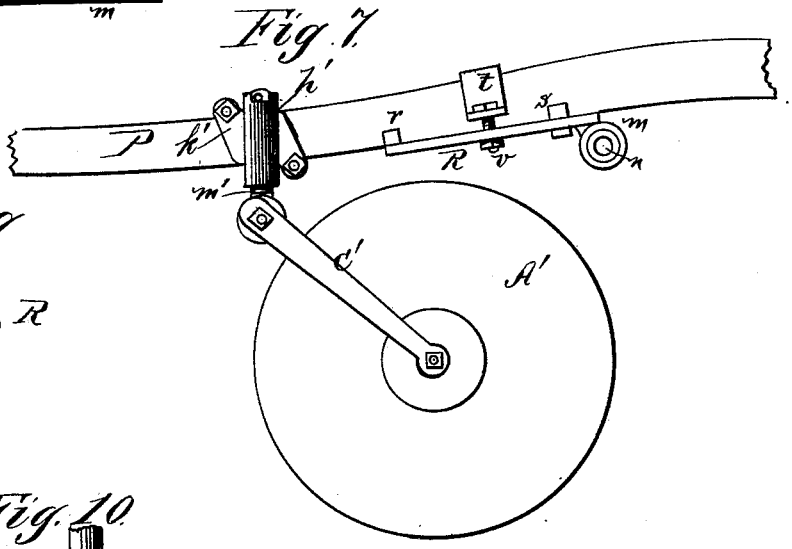


Fig. 9.

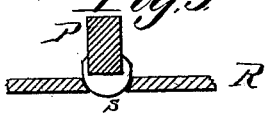


Fig. 12.

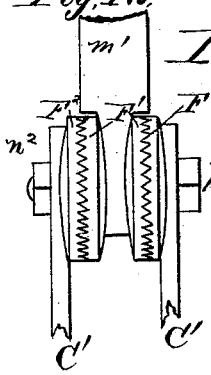


Fig. 10.

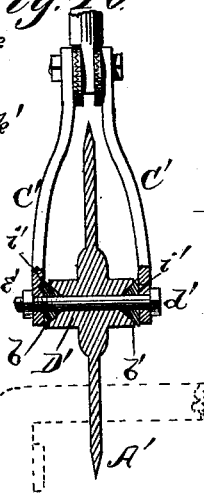


Fig. 11.

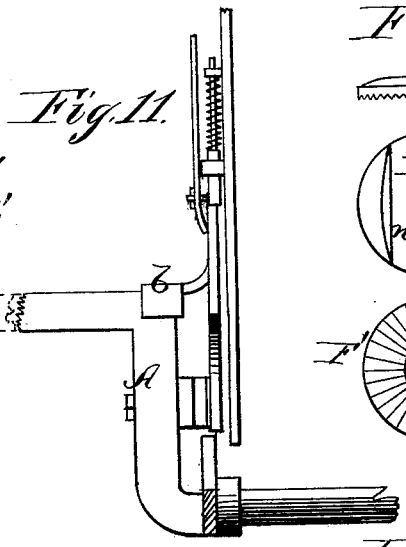
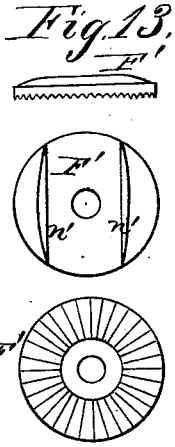


Fig. 13.



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UNITED STATES PATENT OFFICE

ISAAC R. GILBERT, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **218,516**, dated August 12, 1879; application filed March 13, 1879.

To all whom it may concern:

Be it known that I, ISAAC R. GILBERT, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Sulky-Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to sulky-plows; and it consists in the construction and combination of certain parts thereof, as will be hereinafter more fully set forth, and pointed out in the claims.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view of a sulky-plow embodying my invention. Fig. 2 is a side elevation of the same with one wheel removed. Figs. 3, 4, and 5 are detailed views of the sulky-frame and plow and wheel adjusting devices. Fig. 6 shows the plow-clevis. Fig. 7 is a side view of a part of the plow-beam with the colter. Figs. 8 and 9 are details of the devices for connecting the plow-beam to the frame. Figs. 10, 11, 12, and 13 are detailed views of the colter.

A represents the arched axle, one end of which forms the spindle *a* to receive the wheel B. To the sides of the arched axle are fastened the ends of a forwardly-projecting frame, C, which is braced by means hereinafter described. D is a rearwardly-extending frame, one end of which is turned at right angles and has the spindle *a* passing through it, thus forming the pivot at that end, while the other end of said frame is pivoted to the other end of the arched axle. The end of the frame D which has the spindle *a* passing through it is provided with a lever, E, which is also pivoted on the spindle *a* and secured to the frame D. This lever extends upward at right angles to the frame, and is provided with a spring-pawl, F, of suitable construction to mesh into a curved rack-bar, G, for holding the frame D at any angle desired, and thus raise and lower the plow connected to said frame. The rack G is provided with a clip, *b*, which embraces and is fastened to the arched axle A at the angle thereof. The forward end of the rack G is extended and fastened to the side of the frame C, while the rear portion of said rack is provided with an arm, *d*, which extends downward and is fastened by the same bolt or rivet which unites the frame C to the arched axle on that side.

Thus it will be observed that I form a firm brace from the arch and clip or bracket *b* to that part of the frame at which the forward end of the rack is secured. To the opposite end of the axle A is attached, by the same bolt or rivet that secures the frame C to the axle, a curved grooved guide, H, which terminates at its upper end with a curved or semicircular rack, I, and an arm, *f*, projecting from the same, is fastened to that side of the frame C.

It will thus be seen that the two racks G and I form the braces for securing and holding the frame C firmly to the arched axle.

To the side of the frame C is pivoted a lever or axle-arm, J, the rear end of which forms a shoe, *e*, that fits and moves in a curved guide, H, and from which projects the spindle *a'*, that receives the wheel B'. The lever J is, by a rod or link, *i*, connected with an elbow-lever, K, which is pivoted to the rack I, and is provided with a spring-pawl, L, of suitable construction to engage with said rack and hold the lever in any position for raising and lowering the wheel B' as required.

M is the seat, attached to and adjustable laterally on the arched axle A by any suitable means. N is the tongue, which is attached to and adjustable laterally upon the axle A and frame C by means of hooked bolts *h* or other suitable devices.

P represents the plow-beam, provided with the plow O, and connected to the frame D in the following manner: R represents a plate of suitable dimensions, having at its rear end two tubular bearings, *m m*, through which passes a tube or pipe, *n*, of such length as to fit between the side arms of the frame D. Fitting between the bearings *m m*, and surrounding the tube *n*, is a loose collar, *k*, provided with a set-screw, by means of which the plate R may be adjusted laterally on the tube *n* and fastened thereon at any point desired—that is, fastened as far as any lateral movement is concerned, but free at all times to swing thereon. A rod or long bolt, *p*, is passed through the side arms of the frame D and through the tube

n, and fastened by a nut, thus connecting the plate R to the frame.

The plow-beam P rests on top of the plate R between two lugs, *r r*, at the front end of said plate. In the rear portion of said plate is a countersunk opening to receive a self-adjusting seat, *s*, which is grooved in its upper face to receive the plow-beam. A clip, *t*, is then passed over the plow-beam and fastened to the plate R by bolts *v*.

In constructing the plow beams there is liable to be more or less irregularities in them, which would require time and labor to remedy, so as to fit the beam to the coupling; but by means of the self-adjusting seat *s* the plow-beam can be fitted to the coupling without any trouble and expense, however irregular the beams may be. By means of the self-adjusting seat *s* and clip *t* the operator may readily bring the bottom of the plow on the same plane with the sulky.

At the front end of the plow-beam is a clevis of the following construction: S S are two plates, pivoted at their rear ends, one on each side of the plow-beam, and projecting in front thereof, the forward ends of said plates being enlarged vertically, and perforated with a series of holes, as shown in Fig. 6. These plates may be turned up and down, and held at any point by means of a pin, *w*, passing through the front end of the beam and proper holes in the plates. The plates S S are, at their forward ends, provided with a horizontal perforated plate, T, which is formed along its front edge with a tube, V, said tube having a longitudinal opening in its rear below the plate T. The plates S S and T and the tube V are all cast or otherwise made in one piece.

In and around the tube V is placed a coupling, W, which surrounds the upper, front, and under sides of the tube, and has at its rear a tubular extension, *x*, for entering the interior of the tube V. In the back of the coupling W is a notch or groove for the passage of a pin, *y*, which goes down through one of the holes in the plate T, and thus holds the coupling from any lateral movement, the coupling having, however, a limited rotary movement or up-and-down movement. To the front of the coupling is connected a link, *z*, for attaching the team or power.

It has always been extremely difficult to change the clevis in the field when the team is connected to the plow, because, if the chains are in any way taut, there is such a load to pull back before the clevis can be moved; but by my invention this is obviated, as, no matter how much strain there may be on the chains, it does not affect the coupling.

It will be observed that by this arrangement I may obtain a lateral and vertical adjustment without disconnecting the team.

A′ represents the circular colter, which is formed with an enlarged hub, D′, and in each end of this hub is formed a recess to receive a conical bearing-block, *b′*. A bolt, *d′*, is passed through said blocks and hub and through the ends of two arms, C′ C′, with a nut, *e′*, screwed on the end of the bolt, as shown in Fig. 10. The bearing-blocks or cones *b′* are provided on their outer faces with small projections or lugs *i′*, which fit in corresponding recesses in the inner faces of the arms C′, to prevent said cones from turning. The colter rotates on the bearing-blocks *b′*, and, in case of any wabbling from wear, by simply tightening the nut *e′* the bearings are made true again.

To the plow-beam P is, by a clip, *f′*, fastened a plate, *k′*, which is formed with a vertical tube, *h′*, and in this tube is a swivel-pin, *m′*, to the lower ends of which the upper ends of the arms C′ are adjusted and fastened, as follows: The lower end of the swivel or pin *m′* is made flat, and on each side thereof is placed a disk, F^1, having on its inner face flanges n^1, between which the flattened part of the swivel fits. Similar flanged plates, F^2, are placed on the inner sides of the arms C′, at their upper ends. A bolt, *p′*, is then passed through all and fastened by a nut, n^2. The adjacent faces of each pair of plates F^1 F^2 are corrugated or toothed radially to fit into each other, and thus hold the parts together. By loosening the nut n^1 the arms C′ can be adjusted at any angle desired to bring the colter to proper position for work, and when the nut is again tightened the arms and colter are held stationary.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The curved rack-bar G, provided with the clip or bracket *b* on its inner side, for the purpose of fitting over the end of the arched axle, and bracing the rack-bar both lengthwise and transversely, substantially as set forth.

2. The combination of the arched axle A with the curved guide H, rack I, and arm *f*, when said guide, rack, and arm are cast in one piece, substantially in the manner and for the purpose set forth.

3. The combination of the L-shaped lever K, curved guide H, link *i*, pivoted lever J, and spindle *a′*, all arranged for joint operation substantially as described.

4. The combination of the plow-beam P, plates R, with lugs *r r*, the automatic adjusting seat *s*, and the clip *t* with bolts *v*, substantially as and for the purposes herein set forth.

5. The clevis composed of the plates S S and T and open tube V, and the laterally-adjustable coupling W, provided with the tubular extension *x*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ISAAC R. GILBERT.

Witnesses:
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J. GEO. RUCKSTUHL.