2 Sheets—Sheet 1.

C. SIEGORDNER.

Plow-Sulky.

No. 208,426. **Patented Sept. 24, 1878.**

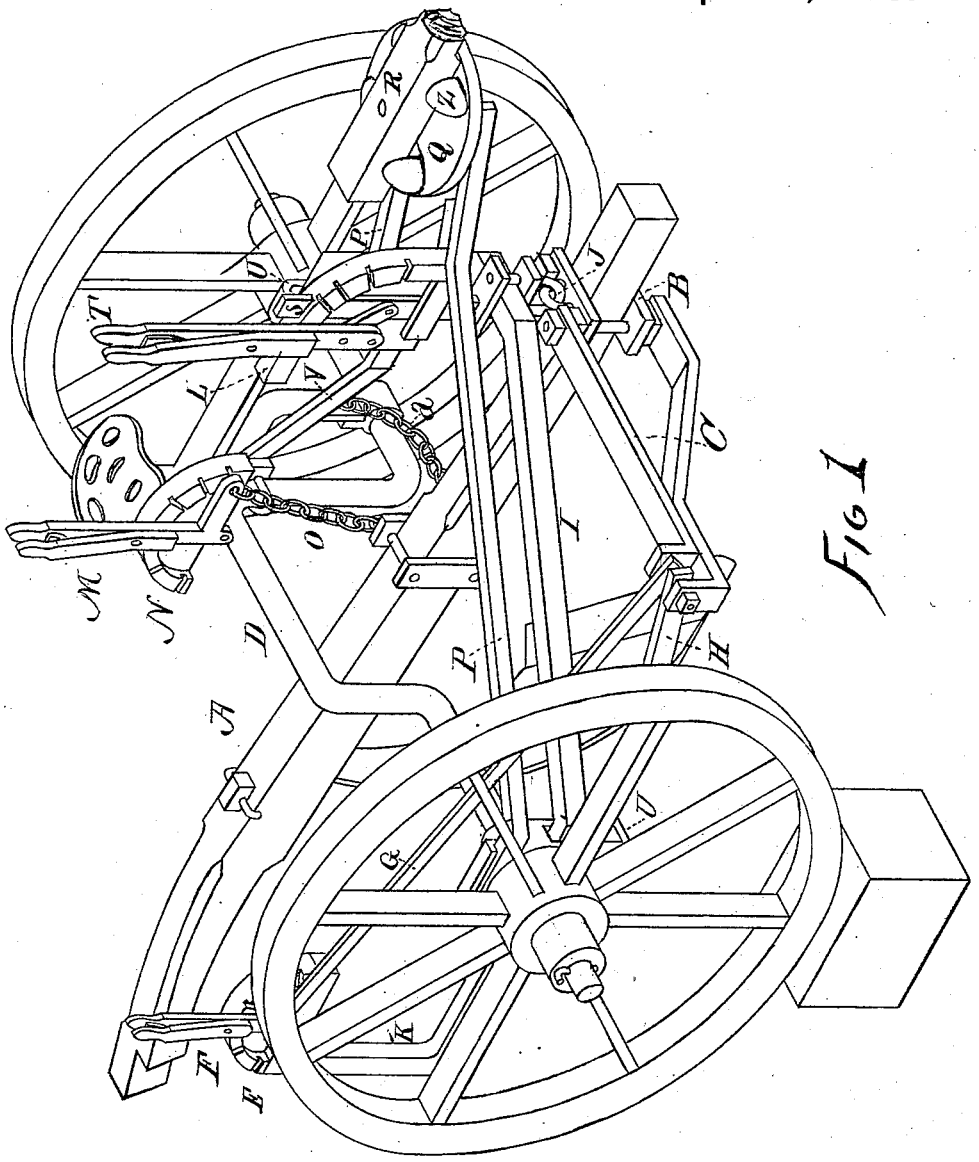

Fig 1

WITNESSES:
L. P. Clawson
H. A. Gray.

Conrad Siegordner INVENTOR
by James M. See
ATTORNEY

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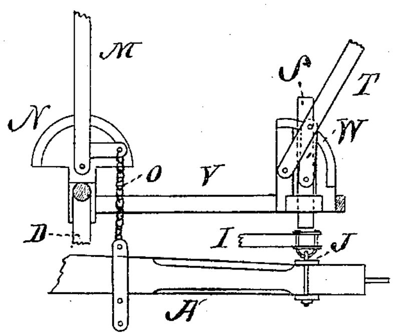

Fig 2

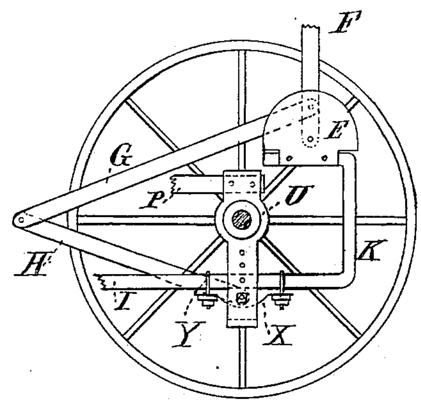

Fig 3

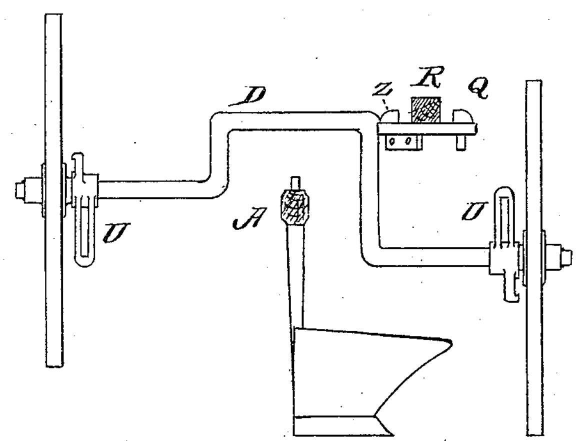

Fig 4

Witnesses
W. A. Gray
John R. Woods

Conrad Siegordner Inventor

By James W. See

Attorneys

UNITED STATES PATENT OFFICE.

CONRAD SIEGÖRDNER, OF BUTLER COUNTY, OHIO.

IMPROVEMENT IN PLOW-SULKIES.

Specification forming part of Letters Patent No. **208,426,** dated September 24, 1878; application filed July 2, 1878.

To all whom it may concern:

Be it known that I, CONRAD SIEGÖRDNER, of Butler county, State of Ohio, have invented a new and useful Improvement in Plow-Sulkies, of which the following is a specification:

This invention belongs to that class of agricultural implements which are intended to lighten the plowman's toil and increase his capacity for work by giving him a seat upon a wheeled vehicle while engaged in plowing. Machines of this class are in common use, and are called "sulky-plows" or "riding-plows." I call my invention a "plow-sulky," for the reason that it relates solely to the vehicle and not to the plow.

The object of my invention is to produce a sulky which may be so adjusted as to adapt it to most any of the usual forms and sizes of plows, and which will, after adjustment, give the rider the most perfect control over the plow under every varying condition incident to change of surface of land, character of soil, &c.

I wish it understood that my invention does not pertain to or seek to cover, broadly, riding-plows. There are many such devices, and it is experience, based on the knowledge of many of these machines, which suggests the improvements forming my invention.

My invention consists of a frame provided with a pair of wheels, a tongue having a limited swinging motion upon a vertical pivot, an adjustable suspension for the plow, an adjustable depressor for the front end of the plow-beam, an adjustable sub-frame pivoted to the main frame in such a manner as to allow the front end to fall freely, and to whose front end the plow is loosely attached, and a device for twisting the plow, all arranged so as to act and coact, as will be explained.

In the accompanying drawing, Figure 1 is a perspective view of my improved sulky with a plow attached; Fig. 2, a side elevation of the devices attached to the main frame for suspending the beam and depressing its forward end; Fig. 3, a section of the machine exhibiting a side elevation of that portion of the sub-frame which carries the initial parts of the twisting devices; and Fig. 4, an elemental front view of the machine, exhibiting the axle, wheels, tongue-deck, tongue in section, the plow with its beam in section, and the axle-stirrups U, by which the axle is joined to other parts.

The main frame consists of the axle D, with its two wheels, tongue-deck Q, stirrups U, and stretchers P. I will describe this main frame, with its direct attachments, as an independent structure, and will then proceed to describe other portions of the device.

The axle D is arched at the center, in order to allow the plow-beam space for movement. On each end of the axle is placed a wheel; but, instead of the axes of both wheels being in line, one is very much elevated, as shown in Fig. 4. This allows the general structure to be nearly level when one wheel is in the furrow, it being understood that the high wheel runs upon the land and the low wheel in the furrow. Both wheels are of the same diameter. Forward of the axle, and to the furrow side of the center, is placed the tongue-deck Q, which is connected with the axle by the stretchers P. These stretchers are bars bolted to lugs upon the under side of the tongue-deck and at their other ends to the stirrups U, which are rigidly attached to the axle. A third stretcher, V, connects the front end of the first-mentioned stretchers with the axle at its arch. The tongue-deck Q is a plate, upon whose upper surface is pivoted the tongue R. Lugs Z, cast upon the upper side of the deck, serve to limit the swinging motion of the tongue, their inner faces being somewhat farther apart than the breadth of the tongue would normally suggest. It should now be understood that the main frame is simply a peculiar wheeled vehicle, having a tongue with some pivoting motion.

The driver's seat is attached to the axle. A notched segment, N, is bolted to the axle-arch near the driver's seat, and to this segment is pivoted the adjusting suspension-lever M, which is in bell-crank form, and from whose horizontal arm a chain, O, is led to the plow-beam, and there attached in a position about over the point.

The plow to be used with this sulky may be of any of the usual forms, and devices will in good time be described which are intended to render the sulky adaptable to varying dimensions of plows. The track of the plow is cen-

trally between the wheels, with the point directly under or a little behind the axle.

As far as described, it should be understood that we have a wheeled vehicle with a plow beneath it, and that by means of the suspension-lever M we can regulate the depth of furrow.

Here it will be well to state that the beam at the point where the chain O is attached is at liberty to move or swing sidewise till in one direction it comes in contact with the furrow side of the arch. In the other direction it is checked by the chain *a*, which is simply hitched to the beam and to the axle between the furrow-wheel and the furrow side of the arch. When the sulky is in operation this check-chain is never called upon. The beam is, within working limits, perfectly free at this point, the only connection with the axle being the suspension-chain O, which governs the depth of furrow.

On the front end of the main frame is bolted a notched segment, furnishing a pivot for the depressing-lever T and mortises for the vertically-sliding depressor S. This arrangement is more plainly shown in Fig. 2. The depressor S is connected with its lever by the link W. It is obvious that the lever T will thus vary the vertical position of the depressor.

The office of the depressor is to prevent the rising of the front end of the plow-beam, and for simplicity's sake I will say that when the front end of the beam tends to rise past the adjusted limit, it will come in contact with the lower end of the depressor, and can rise no farther. In fact, the depressor does not act upon the plow-beam directly, but upon intervening parts, which, however, have no effect upon its functions, but are incident entirely to other offices.

The suspending and depressing mechanism having been described, it may be well to explain their operation, as their offices are dependent only upon each other.

In connection with Fig. 2 it should be understood that when the driver wishes to adjust the depth of furrow he operates the suspension-lever M till the general position of the plow is correct; but in case he lowered the beam at that point, it is obvious that the front end of the beam will be too high, that the plow will not be level, and that it will not take to the earth. To rectify this he adjusts the depressor S so as to force down the front end of the beam. This, of course, makes the matter right, and under ordinary circumstances the suspension-lever M remains untouched in an unvarying soil.

The depressor is operated whenever the driver desires to lower or raise the point of the plow.

The plow may rise bodily from the ground, the chain O not interfering in any way; but under no circumstances can the point run upward, as such a tendency is suppressed by the depressor acting upon the front end of the beam.

I now come to the devices for attaching the plow to the vehicle, for it must have been noticed that thus far the plow has been spoken of as being simply under the vehicle, the only attachments mentioned being such as limit the upward motion of the front end of the beam and the downward motion of the other parts of the beam.

The stirrups U, which are attached to the axle just inside the wheels, carry pivots, on which swing the blocks X. (Shown in Fig. 3.) The sub-frame I is clamped to these blocks. The sub-frame I forms two sides of a triangle, the apex of which lies over the plow-beam in the neighborhood of the depressor. The sub-frame I is at this point provided with the free joint J, by which it is attached to the plow-beam near the clevis. A simple bolted clamp, as shown, serves the purpose of attachment. The extremities of the sub-frame I are clamped to the stirrup-blocks X before mentioned.

It will now be seen that the plow is attached loosely to the apex of the sub-frame, and that the sub-frame is pivoted to the axle-stirrups.

The team is hitched to the clevis, as usual, and in adapting the sulky to different plows it may be lengthened or shortened at the stirrup-blocks X by means of the clamps Y, and the pivot-point may be raised or lowered by means of a series of holes in the stirrups, as shown in Fig. 3.

The office of the sub-frame I is to connect the plow with the axle, and at the same time give it freedom to drop at the front end and to twist. This word "twist" will be used to indicate that rolling adjustment given to a plow to keep it steady and turn its furrow uniformly.

We now come to the devices for twisting the plow so as to compensate for the side-hill lay of the land, variation in depth, &c.

It will be seen that no twisting devices can be conveniently attached to the main frame, for that part is practically independent of the plow. The sub-frame, however, retains an almost uniform relation to the beam at the front end, and this offers the most suitable place for attaching any direct twist-adjusting devices.

The land-side of the sub frame projects rearward past the axle, as at K, and on this projection is rigidly mounted the notched segment E, having a lever, F, pivoted to it.

A skeleton lever, C, is attached to the front end of the plow-beam and projects landward. This lever is attached to the beam rigidly in one direction, so that if the end of it be raised or lowered the attachment will not yield, but the plow will be twisted; but if moved horizontally it will pivot upon its attaching-bolt. A radius-bar, H, reaches from the extremity of the twisting-lever C to the stirrup-pivot of the sub-frame, as shown plainly in Fig. 3. A connecting-rod, G, connects the extremities of the twisting-lever C with the hand-lever F.

It is obvious that the hand-lever F can thus

cause any degree of twist to be given to the plow, and that all of the twisting machinery is free to follow the movements of the sub-frame.

Any of the hand-levers shown may, if desired, be made foot-levers by proper construction.

I claim as my invention—

1. In a sulky-plow, the combination, with the main frame and plow-beam, of the sub-frame I, the guide-chain *a*, the lifting-lever and chain M O, and the adjustable non-lifting depressor T S, substantially as shown and specified.

2. The axle D, sub-frame I, articulating joint J, twisting-lever C, radius-bar H, connecting-rod G, and adjusting-lever F, all combined substantially as specified.

CONRAD SIEGÖRDNER.

Witnesses:

H. C. HUME,

R. S. CARR.