(No Model.)

3 Sheets—Sheet 1.

W. STRAIT.

SULKY PLOW.

No. 332,301. Patented Dec. 15, 1885.

Fig. 1.

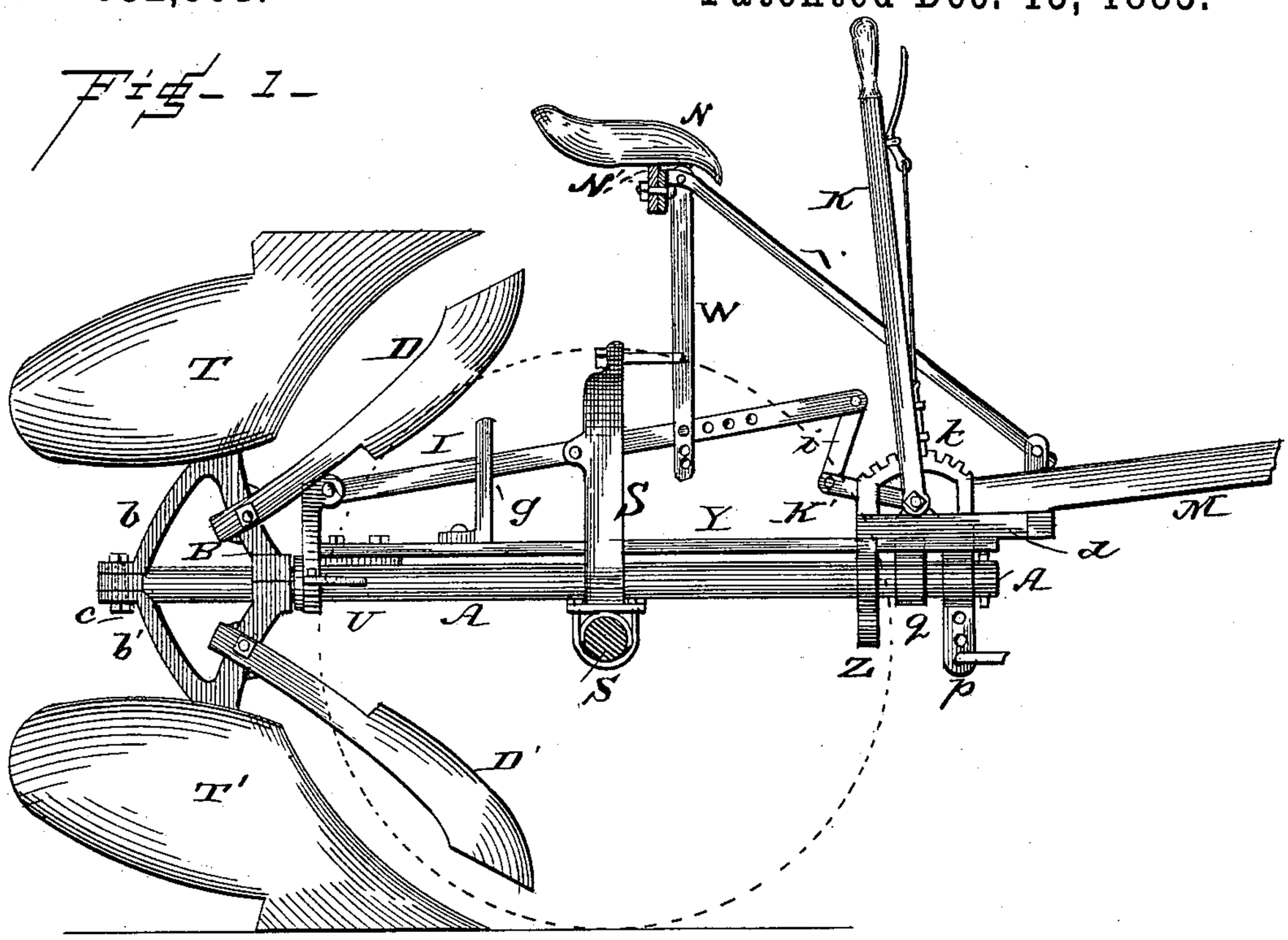
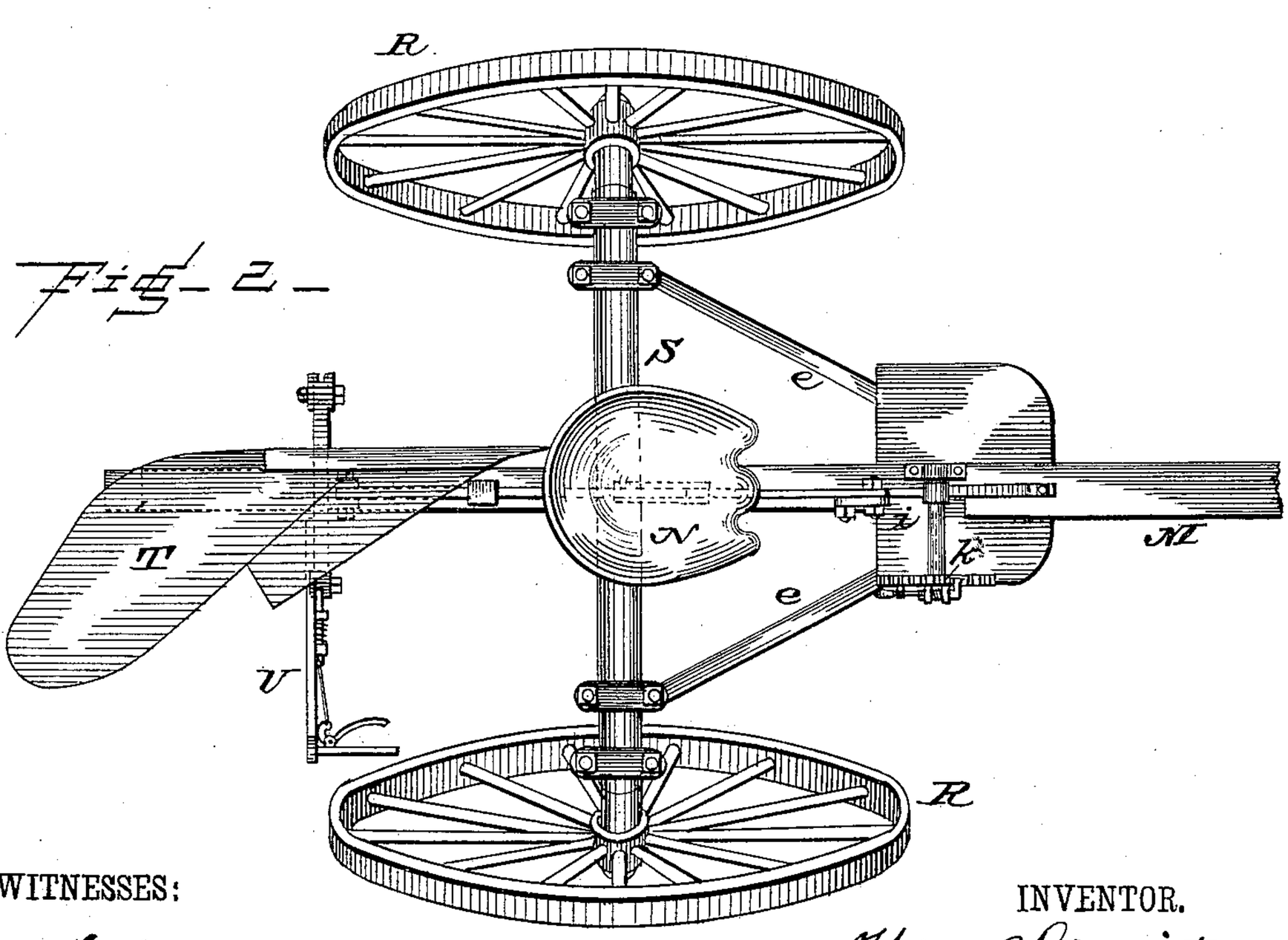


Fig. 2.



WITNESSES:

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Wm Strait

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(No Model.)

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W. STRAIT.

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Fig. 3.

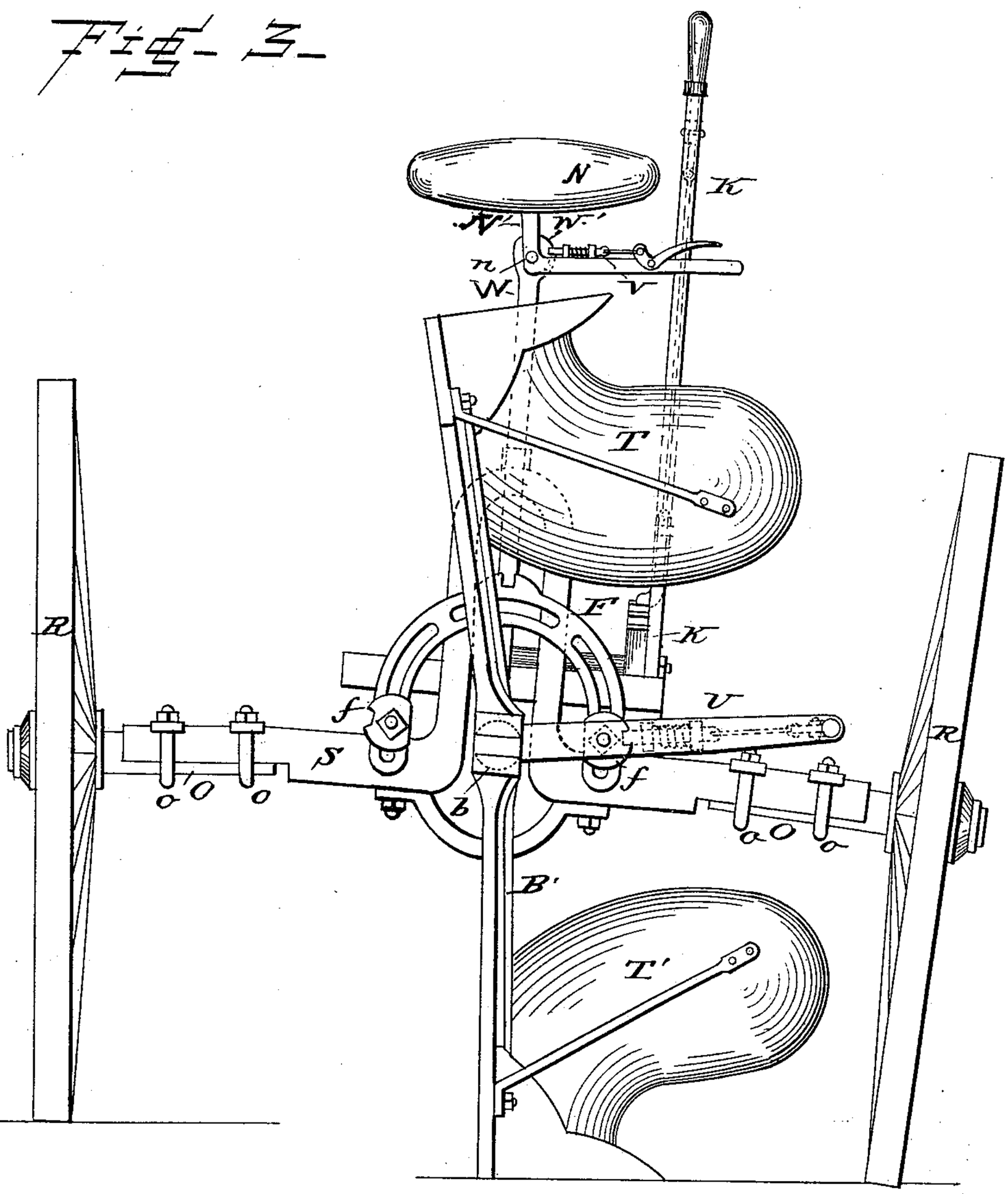

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Fig. 4.

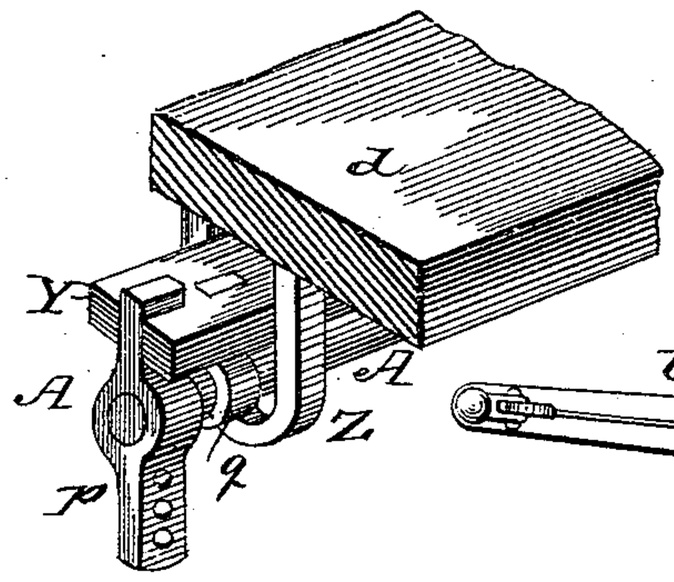


Fig. 5.

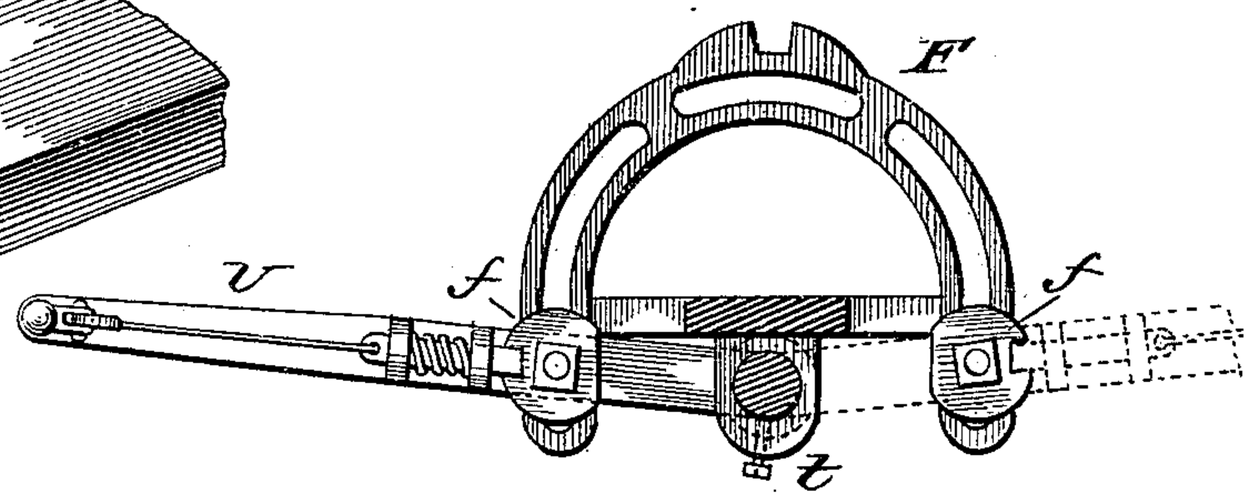


Fig. 6.

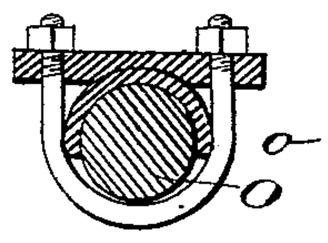


Fig. 7.

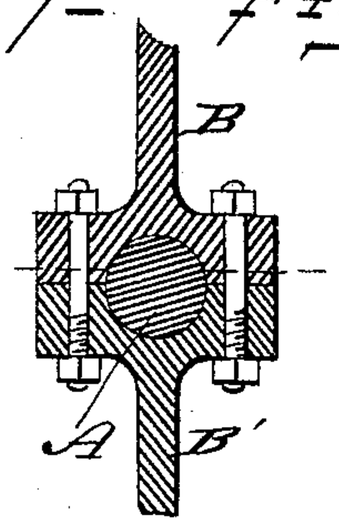


Fig. 8.

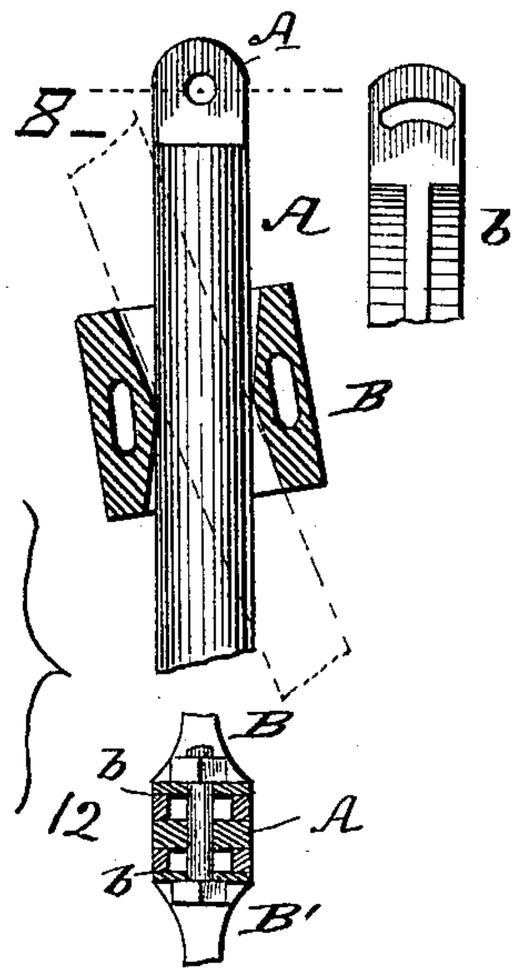


Fig. 9.

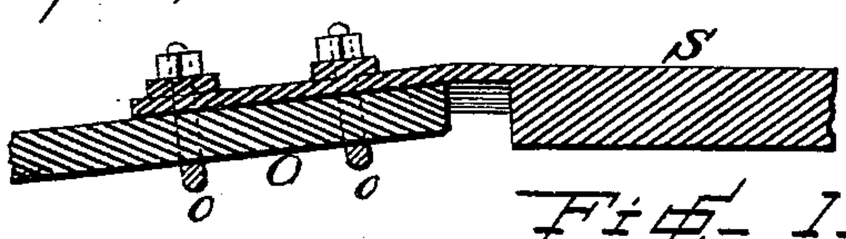


Fig. 10.

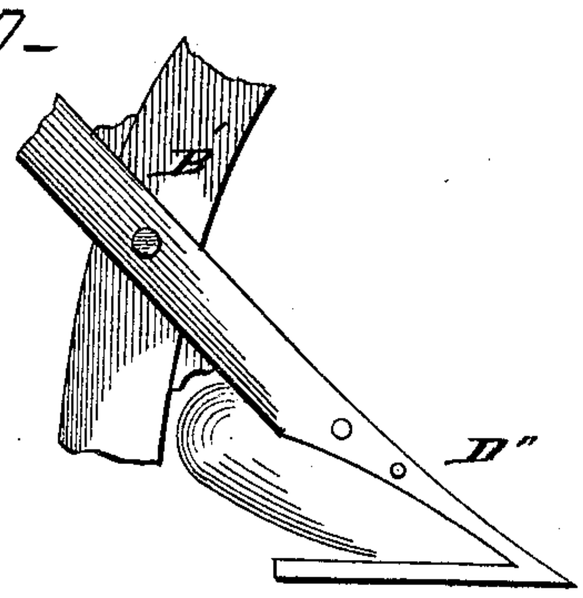
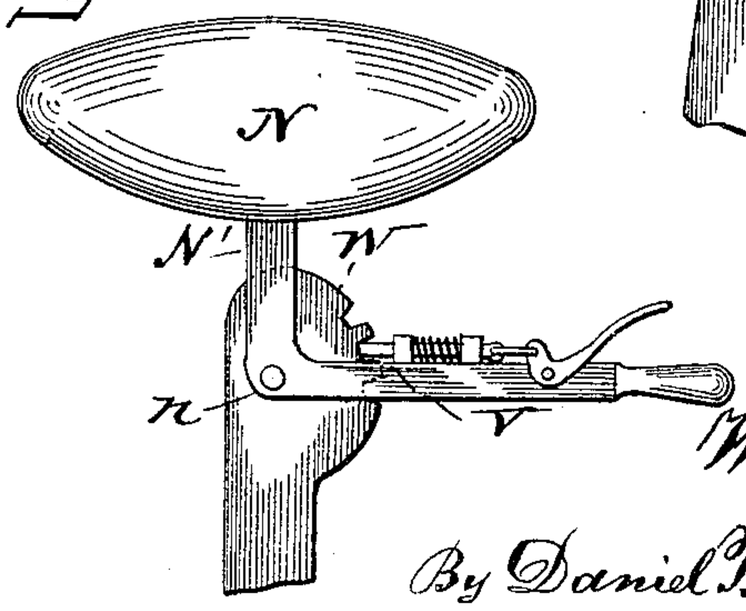


Fig. 11.



WITNESSES:

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INVENTOR.

Wm Strait

By Daniel Breed ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM STRAIT, OF ELMIRA, NEW YORK, ASSIGNOR TO CELESTIA L. STRAIT, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 332,301, dated December 15, 1885.

Application filed May 5, 1884. Serial No. 130,391. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STRAIT, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Sulky-Plows; and I do declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it belongs to make and use the same.

The object of my invention is to make a sulky-plow adapted to work on flat land and side hills, and to do perfect work in either case, the plows being adjustable to run at the desired depth, to cut a wider or narrower furrow, and to work in a proper position, making the standard vertical either on a side hill or when one wheel is in the furrow and the other wheel raised upon the land.

My invention consists of two plows, one being right-hand and the other a left-hand plow mounted upon a revolving and oscillating shaft carrying colters or jointers, said plows being adjustable, as to depth, to and from the land, and so as to bring the plows into proper position either on a hillside, on flat land, or when either wheel runs in the furrow, and also in other devices and combinations, all of which will be fully understood by the following description and claims.

In the accompanying drawings, Figure 1 is a side view showing the revolving shaft with the plows and colters mounted thereon, and other parts connected therewith, the relative position of the wheels being indicated in dotted lines. Fig. 2 is a top view of the machine. Fig. 3 is a rear view. Fig. 4 is a detached front view of the draw-head and parts connected therewith. Fig. 5 is a detached view showing the lever by which the plows are rotated and the adjustable notches for locking the lever. Fig. 6 shows the attachment of the journal-arm to the axle S. Fig. 7 is a vertical section through the rotating shaft and heels of the plow-standards on the line *x x*, Fig. 8, which is a horizontal section showing the way in which the standards are attached to the shaft A so as to allow the plows to be swung into position. Fig. 9 is a detached view of joint between the adjustable journal-arms and the axle. Fig. 10 is a detached view of a jointer attached to the plow-standard. Fig. 11 is a detached view of the seat and its lever and dog for tilting and locking the same. Fig. 12 is a section through the heels of the braces *b* of the plow-standard.

In the construction of my sulky-plow I make an arched axle, S, with adjustable wheel-spindles O for the wheels R, as shown in Fig. 3. These wheels are inclined inward at the bottom, and one wheel is intended to run in the furrow, treading close to the land side while the other wheel travels on the land. In this position the furrow-wheel runs clear and does not chafe against the land. By this arrangement of the wheels the upper one runs in a perpendicular position while the lower wheel is inclined, and upon reversing the plow the position of the wheels is reversed. On a side hill the pole is naturally carried higher than when plowing on level land, and by raising the pole the arch of the axle is thrown backward, and the front of the wheels are gathered inward, and the lower wheel, by running in the furrow on the corner of the tire, inclines the machine to run toward the land. By means of the wheel-spindles O the wheels may be set wider apart or nearer together, according to the width of furrow desired to cut.

Upon the axle S is mounted a revolving and oscillating horizontal shaft, A, carrying two plows, T and T′—one right and the other left hand—on the standards B and B, having rear braces, *b* and *b′*, as shown in Fig. 1. Attached to these standards are two colters, D and D′, or in place of the colters two jointers, D, Fig. 10, when it is desirable to employ jointers. By means of this revolving shaft either the right or left hand plow is easily brought down into working position, and enables the machine to plow back and forth, either on a side hill or on flat land; but in reversing the sulky we change the position of the wheels and bring the upper one on the lower side, either on the hillside or on flat land, changing one wheel from the furrow to the land, and the other from the land to the furrow. The seat-bar N is pivoted in front and connected

to the lever I by support W, which is provided with a spring dog, *v*, and ratchet *w'*, by means of which the seat may be tilted to the right or left and brought into proper position, whether the right or the left wheel is in the furrow. The plows are raised and lowered by means of the crank-lever K, which is connected to lever I by means of link *i*, and provided with dog *k*, Fig. 1. This lever I is pivoted to the arch of the axle S, and the weight of the driver in his seat helps to counterbalance the weight of the plow. A flat bar, Y, holds the revolving shaft A in place, the bar and shaft both passing through the axle-arch and the loop *z*, which is bolted to the underside of the platform, leaving the bar and shaft to oscillate freely up and down in said loop and arch. This bar Y carries a vertically-slotted guide, *g*, in which the lever I plays up and down, thus keeping the plows from twisting. The rear end of bar Y is bolted to a bracket on the front part of the arch F. The draw-head *p* is attached to the front end of the shaft A, and the upper end of the draw-head rests in a notch or slot in the front end of bar Y, to keep the draw-head from turning when shaft A is revolved. The front end of shaft A has a journal-box, *q*, attached to bar Y, as seen in Fig. 4, and the rear end of said shaft has a box, *t*, Fig. 5. The platform *d* is supported on the braces *e*, and the pole M is bolted to the top of the platform, as seen in Fig. 1. A crank-lever, K, has a shaft about one foot in length, working in boxes on the top of the platform, the lever being at one end of said shaft and the crank-arm K' being at the other. This crank-arm K, by means of link *i*, is connected to lever I, which is pivoted to the arch of the axle, and the rear end of lever I is connected to arch F, so that the driver, by moving lever K, can readily raise or lower the rear end of shaft A, thus raising or lowering the plows at pleasure.

In a reversible plow, where first one horse and then the other is brought into the furrow, the horses sometimes crowd in going in one direction and then pull apart in going in the opposite direction. To compensate for this change it is necessary to make the plows independently adjustable, in order to swing them to or from the land. The plow-standards B and B' are adjustably attached to the rotary shaft A by means of the mechanism shown in Figs. 7 and 8, so as to be swung to and from the land, the heels of braces *b* being slotted laterally, as shown in Fig. 12, and attached to the flattened end of the shaft A by a set-bolt, which is easily moved. The shaft A and plows are rotated by means of lever U, which is held in working position by the adjustable notch or lever-lock *f* upon the arch F. This adjustment compensates for tilting the frame and wheel and also for changing the depth of the furrow.

Instead of a colter, D, the jointer D'' may be used when desired.

I do not claim, broadly, a sulky or wheel plow with the wheel-spindles inclined so as to cause the wheels to incline inward at the bottom or upon the ground, for I am aware that wheels have been set in that manner heretofore; but what I do claim is the use of wheels set in that manner, in combination with a rotating or side-hill plow, because in such combination there is a special use and I obtain special advantages not obtainable by the use of this feature in ordinary sulky-plows.

Having thus described my invention, what I claim is—

1. The bar Y, having a box at each end thereof, the shaft A, and draw-head *p*, all oscillating vertically, substantially as set forth.

2. In a side-hill or revolving plow, the standards B B', provided with means for separate or independent lateral adjustment upon their shaft or axis, whereby either plow may be set with its point to or from the land, substantially as set forth.

3. In a revolving plow, the standards B B', in combination with the axle and wheels, and an adjustable locking device, whereby the plow-standards may be locked in a vertical position while either wheel runs in the furrow, substantially as set forth.

4. In a revolving plow, the adjustable notch or lever-lock *f* upon the slotted arch F, in combination with the standards, for the purpose of stopping the lever U in proper position when the plows are reversed, substantially as set forth.

5. The rocking lever or bar I, pivoted upon the arch of the axle S, in combination with the seat support W and seat-bar N, for the purpose of bringing the weight of the driver to assist in raising and lowering the plows, substantially as set forth.

6. The combination of the crank-lever K, having arm K', connected by link *i* to lever I, which is pivoted to arch S of the axle and also to the seat-support W, for the purpose of raising and lowering the plows and holding them in working position, substantially as set forth.

7. The combination, with the bar Y and rocking lever I, of the slotted guide *g* and plow-shaft A, for the purpose of holding the plows and preventing them from twisting, substantially as set forth.

8. In combination with a side-hill plow, the inclined wheel-spindles, for the purpose of inclining the wheels inward at the bottom, substantially as and for the purposes set forth.

9. In combination with a revolving plow, the tilting seat, for the purpose of adjusting the same when one wheel is taken from the furrow and the other is put into the furrow, substantially as set forth.

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Witnesses:
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