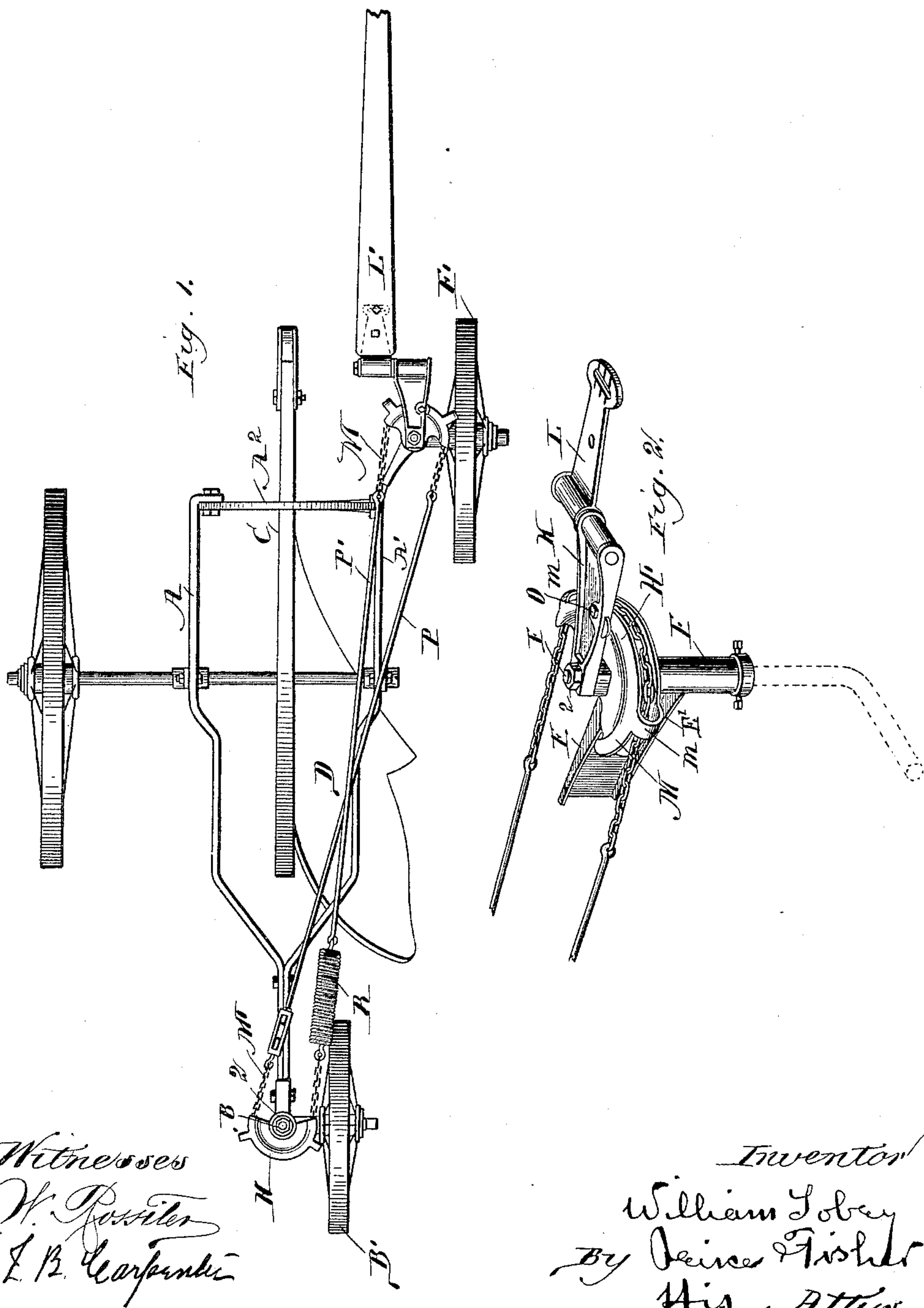


(No Model.)

W. SOBEY.
SULKY PLOW.

No. 437,666.

Patented Sept. 30, 1890.



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UNITED STATES PATENT OFFICE.

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PLOW WORKS, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 437,666, dated September 30, 1890.

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To all whom it may concern:

Be it known that I, WILLIAM SOBEY, a resident of the city and county of Racine, in the State of Wisconsin, have invented certain
5 new and useful Improvements in Sulky-Plows, of which the following is hereby declared to be a full, clear, and exact description, sufficient to enable others skilled in the art to make and use the same.

10 The invention relates to three-wheeled sulky-plows, and more particularly to such plows wherein a unison movement of the front and rear furrow-wheels is automatically effected under control of the team-pole. In the
15 class of plows named it has been heretofore proposed to mount the front and rear furrow-wheels in swivel-bearings and to connect the standards of said wheels together in such manner as to compel the wheels to move in
20 unison according to the shift of the team-pole; but in such prior devices the connection between the swivel-standards of the two furrow-wheels was rigid and unyielding. On turning the plow at the end of a furrow to proceed in a new course the plow-point remains
25 embedded and serves pivot-like to determine the swing and travel of the sustaining-wheels.

This invention also presents the first instance in the art, so far as I am aware, of a
30 sulky-plow having the standards of its front and rear furrow-wheels provided with suitable extensions or plates united by cross-connections, so that a positive pull upon one or the other of said cross-connections shall be exerted
35 to effect the unison movement of the furrow-wheels irrespective of the direction of turn. Heretofore a single connection has been employed between the standards of the furrow-wheels; but obviously this connection served
40 to exert a pull only when the furrow-wheels were turned in one direction, a thrust being exerted upon the single connection, tending to bend and cramp the same when the furrow-wheels were moved in the opposite direction.
45 If the swivel-joints of the furrow-wheels be in connection, both wheels respond and adjust themselves in unison as the turn proceeds. When the travel of the wheel is finished at the turn and the front wheel straight-

ens away in a new course under slight reverse 50
shift of the team, the rigid connection revolves the rear wheel about its swivel-joint with considerable violence, tending to strain the machine parts and to displace the plow
from position. By providing that the con- 55
nection shall yield or give within limits, as contemplated in my invention, this enforced turn of the rear furrow-wheel is materially modified. The swing of the front wheel is not
imparted so directly nor so promptly as if the 60
connection were rigid. The readjusting swing of the rear furrow-wheel proceeds, therefore, more gradually and is without the severe and sudden strain upon the machine which the
compulsory unison turn of the two furrow- 65
wheels under action of the unyielding connection is apt to bring about.

With this end in view the invention consists in the novel features in construction hereinafter described, and particularly pointed 70
out in the claims at the end of the description.

In the annexed drawings, which form part of the specification, Figure 1 is a view in plan of a sulky-plow having the improvements embodied therein. Fig. 2 is an enlarged detail 75
view in perspective, showing the crank-spindle and standard for the front furrow-wheel, the supporting-bracket, the pole-plate, and adjacent connections.

The frame of the plow and its operating 80
mechanism may be of any well-known or suitable character, one simple form of frame being illustrated for convenience in the drawings. This frame is shown as consisting of the side bars A A', united together at their 85
rear ends to form an extension, wherein is journaled the vertical shaft or standard B of the rear furrow-wheel, and united together at their front ends by means of an arch-bar A², beneath which extends the draft-beam C, that 90
is downwardly curved at its rear end and sustains the plowshare D. As the mechanism for sustaining the plowshare and as the precise construction of frame form no part of the subject-matter to be claimed in this applica- 95
tion, it is not deemed necessary to illustrate them in detail.

The side bar A' of the main frame is for-

wardly extended, and to this side bar is bolted the bracket E, extending laterally from the bearing E' of the standard F of the front furrow-wheel F'. The front and rear furrow-wheels will preferably be angled in such manner as to run in the corners of the furrows in well-known manner, although it has not been deemed necessary to illustrate this familiar arrangement, since it forms no part of the present invention.

To the top of the standard B of the rear furrow-wheel and to the top of the standard of the front furrow-wheel are keyed, respectively, the quadrant-plates H H', these quadrant-plates being formed, preferably, with squared sockets, through which will pass the correspondingly-squared upper ends of the standards. To the upper end of the standard of the front furrow-wheel is also fixed the shifting plate K, to the upper end of which is swiveled the plate L, to which is bolted the team-pole L'. Suitable set-nuts may be employed for retaining the parts upon the upper ends of the standards of the furrow-wheels.

Each of the quadrant-plates H H' is furnished with a peripheral groove, around which will pass the chains M M', suitable loops *m* being employed to better retain the chains in place, and in order to unite the chains with the quadrant-plates I prefer to provide the bolts O, which pass through the flanges of quadrant-plates H H' and through the links of the chains. The bolt O also passes through the plate K and serves to better unite this plate with the quadrant-plate H'. The ends of the chains M M' are oppositely connected, preferably by the cross-rods P P', and a suitable spring R is conveniently interposed as part of the connecting mechanism between the front and rear furrow-wheels. By preference this spring R is a stout coil-spring, one end of which is attached to a rod P' while its opposite end is attached to one of the chains M or M', although it will be understood that any other form of spring or springs may be employed to give the desired yielding action to the connection between the front and rear furrow-wheels.

From the foregoing description it will be seen that as the pole L' is shifted by the team in the plowing operation at the corner of the field a like movement will be imparted to the front furrow-wheel F', and through the quadrant-plate H', the chain M, the rod P, the chain M', and quadrant-plate H, a reverse shift will be imparted to the rear furrow-wheel as well. As the plow thus turns about the point of the plowshare as a pivot, the front and rear furrow-wheels will be caused to move in unison; but when the plow is brought into proper position to resume its forward movement at the completion of the turn, the team straightens away, and in so doing will slightly reverse the shift of the pole L' to bring it into right alignment. This slight reverse shift of the pole causes a sudden turning of the furrow-wheels to move them into

position for the advance. At such time the spring R comes into play to relieve the rear furrow-wheel from turning too quickly. The strength of the spring will be sufficient to cause the rear furrow-wheel ultimately to turn into line as the plow is started forward. The temporary relief thus afforded against the premature turning of the rear furrow-wheel acts to prevent severe strain upon the machine parts and holds the plow-point steadily to its work in the furrow.

I have found in practice that the quadrant-plates and chains afford a very effective means for transmitting the movement from the front to the rear furrow-wheels, and especially so because being sectors merely they act to relieve the strain quickly on the cross-connection at the very time that the opposite connection with its governing-spring is coming into play. Obviously springs may be set in each of the cross-connections, instead of in one only, as shown. The two springs would not be of the same strength ordinarily, the lighter one being set on that side which comes most in action at the turn to relieve the rear wheel.

The invention presents the first instance in the art of a spring or yielding connection between the swiveled front and rear furrow-wheels of a plow, and while I have illustrated what is regarded as one convenient and effective embodiment of the invention it will be understood that the improvement is in no sense restricted thereto, but is capable of embodiment in a variety of forms.

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

1. In sulky-plows, the combination, with the front and rear furrow-wheels, of an interposed yielding connection for communicating movement from one to the other of said wheels, substantially as described.

2. In sulky-plows, the combination, with the front and rear furrow-wheels and their standards, of suitable plates attached to said standards, cross-connections between said plates, and a spring interposed in one of said cross-connections, substantially as described.

3. In sulky-plows, the combination, with the front and rear furrow-wheels and their standards, of suitable plates or extensions attached to said standards, and cross-connections extending between said plates or extensions, substantially as described.

4. In sulky-plows, the combination, with the front and rear furrow-wheels and their standards, of suitable quadrant-plates attached to said standards, and cross-connections between said quadrant-plates and flexibly extended to the rims thereof, substantially as described.

5. In sulky-plows, the combination, with the frame-support, of the swivel-mounted front and rear furrow-wheels, the yielding-connector extended between said wheels, and the swinging team-pole coacting with said wheels to shift the same, substantially as described.

6. In sulky-plows, the combination, with the supporting-frame and with the front and rear furrow-wheels having standards swiveled in said frame, of the quadrant-plates secured to
5 said standards respectively, the chain and link-connector extending between said plates and provided with an interposed spring, and the team-pole suitably sustained by the front quadrant-plate, substantially as described.

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