

No. 708,405.

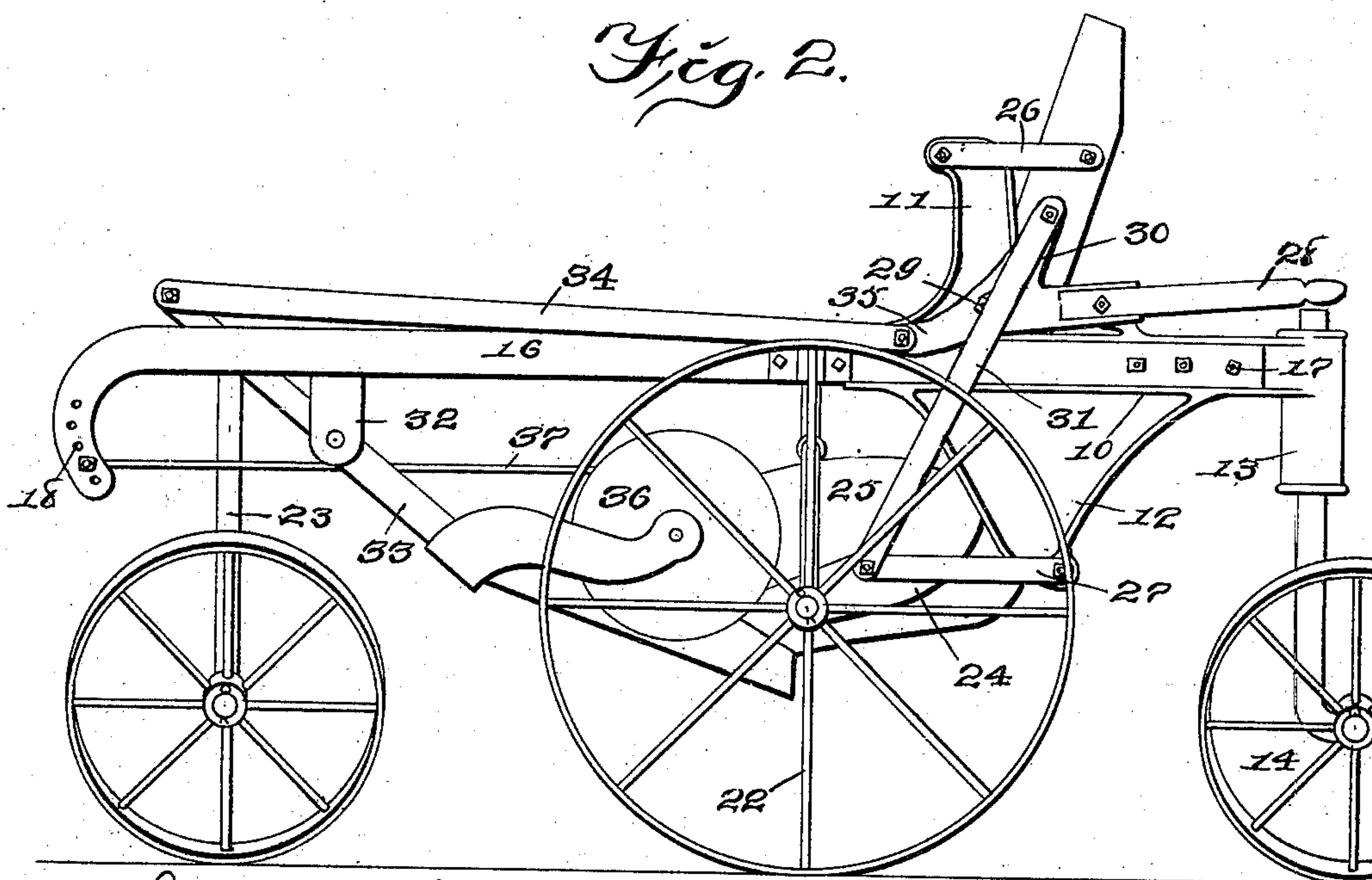
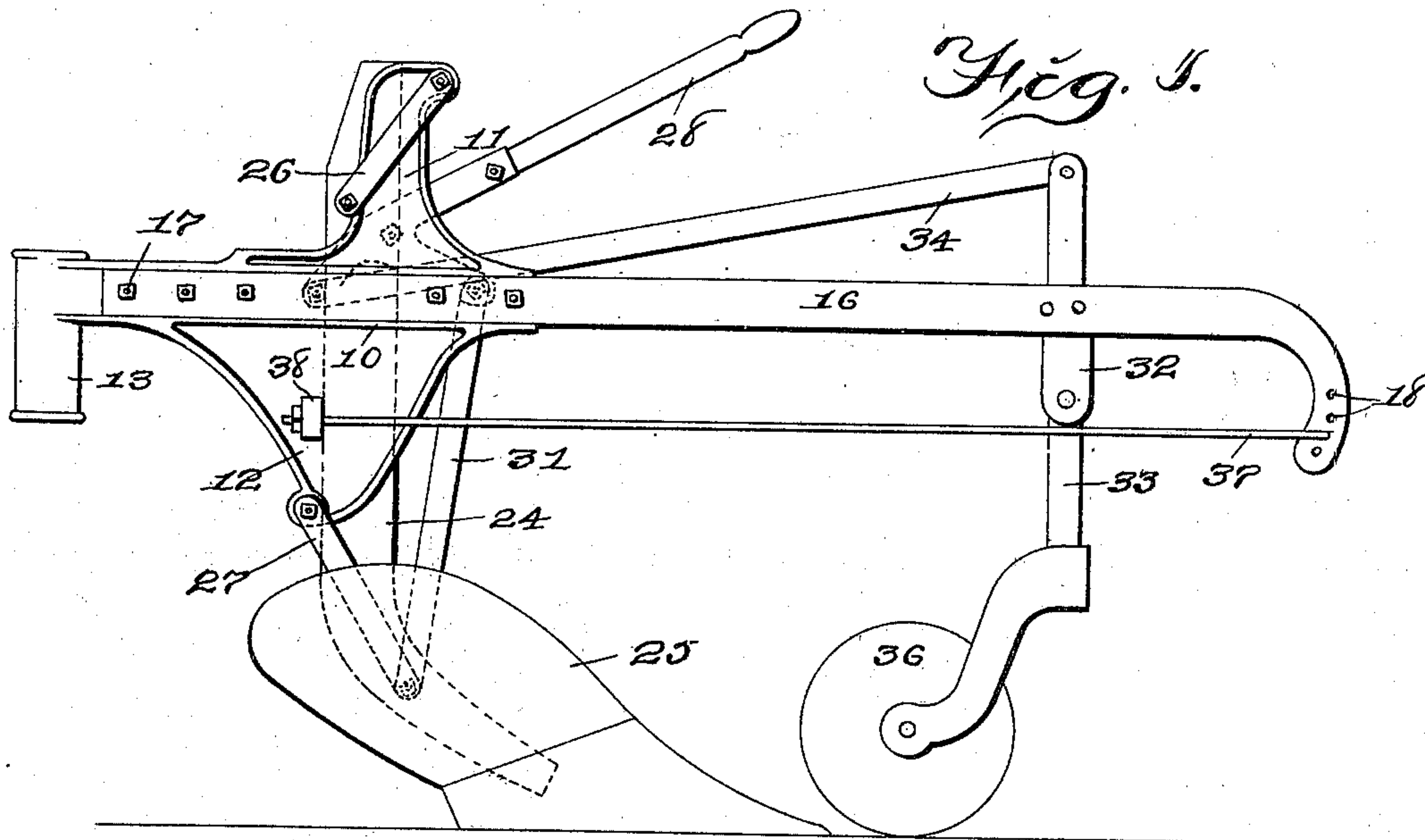
W. W. ROBINSON.  
SULKY PLOW.

Patented Sept. 2, 1902.

(Application filed Sept. 13, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses: {  
R. S. Orwig,  
Henry Manger.

Inventor: William W. Robinson,  
By Thomas G. Orwig, Attorney.

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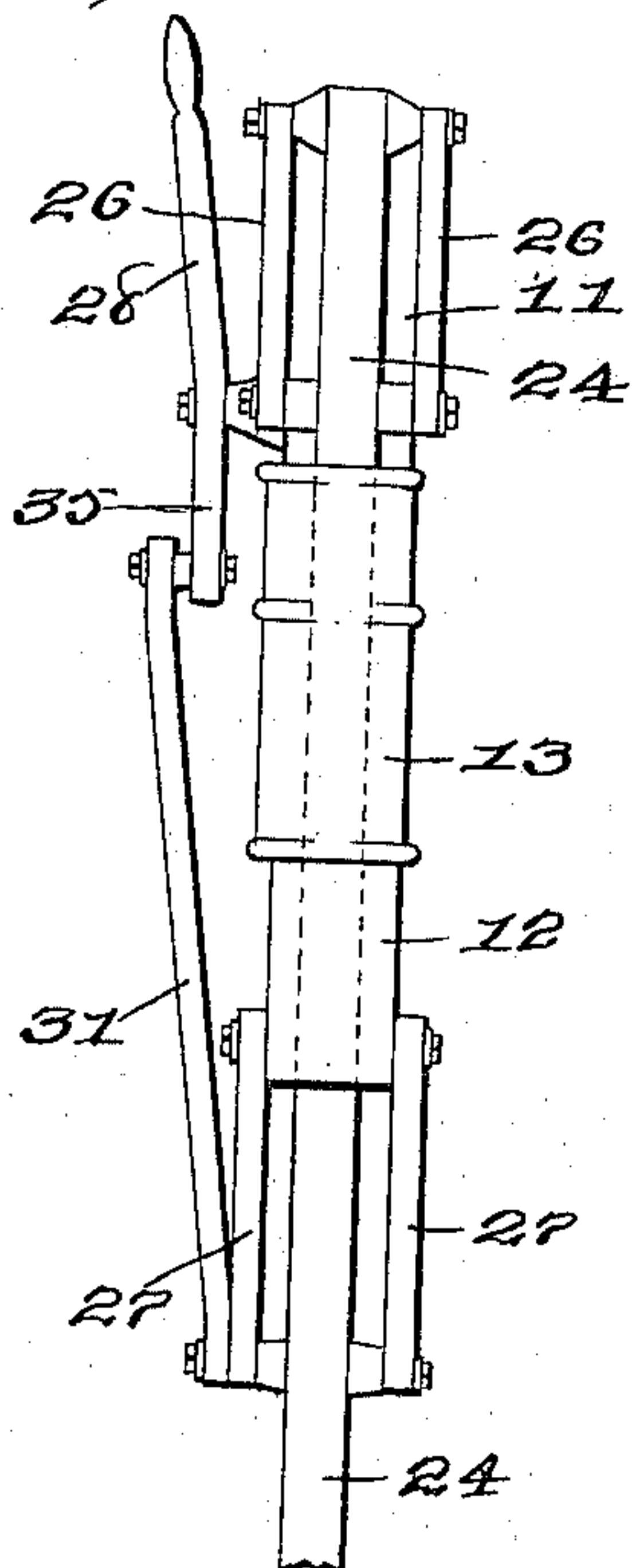
SULKY PLOW.

(Application filed Sept. 18, 1901.)

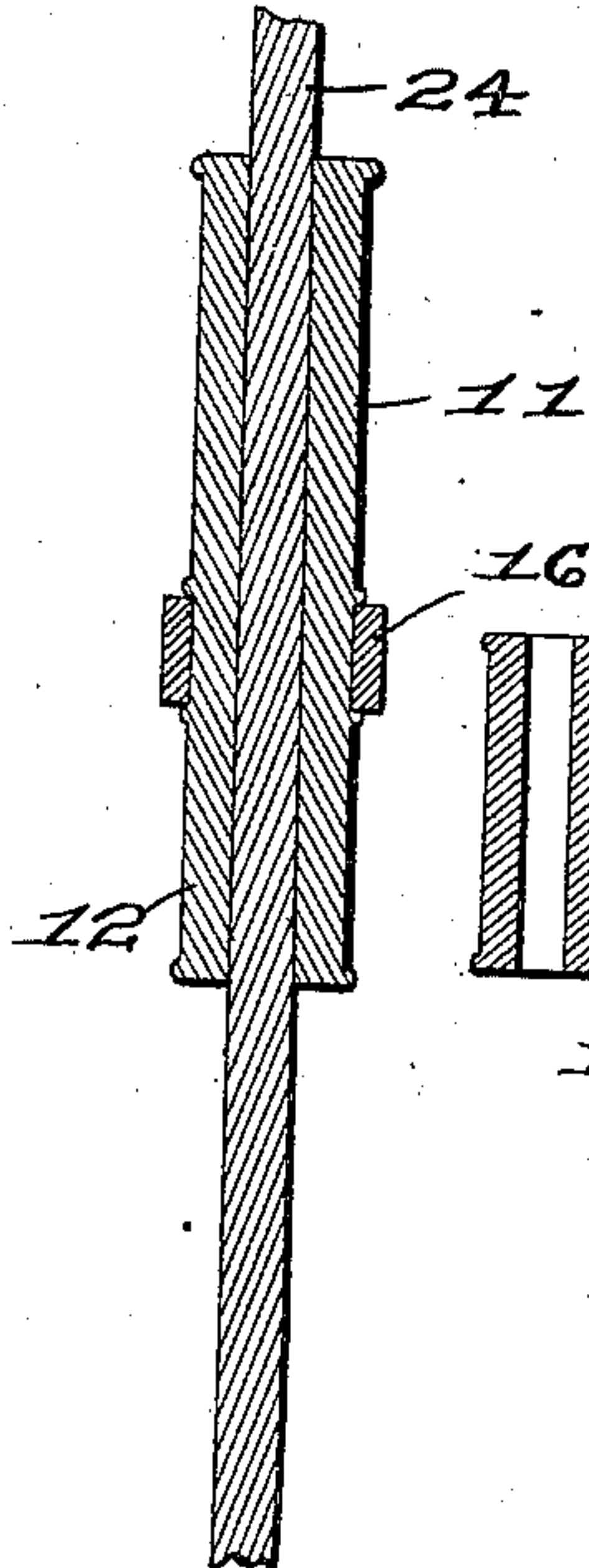
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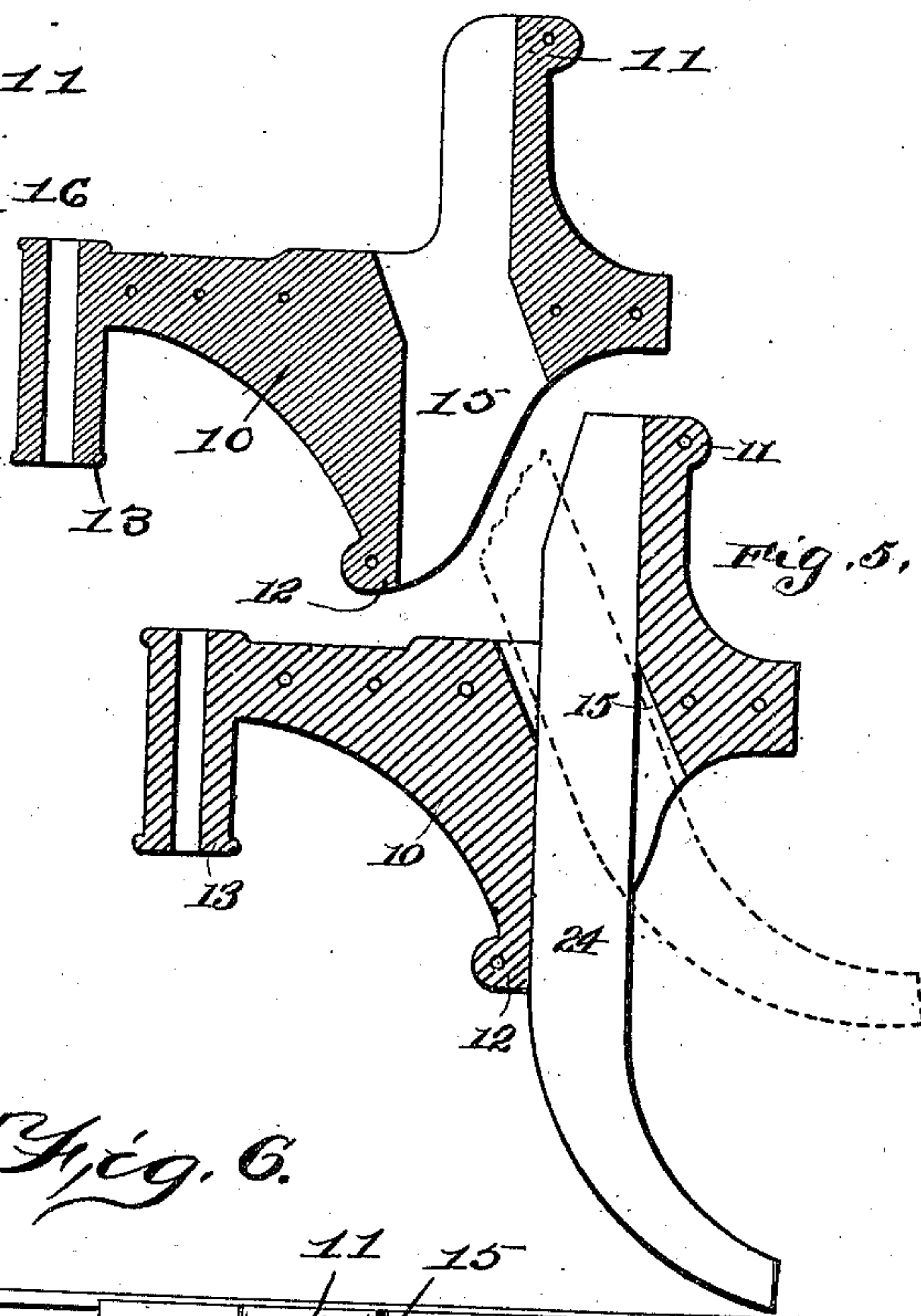
*Fig. 3.*



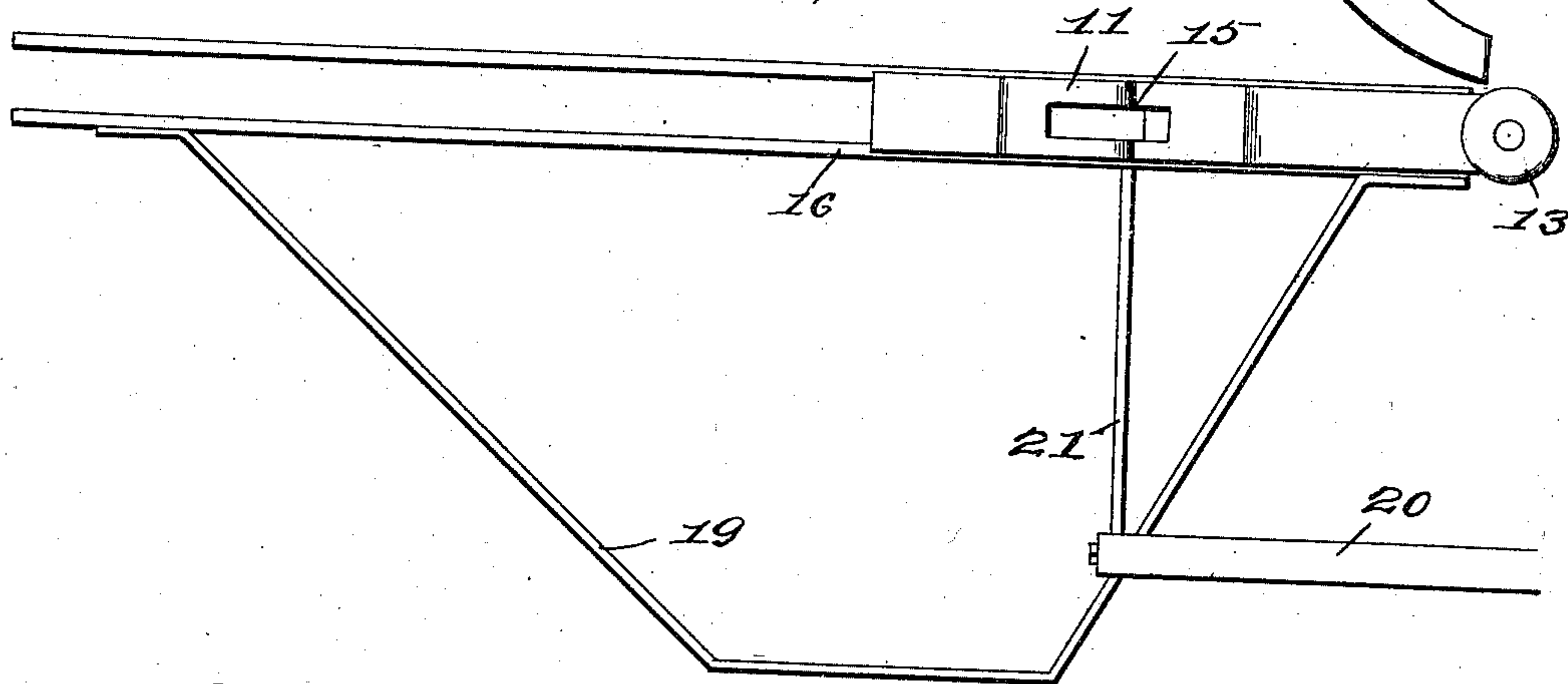
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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3 Sheets—Sheet 3.

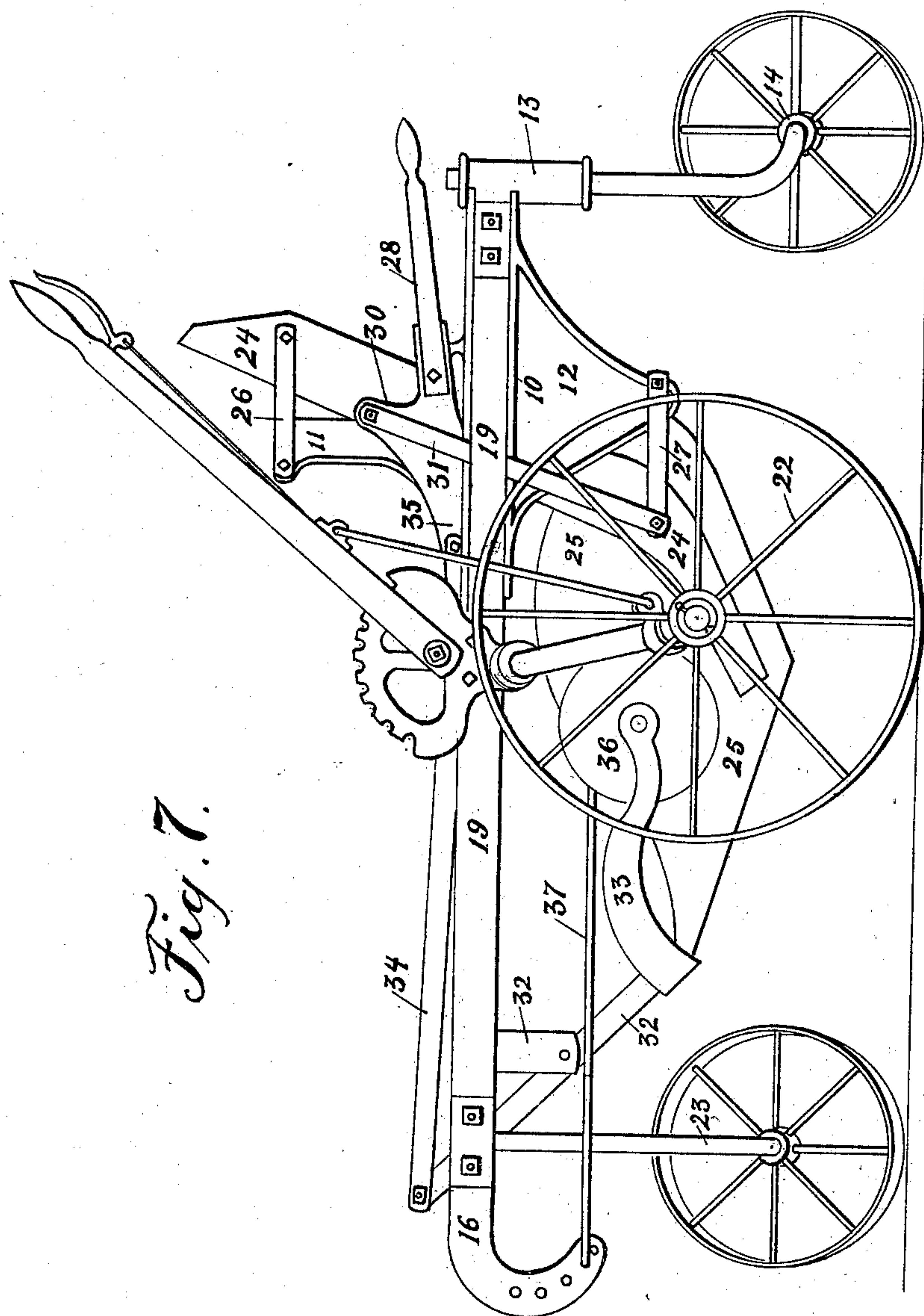


Fig. 7.

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Wm W. Wallace  
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# UNITED STATES PATENT OFFICE.

WILLIAM W. ROBINSON, OF DES MOINES, IOWA.

## SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 708,405, dated September 2, 1902.

Application filed September 13, 1901. Serial No. 75,267. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. ROBINSON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Riding-Plows, of which the following is a specification.

My invention relates to certain improvements in the mechanism for raising and lowering the plow and colter relative to the frame of an ordinary riding-plow and may be used in connection with any of the ordinary forms of plows of this class.

My objects are, first, to provide a frame to be cast complete in one piece and secured to the machine-frame, designed primarily to slid- ingly support the plow-standard and also de- signed to serve as a brace for the machine- frame, so that a light and inexpensive frame may be used, and, further, to provide a bear- ing for the rear caster-wheel.

A further object is to provide a standard for the plow, mounted for movement in the said frame and capable of firmly holding the plow in position and preventing lateral move- ments of the plow, said frame being espe- cially constructed to carry a plow without a landside, and, further, it is my object to pro- vide improved means of simple, durable, and inexpensive construction for raising and low- ering the plow-standard in such manner that as the standard is elevated it is also tilted or inclined rearwardly and the plow-point there- by raised some distance above the heel of the plow, and that, furthermore, the operating- lever is moved past a dead-center, so that the plow is firmly held in its elevated position without the use of any fastening means. In this connection it is to be remembered that a plow can be raised bodily to only a limited degree. Hence by tilting or inclining the plow-point said plow-point may be elevated nearly twice as high as is possible in case the plow is not tilted or inclined.

A further object is to provide a colter ar- ranged to be raised and lowered by the same operating-levers and simultaneously with the similar movements of the plow.

My invention consists in certain details in the construction, arrangement, and combina- tion of the various parts of the device, where- by the objects contemplated are attained, as

hereinafter more fully set forth, pointed out in my claims, and illustrated in the accom- panying drawings, in which—

Figure 1 shows a side elevation of the ma- chine-frame with the plow and colter attached thereto and shown in their position required for use, the frame-supporting wheel and con- nected parts being omitted. Fig. 2 shows a side elevation of the complete machine, ex- cept the means for raising and lowering the supporting-wheel. Fig. 3 shows a rear eleva- tion of a portion of the machine-frame to illus- trate the position of the standard in the stand- ard-supporting frame and the lever and links for supporting the standard. Fig. 4 shows a vertical central sectional view through the standard-supporting frame and standard. Fig. 5 shows a horizontal sectional view through the standard-supporting frame and also showing the plow-standard in its lowered position and by dotted lines in its elevated position. Fig. 6 shows a top or plan view of the machine-frame proper with the standard- supporting frame in position thereon. Fig. 7 shows a side elevation of the complete rid- ing-plow.

Referring to the accompanying drawings, I shall first describe the supporting-frame for the plow-standard. This frame is cast com- plete in one piece and is provided at about its horizontal center with two horizontal par- allel ribs 10 on each side. At its top is an extension 11. At its lower side is an exten- sion 12. Its rear end terminates in a bear- ing 13, in which the caster-wheel 14 is sup- ported, and extended vertically through the said frame is an opening 15 for the plow- standard, the forward edge of the upper por- tion of the slot being vertical and the lower edge of the rear portion of the slot being ver- tical and parallel with the forward vertical portion and the lower edge of the forward portion being inclined downwardly and for- wardly and the upper edge of the rear por- tion of the slot being inclined downwardly and forwardly, the distance between the in- clined portions being materially greater than between said vertical portions and the sides of the slot being straight and parallel through- out their entire length for purposes herein- after made clear. This standard-supporting frame is connected with the machine-frame



by having the parallel sides 16 of the machine-frame placed between the ribs 10 of the standard-supporting frame, and bolts 17 are passed through the machine-frame 16 and the standard-supporting frame. The forward end of the machine-frame pieces 16 are curved downwardly and provided with a series of openings 18, to which a clevis of any ordinary design may be attached.

Extending laterally from one side of the machine-frame 16 is a metal frame-piece 19, both ends of which are attached to the frame 16. Connected with the frame-piece 19 is a seat-spring 20, and a brace 21 is attached to the lower extension 12 at one end and to the frame-piece 19 at its other end to brace the lower end of the extension 12.

The supporting-wheel 22 is connected in any desirable manner with the machine-frame piece 19, and a supporting-wheel 23 is connected in any desirable manner with the machine-frame.

The plow-standard is indicated by the reference-numeral 24. It is rectangular in cross-section and curved forwardly at its lower end, where it is attached to the plow 25, which plow may, if desired, be made with a landside. To the upper end portion of the plow-standard two levers 26 are pivoted. They project rearwardly and downwardly and are attached to the standard 24 in the rear of the extension 11, thus compelling the upper end portion of the plow-standard to swing rearwardly when it is elevated. Pivoted to the lower end portion of the extension 12 are two levers 27. These levers project forwardly and downwardly and are pivoted to the standard 24 so that when the standard is elevated its lower end must swing forwardly. The opening 15 in the standard-supporting frame is of such shape that when the standard is in its lowered position the rear edge of the standard will engage the standard-supporting frame at the rear of the opening 15, and the thickness of the standard-supporting frame is such that it may freely slide vertically in the frame, but may not be moved laterally.

From the foregoing description it is obvious that when the plow is in its position required for use it is firmly supported against movement in any direction except vertically. Its rear end engages the vertical portion at the rear of the slot in the standard. Its front edge engages the edge of the vertical slot at the front and upper portion of the standard, and the sides of the standard engage the sides of the slot, so that in the event of the plow striking an obstruction the strain will be thrown upon the standard-support at the rear lower portion of the slot, and the upper forward portion of the slot prevents the plow-standard from tilting. Hence the plow-standard is firmly supported against strains in every direction entirely independent of the levers or links that engage the plow-standard, and the standard-supporting frame is braced against movement inwardly by the brace 21,

so that if the plow should strike an obstacle it cannot incline inwardly toward the land side on account of the rigid standard-supporting frame, and when the said standard is elevated it can only move in one direction on account of the levers 26 and 27, which force its lower end to tilt forwardly, thus elevating the plow-point above the heel of the plow. These levers 26 and 27 are so arranged that as the standard is being elevated its upper end moves rearwardly and its lower end moves forwardly. Hence it is necessary to shape the frame in the rear of the slot in such manner as to permit this rearward movement of the upper portion of the standard. This feature of the shape of the standard in the rear of the slot is clearly illustrated in Fig. 4 of the drawings. The means for raising and lowering the said plow-standard comprises a lever 28, fulcrumed at 29 to the extension 11 and having an arm 30, to which a link 31 is attached, the other end being connected with the plow-standard at a point where the levers 27 are attached thereto. When the plow is in the position required for use, the said lever 28 inclines forwardly, and in order to elevate the plow-standard the said lever is moved rearwardly, thereby elevating the standard by means of the link 31. During this rearward movement this lever passes a dead-center—that is to say, the point of attachment of the link 31 with the lever 28 moves to a point to the rear of the fulcrum 29 of the lever. Hence the supporting-standard is secured in its elevated position and cannot be lowered until the lever 28 is first raised.

I have provided means by which the colter can be elevated and lowered at the same time with the plow and by means of the same operating-lever, as follows:

The numeral 32 indicates a bracket fixed to the machine-frame and having the upright 33 of the colter pivoted therein. The upper end of the upright 33 is connected, by means of a rod 34, with an extension 35 on the lever 28, and on the lower end of the upright 33 is a colter 36 of ordinary construction. Hence when the lever 28 is moved from its forward position to its rearward position the rod 34 pushes the upper end of the upright 33 forwardly, thus moving the colter and the lower end of the upright both rearwardly and upwardly. The brace-rod 37 is attached to the forward end portion of the frame 16 and to the lug 38 on the extension 12.

In practical use and assuming the plow to be in its operative position it is obvious that as it is advanced through the ground the plow and its standard are firmly supported against movement in every direction and that the plow cannot twist laterally, even if it is not provided with a landside, on account of this standard 24 being supported in a slotted casting which it tightly fits. Assuming that it is desired to elevate the plow out of the ground, the operator simply grasps the lever



28 and starts it rearwardly. Upon the first movement of the operating-lever the point of the plow is elevated, and obviously the plow may then be readily withdrawn from the ground by simply advancing the plow and permitting it to move upwardly by engagement with the ground, during which operation and on account of the incline of the plow the plow will clean itself. Then when the lever has been moved to the position past a dead-center the plow is firmly supported in its elevated position, and the colter is also elevated and is firmly supported. Furthermore, by the use of a standard-supporting frame shown and described all of the strains and impact applied to the plow are taken up by the standard-supporting frame. Hence the machine-frame may be made much lighter than is usual in plows of this class.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. The combination with the frame of a riding-plow of a standard-supporting frame connected with the plow-frame and vertically slotted to receive a plow-standard, the front edge of the slot being vertical at its upper end and inclining downwardly and forwardly at its lower end, the rear edge of the slot being inclined downwardly and forwardly at its upper end and vertical at its lower end and the sides of the slot being straight and parallel, a plow-standard mounted in the slot and in an engagement, in its lowered position with the vertical portions at the back and front of the slot, and in engagement with the sides of the slot, when in any position levers pivoted to the top portion of the standard-supporting frame in front of the slot and projected rearwardly and downwardly and pivoted to the top portion of the standard, and levers pivoted to the lower portion of the standard-frame and extended in the rear of the slot downwardly and forwardly and pivoted to the lower portion of the standard and means for elevating and lowering the standard.

2. The combination with the frame of a riding-plow of a standard-supporting frame connected with the plow-frame, and vertically slotted, the forward edge of the slot being vertical at its upper end and inclined downwardly and forwardly at its lower end, the rear portion of the slot being inclined downwardly and forwardly at its upper end and vertically at its lower end and the sides of the slot being parallel a standard mounted in said slot and when in its lowered position, engaging both the front and back edges of the slot, means for elevating and lowering the plow-standard and means for tilting the lower end of the standard forwardly and upwardly when elevated, a colter pivoted to the plow-frame to be capable of moving from a substantially vertical position rearwardly and upwardly and means for moving the said colter simultaneously with the movement of the plow-standard.

3. The combination with the frame of a riding-plow of a standard-supporting frame fixed to the plow-frame and vertically slotted, the forward edge of the slot being vertical at its upper end portion and inclined downwardly and forwardly at its lower end portion, the rear edge of the slot being inclined downwardly and forwardly at its upper end portion and vertically at its lower end portion, the sides of the slot being parallel, a plow-standard passed through said slot and when in its lowered position engaging the vertical portions at the front and back of the slot, and when in its elevated position engaging only the sides of the slot, and means for elevating and lowering the plow-standard.

4. The combination with the frame of a riding-plow of a standard-supporting frame, having a vertical slot therein, the sides of the slot being parallel, the front edge of the slot being vertical at its upper end and inclined downwardly and forwardly at its lower end, the rear edge of the slot being inclined downwardly and forwardly at its upper end and vertically at its lower end, the said inclined portions being separated from each other a materially greater distance than the vertical portions are separated, a plow-standard mounted in said slot and when in its lowered position engaging the sides of the slot and the vertical portions of the front and rear edges of the slot and when in its elevated position engaging the sides of the slot only, and means for moving the plow-standard from a position, where its front and rear edges engage the vertical portions of the slot to a position tilted forwardly and upwardly at its lower end where it engages only the sides of the slot, for the purposes stated.

5. The combination with the frame of a riding-plow of a standard-supporting frame connected with the plow-frame and vertically slotted to receive a plow-standard, the front edge of the slot being vertical at its upper end and inclining downwardly and forwardly at its lower end, the rear edge of the slot being inclined downwardly and forwardly at its upper end and vertically at its lower end, and the sides of the slot being straight and parallel, a plow-standard mounted in the slot and in an engagement in its lowered position with the vertical portions of the back and the front of the slot, and in engagement with the sides of the slot, when in any position levers pivoted to the top portions of the standard-frame in front of the slot and projecting rearwardly and downwardly and pivoted to the top portion of the standard and levers pivoted to the lower portion of the standard-frame in the rear of the slot and extending downwardly and forwardly and pivoted to the lower portion of the standard and means for elevating and lowering the standard, and means for locking the plow-standard in its elevated position.

6. The combination with the frame of a riding-plow of a standard-supporting frame con-



5 nected with the plow-frame and vertically supported to receive a plow-standard, the front edge of the slot being vertical at its upper end and inclining downwardly and forwardly at its lower end, the rear edge of the slot being inclined downwardly and forwardly at its upper end and vertically at its lower end and the sides of the slot being straight and parallel, a plow-standard mounted in the slot and in an engagement in its lowered position with the vertical portions of the back and front of the slot, when in any position, levers pivoted to the top portions of the standard and projecting rearwardly and downwardly and pivoted

to the top portion of the standard, and levers pivoted to the lower portion of the standard-frame and extending downwardly and forwardly and pivoted to the lower portion of the standard and means for elevating and lowering the standard, a lever fulcrumed to the slotted frame, a link pivoted to said lever and to the plow-standard, said link passing the fulcrum of said lever when the plow-standard moves from its lowered to its elevated position.

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Witnesses:

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