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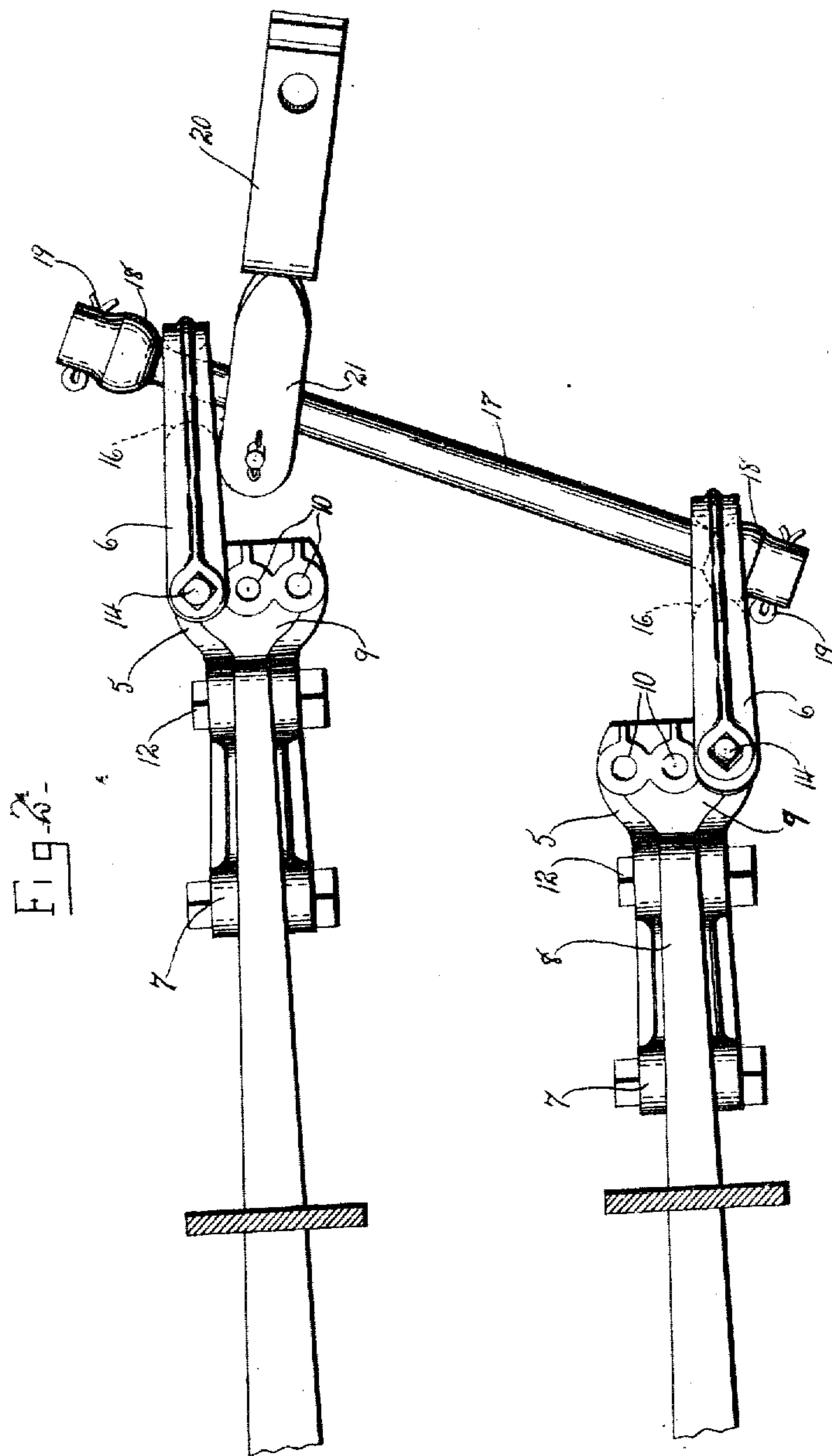
PATENTED SEPT. 3, 1907.

H. WIARD.

PLOW.

APPLICATION FILED OCT. 17, 1906.

2 SHEETS—SHEET 2



WITNESSES:

*Chas. H. Young*  
*Sidney H. Abbott*

INVENTOR

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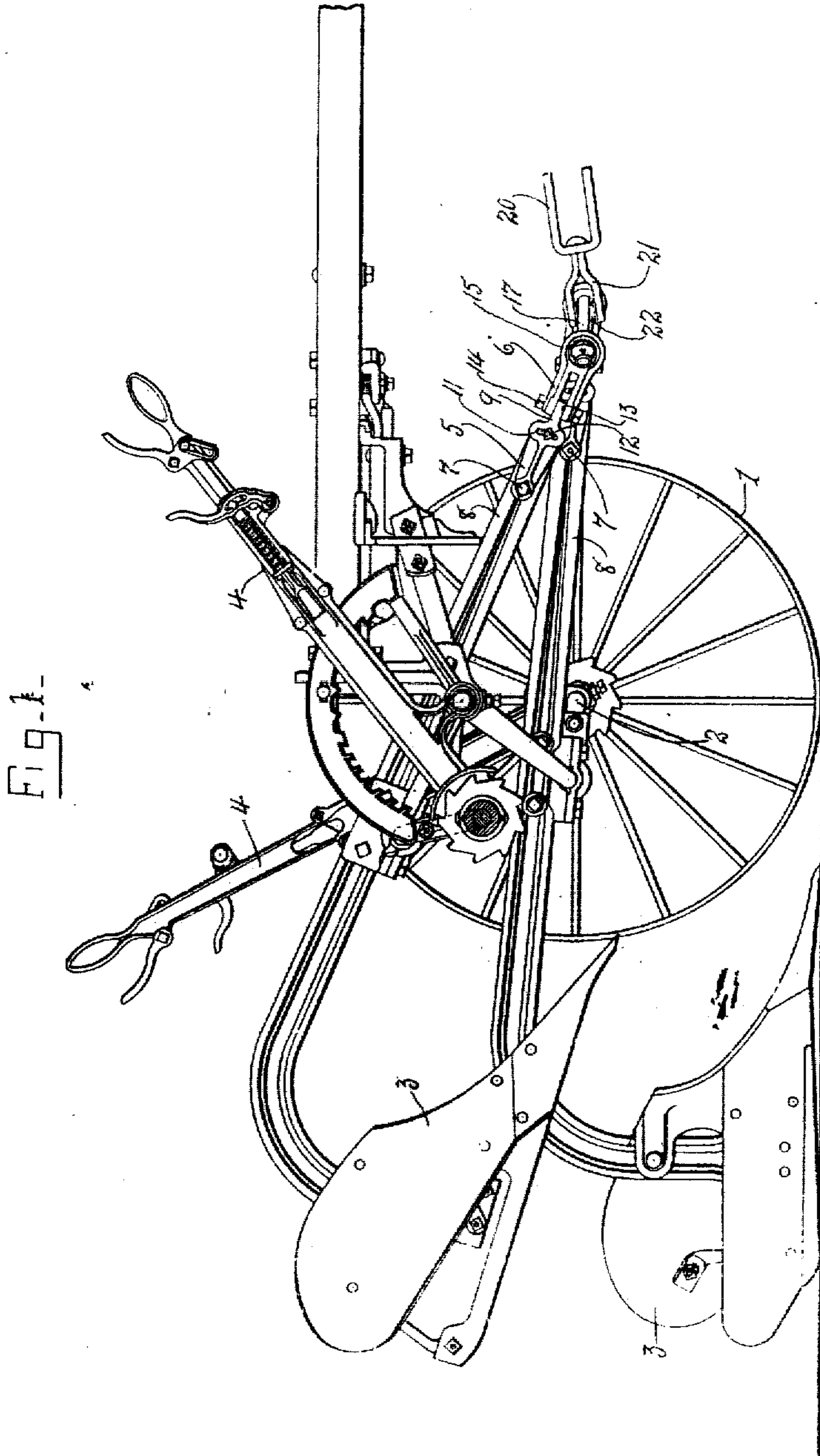
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# UNITED STATES PATENT OFFICE.

HARRY WIARD, OF SYRACUSE, NEW YORK.

## PLOW.

No. 865,141.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed October 17, 1906. Serial No. 339,331.

*To all whom it may concern:*

Be it known that I, HARRY WIARD, of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Plow, of which the following is a specification.

My invention relates to sulky-plows, and has for its object the production of means for connecting the plow-carrying beams and the draft-member, which is particularly simple in construction and efficient in use, and to this end it consists in the combinations and structures hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is an elevation, partly broken away, of a sulky-plow embodying my invention, one of the plows being elevated into inoperative position. Fig. 2 is a plan of the front ends of the plow-carrying beams, the draft-member and contiguous parts.

1 and 2 are, respectively, one of the supporting wheels and the cranked axle connecting said wheels. A pair of plow-carrying beams are suitably connected to the axle 2 and their rear ends are provided with plows 3.

Means comprising levers 4 is connected to the axle 2 and the plow-beams for shifting one beam relatively to the other. In the movement of a plow-beam by said shifting means, the rear end thereof carrying the plow swings upwardly out of plowing position, or downwardly into such position, in an arc having its axis at substantially the front end of the beam, and consequently, said front end has substantially no vertical movement, and the front ends of the plow-beams are in substantially the same horizontal plane when their rear ends are out of horizontal alinement. It will be understood, however, that when the rear end of the beam is moving upwardly, the front end thereof moves rearwardly, and that during the downward movement of said rear end the front end moves forwardly. This shifting means for the plow-beams may be of any well-known construction, and further description thereof herein is deemed unnecessary.

The front ends of the plow-carrying beams are provided with vertically-adjustable connecting members 5, and horizontally-movable connecting members 6. As here illustrated, the rear ends of the members 5 are pivoted at 7 to the main parts 8 of the plow-beams, their front ends are formed with horizontally-flattened portions 9 having substantially vertical openings 10, and their intermediate parts are formed with slots 11 which receive clamping bolts 12 passed through the main parts 8 for holding the members 5 in their adjusted position relatively to said main parts. The members 6 are substantially rigid and are formed with slots 13 extending forwardly from their rear edges and receiving, and substantially fitting, the flattened por-

tions 9 of the members 5. Pivots 14 are passed through the vertical openings 10 and connect the members 6 to the members 5. The front ends of the members 6 are provided with horizontally-extending eyes 15 having convex inner surfaces 16 and cup-shaped outer portions.

As will be apparent to those skilled in the art, the members 5 carrying the members 6, may be adjusted vertically, the members 6 may be adjusted horizontally, and the main parts 8 of the plow-beams, or the members 6, may swing relatively to each other in a horizontal plane on the pivots 14, but said main parts 8 and members 6 are prevented from swinging or moving vertically relatively to each other.

Supported in the eyes 15 is a bar 17 preferably formed cylindrical and of less diameter than the eyes 15, and provided with enlarged ends having convex or semi-spherical surfaces 18 coacting with the outer portions of the convex surfaces 16, said surfaces 18 being spaced apart a greater distance than the surfaces 16, when the members 6 are arranged parallel to each other. The surfaces 18 are generally provided upon detachable sleeves or caps suitably secured to the main portion of the bar 17 by keys 19. The connection between the members 6 and the bar 17 is more or less loose and enables said members to move vertically freely on the bar 17 as a pivot, or to swing in a horizontal plane relatively to the bar, and further permits of a limited movement of the bar 17 in a horizontal plane relatively to the members 6. Moreover, the surfaces 16 and 18 of the members 6 and the bar 17 form essentially ball-and-socket joints and facilitate the movement of said parts relatively to each other.

A draft-member 20 is movable lengthwise of the bar 17 between the connecting members 6, said member 20 having an eye 21 which receives the bar 17. The rear wall of the eye 21 preferably consists of a roller 22 which engages the rear surface of the bar 17 and facilitates movement of the draft-member 20 relatively to the bar 17.

In the practical use of a plow embodying my invention, each connecting member 6 holds the contiguous end of the bar 17 from substantial vertical movement relatively to the plow-carrying beam including such connecting member, although in the shifting of the plow-carrying beams from one extreme position to another, either end of the bar 17 may have a slight vertical movement relatively to the beam connected to the opposite end of said bar. When a plow is in its operative or depressed position, the front end of the beam carrying such plow is in advance of the corresponding end of the other beam, and since each member 6 holds one end of the bar 17 from substantial vertical movement relatively to the end of the plow-beam comprising such member, said bar 17



is held by the members 6 in a substantially horizontal position and inclines rearwardly from the front end of the beam carrying the plow in use. Consequently, the draft-member 20 under the strain transmitted thereby to the plow, moves automatically lengthwise of the bar 17 to the desired position in advance of the beam from which the bar 17 inclines rearwardly.

This invention, although simple in construction, greatly reduces the necessity of attention to the draft-connections, and enhances the utility and efficiency of the plow.

What I claim, is:—

1. In a plow, a pair of plow-carrying beams, means for shifting the rear end of one of the beams vertically relatively to the rear end of the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a bar having its ends supported by the front ends of said beams, and having each end held from substantial vertical movement relatively to the front end of the contiguous beam, the bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose described.

2. In a plow, a pair of plow-carrying beams, each comprising at its front end a connecting member movable substantially horizontally, relatively to the remaining part of the beam and prevented from substantial vertical movement relatively to said remaining part, means for shifting the rear end of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a bar having its ends supported by the front ends of the connecting members, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose specified.

3. In a plow, a pair of plow-carrying beams, each comprising at its front end a horizontally-flattened portion having substantially vertical openings, a connecting member having a slot opening from its rear edge for receiving, and substantially fitting, said flattened portion, and a pivot for the connecting member passed through one of said vertical openings, means for shifting the rear end of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a bar having its ends supported by the connecting members, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose set forth.

4. In a plow, a pair of plow-carrying beams, each comprising at its front end a horizontally-flattened portion having substantially vertical openings, a connecting member having a slot opening from its rear edge for receiving, and substantially fitting, said flattened portion, and having a horizontally-extending eye in its front end, and a pivot for the connecting member passed through one of said vertical openings, means for shifting the rear end of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one

of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a bar having its ends supported by the horizontally-extending eyes of the connecting members, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose described.

5. In a plow, a pair of plow-carrying beams, each comprising at its front end a vertically-adjustable connecting member formed with a horizontally-flattened portion having substantially vertical openings, means for holding the connecting member in its adjusted position relatively to the main part of the beam, a second connecting member having a slot opening from its rear edge for receiving, and substantially fitting, said flattened portion, and having a horizontally-extending eye in its front end, and a pivot for the rear end of the second connecting member passed through one of said vertical openings, means for shifting the rear end of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a bar having its ends supported by the horizontally-extending eyes of the connecting members, and having a limited movement horizontally relatively thereto, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose specified.

6. In a plow, a pair of plow-carrying beams having horizontally-extending eyes in their front ends formed with cup-shaped outer portions, means for shifting one of the beams relatively to the other, a bar supported by the horizontally-extending eyes, and having a limited movement horizontally relatively thereto, said bar having semi-spherical surfaces coacting with the cup-shaped outer portions of the eyes, and a draft-member movable lengthwise of the bar, substantially as and for the purpose set forth.

7. In a plow, a pair of plow-carrying beams having horizontally-extending eyes in their front ends, said eyes being formed with convex inner surfaces, means for shifting the rear end of one of the beams vertically relatively to the rear end of the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a cylindrical bar supported by the horizontally-extending eyes, and having a limited movement horizontally relatively thereto, the bar being provided with enlarged ends having opposing semi-spherical surfaces coacting with the convex inner surfaces of the eyes, and said bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose described.

8. In a plow, a pair of plow-carrying beams, each comprising at its front end a vertically-adjustable connecting member formed with a horizontally-flattened portion having substantially vertical openings, means for holding the connecting member in its adjusted position relatively to the main part of the beam, a second connecting member having a slot opening from its rear edge for receiving, and substantially fitting, said flattened portion, and having a horizontally-extending eye in its front end formed with a convex inner surface, and a pivot for the rear end of the second connecting member passed through one of said vertical openings, means for shifting the rear end of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one



of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a cylindrical bar having its ends supported by the horizontally-extending eyes of the connecting members, and having a limited movement horizontally relatively thereto, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar being provided with enlarged ends having opposing semi-spherical surfaces coacting with the convex inner surfaces of the eyes, and said bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar, substantially as and for the purpose specified.

9. In a plow, a pair of plow-carrying beams, each comprising at its front end a vertically-adjustable connecting member formed with a horizontally-flattened portion having substantially vertical openings, means for holding the connecting member in its adjusted position relatively to the main part of the beam, a second connecting member having a slot opening from its rear edge for receiving, and substantially fitting, said flattened portion, and having a horizontally-extending eye in its front end formed with a convex inner surface, and a pivot for the rear end of the second connecting member passed through one of said vertical openings, means for shifting the rear end

of one of the beams vertically relatively to the other beam, and for simultaneously shifting the front end of said one of the beams relatively to the front end of the other beam, the front ends of said beams being in substantially the same horizontal plane when their rear ends are out of horizontal alignment, a cylindrical bar having its ends supported by the horizontally-extending eyes of the connecting members, and having a limited movement horizontally relatively thereto, and having each end held by the contiguous connecting member from substantial vertical movement relatively to the front end of the contiguous beam, the bar being provided with enlarged ends having opposing semi-spherical surfaces coacting with the convex inner surfaces of the eyes, and said bar inclining rearwardly from one of the beams when the plow carried by said beam is in its plowing or depressed position, and a draft-member movable lengthwise of the bar and provided with a roller coacting with the rear surface of the bar, substantially as and for the purpose described.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 13th day of October, 1906.

HARRY WIARD.

Witnesses:

S. DAVIS,

E. K. SEEMILLER.