No. 830,657. PATENTED SEPT. 11, 1906.

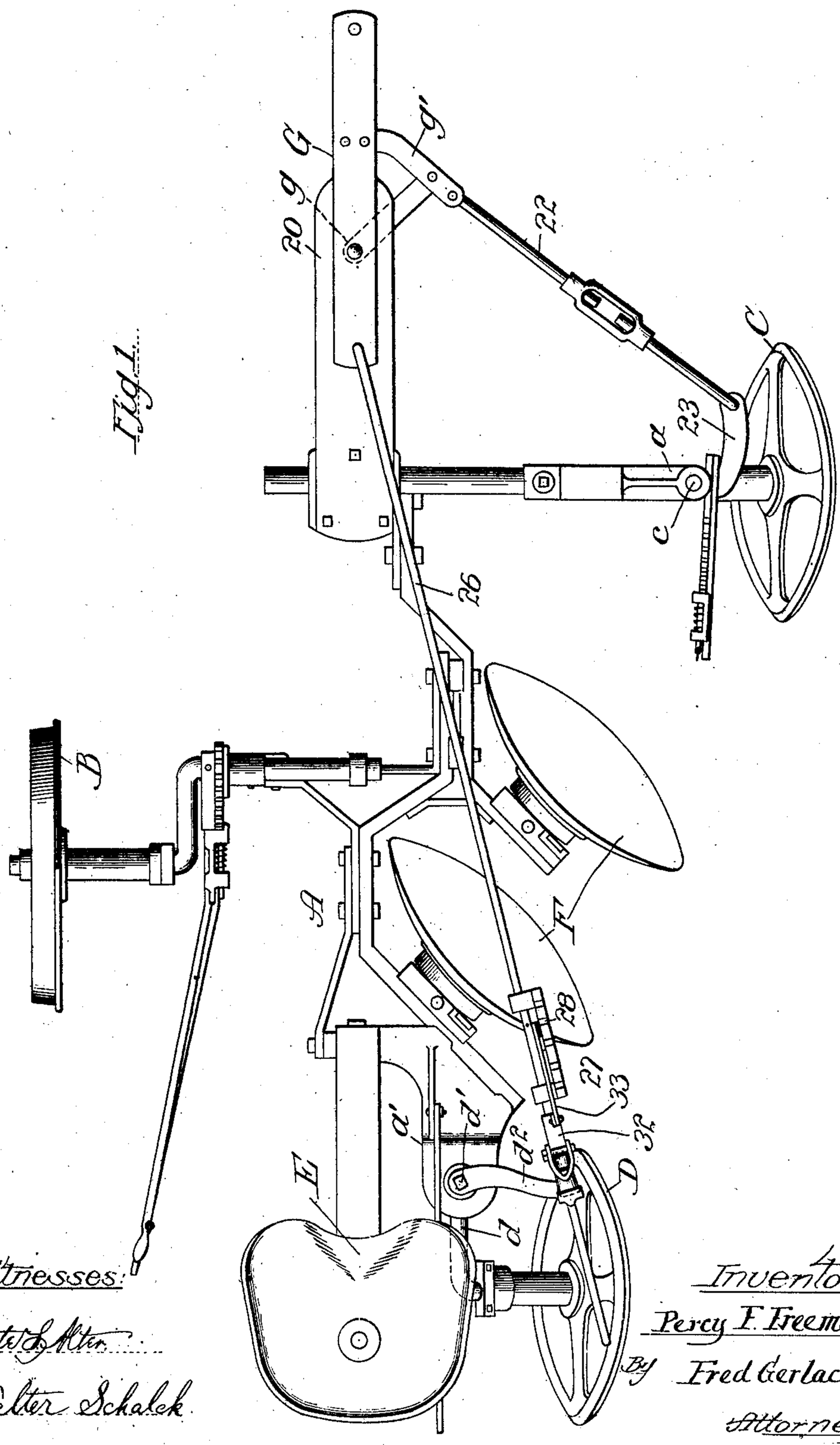
P. F. FREEMAN.

PLOW.

APPLICATION FILED JULY 22, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Luther L. Alter

Walter Schalek

Inventor:

Percy F. Freeman

By Fred Gerlach

Attorney

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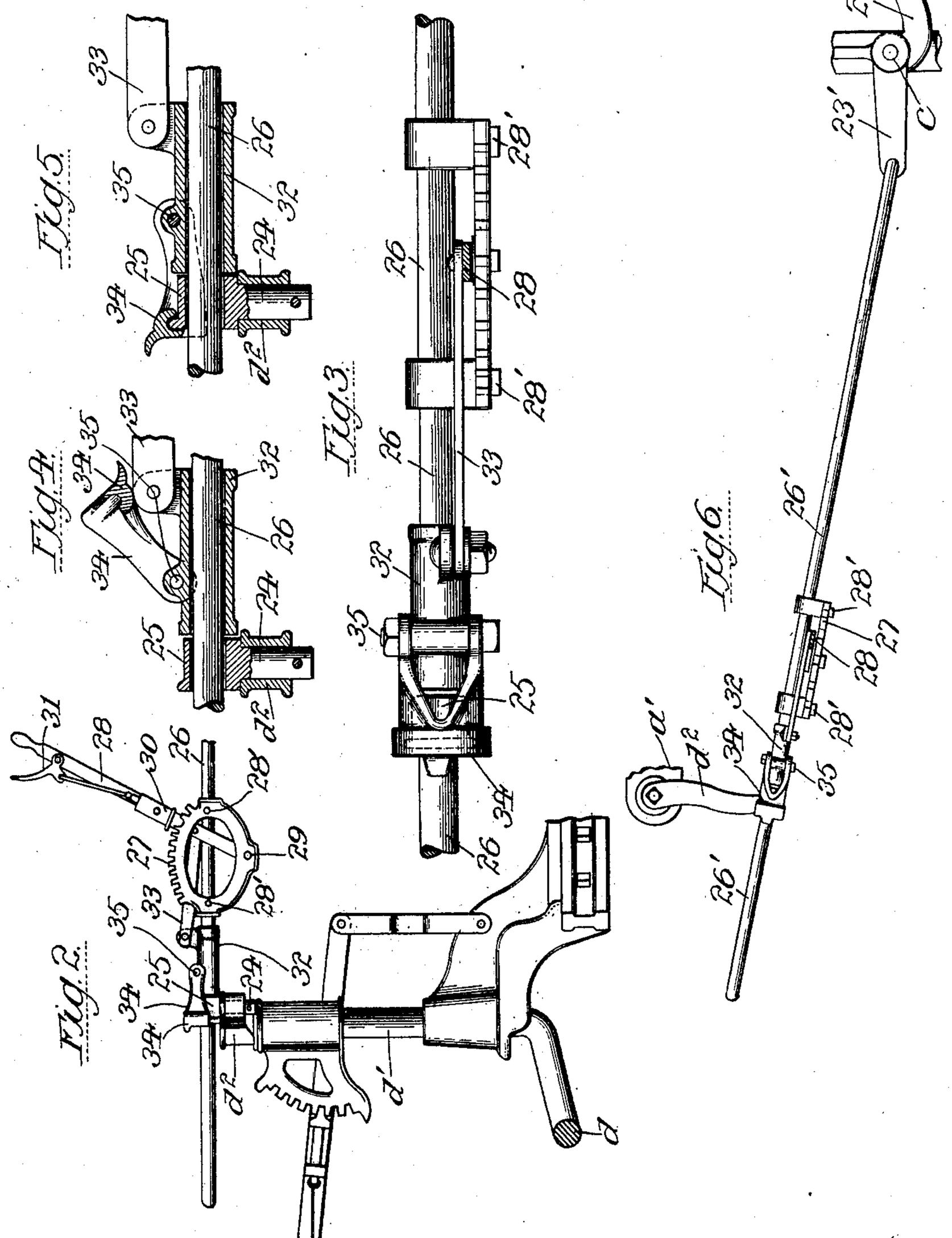

Witnesses:

Lutie L. Utter

Walter Scholck

Inventor:

Percy F. Freeman

By Fred Gerlach

Attorney.

UNITED STATES PATENT OFFICE.

PERCY F. FREEMAN, OF PORTLAND, OREGON, ASSIGNOR TO LA CROSSE PLOW COMPANY, OF LA CROSSE, WISCONSIN, A CORPORATION.

PLOW.

No. 830,657. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed July 22, 1904. Serial No. 217,653.

To all whom it may concern:

Be it known that I, PERCY F. FREEMAN, a resident of Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Plows, of which the following is a full, clear, and exact description.

The invention relates to plows or furrow-openers provided with carrying-wheels, and more particularly to that class of plows which are provided with a steering connection for guiding and controlling the furrow-wheels.

The invention designs to provide a simple steering device or connection for the rear furrow-wheels which can be adjusted by the operator while the plow is in use, so the rear furrow-wheel can be adjusted into angular relation with respect to the line of draft, to rectify any tendency to cut uneven or irregular furrow-slices—*e. g.*, which frequently occurs when plowing in hard soil or on hillsides, and which can release the rear caster-wheel for independent movement necessary in turning corners.

The invention consists in the several novel features hereinafter set forth, and more particularly defined by claims at the conclusion hereof.

In the drawings, Figure 1 is a plan of a disk-plow embodying the preferred form of the invention. Fig. 2 is a side elevation of the parts at the rear. Fig. 3 is a detail plan of the adjustable and detachable connection of the steering-rod, the hand-lever being shown in section. Figs. 4 and 5 are detail vertical sections showing the latch of the steering connection in released and locked positions, respectively. Fig. 6 is a plan of the modified form of the invention.

A frame A, sustained in usual manner by a land-wheel B, a front caster-wheel C, mounted upon an axle having its vertical standard *c* swiveled in a bracket *a* of the frame, and a rear caster-wheel D, journaled on an axle *d*, having its vertical standard *d'* swiveled in a bracket *a'* of the frame. These parts may be of any suitable and well-known construction, and the usual seat E, levers, and raising and lowering devices may also be provided, as well understood in the art. Disks F are carried by the frame.

A clevis or draft-bar G, to which the team is hitched, is pivoted at *g* to a short tongue 20, which is secured to the frame. The clevis is swung about its pivot by the team and has secured thereto an arm *g'*, which is connected by a rod 22 to an arm 23, which is secured to the axle *c* of the front furrow-wheel. This connection between the clevis and the axle of caster-wheel C causes the front wheel to swing with the team. An arm d^2 is secured to the axle-standard *d* and at its free end is pivotally sustained a stud 24, which is provided with an eye 25. A steering-rod 26 is pivotally connected at its front end to the rear end of clevis G, and its other end passes loosely through eye 25 of stud 24. A segmental toothed rack 27 is secured by bolts 28' to rod 26 and a hand-lever 28 pivoted to said rack, as at 29, and is provided with a lock 30 and finger-lever 31, whereby the lever can be adjusted and secured in assigned position. A sleeve 32 is mounted in manner free to slide along rod 26 and is connected by a link 33 to hand-lever 28. A latch 34 is pivoted at 35 to sleeve 32 and is adapted to overlie and engage the back of stud 24 to operatively connect the steering-rod to arm d^2 (see Fig. 5) when in one position and is adapted to release the steering-rod from arm d^2 to free the rear furrow-wheel for independent movement. By adjustment of hand-lever 28 sleeve 32, latch 34, and stud 24 can be shifted to swing arm d^2 to vary the plane or angle of rotation of the rear furrow-wheel so as to travel truly in the line of draft or to serve as a rudder and to overcome any tendency to move downhill in hillside work or away from the preceding furrow when plowing hard soil. Manifestly such adjustment can be readily effected by the operator, hand-lever 28 being in convenient reach of the operator without stopping the plow. Rod 26 is connected to clevis G substantially at the rear of clevis-pivot *g*, so slight lateral sway of the clevis by the team will not swing the rear caster-wheel out of line.

When the steering connection is locked, the front and rear wheels will be rigidly connected to steer the plow in response to the team and the relative position of the rear wheel to correct any tendency to sidewise travel with respect to the line of travel can be adjusted to a nicety by the operator while the plow is in operation. In some instances—*e. g.*,

when a sharp corner is to be turned toward unplowed land—release of the rear wheel is necessary to permit said wheel to caster independently of the clevis and front wheel. The operator then shifts latch 34 into position shown in Fig. 4, and then arm d^2 and stud 25 will be disconnected from sleeve 32 and the rear caster-wheel will be free for independent movement.

The rear caster-wheel and its axle are so disposed with respect to the frame that forward travel will move said wheel forwardly after independent rearward movement thereof, so stud 25 can be readily locked to the steering-rod when desired. In some instances it is desirable to allow the latch to remain in position to permit the rear wheel to remain released for independent movement, and for that reason the latch is arranged so it will remain in released position until restored to locking position by the operator.

In Fig. 6 is shown a modification in which a steering-rod 26′ is connected at its front to a crank 23′, which is secured to the axle-standard of the front furrow-wheel. In this construction the steering-rod for the rear wheel will be controlled by the front wheel C, which is controlled by the team.

The details of construction may be modified without departing from the spirit and scope of the invention.

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

1. In a plow, the combination of front and rear caster-wheels, and a steering connection comprising a hand-lever for adjusting the connection to vary the angle of one of said wheels with respect to the other, and means whereby the connection can be released to free one of the caster-wheels for independent swiveling movement said device being operative independently of the hand-lever.

2. In a plow, the combination of rear and front caster-wheels, and a steering connection comprising a rod, a hand-lever for adjusting the connection to vary the angle of one of said wheels, a latch whereby the connection can be released independently of the lever to free one of the caster-wheels for independent swiveling movement.

3. In a plow the combination of rear and front caster-wheels, and a steering connection comprising a rod, a hand-lever, and a rack to which said lever is adjustably connected for adjusting the connection to vary the angle of one of said wheels with respect to the other, a latch whereby the connection can be released independently of the lever to free one of the caster-wheels for independent swiveling movement.

4. In a plow the combination of front and rear caster-wheels, and a steering connection comprising an arm for the rear wheel, a rod having connection at its front whereby its movement will be controlled by the team and having at its rear, a swiveled and sliding connection with said arm, a hand-lever for adjusting the connection to vary the angle of the rear wheel, a rack to which said lever is adjustably connected, and a latch whereby the connection can be released to free one of the rear caster-wheels for independent movement.

5. In a plow the combination of front and rear caster-wheels, and a steering connection between the wheels comprising a hand-lever for adjusting the connection to vary the angle of one of the wheels with respect to the other, and means whereby the operator can release the steering connection to permit independent movement of one of the caster-wheels with respect to the other, said means being arranged to remain in released position when shifted by the operator.

6. In a plow the combination of a front and rear caster-wheels, and a steering connection between the wheels comprising a hand-lever for adjusting the connection to vary the angle of one of the wheels with respect to the other and a latch whereby the operator can release the steering connection to permit independent movement of one of the caster-wheels with respect to the other said latch being arranged to remain in released position when shifted by the operator.

7. In a plow the combination of front and rear caster-wheels, and a steering connection between the wheels comprising a hand-lever for adjusting the connection to vary the angle of one of the wheels with respect to the other, a rack to which said lever is adjustably secured and means whereby the operator can release the steering connection to permit independent movement of one of the caster-wheels with respect to the other, said means being arranged to remain in released position when shifted by the operator.

8. In a plow the combination of front and rear caster-wheels, and a steering connection between the wheels comprising a hand-lever, for adjusting the connection to vary the angle of one of the wheels with respect to the other, a rack to which said lever is adjustably secured and a latch whereby the operator can release the steering connection to permit independent movement of one of the caster-wheels with respect to the other said latch being arranged to remain in released position when shifted by the operator.

9. In a plow the combination of front and rear caster-wheels, and a steering connection comprising an arm for the rear wheel, a rod having at its front, connection whereby its movement will be controlled by the team, and having at its rear a swiveled and sliding connection with said arm, a sleeve slidable on said rod, a hand-lever connected to and for adjusting, said sleeve along said rod, and

a latch for connecting the hand-lever and sleeve, and whereby the rear wheel can be released for independent movement.

10. In a plow the combination of front and rear caster-wheels, and a steering connection comprising an arm for the rear wheel, a rod having at its front, connection whereby its movement will be controlled by the team, and having at its rear a swiveled and sliding connection with said arm, a sleeve slidable on said rod, a rack secured to said rod, a hand-lever adjustably connected to said rack and for shifting said sleeve along said rod, and a latch pivoted to the sleeve, and whereby the rear wheel can be released for independent swiveling movement.

11. In a plow the combination of a frame, front and rear caster-wheels, a clevis pivoted at the front of the frame, and a steering connection for the rear caster-wheel, comprising a rod connected to the clevis, means whereby the connection can be adjusted to vary the angle of the rear caster-wheel, and means whereby the rear wheel can be released for independent movement.

12. In a plow the combination of a frame, front and rear caster-wheels, a clevis pivoted at the front of the frame, and a steering connection for the rear caster-wheel, comprising a rod connected to the clevis, a hand-lever and a rack whereby the connection can be adjusted to vary the angularity of the rear caster-wheel and means whereby the rear wheel can be released for independent movement.

PERCY F. FREEMAN.

Witnesses:
J. A. FREEMAN,
ADELLA R. MCBRIDE.