No. 633,482. Patented Sept. 19, 1899.

J. E. PHILLIPS.

PLOW.

(Application filed Mar. 22, 1899.)

(No Model.) 2 Sheets—Sheet 1.

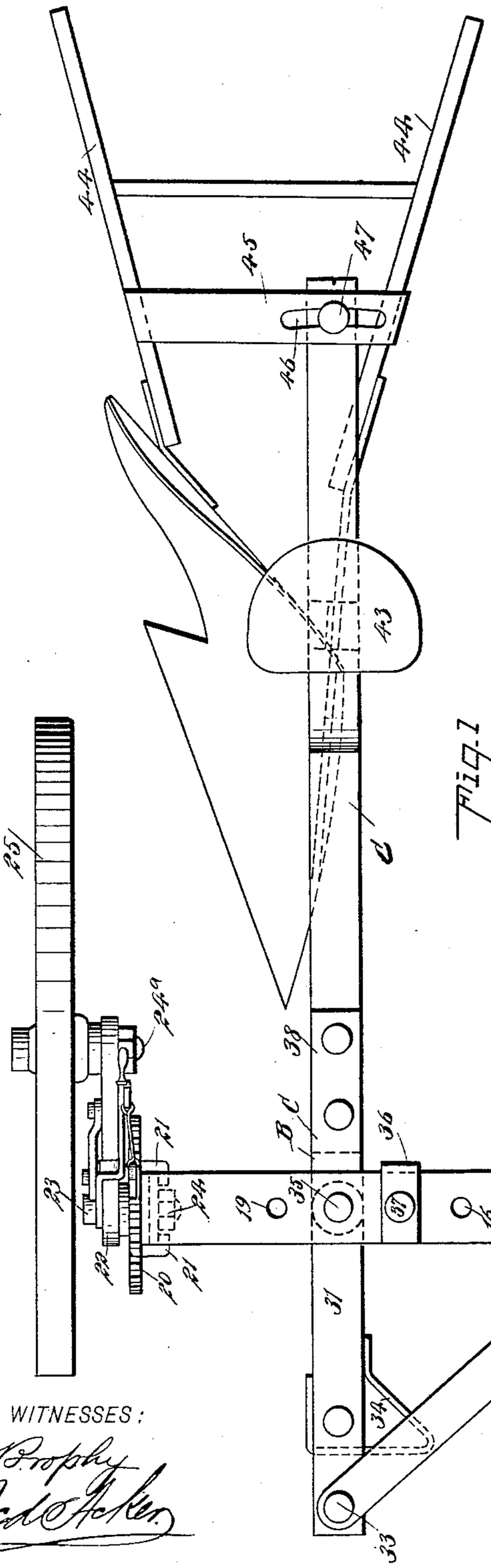

Fig. 1

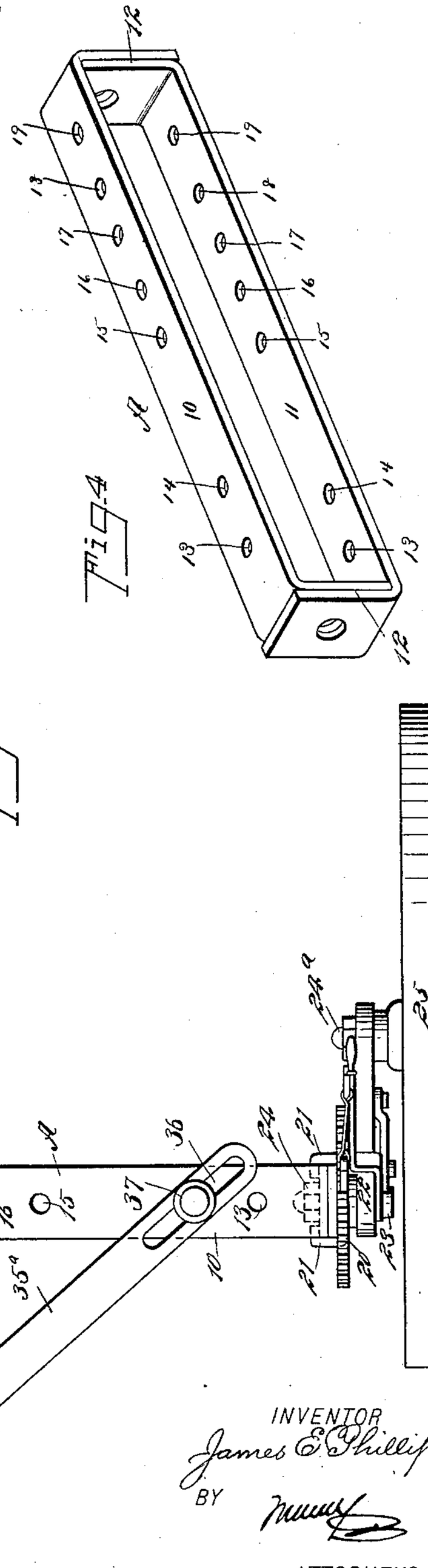

Fig. 4

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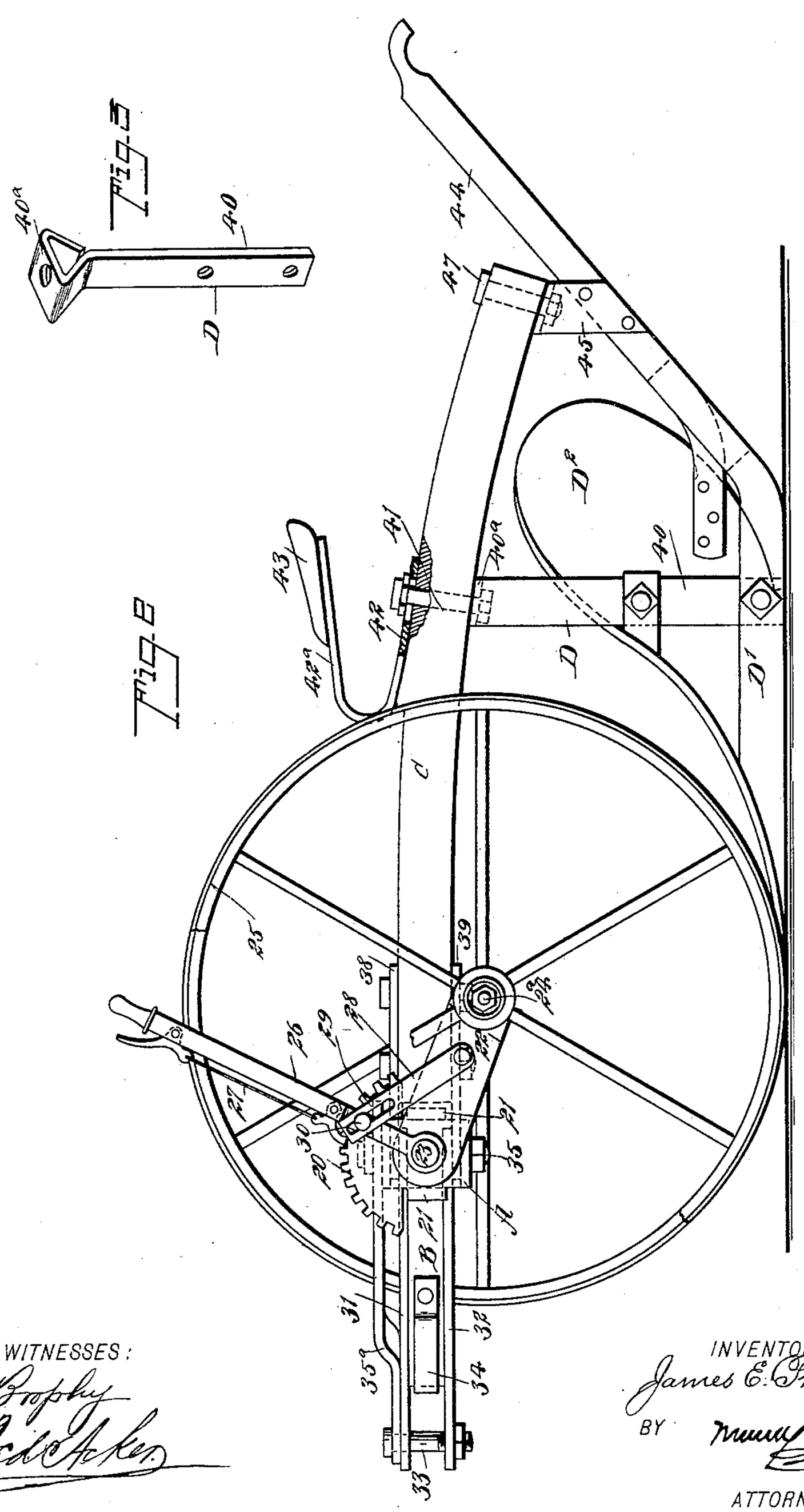

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UNITED STATES PATENT OFFICE.

JAMES ERASTUS PHILLIPS, OF DAYTON, MICHIGAN.

PLOW.

SPECIFICATION forming part of Letters Patent No. 633,482, dated September 19, 1899.

Application filed March 22, 1899. Serial No. 710,060. (No model.)

To all whom it may concern.

Be it known that I, JAMES ERASTUS PHILLIPS, of Dayton, in the county of Berrien and State of Michigan, have invented a new and Improved Plow, of which the following is a full, clear, and exact description.

The object of my invention is to construct a plow capable of use either as a walking-plow or in connection with a sulky and to provide a means for expeditiously and conveniently connecting the beam with a sulky or supporting the beam therefrom.

Another object of the invention is to provide a simple means for limiting the swing of the beam in turning corners and facilitating the action of the sulky-wheels at such times.

A further object of the invention is to provide a means for equalizing the draft, rendering it possible to use two, three, or four horses abreast, and to provide levers controlling the adjustment of the sulky-wheels, which levers can be adjusted to suit the driver without changing the depth of the furrow.

Another object is to provide an adjustable seat, whereby the weight of the driver may be distributed to the best advantage, and, furthermore, to provide a guide for the doubletree, acting to prevent said doubletree from engaging with the wheels of the sulky when turning corners.

Another object of the invention is to construct a plow of the character above set forth, that will be light, durable, and economic.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved plow and sulky. Fig. 2 is a side elevation viewed from the landside. Fig. 3 is a perspective view of the plow-standard, and Fig. 4 is a perspective view of the body portion of the sulky-axle.

A represents the axle of a sulky, which axle is preferably made of metal and is of skeleton form, comprising top and bottom plates 10 and 11 and end plates 12, as shown in Fig. 4. At the left-hand end of the axle two apertures 13 and 14 are made in both the top and bottom plates, corresponding apertures being in vertical alinement, and between the center and right-hand end of the axle a series of five apertures 15, 16, 17, 18, and 19 is produced in both top and bottom plates, as is also shown in Fig. 4. At each end of the axle a rack 20 is located, and each rack is provided with side arms 21, that are bent inward over the front and side edges of the end plates, as shown in Fig. 1, in order to prevent the rack from shifting in a lateral direction. An arm 22 is pivoted at each end of the axle, the pivot-pins 23 of said arms being passed through the lower portions of the racks 20 and through the ends of the axle, being secured within the axle by means of nuts 24, as shown in dotted lines in Fig. 1. Each arm 22 is provided with a spindle 24^a at its lower end, and a ground-wheel 25 is mounted to turn upon each spindle 24^a. A hand-lever 26, provided with a thumb-latch 27 for engagement with a rack 20, is pivoted at each end of the axle upon the aforesaid pivot-pin 23, as is best shown in Fig. 2, and each lever is adjustably connected with an arm 22 through the medium of links 28, each link being pivotally attached at its lower end to an arm 22, the upper end having a slot 29 produced therein, and a set-screw 30 is passed through the slot of a link 28 into a lever 26. The levers are adapted to raise or to lower the axle by raising or lowering either one or both of the arms 22, and through the medium of the links 28 the levers may be moved backward or forward to be within convenient reach of the driver without changing the depth of the furrow.

A short pole B is provided for the main axle A. This short pole is shown in both Figs. 1 and 2 and is provided at the top with a metal strap 31, a similar strap 32 being located at the bottom of the pole, and these straps extend beyond the front of the pole and are connected at their forward ends by a bolt 33. In this manner a clevis is formed for the reception of the doubletree. The doubletree is prevented from rubbing against the wheels in turning curves by placing a stop 34 at the end of the pole, which stop, as is best shown in Fig. 1, consists of a strap of metal secured

to the right-hand side of the pole, extending toward the left across the front of the pole and beyond its left-hand side, the strap being returned to the pole and suitably attached. Thus it will be observed that an extended flat surface of the plate is presented to the whiffletree at the left-hand side of the pole. The pole is attached to the main axle A by passing its rear end between the top and bottom plates of the axle and passing a pin or a bolt 35 through any one of the apertures 15, 16, 17, 18, and 19 and through a suitable opening in the pole. When working two horses, the pin or bolt 35 is placed in the first hole to the right, when working three horses the pin or bolt 35 is placed in the next hole toward the left, and when four horses are employed the pole bolt or pin is passed through the third hole to the left. A stop 36 is located at the left-hand side of the pole. This stop consists of a plate, preferably U-shaped, mounted upon the axle and held in position by passing a bolt 37 through the stop and through one of the apertures 15, 16, 17, 18, and 19 closest to the aperture through which the pole bolt or pin has been passed, as shown in Fig. 1. This stop permits the plow-beam C, to be hereinafter described, to swing around to the left just so far and then stop.

In connection with the pole and axle an equalizing-bar 35^a is employed. This bar is pivoted at its forward end upon the clevis-pin 33, being provided with a slot 36 at its rear end, and a bolt 37 is passed through said slot and through either of the apertures 13 or 14 at the left-hand end of the axle. When working two horses, the equalizing-bar is carried outward its full length, the pin 37 engaging with the rear end of the slot 36. When working three horses, the pin 37 is made to engage with the bar at the central portion of its slot, and when four horses are worked the pin is made to engage with the forward end of the slot 36, the equalizing-bar at that time being shortened as much as possible and the pole carried decidedly in direction of the left-hand side of the machine.

The plow-beam C is provided with a top plate 38 and a bottom plate 39, (shown best in Fig. 2,) and these plates extend beyond the front end of the plow-beam. The forward end of the plow-beam C is rounded off and likewise the rear end of the pole B. When the plow-beam is to be attached to the sulky, the plates 38 and 39 are passed, respectively, above and below the rear end of the pole 31 and the pole-bolt 35 is passed through these plates, providing a pivotal connection between the plow-beam and the axle.

The plow-standard D is of peculiar construction and is illustrated in detail in Fig. 3 as consisting of a flat body 40 and a loop top 40^a. The plow-standard is attached to the under face of the beam C by passing a bolt 41 through a suitable aperture in the loop 40^a, the head of the bolt being within the loop. This bolt is passed through the beam and through a slot 42 in a standard 42^a, adapted to support a seat 43. In this manner it will be observed that the seat is rendered adjustable. In working four horses the seat is carried back to balance the weight of the doubletrees, so that the plow will not run too much on its point, or the seat can be adjusted to balance the plow when necessary. The lower end of the plow-standard D is attached to the landside D', the moldboard D^2 being attached to the standard by any form of bracket. The moldboard is made very long and is provided with a well-defined yet gradual curve, so as to gradually lift the earth to be turned, making the plow run easy.

Handles 44 are suitably attached to the moldboard and landside, and a bar 45 extends from handle to handle, the upper portion of said bar being flat and adapted to receive the under face of the rear end of the plow-beam C. This cross-bar 45 is provided with a curved slot 46. The slot 46 is preferably made much longer than ordinary, and a set-screw or a bolt 47 is passed through the rear end or heel of the plow-beam and through said slot 46. When working two horses, the beam is carried to the left-hand end of the slot 46 and secured. When three horses are used, the beam is carried to the central portion of the slot and to the right-hand end of the slot when four horses are used to draw the machine.

When the sulky-plow is to be converted into a walking-plow, the bolts 41 and 47 are removed, freeing the share and handles from the beam C. Another and longer beam is then attached to the plow-standard and handles by the said bolts 41 and 47, and a suitable clevis is provided for the substituted beam.

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

1. In a plow, a sulky, a pole pivotally attached to the axle of the sulky, an equalizer connected with said pole, and a plow-beam pivotally attached to the sulky at the pivotal attachment of the pole, substantially as described.

2. In a plow, a sulky, a pole, means for adjusting the pole upon the sulky and pivoting the pole to said axle, an equalizing-bar pivoted to the pole, adjustably attached to the axle of the sulky, and a plow-beam pivoted to the axle of the sulky at the pivot-point of the pole, as specified.

3. In a sulky-plow, a pole provided with a clevis and a stop for the doubletree at the end of said clevis, said stop consisting of a strap extending across the front of the pole beyond one side thereof, the strap being secured to the pole at a point between its forward and rear ends, as described.

4. In a sulky for plows, a skeleton axle provided with two series of apertures and adjustable spindles for ground-wheel, a pole adapted to enter the space between the top and bot-

tom portions of said axle, a pivot-pin adapted to be passed through one of the apertures of one series and through the pole, pivoting the pole to the axle, and an equalizing-bar pivotally attached to the outer end of the pole at one end, the opposite end being slotted, and a bolt passed through the slotted end of the equalizing-bar and through one of the apertures of the second series in the axle, as and for the purpose specified.

5. In a sulky-plow, a plow-standard having a loop at the top adapted to engage with the under face of the plow-beam, a seat-standard provided with a slot, the slotted portion of the seat-standard resting upon the upper portion of the plow-beam, and a bolt passed through the loop portion of the plow-standard and the slot of the seat-standard, for the purpose specified.

6. The combination, with a sulky, a pole adjustable upon the axle of the sulky, a pin pivotally connecting said pole with said axle, an equalizing-bar adjustable upon the axle and connected with said pole, a plow-beam pivotally attached to the axle of the sulky at the pivot-point of the pole, a plowshare, handles for the share, said handles being provided with a cross-bar having a lengthy curved slot, a set-screw passed through the heel of the plow-beam and the said curved slot, and a stop adjustably secured upon the axle of the sulky, said stop being adapted to limit the swing of the plow-beam in one direction, as described.

7. The combination of a rigid axle, a wheel mounted on each end thereof, a plow-beam, a pole, the beam and pole being pivotally connected with the axle on a common pivot, and means for holding the pole rigid on the axle.

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