(No Model.) 3 Sheets—Sheet 1.

E. D. MEAGHER & C. E. TOWER.

SULKY PLOW.

No. 306,342. Patented Oct. 7, 1884.

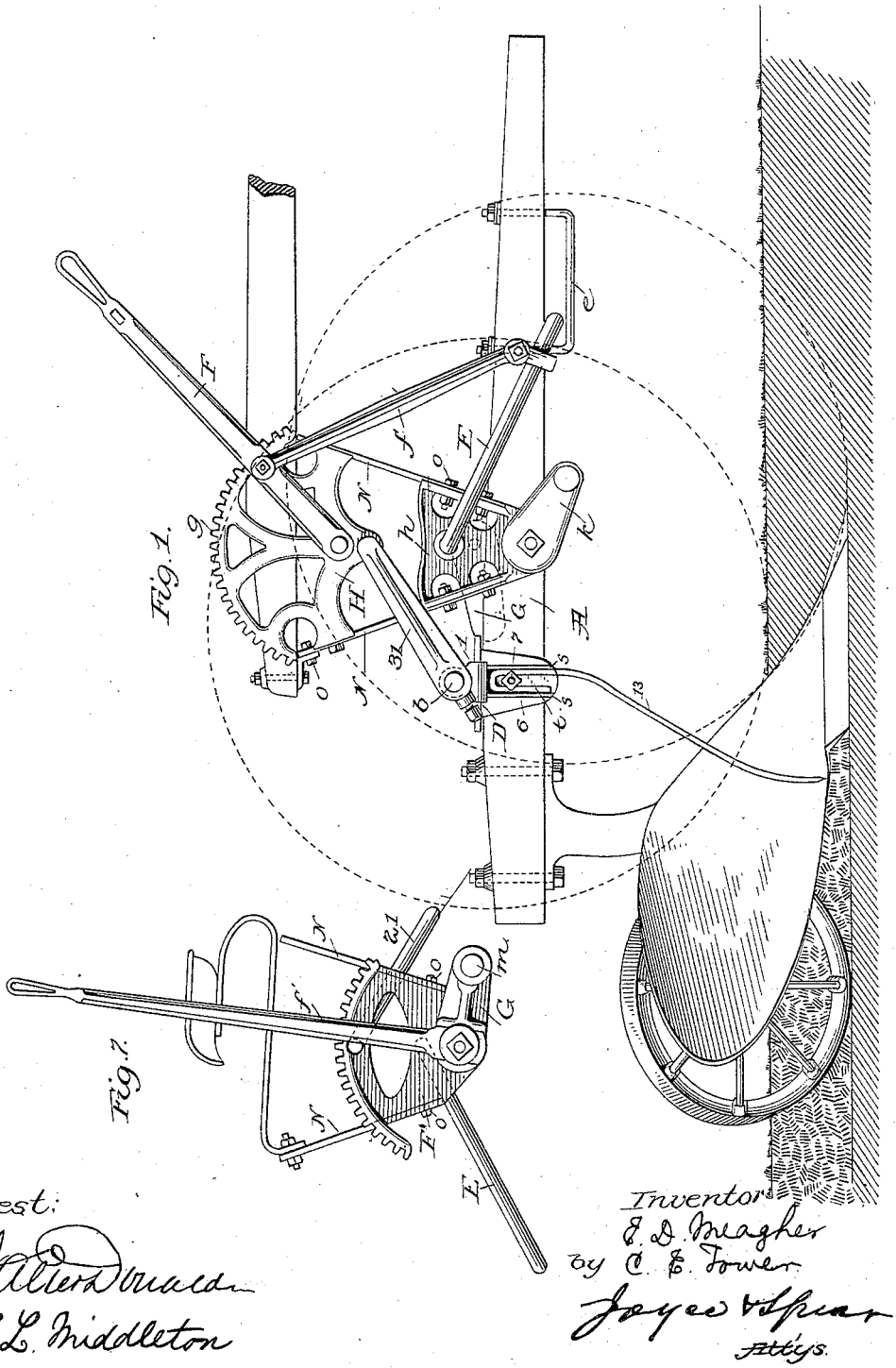

Fig. 1.

Fig. 2.

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(No Model.) 3 Sheets—Sheet 2.

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SULKY PLOW.

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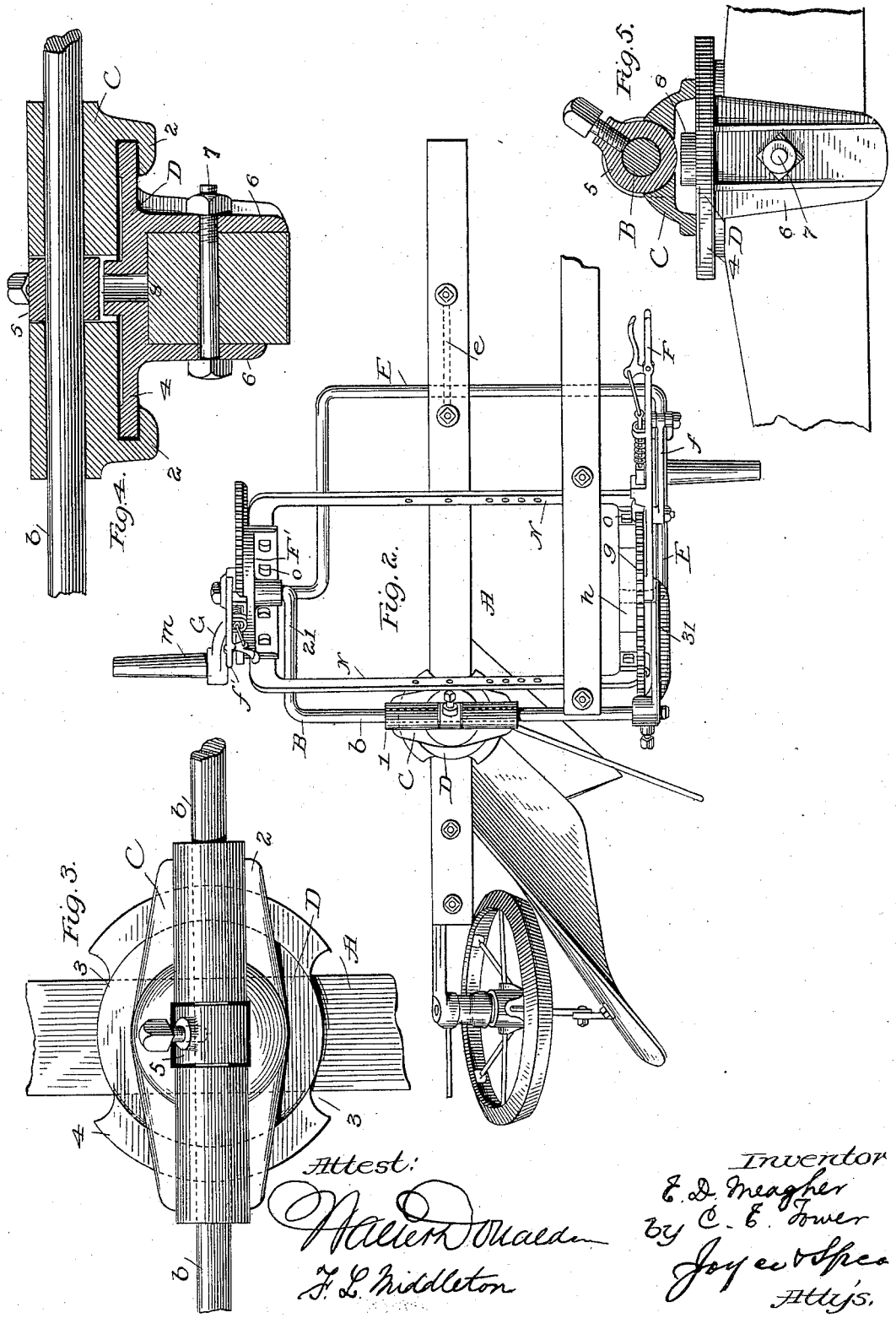

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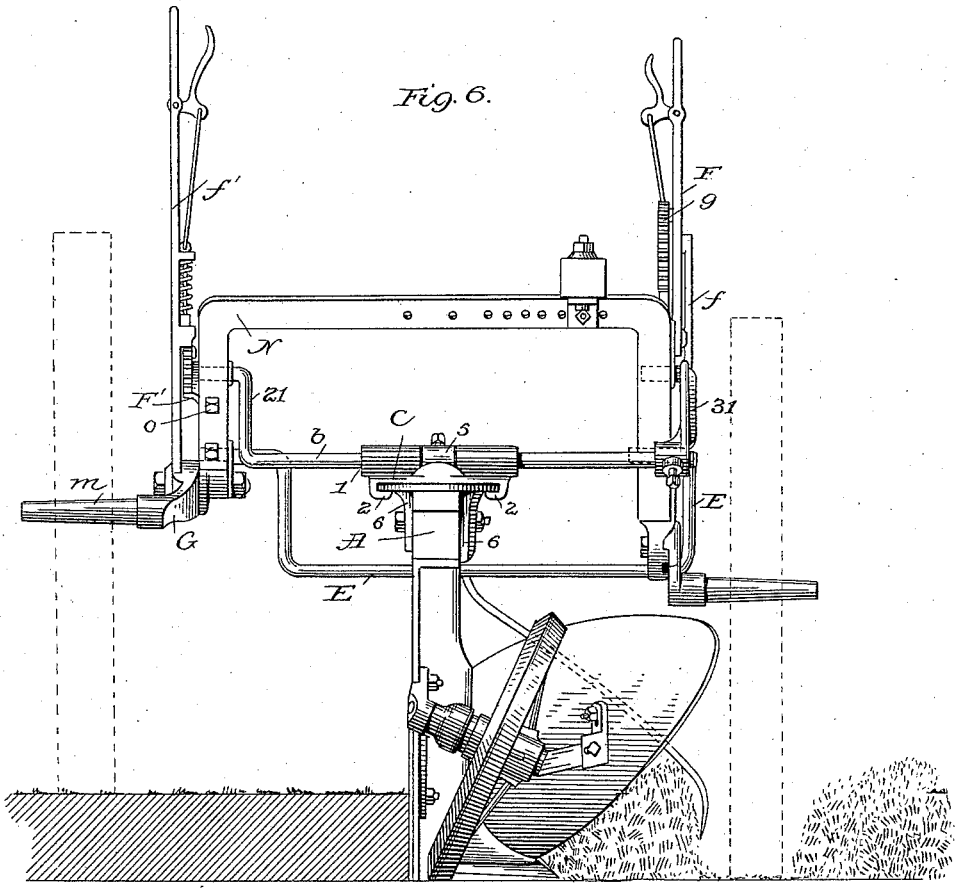
Fig. 6.



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UNITED STATES PATENT OFFICE.

EDMUND D. MEAGHER AND CALEB E. TOWER, OF SOUTH BEND, INDIANA, ASSIGNORS TO THE ECONOMIST PLOW COMPANY, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 306,342, dated October 7, 1884.

Application filed January 2, 1884. (No model.)

To all whom it may concern:

Be it known that we, EDMUND D. MEAGHER and CALEB E. TOWER, of South Bend, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in Sulky-Plows; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention consists in the devices and combinations of devices, as hereinafter described, which go to make up our improved plow, whereby the plow is rendered simple in its construction and efficient in its operation.

In the accompanying drawings, which illustrate the special embodiments of our invention, Figure 1 is a side elevation of the sulky-frame, the position of the wheels being shown by dotted lines. Fig. 2 is a plan view of the sulky-frame and plow. Figs. 3, 4, and 5 represent details enlarged. Fig. 6 is a rear view of the plow and sulky. Fig. 7 is a detail view.

In these drawings we have represented a form of plow such as that shown in Letters Patent granted E. D. Meagher, February 7, 1882, and numbered 253,403; but any other style of plow may be used with our invention. The frame of the sulky is mounted upon a pair of wheels, one of which is capable of adjustment and runs upon the land in the ordinary manner.

The particular construction of the frame is described hereinafter. The plow-beam A is provided with a suitable clevis, and is drawn by the team in the ordinary manner. The point of connection of the sulky-frame to the beam A is at the point 1. The connection here shown consists of a bail, B, which has a straight part, *b*, and arms 21 and 31. We prefer to make the straight part and arm 21 of this bail of round iron rod, the other arm, 31, being of malleable iron. The bail is hinged in suitable sockets in the end castings of the sulky-frame. The horizontal part *b* is held to the plow-beam by means of a turning-plate, C. This plate has lugs 2 2, which are adapted to pass through openings 3 3 in the flange 4 of a fixed plate, D, on the plow-beam, and to project under the said flange when the plate C is turned on the plate D. The upper part of the plate C has a tubular bearing for the bail. The tube is cut away in the central part to form a recess for a sleeve, 5, which may be held to the bail by a set-screw, and thus hold said plate against lateral movement. The bail turns at all times freely in this tubular bearing. The plate C slides freely on the bail when not held by the set-screw, and the flange of the plate D being circular, the upper plate may turn on the lower. From this construction it will appear that the plow-beam may be turned in a horizontal plane on the upper plate as a pivot, or it may be turned in a vertical plane on the bail as a pivot, or may be moved laterally on the bail. It is held rigidly only against tipping from side to side. This bail forms the connection between the plow and sulky, by means of which the sulky is moved with the plow, the bail serving to push the sulky, and as it is inclined forward it permits the sulky-frame to rise or fall without interfering with the movement of the plow. Further, as the point of connection with the plow-beam is in rear of the frame and well back upon the beam, the plow may be swung from side to side without affecting the sulky, and the beam may also be tipped readily to give greater or less depth of cut. The plate D is connected to the beam conveniently by means of two cheek-pieces, 6 6, and a bolt, 7, passing through them and the beam.

We have made provision also for another movement in the connection between plow and sulky. In case the plow strikes an obstruction, it is desirable that the shock should not be communicated to the sulky. For the prevention of this, one of the plates, preferably the upper plate, C, is slotted lengthwise of the beam, and receives a low stud, 8, which limits the front and rear movement of the plate C upon the plate D sufficiently to keep them in working position in relation to each other at all times. Ordinarily, when the plow is in motion, the stud 8 will be in the front end of the slot, and will be the bearing-point at which the plow will push upon the bail to move the sulky; but should the plow be suddenly arrested by striking an obstruction, the

sulky will have movement to the length of the slot, and will to that extent be relieved of the shock.

For economy of material, and to avoid increase in the number of parts, a seat is formed in one of the cheek-pieces 6, for the reception of the end of the weed-turning arm 13. The seat is formed by means of two vertical ribs, *s s*, between which lies the end of the rod formed with a loop, *t*. The bolt which holds the cheek-pieces passes through the loop, and the nut on the bolt bears on the loop, and thus holds the rod without further fastening.

In order not to interfere with the lateral movements permitted by the connection above described, and at the same time to provide means for putting the plow into or out of ground, we have devised an improved mechanism for this purpose. It consists of a lifting-bail, E, pivoted to the sulky-frame, having a sliding connection with the plow-beam. This sliding connection is formed by passing the bail across (preferably underneath) the plow-beam, and limiting its movement by means of an elongated staple, *e*, on the beam. One arm of the bail E is connected by the rod *f* to a lever, F, pivoted on the end piece of the frame, and moving over a segment, *g*. The handle of the lever is within reach of the driver, and he may, by moving the lever, lift or drop the beam and lock it in any position, the bail sliding on the beam as the latter rises or falls.

It will be seen from an inspection of Fig. 6 that the distance between the sulky-frame and the plow-beam may be fully changed. If the said frame be lifted—as by the wheel passing over a stone—the connecting-bail will simply be swung backward and the lifting-bail will be drawn back. Depression of the sulky—as by the wheel falling into a hollow—will only bend down and spread out the bails by pushing the lifting-bail forward. The same connection of the lifting-bail to the beam permits the beam to swing from side to side on the rear pivotal connection.

We are aware that the bails may be modified in form without departing from the spirit of our invention—that is to say, with the retention of the flexible connection, allowing the free up-and-down movement of the sulky, not interfering with other necessary movements of the plow; or, retaining the rear rigid connection in the form of a bail or link, we may use other forms of flexible lifting devices than that shown.

The sulky-frame is composed of end pieces and two bent bars bolted thereto. Each of these end pieces may be of a single casting. As shown in the drawings, on the land side is an end piece, F', in which is the bearing of a crank, G, provided with a journal, *m*, for the land-wheel and bearing-socket for the ends. A lever, *f'*, with the usual locking device, serves to move and to retain the crank and wheel in place. On the other side of the frame is a lower casting, *h*, having the journal-arm *k* of the furrow-wheel attached to it, and an upper casting, H, in which are the bearing-sockets of the bail ends and lever, and which has also a segment-rack for the lever. These castings are connected by means of bent bars N N. These are of ordinary rolled iron or steel, and may be swaged or bent into shape by any well-known means. They are bolted to the end castings by bolts *o*. The tongue is attached to the bars N N, as shown in Figs. 1 and 7, and the seat may be connected to and rest upon the same bars.

The special shape shown of the end pieces is not material. The bars are set on edge, and are inclined to front and rear, as shown.

In operation the plow has the capacity to adjust itself to the work, and free movement, as explained. It is regulated as to the width of the furrow-slice by the set of the clevis in the ordinary way. It may be adjusted in proper position on the crank, in proper relation to the sulky, by simply loosening the set-screw in the sleeve and then starting the team. The draft brings the plow into proper position, and then the screw may be set again. In driving to and from field the front end of the beam may be raised by the lifting-loop, which throws the weight of the plow on the land side wheel.

We claim as our invention—

1. In a sulky-plow, a bail, B, forming pivotal connections between the plow-beam and sulky-frame, adapted to permit separate vertical movement of either, and a lifting-bail pivoted on the sulky-frame, having a longitudinally-sliding connection with the plow-beam in front, a locking-lever, and a rod connecting it to the lifting-bail, whereby the plow-beam is held up to any given point and the movement of the sulky prevented from affecting the plow, substantially as described.

2. In a sulky-plow, a bail connecting the plow-beam at a point in rear of the sulky-frame and permitting free vertical movement, connection between said bail and plow-beam, whereby lateral movement is permitted to the plow on said bail, a lifting-bail pivoted on the sulky-frame, and having longitudinally and laterally sliding connection with the beam in front of the sulky-frame, a locking-lever, and connection between said lever and the lifting-bail, substantially as described.

3. In a sulky-plow, a pivoted bail forming connection between the sulky-frame and the plow-beam at a point in rear of the said frame, adapted to permit vertical movement, connecting devices between said bail and the plow-beam, adapted to permit the said beam to slide on the bail or to turn in horizontal plane thereon, and a lifting-bail having longitudinally and laterally sliding connections with said beam, and connections to a locking-lever, whereby the plow is permitted free movement independent of the frame, substantially as described.

4. In a sulky-plow, the bail B, connecting the plow-beam at a point in rear of the sulky-

frame, whereby a vertically-flexible connection is provided, and means, substantially as described, by which said connections have a limited forward and backward sliding movement and a lateral movement, substantially as described.

5. In combination with the frame and beam of a sulky-plow, a bail, B, connected to the frame and pivoted to the beam in rear of the sulky-frame by longitudinally and laterally adjustable connection, and a lifting-bail in front attached to the beam by a longitudinally sliding connection, substantially as described.

6. The combination, in a sulky-plow, of a bail, B, hinged in the end castings of the sulky-frame, the part *b* thereof pivoted to a plate having limited longitudinal and lateral movement on the plow-beam, and a lifting-bail, E, pivoted to the sulky-frame, and having a longitudinally and laterally sliding connection with the plow-beam, the locking-lever F, pivoted on the end piece of the frame, and the rigid connecting-rod *f* between said lifting-bail and lever F, the parts being constructed and operating substantially as described.

7. In combination with the sulky-frame and plow-beam, as described, the turning plate C, slotted as described, secured to the bail B, the plate D, fixed to the beam, and having the projecting stud 8, adapted to the slot in the plate C, all substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDMUND D. MEAGHER.
CALEB E. TOWER.

Witnesses:
JOHN M. CHAPMAN,
EDWIN R. KIMBLE.