

(No Model.)

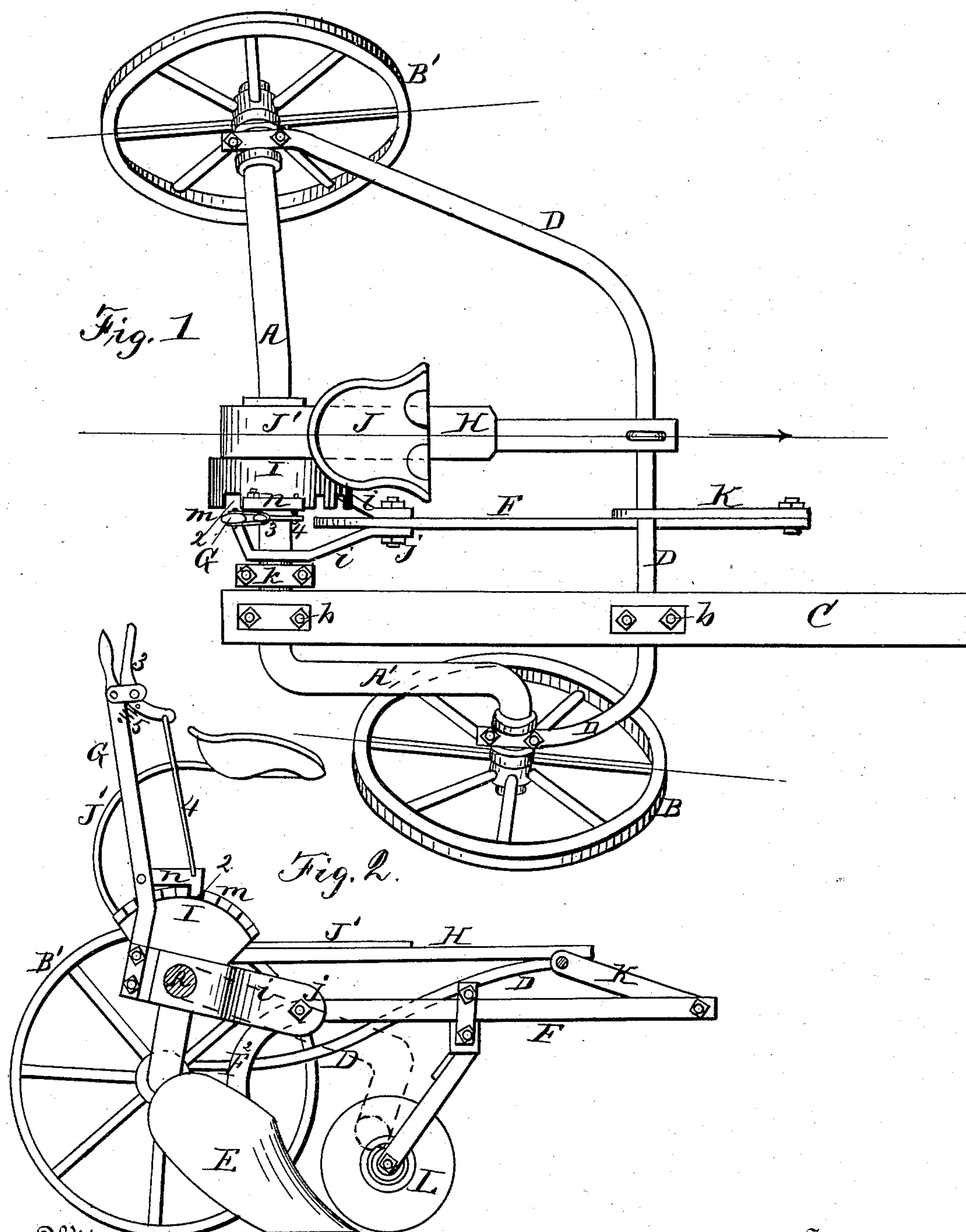
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M. T. HANCOCK.

SULKY PLOW.

No. 366,094.

Patented July 5, 1887.



Witnesses

Ella S. Johnson,
H. B. Mackrille.

Inventor

Milton T. Hancock

By his Attorney

Johnson & Johnson

(No Model.)

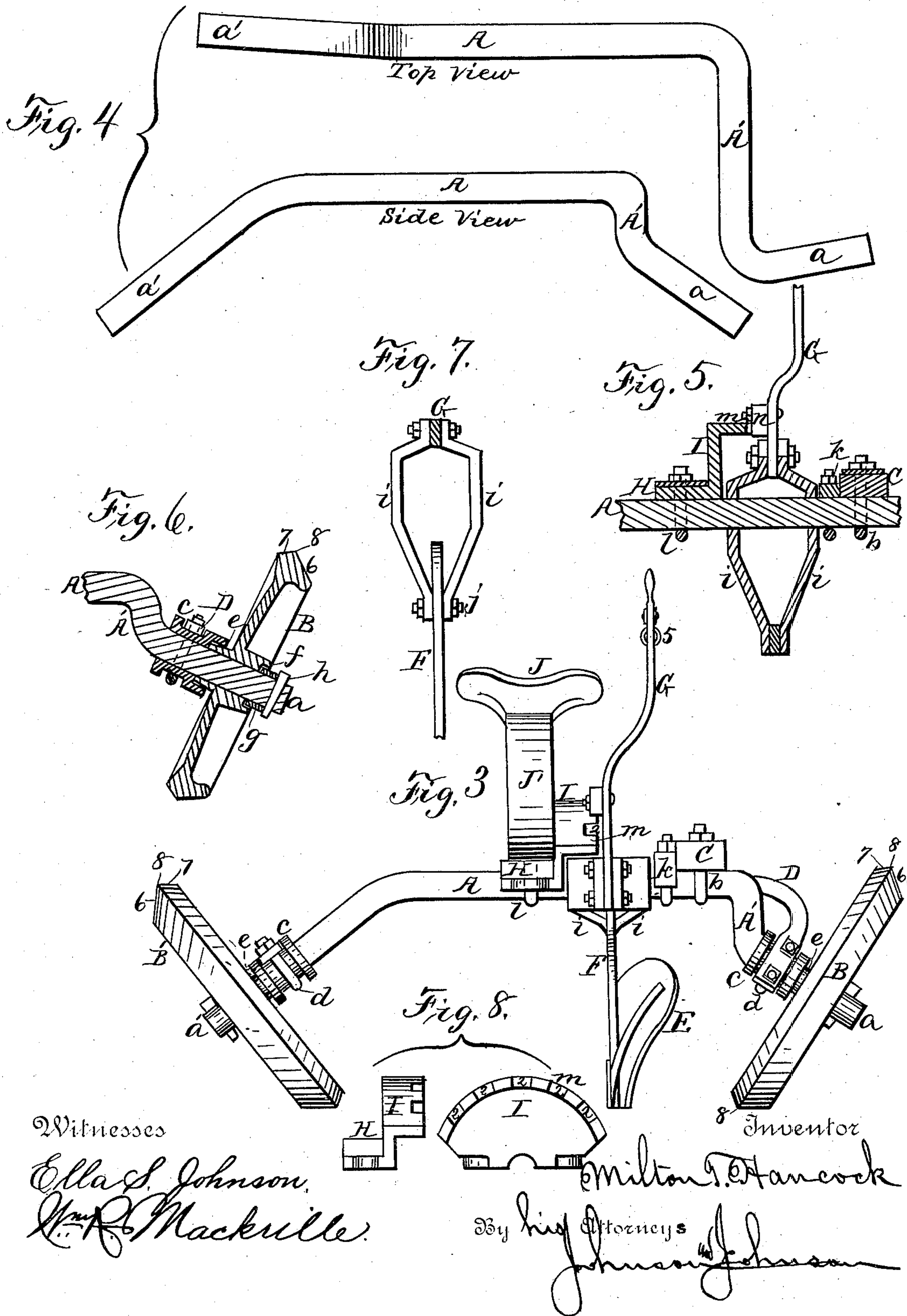
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UNITED STATES PATENT OFFICE.

MILTON T. HANCOCK, OF LITTLE ROCK, ARKANSAS, ASSIGNOR OF ONE-HALF TO JOHN E. BISCOE, OF SAME PLACE.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 366,094, dated July 5, 1887.

Application filed March 10, 1887. Serial No. 230,374. (No model.)

To all whom it may concern:

Be it known that I, MILTON T. HANCOCK, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented new and useful Improvements in Sulky-Plows, of which the following is a specification.

This invention relates to sulky-plows in which the axle is bent at its ends to form a crank-arched support, and in which one of the wheels is attached to an oblique bearing to form what is known as the "oblique" or "furrow" wheel; and the objects of my improvements are to prevent the left-side wheel from dropping into the furrow at the end of the land, and thus avoid the difficulty and necessity of backing out of the furrow when turning the plow, this being effected by placing the right-side wheel in advance of the other, looking toward the front; to cause a slight outward pressure upon the ground at the lower edge of each wheel to relieve the friction and wear of the wheels upon their axle-shoulders, this being effected by setting both wheels so as to incline upward and outward from the ground and also to set flaring toward the front; to prevent the wheels from catching on the edge of the furrow and climbing out, this being effected by dividing the tread of the wheel into two faces beveled or inclined to each other. It is very necessary to have the right wheel run regularly in the furrow, as the width and regularity of the cut of the plow is regulated very much by this wheel.

The construction by which these objects are attained is illustrated in the accompanying drawings, and the parts and combinations of parts which constitute my improvements will be hereinafter described, and pointed out in the claims.

Figure 1 represents a top view of a sulky-plow embracing my improvements. Fig. 2 is a side view, and Fig. 3 is a rear view, of the same. Fig. 4 shows the bent axle in top and rear view. Fig. 5 shows a vertical section of that part of the axle to which the plow-hanger and the tongue are secured; and Fig. 6 shows a sectional detail of one of the oblique supporting-wheels and its axle-bearings. Fig. 7

shows the plow-hanger, and Fig. 8 shows the seat-supporting frame, in side and rear views.

The axle A is of peculiar form, having its right-end portion bent forward parallel with the tongue, and forms a crank or L-shaped arm, A', whose end is bent outward and obliquely downward, so as to form a journal-bearing, a, for the right supporting-wheel, B. The other end of the axle is bent downward obliquely and terminates in a journal-bearing, a', for the left supporting-wheel, B'. These several bends of the axle have different relations to the middle part, A, and the axle-bearing parts or journals stand downward, preferably, at different angles, as seen in Fig. 4, so that the right or furrow wheel, B, shall stand at a greater upward and outward obliquity from its traction side than the left wheel. The axle-arm A' stands obliquely downward toward the front, and is of such a length as to throw the left wheel about twelve inches behind the right one for the purpose of causing the plow to be turned at the end of the land without bringing the left wheel into the furrow, and thus avoid having to back the plow to free it of the furrow at the turning-point, as is the case with this class of plows now in use. The wheels, however, may stand at the same obliquity in relation to the axle and the ground, and when arranged so as to stand flaring toward the front their bearings are bent slightly rearward out of parallel relation to the middle part, A, of the axle, as seen in Figs. 1 and 4, so that both wheels will stand obliquely outward and have a slight front flaring relation, so as to relieve the friction and wear of the wheel-hubs upon the axle-shoulders by causing the wheels to have a slight outward pressure in the ground. The tongue C is secured by a clip-bolt, b, to the axle at its crank-arm side, and to a front axle-brace, D, by a similar clip b, so that the tongue can be set laterally in relation to the axle crank-arm A' in line with the draft of the plow. This brace D is bent and secured to the ends of the axle by tubular boxes c, to which the brace is fastened by U-shaped clip-bolts d, bound within circumferential grooves in said boxes, whereby the latter are held against endwise movement upon

said axle. These brace-boxes also serve to form the axle-shoulders for the wheels, and the latter for this purpose are formed with projecting rings *e*, (see Fig. 6,) made tapering on their circumference from the face of the wheel, so as to fit and run within an annular groove formed within the inner end of the box *c* and prevent dirt falling from the wheel from getting onto the wheel-bearing or into the hub, so that this box serves as the means of clipping the brace *D* to the axle, forming the shoulder for the latter and a cover for the wheel-bearing ring *e*. The outer end of the hub has an annular interior recess, *f*, to receive a ring-box, *g*, fitted on the outer end of the journal and secured by a pin, *h*, or otherwise, and thus secure the wheel and protect its journal-bearing from dirt.

The plow *E* may be of any approved form, and is preferably carried by a beam, *F*, terminating in a curved standard, *F'*, and connected to the axle and to the front curved brace, *D*, as I shall now describe. A hanger formed of two clamping-plates, *i i'*, is hung so as to turn freely upon the axle and extend in front thereof a greater distance than at the rear. The plow-beam *F* is pivoted between the front ends of the hanger-plates by the pivot clamp-bolt *j*, while the adjusting-lever *G* for the plow is rigidly bolted to the rear ends of the hanger-plates, so that the axle passes through the hanger-plates between the pivot *j* for the beam and the lever *G*, having a rigid connection with said hanger. The proper lateral relation or adjustment of the hanger *i*, and consequently of the plow, to the tongue is maintained by a clip-plate, *k*, fastened upon the axle between the hanger and the tongue, and by a seat-supporting plate, *H*, bound upon the axle by a clip-bolt, *l*, on the other side of the hanger. This seat-supporting plate *H* has an upward extension, *I*, which terminates in a curved rack or notched rim, *m*, standing over the axle and the hanger *i*, the arc of which rack being struck from the axis of the axle. The plow-actuating lever *G* rises by the notched rim *m*, so as to be supported laterally thereby, within convenient reach of the driver upon his seat *J*, and this lever is provided with a latch device consisting of an L-shaped latch, *n*, pivoted to the lever *G*, just over the notched rim *m*, so as to enter any one of the notches therein, to lock the lever and its hanger to the fixed seat-supporting plate. This latch *n* is controlled by a small thumb-lever, *3*, pivoted to the upper end of the hand-lever and connected by a rod, *4*, to the latch *n*, so as to be constantly pressed down by a spring, *5*, to keep the latch in lock with the rack, whether the plow be raised or lowered. I form the treads of the wheels of two beveled or inclined surfaces, *6* and *7*, so as to form a tread-ridge, *8*, dividing the bevel-faces. I prefer to form this dividing-ridge, nearer the inner face of the wheel, so as to give the widest part, *6*, of the tread at the outer face of the wheel, and thus form a comparatively-narrow bevel

landside, *7*, of the tread of the wheel, and thus prevent the latter from catching on the wall or side of the furrow and climbing or riding out of the same, because the wheel at the inner edge of the tread has its tread part sloping to the furrow-wall. By this construction the right wheel is caused to run regularly in the furrow, and thus regulate the width of the cut of the plow. The plow-beam *F* is held down to its work by a stay-rod, *K*, which connects the front end of the plow-beam to the axle-brace *D*, and holds the plow and the colter *L* down in the ground and prevents the doubletree from dropping under the horses' feet when turning the machine. The depth of the plow-cut may be also regulated by this stay-rod by making it longer or shorter.

Pivoting the plow-beam to a front stay-rod and to a hanger adapted to swing freely upon the axle, and rigidly connecting the plow-operating lever to said hanger, gives the advantage of easily adjusting the plow into and out of work. The hanger may extend so as to bring its beam-pivot connection at the rear of the axle, and it may be formed of a single casting with its lever. The seat-supporting plate *H* may be extended to and fastened to the axle-brace, and the seat-supporting spring *J'* may be made adjustable upon said plate.

I prefer to form the wheels with their treads having double inclines, as described; but the tread-ridge of the right wheel may be formed by a circumferential surface-bead on its inner side edge.

I claim—

1. In a sulky-plow, the combination of the axle having the downward oblique journal-bearings on its opposite ends, and the angular arm *A'*, and the supporting-wheels, both arranged in vertical oblique relation to each other and to the axle-arms, substantially as described.

2. In a sulky-plow, the combination of the axle having the downward oblique journal-bearings on its opposite ends, and the angular arm *A'*, the supporting-wheels, both arranged in vertical oblique relation to each other and to the axle-arms and in flaring relation toward the front, and a rigid tongue, substantially as described, for the purpose specified.

3. In a sulky-plow, the combination of the oblique supporting-wheels, the stiff tongue, and the axle having journal-bearings on its opposite ends inclining obliquely downward and slightly rearward to the line of the axle proper, substantially as described, for the purpose specified.

4. In a sulky-plow, the combination, with the axle having the crank-arm *A'* at one end and the oblique journal-bearings on both ends, of the supporting-wheels having traction-surfaces formed of oppositely-inclined faces and arranged in oblique relation to each other, and a rigid tongue connected to the axle near its crank-arm, substantially as described.

5. The combination, in a sulky-plow, of the axle having oblique journal-bearings on both ends and an oblique crank-arm at one end, a

frame consisting of the axle, a front brace, and a tongue, a hanger for the plow, a lever rigid to the hanger for adjusting the plow, and the supporting-wheels arranged in oblique relation to each other, substantially as described.

6. In a sulky-plow, the frame consisting of the axle, the brace, and tongue, in combination with the hanger *i*, the stay-rod K, the plow-beam pivotally connected to the hanger and to the brace-rod, the plow-operating lever fixed upon said hanger, and the rack-plate H I, substantially as described.

7. The combination of the frame consisting

of the axle, the brace, and the tongue, with the plow-beam, the hanger having the rigid lever, the seat-supporting plate having the rack, and the clips *k* and *l*, whereby both the hanger and the seat are secured and made adjustable upon the axle, as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MILTON T. HANCOCK.

Witnesses:

WALTER WITTENBERG,
WILLIAM C. RATCLIFFE.