(No Model.) 2 Sheets—Sheet 1.

E. C. WESTERVELT.

PLOW.

No. 469,075. Patented Feb. 16, 1892.

FIG. 1.

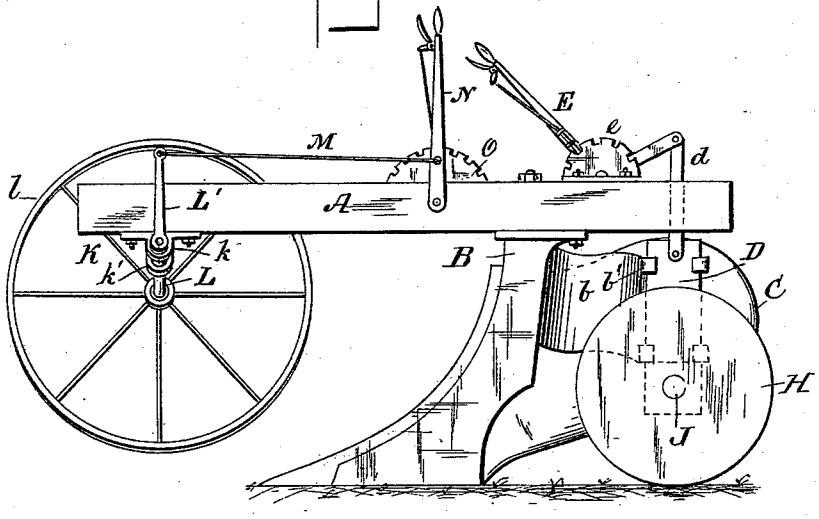


FIG. 2.

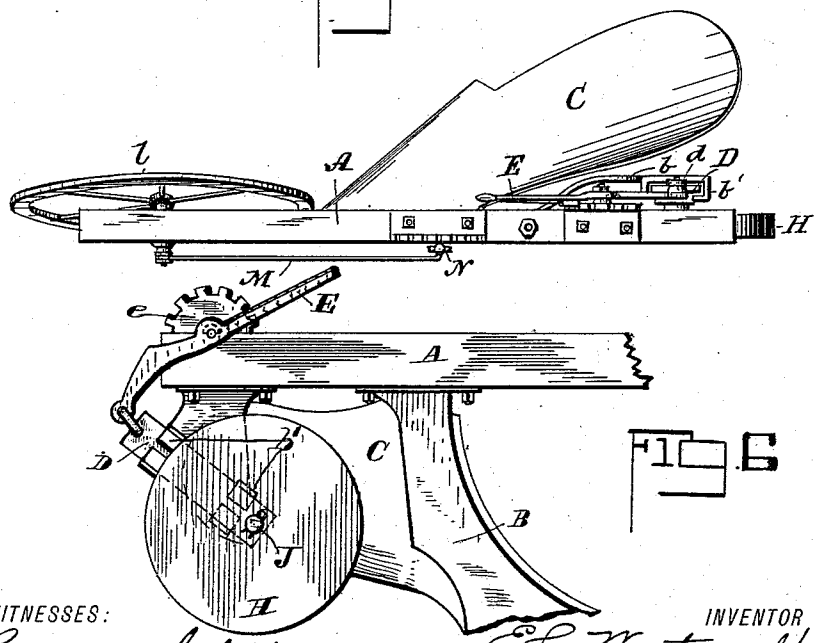


FIG. 6.

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(No Model.) 2 Sheets—Sheet 2.

E. C. WESTERVELT.

PLOW.

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FIG. 3.

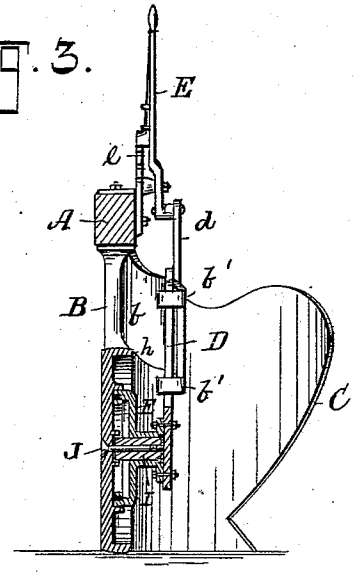


FIG. 4.

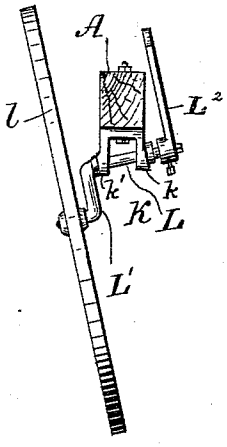
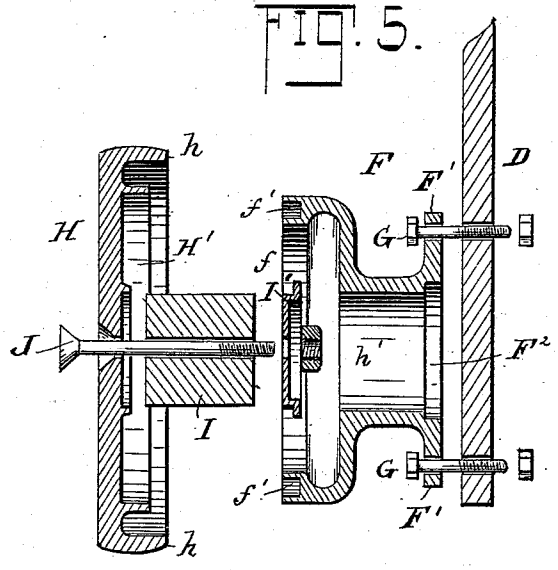


FIG. 5.



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UNITED STATES PATENT OFFICE.

EDMUND C. WESTERVELT, OF SOUTH BEND, INDIANA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 469,075, dated February 16, 1892.

Application filed June 27, 1891. Serial No. 397,699. (No model.)

To all whom it may concern:

Be it known that I, EDMUND C. WESTERVELT, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side elevation of my improved plow, looking at the landside thereof. Fig. 2 is a top plan view. Fig. 3 is a rear view. Fig. 4 is a detail front view; Fig. 5, a transverse vertical section through the landside-wheel. Fig. 6 is a detail side elevation showing a modified arrangement of the wheel-landside.

This invention is an improvement in plows; and its object is to provide the same with a wheel-landside and with a front guide or furrow wheel, and to make both said wheels adjustable.

It consists in the novel construction of the landside-wheel, its mountings, and in certain other novel details of construction and combination of parts, as will be hereinafter clearly described and claimed.

Referring to the drawings by letter, A designates the plow-beam, B the standard, and C the plow or mold-board of ordinary appearance. To the standard, as in Figs. 1 or 6, is connected a bracket or hanger *b*, which projects in rear of the plow.

D designates a movable slide connected to hanger *b* and guided by loops *b'* or other suitable means, and which is upheld and adjusted by means of a link *d* and cranked lever E, the latter being fulcrumed on a pin attached to the beam and having a finger-latch adapted to engage a notched segment *e*, attached to the beam so as to lock the lever when the slide is properly adjusted up or down thereby. The slide may be vertical, as in Fig. 1, or inclined, as in Fig. 6, the latter position enabling it to be shifted or lifted more easily. The lever may be connected with or arranged to operate the slide in any other convenient and desirable manner.

F designates a tubular casting, having a flange F' on one end, by which it is connected to the lower end of slide D by bolts G, and projects horizontally toward the landside of the plow beneath the beam. The opposite end of the casting has an enlarged flaring mouth *f*, and an annular groove *f'* is formed in its end wall, as shown.

H designates the landside-wheel, which is made dish-shaped or is a flat disk having a deep flange *h* at one side on its periphery, forming the tread thereof, and an inner annular flange H', which fits neatly over the mouth *f* of casting F, and within this flange H' is a smaller annular flange or recess *h'*, which is adapted to receive the end of a cylindrical block or axle-journal I, which is of such size as to fit neatly within the tubular portion of casting F, as shown. The wheel and journal are axially bored for the passage of a bolt J, having an enlarged head countersunk in the outer or landside face of the wheel. After the axle-journal and wheel H are fitted to the casting F an enlarged washer I' is slipped on the threaded end of a bolt *j*, and into a recess or chamber F^2 in the end of the casting and secured thereon by a nut, thus binding the wheel H and axle-journal together and to the casting F, which forms the bearing and support for the wheel. Any suitable packing may be placed in the groove *f'*, if desired, and saturated with a suitable lubricant. Preferably the axle-journal is made of wood, which can be readily renewed when worn. The flaring mouth of the casting fitting in the flange H' in a great measure relieves strain on the journal of the wheel and transmits lateral thrust thereon direct to the arm *b* through the casting. This flange also prevents any wabbling movement of the landside-wheel. It will be observed that the bearings of the landside-wheel are all protected or boxed, so that dirt or grit is almost absolutely excluded therefrom; but should any enter, the axle-journal being wood, but little friction or damage would be caused. When properly made and adjusted, however, no dirt will enter. The landside-face of wheel H is perfectly smooth, and as this wheel runs under the beam close to the standard it takes the place of the ordinary landside and becomes a revolving landside. In turning the plow the

driver should raise the landside-wheel clear of the ground, relieving strain thereon and enabling the plow to turn short on its point.

K designates a casting bolted to the beam A in front of the mold-board, and having two depending lugs *k k'* at its opposite sides, lug *k* at the landside of the beam being shorter than lug *k'*, which is at the furrow side. The said ears are perforated for the passage of a shaft at different distances from the beam, so that a shaft passed therethrough will stand obliquely transverse to the beam, its end at the furrow side being lowest.

L designates a shaft journaled in said ears and having an upstanding arm L' on its upper end and a depending cranked arm L^2 on its lower end, on which is journaled a furrow-wheel *l*, as shown.

Owing to the inclination of the shaft, the wheel *l* is staggered or leans from the beam, so that its bottom runs in the previous furrow and acts to prevent the front end of the beam turning laterally toward the landside. The wheel also serves as a guide to keep the furrows true and as a means of equalizing the pressure against the landside-wheel, the thrust on which, if used in ordinary plows, owing to its location so far in rear of the point of plow, tends to turn the plow, rendering it difficult to maintain a straight furrow. The arm L' is connected by a link-rod M with a lever N, pivoted to the beam and provided with a thumb-latch engaging with a segment O, attached to the beam, by which means the wheel *l* can be shifted.

From the foregoing it will be observed that I can convert at little expense an ordinary hand-plow into a riding-plow, and thereby lessen materially the manual labor required in plowing and increase the efficiency of the plow.

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

1. The combination of the plow, a vertically-movable tubular casting having a flaring mouth, the annularly-flanged disk fitted over the mouth of said casting, the axle-journal, and the securing-bolt, substantially as described.

2. The combination of the tubular casting having an enlarged mouth at one end and an axle-journal piece fitted in said casting with the disk bolted to the end of said axle-journal and having an annular flange overreaching the mouth of the casting, substantially as specified.

3. The combination of the plow and the vertically-movable slide attached thereto with the wheel-landside attached to said slide, and the devices for operating the slide, substantially as set forth.

4. The combination, with the plow, of the casting K, attached to the beam, the shaft journaled in said casting and lying transversely of and obliquely to the beam, the staggered furrow-wheel connected to said shaft, and the devices for shifting the same, substantially as and for the purpose specified.

5. The combination of the plow-beam, the movable slide attached thereto, and the devices for adjusting the slide with the tubular casting F, connected to said arm, and the annularly-flanged landside having a stub-axle journaled in said casting, substantially as and for the purpose described.

6. The combination of the plow-beam and plow, the vertically-movable slide, and the wheel-landside attached to said slide, with the oblique shaft attached to the beam in front of the mold-board, the staggered wheel thereon, and devices for adjusting said slide and wheel, substantially as set forth.

7. The combination of the plow-beam and plow with the casting K, having depending ears *k k'* of unequal lengths, the oblique shaft L, journaled therein, having arms L' L^2, the wheel journaled on arm L^2, and the rod, lever, and segment for shifting said shaft, substantially as described.

8. The combination of the tubular casting F, having flaring mouth *f* and groove *f'*, with the wheel H, having flange H', the stub-shaft I, washer I', bolt J, and the securing-nut thereon, all constructed and arranged to operate substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

EDMUND C. WESTERVELT.

Witnesses:

JAMES DUSHANE,

NEILL C. CRABILL.