(No Model.)

J. CALDWELL.

Drag Plows or Shoes for Grain Drills.

No. 230,235. Patented July 20, 1880.

Fig. 1.

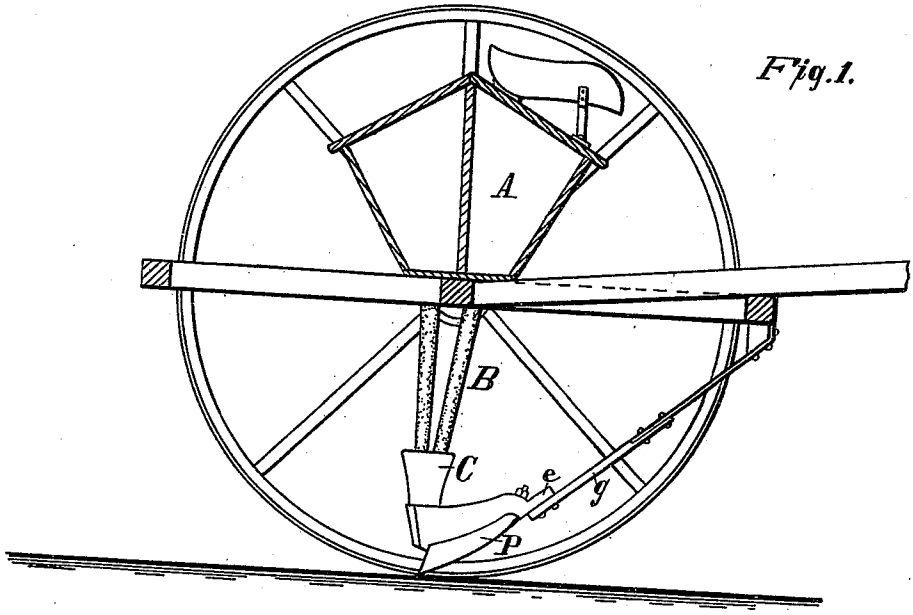


Fig. 2.

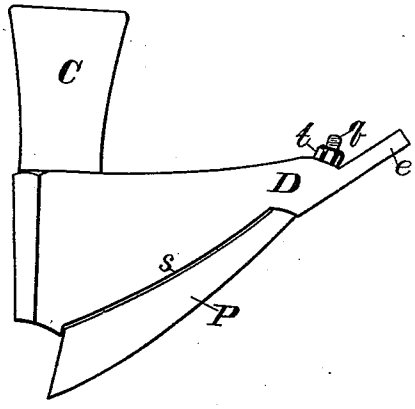


Fig. 3.

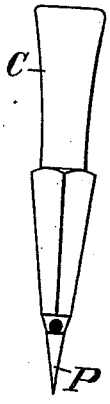


Fig. 4.

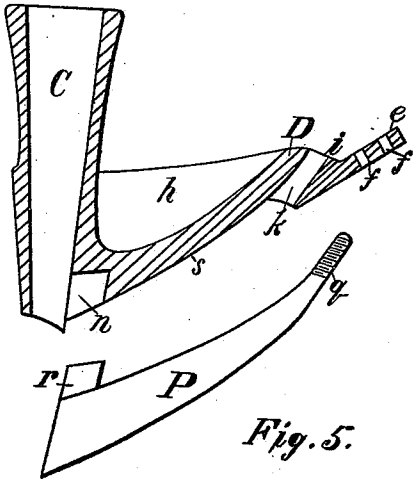


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN CALDWELL, OF LOUISVILLE, KENTUCKY.

DRAG PLOW OR SHOE FOR GRAIN-DRILLS.

SPECIFICATION forming part of Letters Patent No. 230,235, dated July 20, 1880.

Application filed April 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN CALDWELL, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Drag Plows or Shoes for Grain-Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My improvement relates to a drag plow or shoe for grain-drills; and it consists in a detachable cutter or point for such plows, constructed and operating as hereinafter set forth.

In the drawings hereto annexed, Figure 1 is a vertical elevation of a grain-drill with a plow embodying my improvement. Fig. 2 is a side view (enlarged scale) of a drill-plow having my detachable point. Fig. 3 is a rear view of same. Fig. 4 is a vertical section of same. Fig. 5 is a separate view of the point or cutter.

The drill is mounted on a pair of wheels. The letter A designates the grain box or hopper; B, the tube leading from the box to the funnel-shaped tube C of the drill-plow.

This class of drill-plows consists ordinarily of a cutter or point, which opens a furrow or groove in the land, and a tube somewhat funnel-shaped mounted vertically at the heel of the cutter, so as to deliver the grain at the heel or rear of the cutter into the furrow or groove.

The parts just described are usually made of cast-iron, and the said two parts are integral, constituting one piece.

This form of drill-plow has some objections, which my invention is designed to overcome.

Instead of casting the plow in one piece the tube part C and the lateral projecting arm D are cast integral, and the extremity of the arm *e* is provided with holes *f*. A spring or draft rod, *g*, is attached to the arm by rivets or bolts, which pass through the holes.

To avoid making the plow too heavy a cavity, *h*, is formed in the upper part of the arm between its extremity and the tube. Near the extremity of the arm, on its upper surface, is an inclined seat or shoulder, *i*, through which a hole or passage, *k*, extends in a slanting direction, and a slot or recess, *n*, is formed in the bottom or lower edge of the arm near its joinder to the tube. The detachable point or cutter P is provided at its forward extremity with a shank, *q*, which is screw-threaded, and at or near its heel with a lug, *r*, of any suitable shape, which projects upward from the upper edge, and is adapted to snugly fit into the recess *n*, while the shank before described is inserted through the slanting hole *k*. The upper edge of the cutter and the lower edge, *s*, of the arm must have forms which coincide.

By this construction the point or cutter may be firmly secured to its place by the nut *t* over the screw-threaded shank, which has its seat on the inclined shoulder *i*.

The advantages of this detachable point or cutter over the ordinary cast-iron device are that it may be made of steel, while the other parts are made of cast-iron, and of course will wear much longer before becoming dull, and when dull may be readily detached and sharpened by any smith. When finally worn out, it may be replaced by a new one without having to detach the other parts, which, as heretofore made in this class of plows, are rendered valueless, except for scrap-iron, when the cutter is worn dull.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

In a grain-drill plow, the vertical tube and lateral arm part C D, cast integral, and having the arm provided with a hole or passage, *k*, near the extremity, and a slot or recess in its lower edge, in combination with a detachable point or cutter provided at or near its forward end with a shank adapted to be inserted in the hole or passage, and having on its upper edge a lug to fit into the slot or recess, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN CALDWELL.

Witnesses:

GEORGE HOWARD,

GEO. B. BAHR.