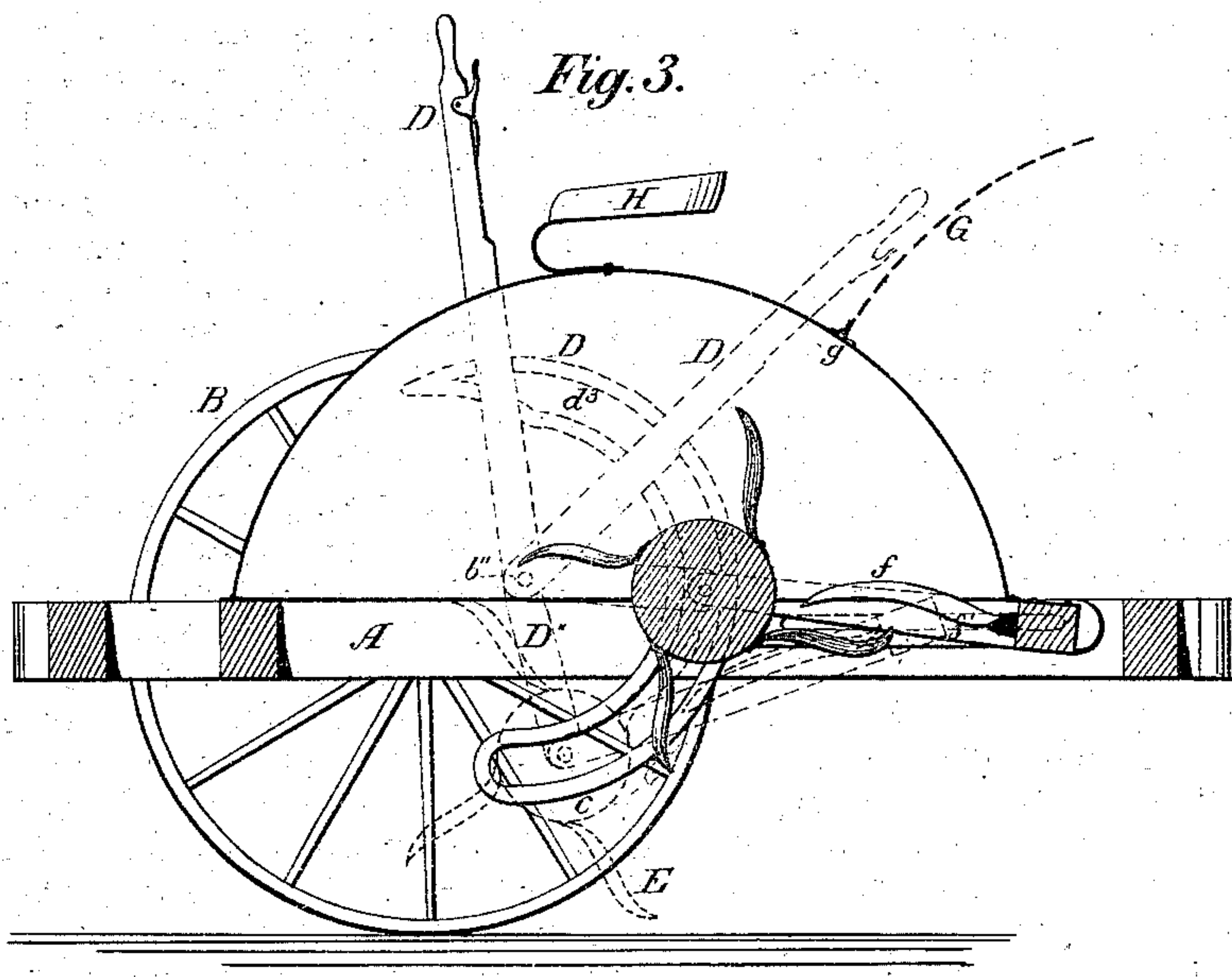
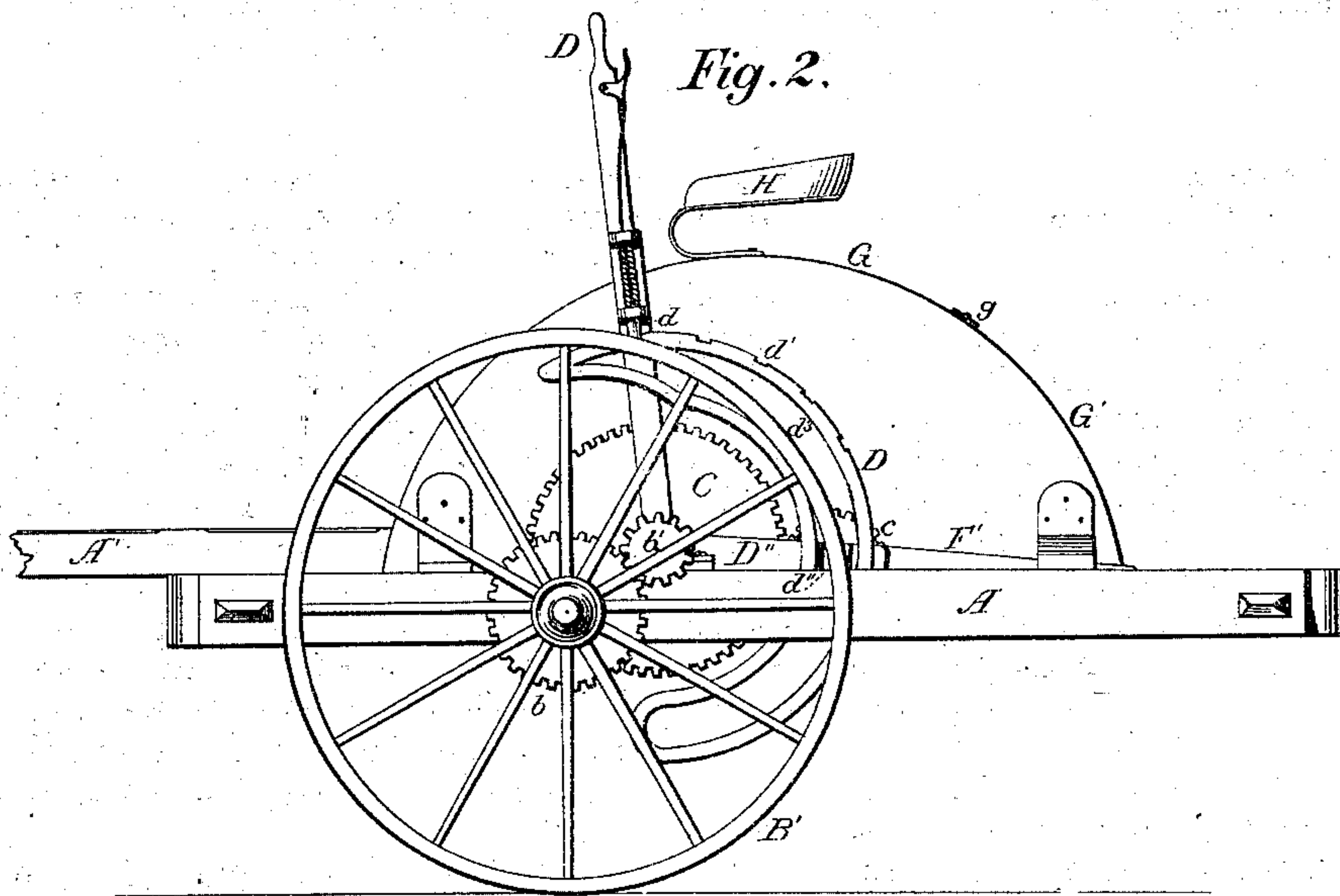




H. JONES & W. K. YARD.  
Rotary-Plows.

No. 154,489.

Patented Aug. 25, 1874.



Attest:

*J. Mason Grogan*  
*E. C. Felt*

Inventors  
*Hezekiah Jones,*  
*William K. Yard*  
by *A. Cranford* atty.



# UNITED STATES PATENT OFFICE.

HEZEKIAH JONES AND WILLIAM K. YARD, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN ROTARY PLOWS.

Specification forming part of Letters Patent No. **154,489**, dated August 25, 1874; application filed May 18, 1874.

*To all whom it may concern:*

Be it known that we, HEZEKIAH JONES and WILLIAM K. YARD, of Rockford, in the county of Winnebago, in the State of Illinois, have made certain Improvements in Rotary Plows, of which the following is a specification:

Our invention relates to that kind of plow in which the plows that stir the ground are placed on a revolving shaft; and it consists in the construction of the parts and the means by which the same are operated and adjusted, as will be fully hereinafter described.

In the drawings, Figure 1 represents a top or plan view of our plow; Fig. 2, a side, and Fig. 3 a longitudinal sectional, view.

A represents the main rectangular supporting-frame; A', the tongue, properly secured to the frame A, and by which the plow is made to move. B B are axles, firmly attached to the side pieces of the frame A, and B' B' are wheels that receive the axles, and upon which they revolve. *b* is a gear-wheel, fast on one of the wheels B', and gears into gear-wheel *b'*, that is fast upon the end of a short shaft, *b''*, that revolves in proper bearings *b<sup>3</sup>* on the framing A. *b<sup>4</sup>* is a similar bearing on the opposite side of the framing, in which is shaft *b<sup>5</sup>*. C is a gear-wheel, fast upon, and revolves with, the shaft *b''*, and gears into wheel *c*, that is fast upon, and revolves with, the plow-shaft C', that goes transversely across the width of the frame A, as seen in Fig. 1. D D are bell-crank levers, that are journaled and turn upon shafts *b''* and *b<sup>5</sup>*, and have spring-catches *d*, that catch into indents *d'* in circular guide-ways D', that are secured to the frame A, to be concentric with the shafts *b''* and *b<sup>5</sup>*, which hold the levers D in such position as the catches take into the indents. D'' D'' are the short arms to the bell-crank levers, and extend nearly at right angles from the handle part D, and so as to be the supports and journal-boxes of the revolving plow-shaft C'. On each of the supporting-arms D'', and where the shaft C' passes through them, is a guide-block, *d''*, that freely slides in, and is guided by, the open circular slots *d<sup>3</sup>*, which slots are concentric with the shafts *b''* and *b<sup>5</sup>*, so that, as the hand-levers D are turned in one direction from a perpendicular, the plow-shaft C' will be raised; or, if in the opposite direction,

the plow-shaft will be lowered. E E are the plows, of which any number may be employed, firmly attached to the revolving shaft C', and set in rows in spiral form around the shaft, in order that but one plow of the same row will take hold of the ground at the same instant. F is a transverse girt extending across the frame, to which are firmly attached knives *f f*, between which, and close to, the plows E pass in their revolution. At each end of the cross-girt F is firmly attached link F', with a projecting pin, that freely slides in grooves *f'* of plates *f''* on the inside of the side pieces of frame A, while the other ends of the links F' go onto the journal end of plow-shaft C', so that the plow-shaft revolves in the ends of the links.

By this construction the plow-shaft with its plows is raised or lowered by simply swinging the hand bell-crank levers, and at the same time, by connecting the cross-girt F with the cutting-edges of its knives down to the plow-shaft, the knives will be kept in the same relative position with the plows, whether the plows cut deep or shallow, and the under side of the knives being sharp, and in close proximity to the plows, as they revolve all the earth that may be raised by the plows must be completely pulverized by contact with the knives, and all weeds or stubble cut into short lengths.

G is a half-circle cover over the plows, to prevent dust arising from the operation of pulverizing the ground from annoying the driver, who sits upon seat H and guides his team. G' is a part of the cover, hinged at *g*, so that the plows or knives can be easily got to, in order to repair or clean them when necessary.

The plows are put in revolution by the revolving of the traction and carrying wheels B', through the intermediate train of gear-wheels, and are raised and lowered by the driver, and the gear attached to the plow-shaft kept in gear with its driving-wheel by the devices as above described and shown, and whereby the plows can be raised entirely out of contact with the ground, when desirable—as, for instance, when turning the machine around—or it can be lowered to have the plows go deeper into the ground, as may be necessary, without throwing the wheel that revolves the plow-shaft out of gear with its driving-gear.

This implement will most perfectly pulverize the ground, and leave it in a smooth, even, and light condition to receive the seed for a crop.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, in a revolving plow, of the hand bell-crank lever D D'', guide-block d'', and circular grooved guide D', with the revolving plow-shaft C', carrying the plows E, constructed and operating as and for the purpose described.

2. The combination of the cross - girt or knife-bar F with knives f, links F', plow-shaft C', carrying plows E, and pivoted hand bell-crank lever D D'', constructed as and for the purpose described.

HEZEKIAH JONES.

WILLIAM K. YARD.

Witnesses:

J. G. MANLOVE,

A. V. BRONSON.