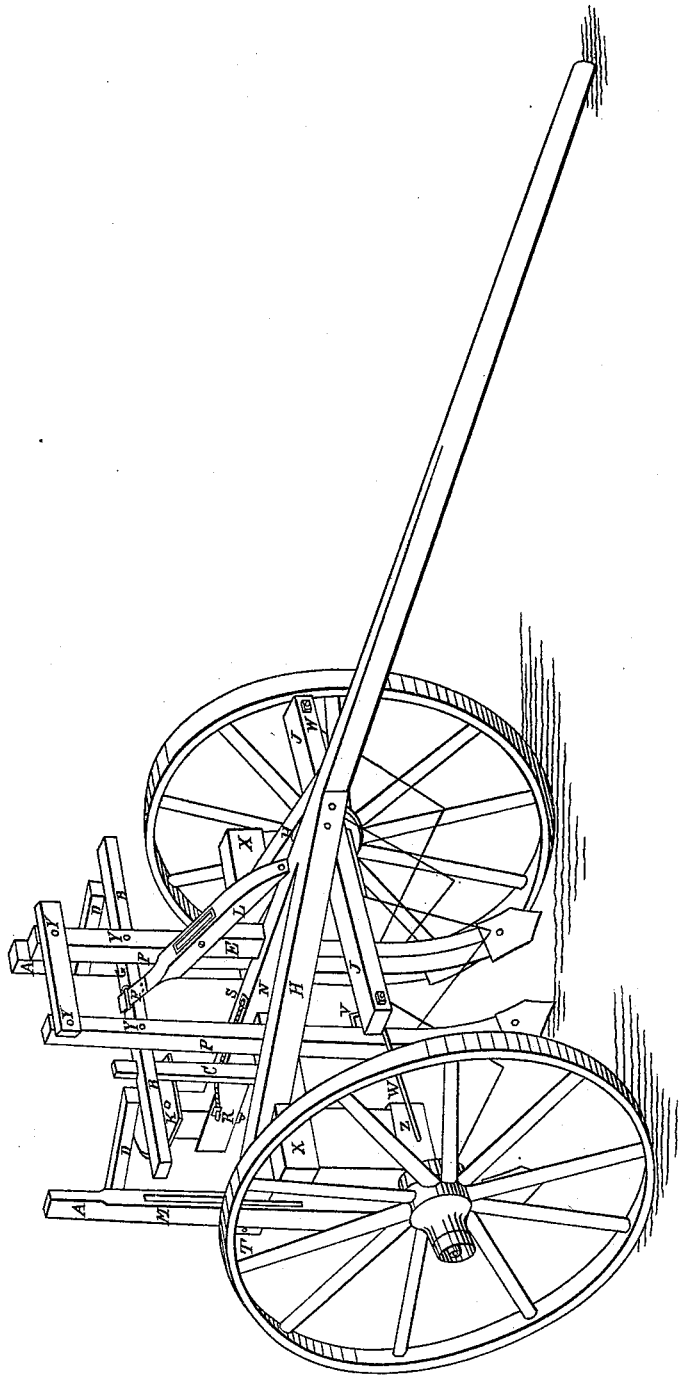


J. HARPER.  
Wheel-Cultivator.

No. 47,017.

Patented Mar. 28, 1865.



Witnesses:

*H. C. Saunders.*  
*B. E. Hill*

Inventor.

*J. M. Harper*

# UNITED STATES PATENT OFFICE.

JOHN HARPER, OF HILLSBOROUGH, IOWA.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 47,017, dated March 28, 1865.

### *To all whom it may concern:*

Be it known that I, JOHN HARPER, of Hillsborough, in the county of Henry and State of Iowa, have invented an Improved Corn-Cultivator; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my improvement consists, in the first place, in connecting the two hindmost shovels, A A, on the ends of the hounds H H by a tenon on the end of the hounds, as seen at T, and a long mortise in the shovels, as at M, on which the shovels are easily moved up and down, as required, and prevented from coming off by a pin in the end of the tenon; in the second place, in the manner in which these two hind shovels are connected with the front shovels, P P, on the common beam B, by means of the arms D D, which beam is made to slide up and down on the standards C, the standards being firmly mortised into the axle X; in the third place, in the manner of lifting or lowering the whole four shovels by means of the lever L, which is attached to this beam by means of the iron shoe F, slipped under the bolt G, giving it room to play in and out while in the act

of moving, the lever working on the fulcrum E and pulled down to the tongue N at the front end by means of a rope attached at O, running through the tongue and over a pulley on the lower side, thence along the bottom of the tongue and over another pulley, and coming up through the tongue again at S, from whence it is carried to the driver's seat K and hooked at R, thereby giving the driver control of the shovels without moving from his seat; in the fourth place, in the manner in which the driver can shift the front shovels, P P, from side to side by placing his feet in the stirrup at V, the bolts Y Y being free, to allow the shovels to play free in a side motion; also, in the stay to the axle-tree X X by the iron rod W W, bolted through the front bar, J J, and the lower part of the axle, running into the wheel-hub at Z.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The slotted shovel-standards P, in combination with the lever L, rope O S, and stirrup V, the several parts being constructed, arranged, and operating as and for the purpose set forth.

JOHN HARPER.

Witnesses:

ROBERT CARTER,  
BEN EBBITT.