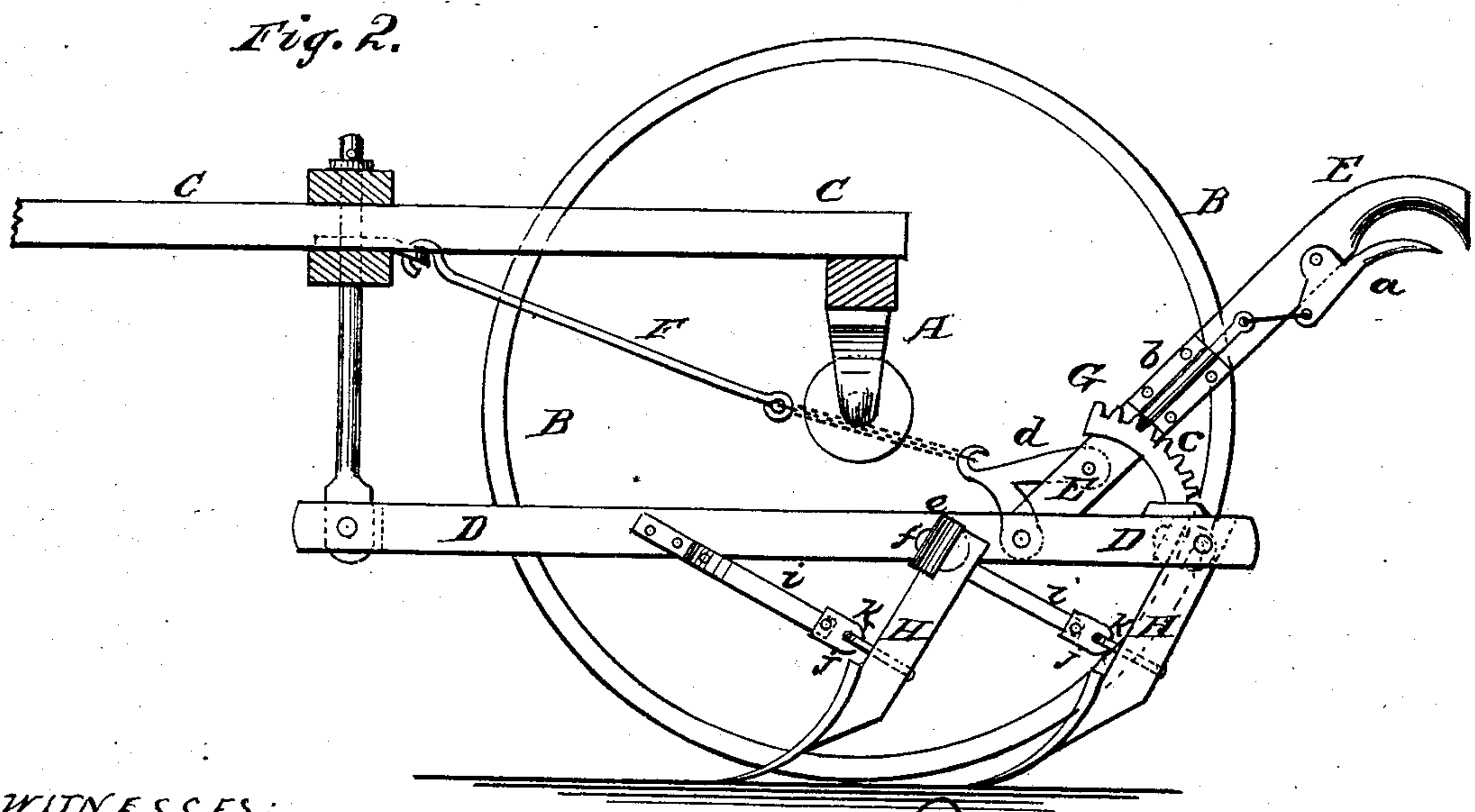
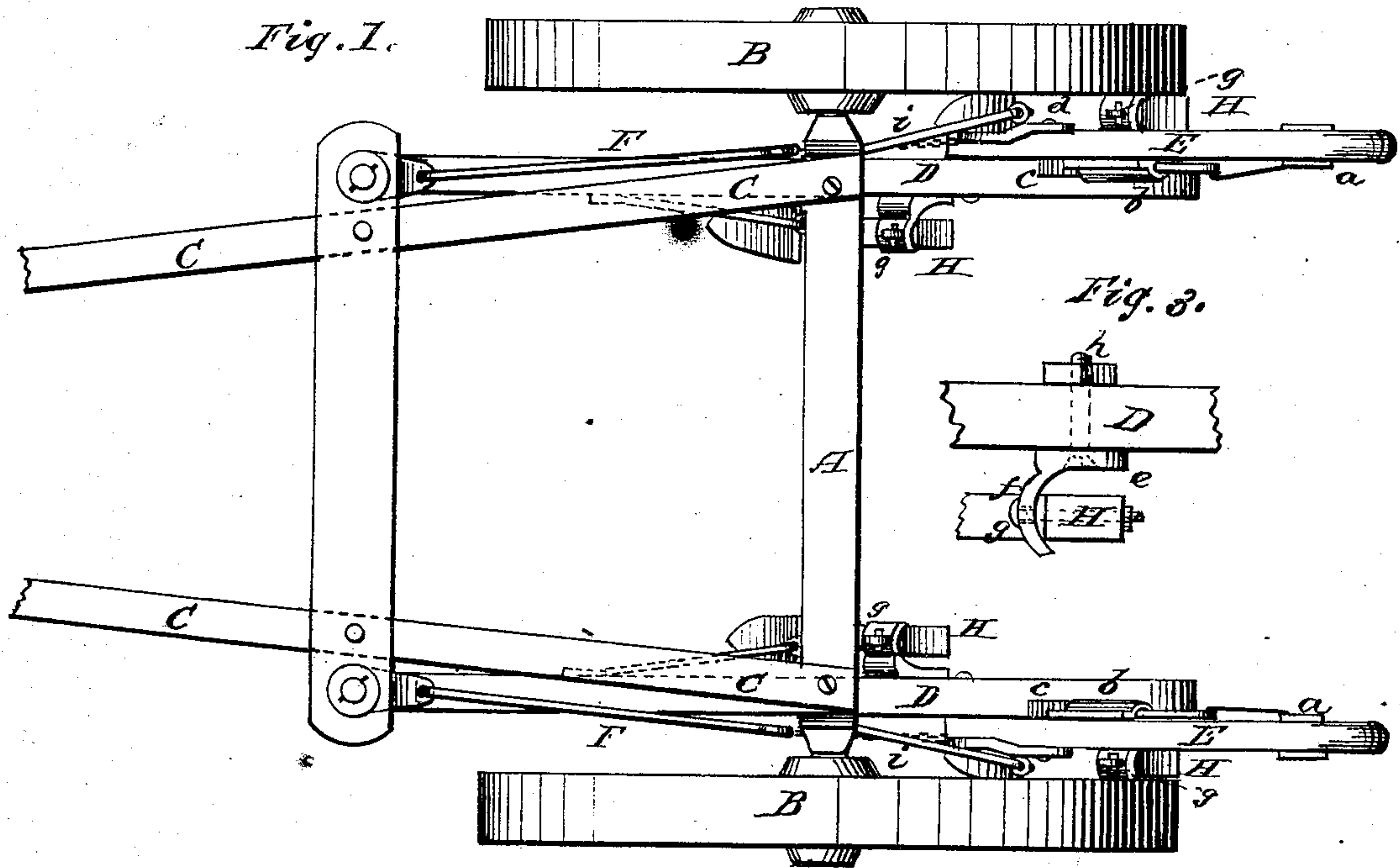


J. BEHEL.  
Cultivator.

No. 160,142.

Patented Feb. 23, 1875.



WITNESSES:

*P. C. Dieterich,*  
*W. C. McArthur*

INVENTOR:

*Jacob Behel*

per *C. H. Watson & Co.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JACOB BEHEL, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO RALPH EMERSON, OF SAME PLACE.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **160,142**, dated February 23, 1875; application filed  
January 26, 1875.

*To all whom it may concern:*

Be it known that I, JACOB BEHEL, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a full description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view. Fig. 2 is a longitudinal section of a device embodying my invention, and Fig. 3 is a detail.

The object of this invention is to make a cultivator which shall have an independent movement in each beam or drag-bar, controllable by means of the handles, not only in its vertical and lateral movements, but also in its depth of penetration of the soil; and also so that each beam may, with its plows or shovels, be lifted and held above the ground; and it consists in the construction and combination of parts, as will be hereinafter more fully set forth, and pointed out by the claims.

In the drawings, A represents the axle; B, the wheels; C, the tongue, which is of the usual split form; D, the beams or drag-bars; E, the handles; F, rod or chain connecting the handles in front; G, curved ratchet; H, plow or shovel standards; *a*, handle for conveniently operating the pawl or catch *b*; *c*, teeth or notches on or in the curved bar G; *e*, bracket or arm, by means of which the plow-standards are attached to the beams; *f*, bolt for attaching the standards H to the brackets *e*; *g*, slots in brackets *e*, and *h* pivotal bolts, by which the brackets *e* are attached to the beams.

The axle A, wheels B, and tongue or draft-pole C are made in any of the usual and well-known forms and modes. To the tongue, just forward of the front of the wheels, I attach a cross bar or bars, as shown, from which a bracket or bar depends on each side, to the lower end of which the front end of a beam or drag-bar is pivoted, or so attached that the rear end of the beams may have free vertical and lateral play, as shown.

The beams or drag-bars D are made of a single bar of wood or iron, as shown; but when different devices for attaching the shovel-

of frame-work, if desired; but I prefer straight beams or bars, as shown.

The shovel-standards are attached to these beams by means of metal brackets *e*, which are secured to the beams by means of a single bolt or projection, *h*, and a nut, by means of which the shoulders of the brackets are pressed and held against the beams with sufficient force to hold them in place with the standards by the aid of the brace-rods *i*, and so as to allow them to turn when the rods *i* give away. The brace-rods are made adjustable by means of a series of holes at their upper ends, and are secured to the standards, at their lower ends, by means of a collar or plate, *k*, and a wooden pin or break-pin, *j*, or by other suitable means. The front portion of the upper ends of the standards H are rounded off, so as to fit the concaved faces of the brackets *e*, as shown, and they are held against the brackets by means of the bolts *f*, which pass through the slots *g*. By simply loosening the bolts *f* the standards, with their shovels, may be turned so as to throw the soil to the right or left, and by turning the bolt back they are held as placed. To the beams D I pivot the handles E, by hinges or bolts, either at the side or on the top thereof, in a suitable position for operating the plows. At a short distance above the beams I attach to each handle a hook, *d*, which may be made in the form shown, or it may be a simple hook, attached to the handle only. To this hook the rod or connection F is attached at its rear end, while its front end is attached to a point higher up in or on the frame, so that by bearing down on the handle the beam will be elevated at its rear end, and the plows partly or wholly lifted out of the ground, as may be desired. By making this connection F partly or wholly of chain the hook *d* may be inserted in various links, to adjust the handles to the height of the operator, and for lifting the plows is just as efficient; but if it is desired to give the plows a positive downward movement, then this connection will be made of a rigid rod or bar its entire length.

It will be obvious that the handles may be made to extend below the beams, and the rear ends of the connections F attached to the handles below the pivots instead of above, as



shown, the only difference being that the operation of the handles is reversed—that is, the handles E will require lifting instead of pressure to raise the beams.

At the side of the handle of each beam I place a curved ratchet or notched bar, as shown, which is attached to the beam, which, with the catch *b*, serves the double purpose of holding the beams in position, and of holding and steadying the handles, the mountings of the catch or pawl being permanently attached to the handle. The catch *b* is held down by a spring, and is lifted by the handle or lever *a* in the ordinary way.

This makes an efficient cultivator, and one which is easily managed and operated, and which is at all times under the control of the operator. As shown, the machine is of the class usually known as walking straddle-row cultivators; but by lengthening the curved ratchet-bars G, and taking up two or three links of the chain on the hook *d*, so as to bring

the handles to a nearly-vertical position, and balancing a removable seat across the axle, it is changed into an efficient and easily-operated riding straddle-row cultivator, retaining all of the advantages of its peculiar structure and operation.

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

1. The handle E, pivoted to the beam or drag-bar D, in combination with the rod or connection F, substantially as and for the purpose specified.

2. The combination of the beam or drag-bar D, handle E, and rod or connection F with the ratchet-segment G and pawl or catch *b*, for changing and holding the beams in different positions, substantially as described.

JACOB BEHEL.

Witnesses:

L. L. BOND,

J. C. MONTAGUE.