D. E. Hall,
Cultivator,

No. 18,587, Patented Nov. 10, 1857.

Fig. 2

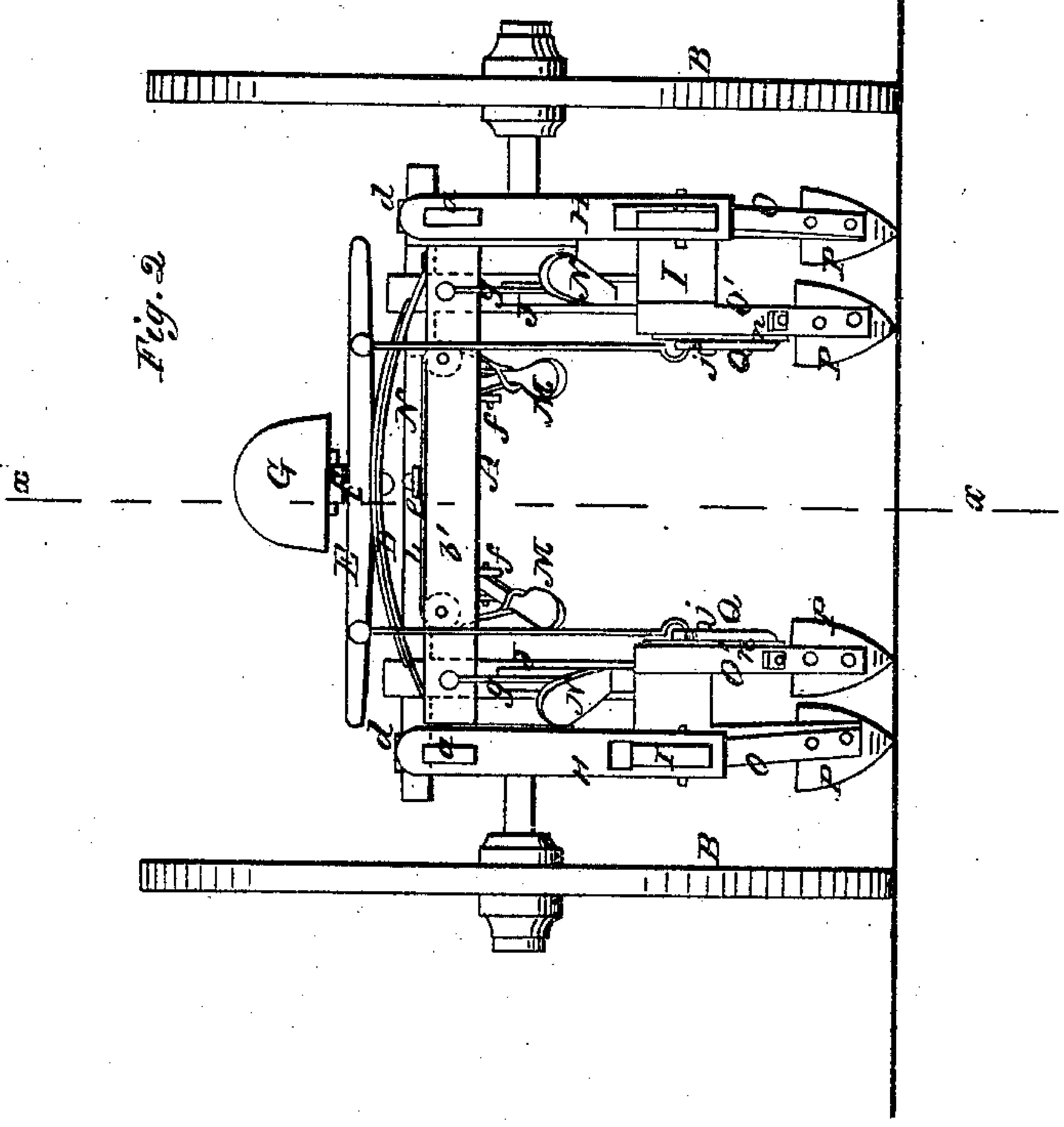
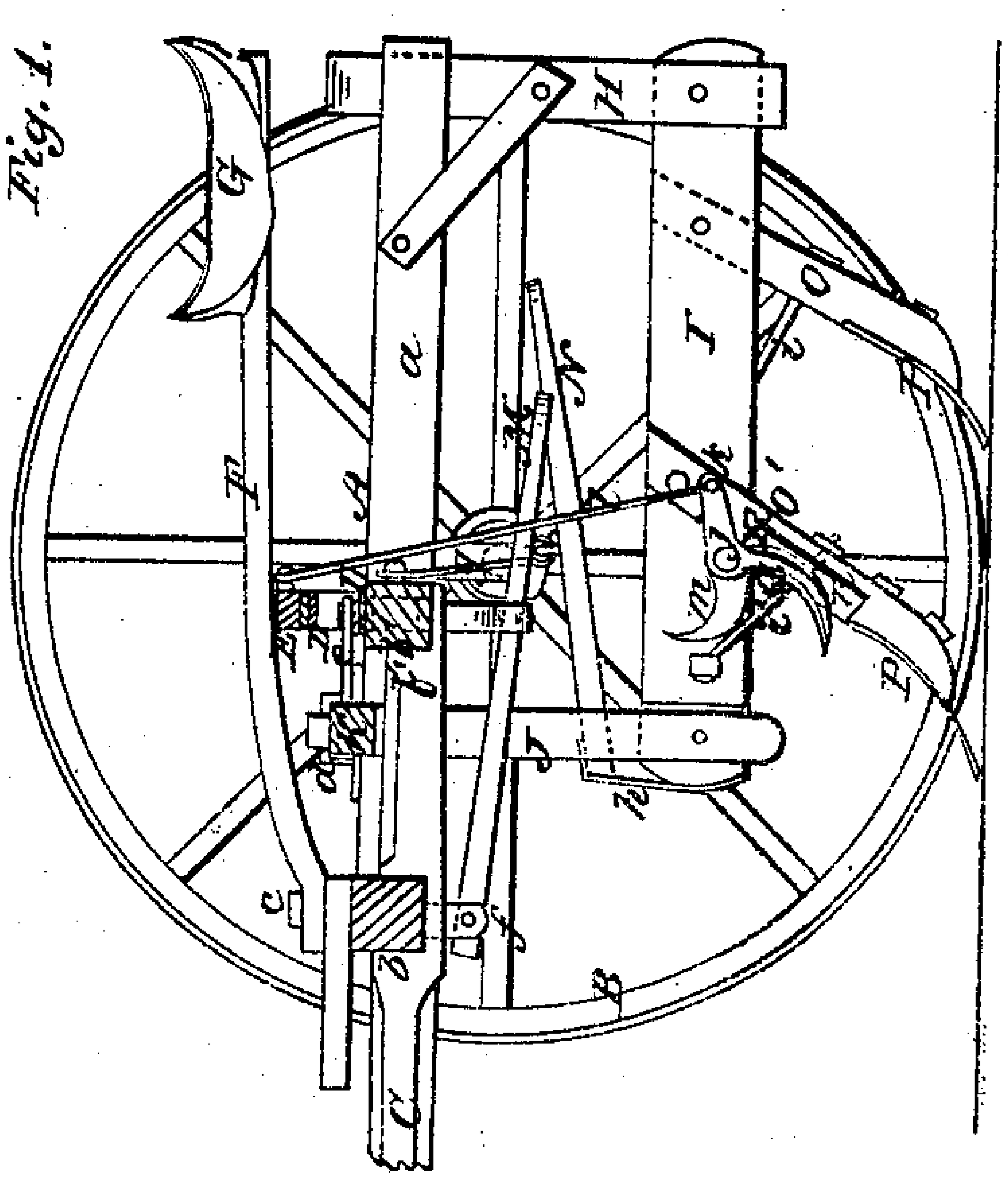


Fig. 1



UNITED STATES PATENT OFFICE.

DAVID E. HALL, OF ABINGDON, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **18,587**, dated November 10, 1857.

To all whom it may concern:

Be it known that I, DAVID E. HALL, of Abingdon, in the county of Knox and State of Illinois, have invented a new and Improved Cultivator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my improvement, taken in the line *x x*, Fig. 2. Fig. 2 is a back view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to place the shares of the device under the complete control of the attendant, so that the shares may be elevated free from the ground or moved laterally with the greatest facility, thereby enabling the driver to adjust or move the shares corresponding to the sinuous form of the rows, and always enable him to raise them in order to avoid obstructions which may be in their path, and also to keep the shares elevated as the machine is moved from place to place, or as it is turned at the ends of rows.

The invention also consists in the employment or use of cutters attached to the device in such a manner that stalks, which frequently encumber the shares, may be cut off, and thereby allowed to be removed or plowed under ground without affecting the perfect operation of the machine.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a horizontal rectangular frame, which is supported by two wheels, B B. The frame A is formed of two side pieces, *a a*, connected by two cross-ties, *b b'*.

C is the draft-pole, attached to the cross-ties at their centers. (See Fig. 1.)

On the cross-tie *b'* a semi-elliptic spring, D, is placed, and a bolster, E, is secured on the upper part or surface of the spring.

F represents a bar, the front end of which is attached by a bolt, *c*, to the center of the front cross-tie, *b*. This bar rests upon the bolster E, and has the seat G of the driver upon its back part. The bolt *c* passes loosely through the bar F, so that said bar may be moved laterally or vertically to a certain extent.

On the back end of each side piece, *a a*, a pendant, H, is placed. These pendants have each a mortise made in their lower ends, and one end of a bar, I, is fitted and pivoted in each mortise, said bars being fitted loosely in the mortises, so that they may have a certain degree of vertical play or movement.

The front or opposite ends of the bars I I are fitted in pendent slotted bars J J, attached to a bar, K, the ends of which are fitted in guides *d d*, attached to the side pieces, *a a*, the bar K being allowed to slide freely within said guides *d d*.

To the center of the bar K an arm, *e*, is attached, and a strap, L, is attached to said arm. The ends of this strap pass through mortises in the cross-tie *b'*, and each end of the strap is attached to a treadle, M, the front ends of which are pivoted to hangers *f f*, attached to the front cross-tie, *b*.

N N represent two treadles, which are pivoted to hangers *g g*, attached to the back cross-tie *b'*, one at each end. The front ends of these treadles are connected by straps *h* to the front ends of the bars I I. (See Fig. 1.)

To each bar I two inclined pendent bars, O O', are attached, one to each side of each bar I, and to the lower part of each bar O O' a shovel or cultivator-share, P, is attached. Each bar O O' is braced by a rod, *i*.

To the inner sides of the two front bars, O O', a cutter, Q, is attached by a pivot, *j*. The blades of these cutters are of hook or curved semicircular form, and each blade has a projection, *k*, formed on it, the outer ends of the handles being attached to rods *t*, the upper ends of which are attached to opposite ends of the bolster E. Each cutter Q is placed against a forked steel plate, R, the upper prongs, *m*, of which may be curved and project out from the bars, the lower prongs, *n*, being by the sides of the bars. The cutters are double-edged and work over both prongs of the plates R.

The implement may be drawn by either one or two horses, according to its size, as larger or smaller implements may be used, according to the nature of the work to be performed. The driver is placed on the seat, and as the implement is drawn along the shares P perform their work as usual, the hills being between the shares—that is, the shares of the two bars I are at opposite sides of the rows.

When a row is winding the shares are adjusted laterally to conform to its sinuosities by operating the treadles M M with the feet; and in case a hill should be out of line with its fellows the shares, instead of plowing it out, as usual, may, by being moved laterally, be made to avoid it, and still plow it properly. This lateral movement or adjustability of the shares is important, as the horses do not require to be moved or guided out of a direct course in order that the implement may conform to the winding of the rows and prevent the stray hills from being plowed out. The driver, by placing his feet upon the treadles N N, may raise the bars I, and consequently the shares P P, so that said shares will be free from the ground and allowed to pass over obstructions, and also be kept elevated in turning at the ends of rows and when the implement is being drawn from place to place.

It frequently occurs in plowing or cultivating crops that stalks, weeds, &c., will wind around and encumber the front shares and prevent the proper working of the machine. I obviate this difficulty by means of the cutters Q, which, by depressing the treadle N, and thereby raising the bars I, cause the cutters Q, in consequence of the projections R being connected to the rods *l*, to pass over the edges of the prongs *m n* of the plates R, the cutters dividing the stalks and causing them to be detached from the shares as they move along.

I would also remark that as the cutters Q are connected to the bolster E by the rods *l*, and as the bar F rests on the bolster, more or less motion will be given said cutters by the elasticity of the spring D, actuated by the movement of the machine, and this will have a tendency to prevent the accumulation of weeds, &c., around the shares P. The treadles N would only require to be operated occasionally to assist in cases of a large accumulation.

I am aware that cultivators have been previously devised in which shares have been so arranged as to allow a certain degree of lateral movement; but I am not aware that shares have been arranged and applied, as herein shown, to admit of the two movements described, and rendered capable of being adjusted with such facility. I therefore do not claim broadly and separately the adjustable shares irrespective of the arrangement herein shown and described; but

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

1. The attaching of the shares P P to the bars I I, which have their back ends pivoted in the pendants H H and their front ends fitted in the pendent slotted bars J J, which are attached to the sliding bar K, the bar K being operated by the treadles M to give the lateral movement to the shares and the bars I used vertically by the treadles N to give them their vertical movement, substantially as described.

2. The cutters Q, pivoted to the bars O′ and over the plates R and connected to the rods *l*, the whole being arranged as shown, for the purpose specified.

DAVID E. HALL.

Witnesses:
H. L. UPSON,
J. B. MOATS.