A. CANFIELD.

RIDING AND WALKING CULTIVATOR.

No. 183,639. Patented Oct. 24, 1876.

Fig. 1.

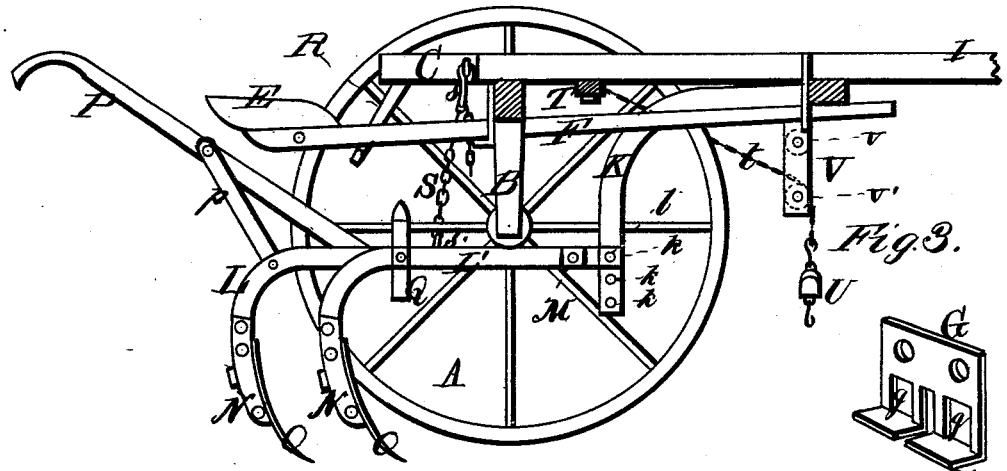

Fig. 3.

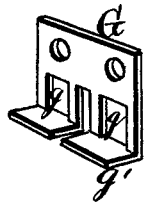

Fig. 2.

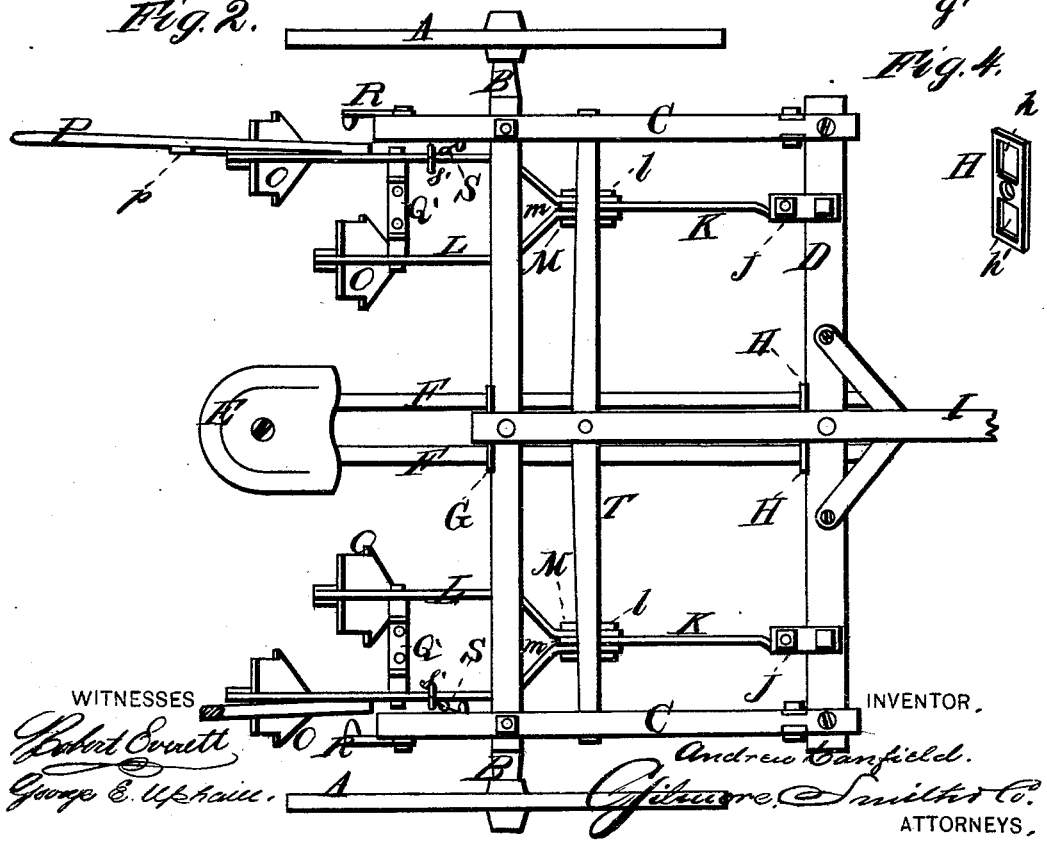

Fig. 4.

UNITED STATES PATENT OFFICE.

ANDREW CANFIELD, OF DAVENPORT, IOWA.

IMPROVEMENT IN RIDING AND WALKING CULTIVATORS.

Specification forming part of Letters Patent No. **183,639**, dated October 24, 1876; application filed August 26, 1876.

To all whom it may concern:

Be it known that I, ANDREW CANFIELD, of Davenport, in the county of Scott and State of Iowa, have invented a new and valuable Improvement in Riding and Walking Cultivators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my cultivator; and Fig. 2 is a plan view of the same. Figs. 3 and 4 are detail views thereof.

This invention is an improvement upon a device secured to me by Letters Patent No. 155,419, dated September 29, 1874; and it consists in the construction and arrangement of various parts of, and attachments to, a cultivator, hereinafter particularly set forth.

In the accompanying drawings, A A designate the transporting-wheels, and B the arched axle, of a cultivator. C C are longitudinal side bars bolted or otherwise rigidly secured to said axle, and D is a cross-bar rigidly attached to the front ends of side bars C C. E represents a driver's seat of ordinary construction, which is rigidly secured to the rear end of seat-bars F F, that extend longitudinally to the front end of the cultivator-frame. Said seat-bars pass through perforations *g g* in a plate or double stirrup, G, (shown in Fig. 2,) which is rigidly secured to the rear side of axle B, so as to hang somewhat below the same. To the rear of cross-bar D are rigidly secured two long rectangular plates, H H, shown in Fig. 4, each which extends partly above and partly below said cross-bar, and is perforated both above and below said cross-bar. The seat-bars F F are made to pass through the upper perforations *h h* of said plates H H, or through the lower perforations *h' h'* of the same, as preferred; and by shifting said bars from one to the other the said seat can be adjusted vertically. Said seat can be adjusted horizontally by simply sliding said seat-supporting rods or bars F F forward or backward through double stirrup G, and doubly perforated plates H H. Stirrup G is provided with rearward horizontal flange *g'*, which aids in supporting said rods or bars F F and seat E. I designates a draft-pole of ordinary construction, which is rigidly secured to the middle of axle B, and to the middle of cross-bar D. J J designate two clips or brackets, which are secured to the rear side of cross-bar D near the ends thereof, and to each is pivoted a downwardly and rearwardly curving shovel draft-bar, K, so as to allow lateral vibration to said draft-bar about said pivotal point. The lower end of said draft-bar is provided with a vertical series of lateral perforations, *k k k*, to allow of the vertical adjustment of the forward ends of two shovel-beams, L L', which are secured, by the same bolt *l*, to opposite sides of the said draft-bar K. Said shovel-beams are also connected to the rear of said draft-bar by a double-headed bolt, M, which is provided with a metal washer, *m*, that is placed between said shovel-beams. The effect of this bolt M and washer *m* is to relieve the forward bolt *l* of strain, and to make the connection of the parts much more durable and perfect. Said shovel-beams diverge widely behind bolt M, and the inner one, L', is somewhat shorter than the outer one, L. Each of said shovel-beams L or L' terminates in a downwardly-curving shovel-shank, N, which is made in one piece with said shovel-beam, and to which is attached a cultivator-shovel, O, in the usual manner. P is a handle, and *p* a brace therefor, both of which are secured at their lower ends to outer shovel-beam L. Shovel-beams L and L' are connected near their rear ends by circular or elliptical stirrup-brace Q, to the upper side of which is rigidly secured a foot-rest, Q', for one of the feet of the operator. R is an inwardly-curving metal hook, which is secured at its upper end to one of the side bars C of the cultivator-frame. Said hook serves to hold the cultivator-shovels O out of operation when the shovel-beam L is raised by handle P, and turned outwardly so as to catch upon said hook R. S is a chain secured at the upper end to a hook, *s*, attached to side bar C of the cultivator-frame, and at the lower end to a ring, *s'*, secured to shovel-beam L. The office of this chain S and its attachments is to adjust the cultivator-shovels O upward or

downward, as may be desired. This is effected by raising or lowering said chain with the shovel-beams, shovels, &c., and at the same time shifting hook *s* from a lower to a higher link, or vice versa. In this operation said chain and link co-operate with the other vertical adjusting device already described for said beams and plows, namely, the vertical series of perforations *k* in curved shovel draft-bar K, and the bolt *l*, which secures the front ends of the shovel-beams L L′ to said curved draft-bar. Chain S also serves to sustain said shovel-beams and shovels with the parts attached.

Devices J, K, *k*, L, L′, O, *l*, *m*, M, N, P, *p*, Q, Q′, R, S, *s*, and *s′*, on one side of the apparatus, are substantially duplicated by their counterparts on the other side of the apparatus, as regards construction, arrangement, and operation, though many slight changes may be made in these and other features of my cultivator without departing from the scope or principle of my invention.

T is a double-tree, which is pivoted to the under side of draft-pole I, near the rear end thereof, and *t t* are chains running to whiffletrees U U from the ends of said double-tree T. V V designate two metal frames or loops depending respectively from side bars C C, near the front end of the cultivator-frame. In each of frames or loops V are secured two small pulleys, *v v′*, one above the other. Chain *t* passes under one of said pulleys, and by shifting said chain from one of said pulleys to the other the height of whiffletree U can be adjusted, so as to compensate for the position of the cultivator. When driver's seat E is occupied, the weight of the driver will partly or wholly balance the forward part of the cultivator, and will hold it so high that chains *t t* can be allowed to pass under lower pulleys V′ V′, thus giving to whiffletrees U U their very lowest adjustment relatively to said cultivator. But when the driver's weight is removed from the rear end of said cultivator, the front of said cultivator will tip downward, and the whiffletrees U U will be too low for convenient operation. Said whiffletrees are then adjusted up into their proper position by shifting chains *t t* into their upper adjustment, immediately below upper pulleys *v v*, as described. The height of said whiffletrees from the ground does not vary by reason of any of these adjustments.

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

1. In a cultivator, the seat-sustaining rods F F, in combination with the double stirrup G, having openings *g g*, and perforated plates H H, substantially as and for the purpose set forth.

2. In a cultivator, the seat-sustaining rods F F, double stirrup G, having openings *g g*, and perforated plates H H, in combination with the laterally and vertically vibrating shovel-beams L, provided with foot-rests Q′, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ANDREW CANFIELD.

Witnesses:

M. S. STUYVESANT,

GEO. E. HUBBELL.