3 Sheets—Sheet 1.

C. D. BRADLEY.

Cultivator.

No. 206,925. Patented Aug. 13, 1878.

FIG. 1.

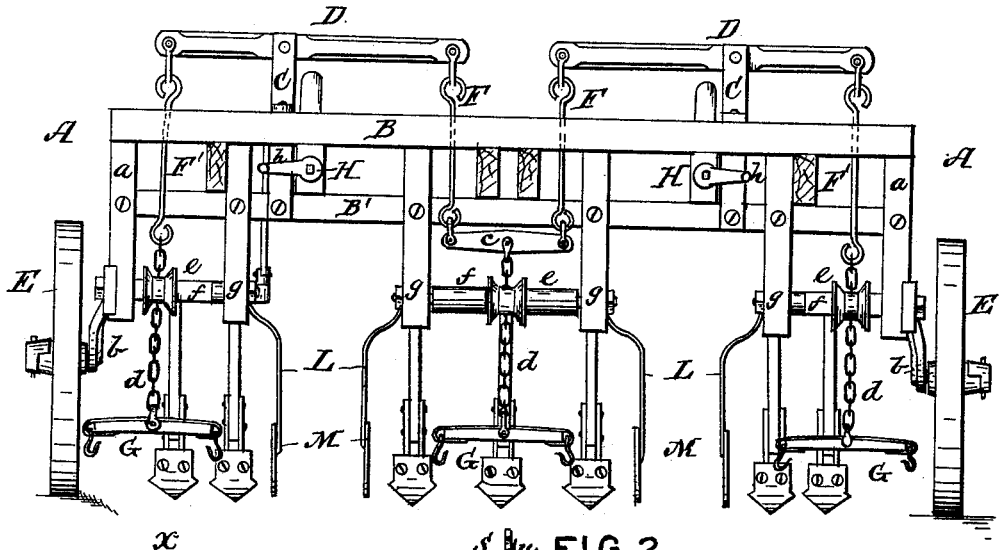
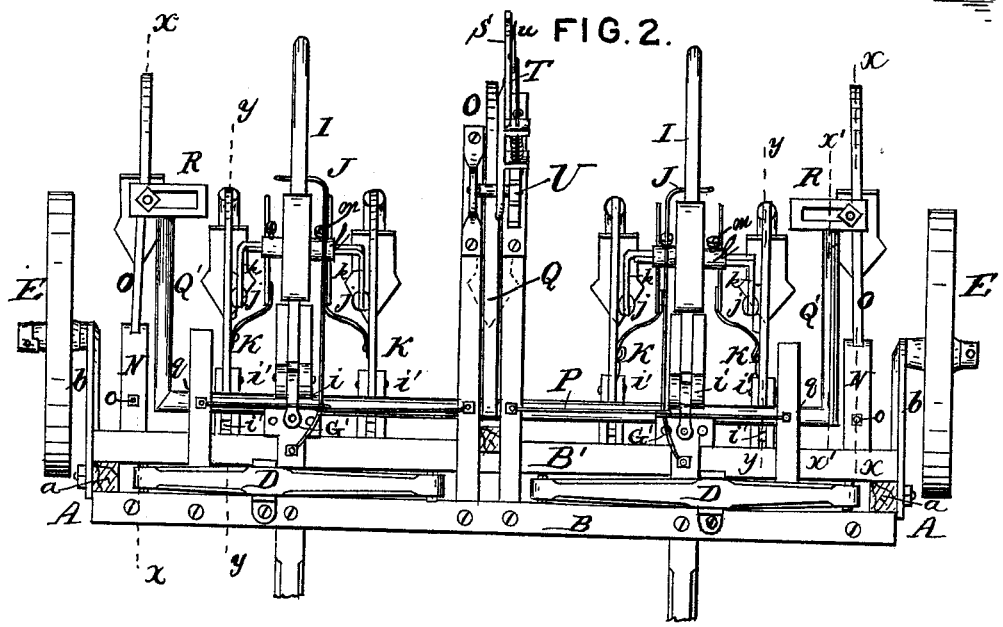
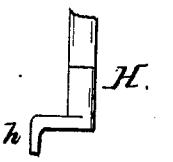
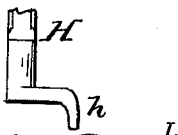


FIG. 2.







WITNESSES

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3 Sheets—Sheet 2.

C. D. BRADLEY.

Cultivator.

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FIG. 3.

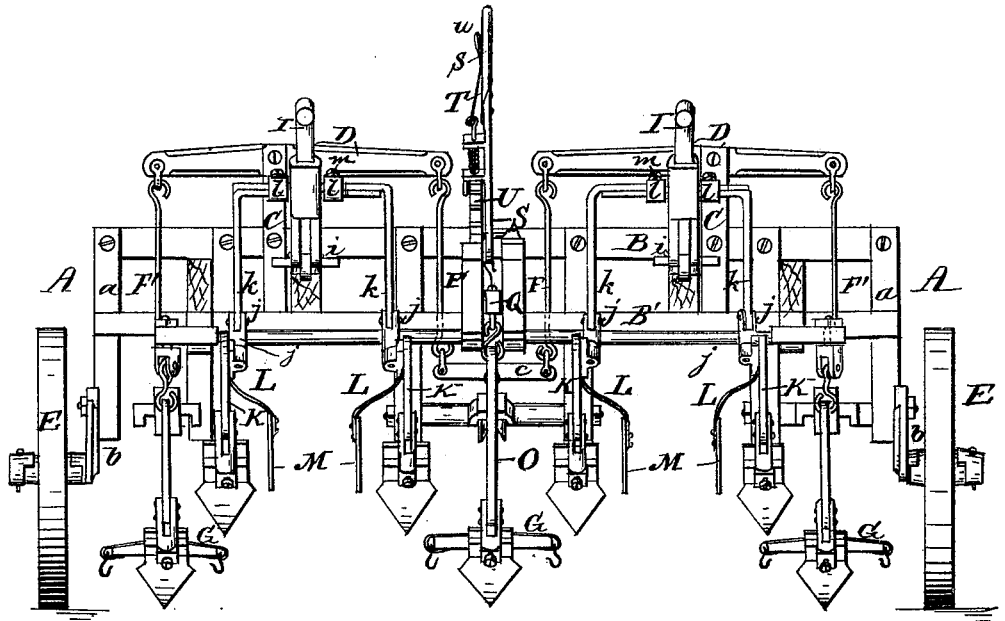

FIG. 4.

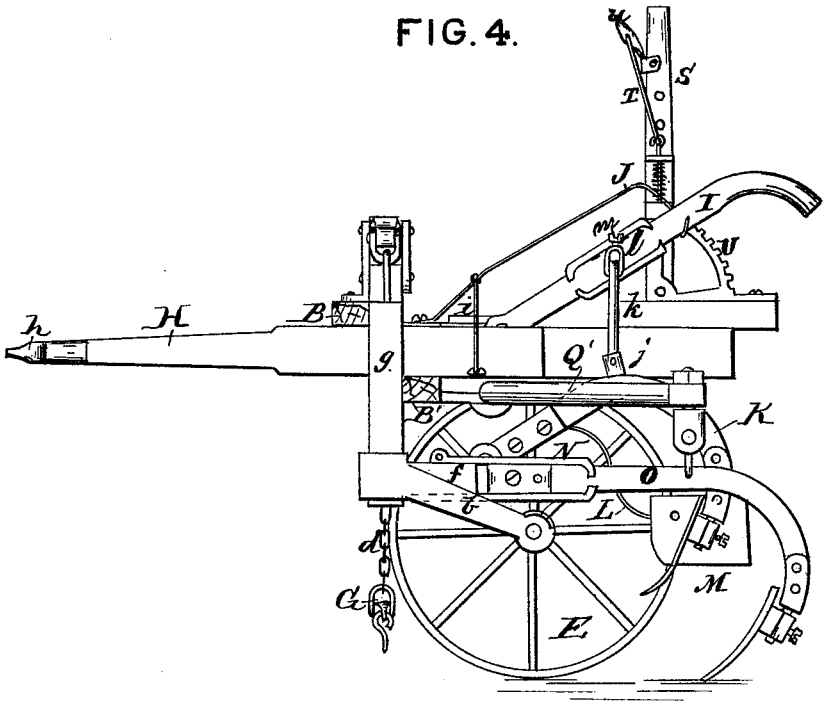

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FIG. 5.

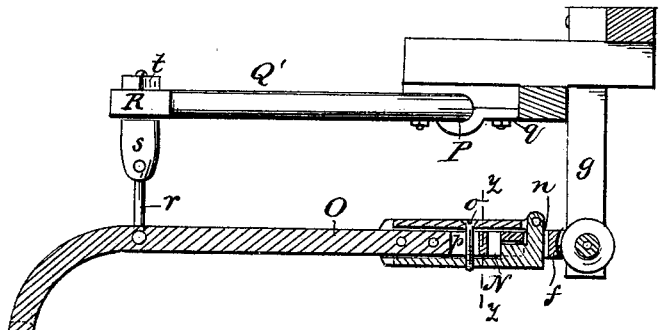


FIG. 6.

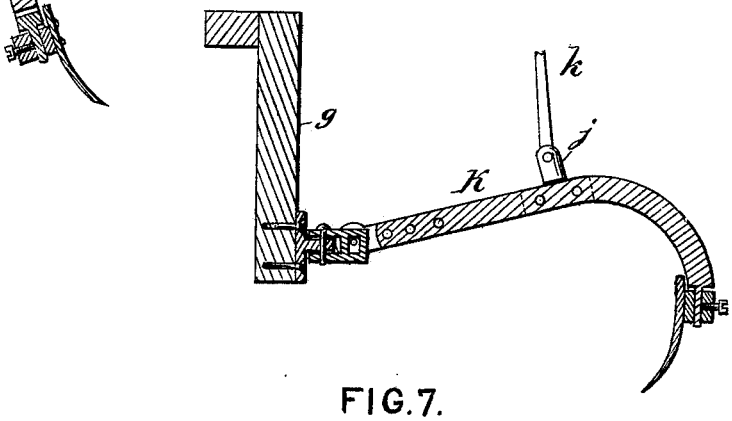


FIG. 7.

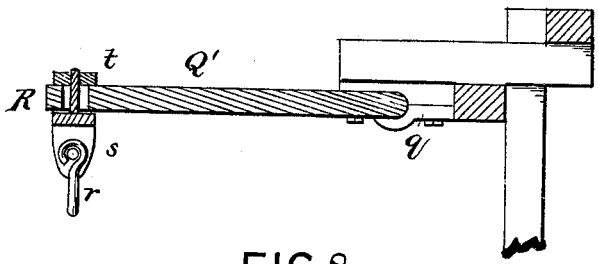
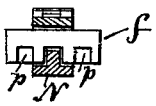


FIG. 8.



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C. A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

CARLOS D. BRADLEY, OF MACEDONIA, IOWA, ASSIGNOR OF ONE-HALF HIS RIGHT TO THEODORE E. BRYANT, OF SAME PLACE.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **206,925**, dated August 13, 1878; application filed April 5, 1878.

To all whom it may concern:

Be it known that I, CARLOS D. BRADLEY, of Macedonia, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in Cultivators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation. Fig. 2 is a top view. Fig. 3 is a rear elevation. Fig. 4 is a side view, one wheel being removed. Fig. 5 is a section on the line *x x*, Fig. 2. Fig. 6 is a section on the line *y y*, Fig. 2. Fig. 7 is a section on the line *x' x'*, Fig. 2; and Fig. 8 is a section on the line *z z*, Fig. 5.

Similar letters of reference denote corresponding parts in all the figures.

This invention relates to certain improvements in three-horse cultivators, so constructed and arranged as to cultivate two rows at a time while attended by one man only, thus saving considerable time and expense; and it consists in the construction and arrangement of parts hereinafter more fully shown and described.

In the drawings, A is the frame. This consists of side pieces *a a*, to the front and rear sides of which are secured beams B B'. *b b* are brackets projecting rearward from the side pieces *a a*, and having spindles carrying the wheels E E, which support the frame. The object of this arrangement is to balance the machine, most of the parts of which project rearward from the frame equally upon the wheels, and thus relieve the horses of a great part of the strain.

C C are uprights, arranged between beams B B' in a line with the side pieces *a a*. At the tops of these uprights are pivoted levers D D, the short ends of which project outwardly, as shown, they being about one-half the length of the inwardly-projecting long ends. F F are rods depending from the inner ends of the levers, and F' F' are similar rods depending from their outer ends. The lower ends of rods F F are connected by a cross-piece, *e*, from the center of which and from the ends of rods F' F' chains *d d* pass around casters or rollers *e e*, having their bearings on the bolts which secure the castings *f f*, the central one of which is secured between vertical supports *g g*, arranged between beams B B', and the two outer ones are each secured between a support, *g*, and side piece, *a*, of the frame.

The single-trees G G are secured to the ends of chains *d d*, which, with the parts just described, form a perfect draft-evener for the three horses required to draw the machine. The tongues H H are, in front, provided with outward-projecting right-angled castings *h h*, for the purpose of equalizing the weight caused by downward pressure upon the horses' collars.

To castings G' G', attached to the rear ends of the tongues, are pivoted laterally-adjustable horizontally-swinging short arms *i i*, to the ends of which are pivoted vertically-swinging handles I I, which may be rested upon brackets or supports J J. *i' i'* are short arms, similar to arms *i i*, and pivoted or hinged in a similar manner to the lower ends of the vertical pieces *g g*, and K K are the beams of the cultivators, pivoted to the rear ends of the short arms *i' i'*, as shown. The beams K K have short upward-projecting studs *j j*, to which are swiveled rods *k k*, reaching upwardly to the handle I and bent toward and across each other. The arms I I have transverse openings or sleeves to accommodate the crossed ends of rods *k k*, upon which, on both sides of arms I, are secured clasps *l l*, adjustable by set-screws *m m*, which enable the beams K K to be secured in any desired position, close together or any distance apart.

To the sides of the beams K K, facing each other, are secured rods L L, having shields M M, for the purpose of protecting the plants. The rear ends of the castings *f f* have slots *n n* to accommodate clips N N, by which the beams O O are held and supported, the clips being fastened or closed by set-screws *o o*, in order that they may be adjustable laterally in any one of the several notches *p p*, Fig. 8, with which castings *f* are provided for their reception.

P is a rod or shaft arranged in bearings *q q*, and having rearward-projecting arms Q Q', the two outer ones of which, Q', terminate in slot-

ted plates R R. Short screw-threaded rods *r r*, having swivel-joints *s s*, project upward from the beams O O through the slots in plates R R, to which they are fastened with nuts *t t*.

The central arm, Q, is directly connected with the central beam, O, and, by a short connecting-rod, with the short end of a lever, S, having a spring-catch, T, operated by a handle, *u*, and engaging with a segmental ratchet, U.

By this arrangement the beams O O O may be simultaneously and evenly raised or lowered to any desired entent, while the outer ones may be previously adjusted laterally to any desired position. It is not necessary that the central beam should be adjustable, because it invariably travels centrally between the two rows.

The plows or cultivator-blades may be of any suitable construction, and are preferably adjusted upon the lower ends of the beams by set-screws.

From the foregoing description, and by reference to the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

The blades attached to the beams O O should be set so as to make the deep furrows between the rows, while the beams K K may be adjusted upon both sides of the hill, the growing plants being protected by the shields M.

It will be seen that the cultivators (except the central one) are all adjustable laterally as well as vertically, thus enabling the machine to be adapted to suit any exigency. The draft-evener, which forms part of my invention, works perfectly in conjunction therewith, and prevents any one of the horses from being overstrained.

The general construction and arrangement of parts is such that with my machine one man and three horses can easily accomplish just twice the amount of work performed by one man and two horses with an ordinary one-row cultivator.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the laterally-adjustable plow or shovel beam O, of the shaft P, provided with arm Q′, having a slotted plate or lateral extension, R, and threaded and nutted rod *r*, connecting by swivel-joint the said beam to the lateral slotted extension R of the shaft-arm Q′, substantially as shown and described, for the purpose set forth.

2. The combination, with the laterally and vertically adjustable handle I, of the extensible yoke consisting of the rods *k k* and the collars *l l*, provided with adjusting or holding screws *m m*, and correspondingly adjustable or movable shovel-beams K K, to which the yoke *k k* is swiveled, substantially as shown and described, for the purpose specified.

3. The combination, with the shovel-beam-securing castings *f f*, bifurcated at their forward ends, and having their fastening-bolts provided with rollers or pulleys *e e*, of the draft-equalizer, consisting of the levers D D, rods F F and F′ F′, the rods F F connected together by a cross-tree, *c*, chains *d d*, and whiffletrees G G, substantially as shown and described, for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CARLOS D. BRADLEY.

Witnesses:
M. T. BRYANT,
H. O. BRYANT.