

(No Model.)

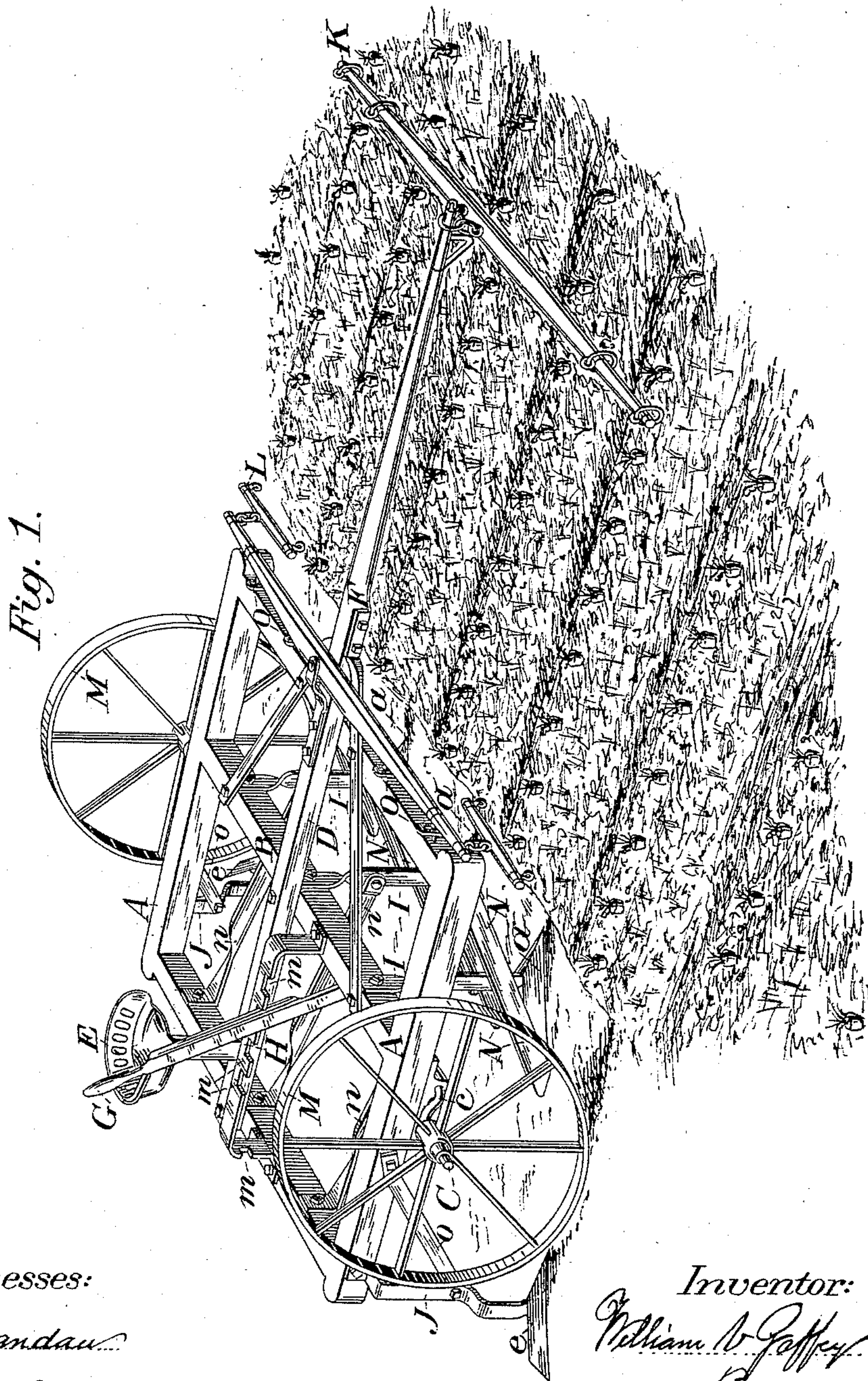
2 Sheets—Sheet 1.

W. V. GAFFEY.

MACHINE FOR CULTIVATING SUGAR BEETS.

No. 495,794.

Patented Apr. 18, 1893.



Witnesses:
E. A. Brandau
Wilson D. Bent, Jr.

Inventor:
William V. Gaffey
John Richards
ATTY

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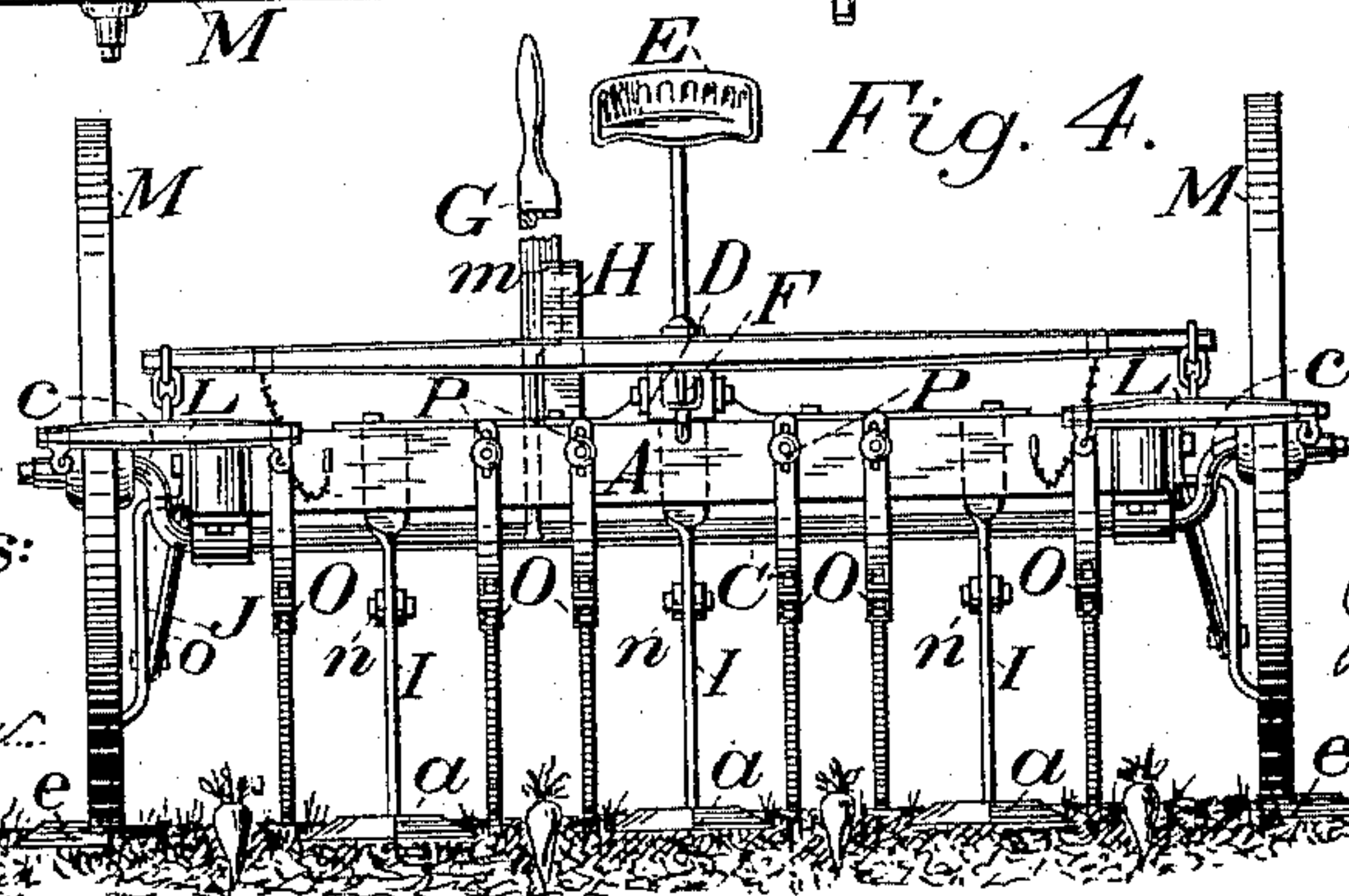
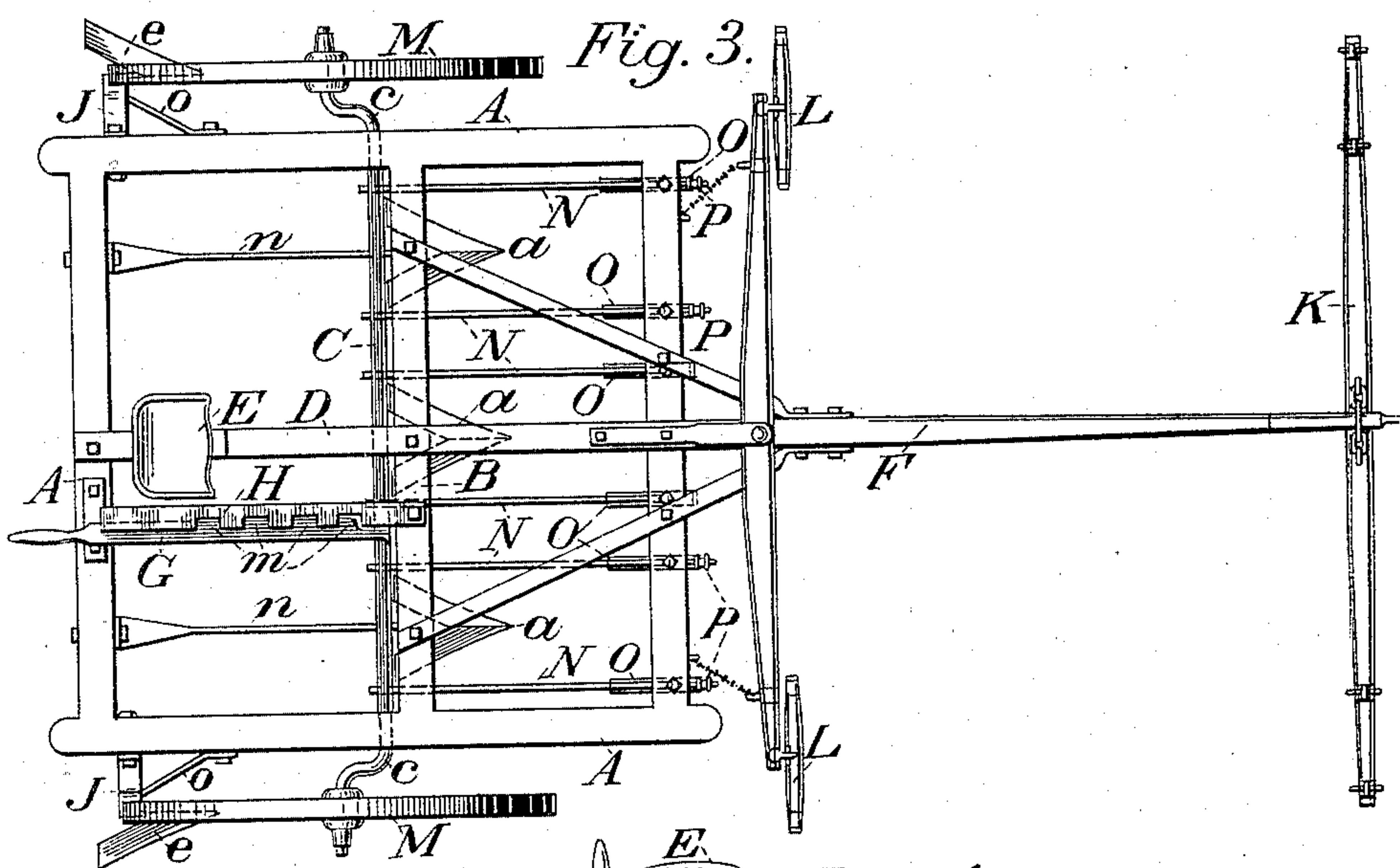
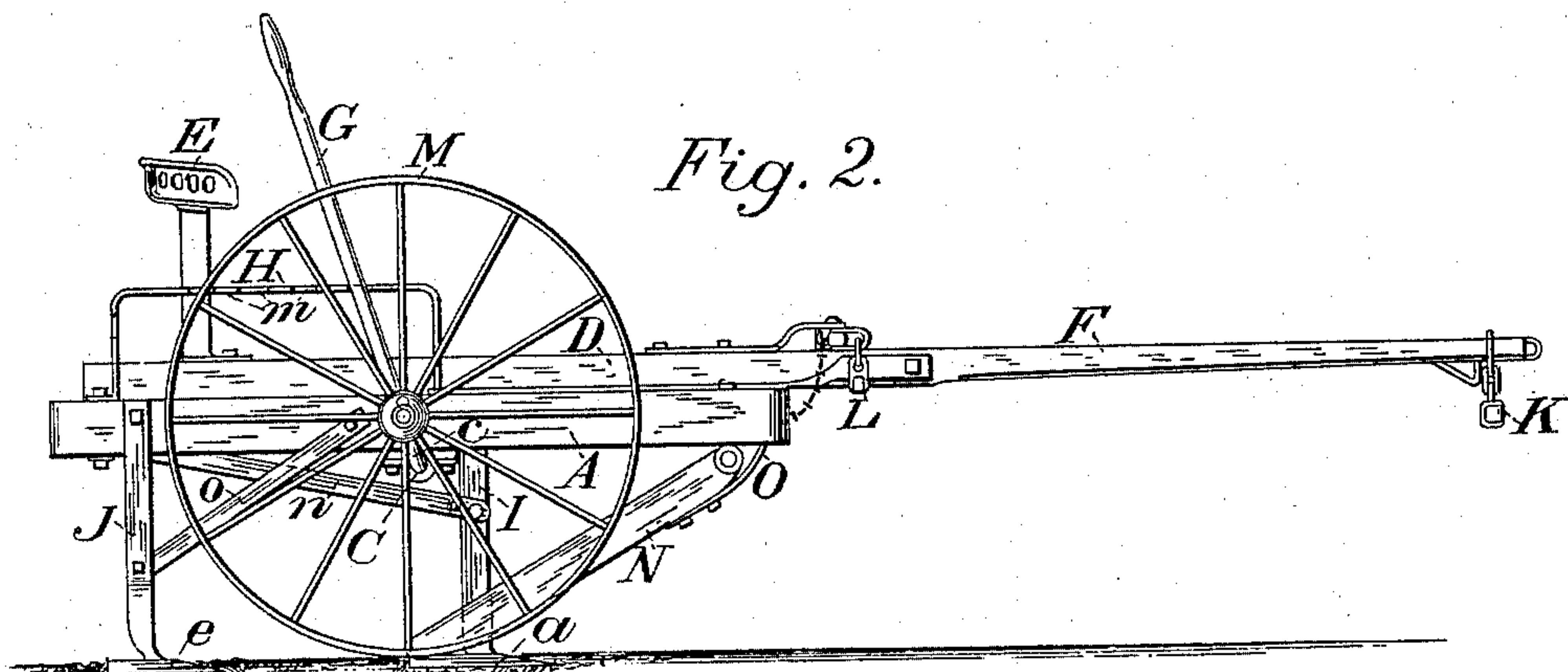
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UNITED STATES PATENT OFFICE.

WILLIAM V. GAFFEY, OF CASTROVILLE, CALIFORNIA.

MACHINE FOR CULTIVATING SUGAR-BEETS.

SPECIFICATION forming part of Letters Patent No. 495,794, dated April 18, 1893.

Application filed September 15, 1892. Serial No. 445,999. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. GAFFEY, a citizen of the United States, residing at Castroville, county of Monterey, and State of California, have invented a new and useful Machine for Cultivating Sugar-Beets; and I hereby declare the following specification and drawings, accompanying and forming a part of the same, to be a true and exact description of my invention.

My invention relates to that class of agricultural machines commonly called cultivators, adapted especially to the culture of sugar beets; having a series of plows positively supported and guided by means of bearing wheels and a frame mounted thereon, and consists in so constructing the machine that its wheels, and the horses that draw it, will pass between the rows of beets without injuring them, and so the plow can be instantly raised or lowered by means of an eccentric axle on which the bearing frame is supported; also in other features of construction required by this peculiar use, that will be more particularly pointed out in connection with the drawings, in which—

Figure 1 is a perspective elevation of a sugar-beet cultivating machine constructed according to my invention. Fig. 2 is a side elevation of the same machine. Fig. 3 is a plan view of the machine, and Fig. 4 is a rear end view of the same.

Similar letters of reference on the different figures are employed to indicate corresponding parts thereof.

It is found in the cultivation of sugar beets that the ordinary implements are not suited therefor, and that special arrangement of the common elements of such machines is required; also added parts not essential or adapted for other growths. The industry being a restricted one, the application being confined to a limited use, calls for careful experiment in the adaptation, form, and arrangement of the plows or earth implements, also in provisions to guard against injury of the tender plants.

While some of the elements embodied in my invention are common to some other ag-

ricultural machines of the same class, their arrangement and relations must be modified to suit the peculiar purpose and application herein described.

Referring now to the drawings, I construct my improved machine in the following manner: All the working parts are mounted on or suspended to a main frame A, having a central member B, set over and parallel to the axle C. Transverse to this member B and parallel to the course of the machine, I place another central member D, which supports the seat E, connects all the cross members of the main frame A, and extends in front to form the pole or tongue F, to which horses are attached to draw the machine in the usual manner.

The main frame A with all its attachments, including the plows or cutters *a a a* and *e e*, is raised and lowered by means of an eccentric axle C, which is formed with cranks or offsets *c* outside the main frame A, so that by turning the axle to the right or left raises or lowers the main frame, as shown by the positions in Figs. 2 and 4.

To turn the axle C and raise or lower the frame A, I employ a lever G attached to the axle C, and provided above with a rack H, having notches *m* into which the lever G is sprung when the main frame A is set at the desired height, so the plows *a a a* and *e e* are to be buried beneath, or are carried above, the ground.

The plows *a a a* are mounted on strong shanks I bolted to the central crossbeam B, and supported by the braces *n n n* extending back to the rear rail of the frame A, as shown in Fig. 1. The rear plows *e e* are mounted on the bent shanks J, and supported by the braces *o*, as shown in Figs. 1 and 2.

In Fig. 1 is shown the arrangement of the rows of beets as they appear in the field, the spaces between the centers of the rows being about twenty inches, and barely wide enough to permit the draft horses to walk between. The width of the machine, and the lateral distances between the plows *a a a* and *e e*, with other parts, are so arranged as to exactly conform to the spaces between the rows of beets,

or multiples of the same, the positions of the horses being indicated by the yoke-piece K and single-trees L, the two wheels M being so placed as to follow between the same rows and immediately behind the horses.

The plows *a a a* are made triangular in form, with acute points and sharp edges on the outer or cutting sides to sever weeds and to loosen the earth as near to the beets as safety will permit. The half plows *e e* are similar in form to those *a a a*, but act on one side only, the cut or furrow being completed when the machine is reversed and makes a return journey.

In cultivating young beets, when the shoots are short and tender, I employ trailing guards N hung to the front bar of the main frame so they will present a barrier on each side of the plows *a a a* to prevent the earth or clods from rolling on or covering the young beets. These trailing guards N are preferably made of wood and provided with adjustable springs O, and screw nuts P, as shown in Figs. 3 and 4, so that some pressure can be applied and thus keep them down on the ground, the springs permitting them to rise and pass over stones or other obstructions. These trailing guards are detachable, and, as before remarked, are not required except when the beets are small, and in certain conditions of the ground. In other cases they are removed altogether.

Having thus explained the nature and ob-

jects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sugar beet cultivating machine, the main supporting frame A, having the central member B, the plows or cutters *a a a* and *e e*, eccentric axle C, means for operating the same for the purpose of raising and lowering the main frame, consisting of the handle G attached to the axle C and provided with the rack H, having the notches *m* adapted to receive the lever G, substantially as described.

2. In a sugar beet cultivator, the main supporting frame A, provided with the transverse plow supporting beam B and longitudinal beam D secured to the top of the main frame and extending forward to form the pole or tongue, all of said parts being adjustably supported on the bearing wheels M by means of the axle C, the plows *a a a* mounted on shanks I, secured to the central cross beam B and supported by the braces *n n n*, the rear plows *e e* mounted on bent shanks J and supported by the braces *o* and means for raising and lowering the main frame, consisting of, eccentric axle C, lever G and rack H, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

WILLIAM V. GAFFEY.

Witnesses:

ALFRED A. ENQUIST,
WILSON D. BENT, Jr.