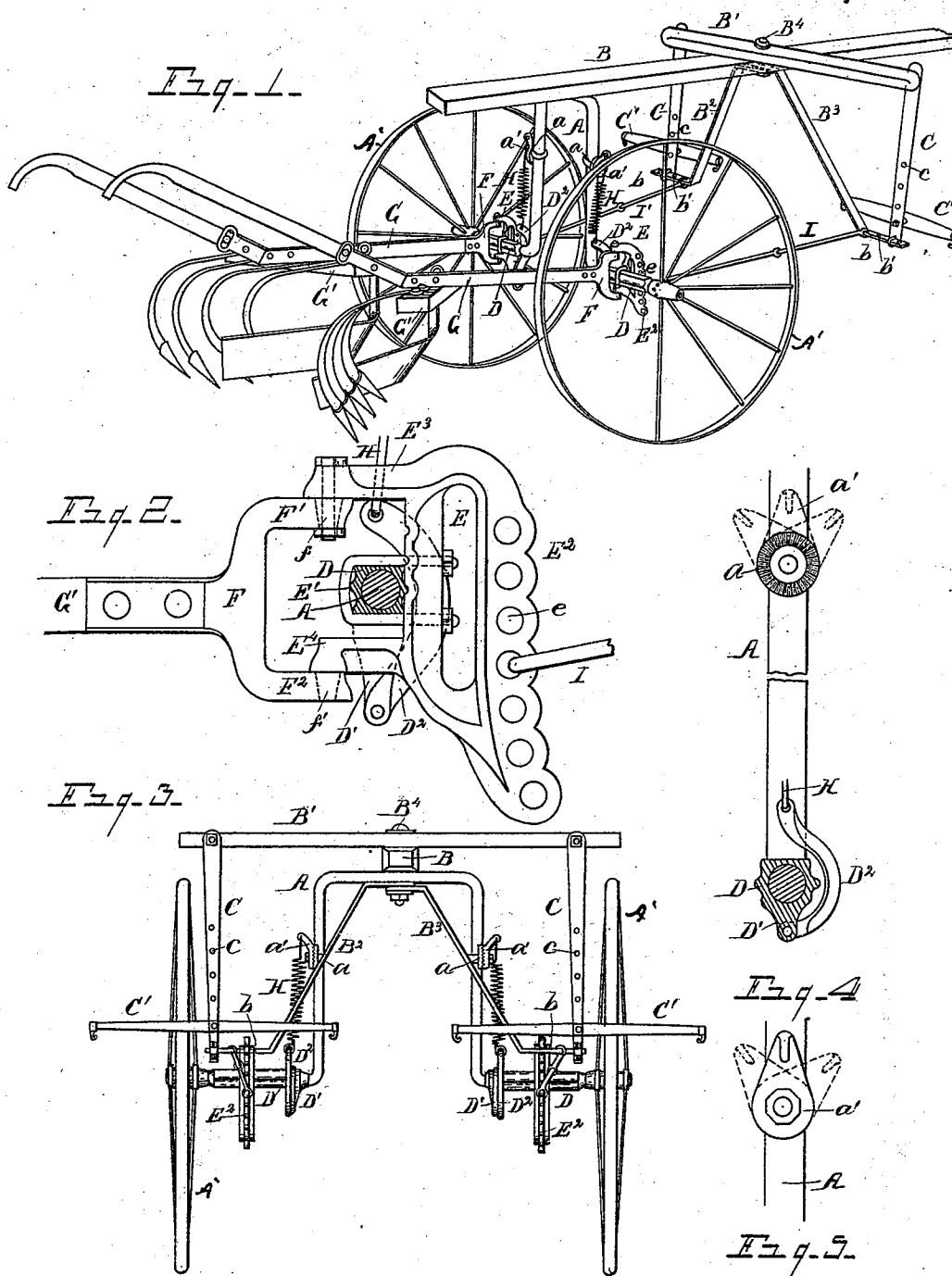


(No Model.)

E. A. OVENSHERE.
WALKING CULTIVATOR.

No. 510,044.

Patented Dec. 5, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

ELIJAH A. OVENSHERE, OF DETROIT, MICHIGAN, ASSIGNOR TO THE
AMERICAN HARROW COMPANY, OF SAME PLACE.

WALKING-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 510,044, dated December 5, 1893.

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To all whom it may concern:

Be it known that I, ELIJAH A. OVENSHERE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Walking-Cultivators; and I declare the following to be a full, clear, and exact description of the invention, such as 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.

My invention relates to certain new and useful improvements in a walking cultivator, and has for its principal objects, first, a construction of superior efficiency; second, to provide a spring and ratchet mechanism, whereby the bars connecting the tooth bearing bars to the other parts of the cultivator, may be firmly held at any desired pitch, to throw the teeth into or out of the ground, as may be desired; third, to provide means for securing a direct draft, whatever may be the pitch of said connecting bars; fourth, also to make the team carry the heft of the machine or the tooth sections, as may be desired, and fifth, my invention also consists in the general construction, combination and arrangement of devices and appliances as hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective embodying my invention. Fig. 2 is a side elevation, showing certain details of the mechanism on an enlarged scale, the axle being in section. Fig. 3 is a front elevation. Fig. 4 is a view in detail, the same being a side elevation of a portion of the axle with the sleeve mounted thereupon, the lower end of the axle being in section, and showing the axle broken away at the upper portion of the figure. Fig. 5 is a detail view of one of the ratchet arms.

I carry out my invention as follows:

In the drawings, A represents an axle, having its intermediate portion bent upward and of an inverted U-shape, and having its extremities horizontally extended to receive the wheels A'.

B is the tongue engaged at its rear end upon the intermediate portion of the axle.

B' is an evener located upon the tongue.

B² and B³ denote equalizer bars, each having an independent jointed engagement at its inner end on the under side of the tongue upon a bolt B⁴ passed through the evener and tongue. These equalizer bars descend at an outwardly extended angle, as shown, and are formed at their lower extremities with horizontal arms "b," provided with a series of perforations, as shown at "b'."

C denotes vertical draft standards engaged in any suitable manner at their extremities with the evener B' and with the outer end of the equalizer bars B² and B³, respectively. Said standards are constructed with a series of perforations as shown at "c."

C' denotes the single-trees, having an adjustable engagement with said draft standards, so that the single-trees may be raised or lowered in their connection with said draft standards. This adjustment may readily be made by connecting the single-trees into any of the perforations "c" of said standards, as may be desired.

Upon each of the horizontal extremities of the axle is mounted a sleeve D, the sleeves being rotatable thereupon.

E denotes a clevis engaged upon each of said sleeves in any suitable manner, as by clips E'. I do not limit myself to any precise construction of said clevises, but prefer to construct them with a vertical front arm E², provided with a series of perforations, as shown at "e." The clevises are also preferably constructed with rearwardly projecting arms E³ and E⁴, extending the one above and the other below the axle. At their rear extremities, the rearwardly projecting arms E³, E⁴ of the clevises are jointly connected with a yoke F engaged with each of the connecting bars G, of the tooth bearing bars G'. The yokes are formed with forwardly projecting arms F' and F² constructed, preferably, with conical shaped orifices to receive conical shaped lugs upon the rear ends of the arms E³, E⁴ of the clevis, as shown in dotted lines at "f" and "f'" Fig. 2. The inner ends of the sleeves D are provided with a lever arm D', for effecting the rotation of the sleeves.

Upon each of the upright portions of the axle, I locate a ratchet disk "a," meshing with a ratchet arm "a'," shown in dotted

lines, Fig. 4. Connected with the lever arm D' of each of the sleeves D D is a bar D².

H, H denote springs connecting each of the ratchet arms "a'" to the corresponding bar D², respectively.

It will be obvious that when the outer end of the ratchet arm "a'" is turned forward or rearward of the axle, as indicated in dotted lines in Figs. 4 and 5, the corresponding sleeve is turned forward or backward upon the axle, carrying the clevis attached thereto therewith, and thereby elevating or depressing the yoke F engaged with said clevis, whereby the bars G connected with the tooth bearing bars G' are raised or lowered, so as to hold the teeth more firmly into the ground or to lift them more out of the ground, as may be required. Thus by setting the ratchet mechanism "a'" "a'", any desired depth of cut may be given to the teeth. It will be seen also that by adjusting said ratchet mechanism the tension of the spring connected therewith, is also adjusted to increase or diminish its tension, as may be desired to hold the bars G at a desired pitch, and thereby force the teeth more or less into the soil. The upright portions E² of said clevises E E are connected with the corresponding equalizer bars B², B³, by rods I and I'. These connecting rods may evidently be adjusted at their forward ends laterally in the arms "b'" of said equalizers, in consequence of the perforations "b'" therein. It is equally evident that said rods may also be adjusted at their rear ends vertically in the upright portions of said clevises by means of the perforations "e'" therein. This adjustability of said connecting rods provides for a straight or direct draft, whatever may be the adjustment of the sleeves and clevises upon the axle. When the ratchet arms "a'" are thrown forward, the spring tension and leverage tends to throw the teeth into the ground, and vice versa. Both tooth bearing bars can be thus readily adjusted, as desired. Thus, in going over hard ground, the draft can be so adjusted as to force and hold the teeth firmly into the ground. By this construction, moreover, it is evident that the adjustment may be so made as to either make the team carry the principal heft of the machine or the tooth sections. It will be observed that each tooth section may be independently connected to the corresponding whiffletree. This form of engaging each single-tree with the equalizer bar and standard C prevents the single-tree from whipping about in a detrimental manner, or to the injury of the corn cultivated.

It is obvious that by the movement of the draft rods I and I' below the center of draft on the sleeve, in their connection with the clevises, and by adjusting the single trees on the lower ends of the standards C, the whole draft tends to pull down on the tooth sections to force and hold the teeth into the ground, and vice versa. At the same time, the springs

H, H may be so adjusted as to cause the tension of the springs to work in unison with the draft.

What I claim as my invention is—

1. In a cultivator, the combination with an axle having an upright and a horizontal portion, of a sleeve rotatable on the horizontal portion of the axle, a clevis mounted on said sleeve, a yoke jointly engaged with said clevis, ratchet mechanism engaged upon the upright portion of the axle, and a spring connecting the sleeve with the ratchet mechanism, whereby the tension of the spring may be regulated, and the position of the clevis and the yoke adjusted, substantially as and in the manner described.

2. In a cultivator, the combination of a tongue, an evener, equalizer bars jointly engaged at their inner ends with the tongue and having horizontal arms at their outer ends, vertical draft standards engaged with the evener and with the outer ends of the equalizer bars, single trees engaged with said draft standards, an axle, a sleeve rotatable upon said axle, a spring adjustably engaged upon said axle and connected with said sleeve, a clevis engaged with the sleeve and connected with said equalizer bars, and a tooth section having a jointed connection with said clevis, substantially as described.

3. In a cultivator, the combination of an axle, having a horizontal and a vertical portion, of a sleeve rotatable upon the horizontal portion of the axle, having a lever arm D', connecting bar D² and a spring connected at one end with said sleeve and having a laterally adjustable engagement with the vertical portion of the axle at the opposite end, whereby both ends of the spring may be adjusted backward and forward longitudinally of the cultivator, substantially as described.

4. In a cultivator, the combination with an axle, having an upright and a horizontal portion, of a sleeve rotatable upon the horizontal portion of the axle, ratchet mechanism provided with a movable arm "a'" attached to said axle, and a spring connecting said arm with said sleeve, whereby the sleeve may be rotated upon the axle, substantially as described.

5. In a cultivator, the combination with an axle, of a sleeve rotatable upon the axle, ratchet mechanism located upon said axle, a spring engaged with said ratchet mechanism and a bar D² connected with the spring, said sleeve provided with a lever arm D' connected with the arm D², substantially as described.

6. In a cultivator, the combination of an axle, a tongue, an evener, equalizer bars having a jointed engagement with said tongue, vertical draft standards engaged with the evener and with the equalizer bars, clevises rotatable upon the axle, tooth sections having a jointed connection with said clevises, and draft rods having a vertically adjustable connection with said clevises, and a laterally

adjustable connection with said equalizer bars, substantially as described.

7. In a cultivator, the combination of a tongue, an axle, a clevis rotatable on the axle, a vertically adjustable single tree, an equalizer, a draft rod having a laterally adjustable connection with the equalizer and a vertically adjustable engagement with the clevis, and

a tooth section having a jointed connection with the clevis, substantially as described. 10

In testimony whereof I sign this specification in the presence of two witnesses.

ELIJAH A. OVENSHERE.

Witnesses:

N. S. WRIGHT,

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