(No Model.)

L. A. BROWN.

CULTIVATOR.

No. 421,903. Patented Feb. 25, 1890.

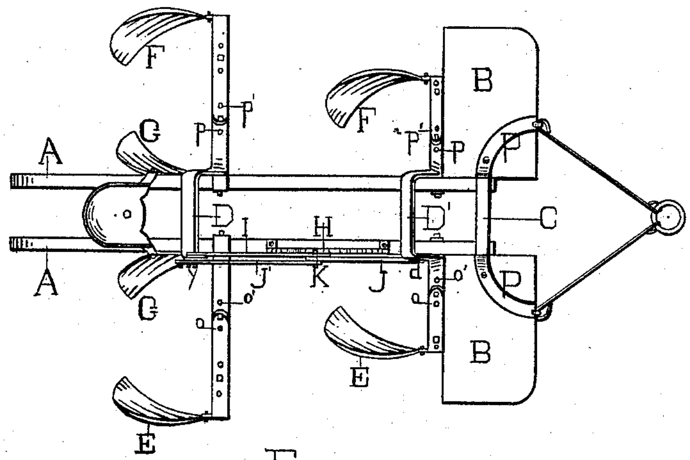

Fig. 1.

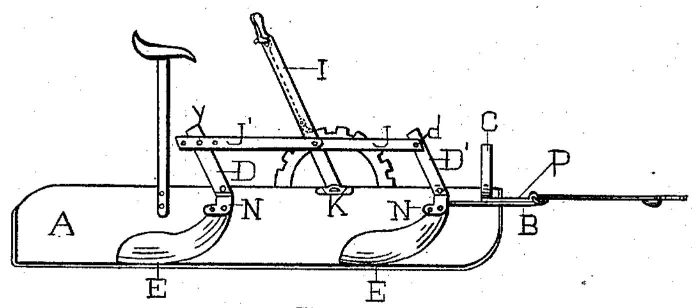

Fig. 2.

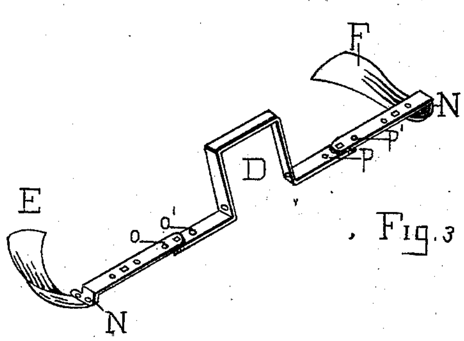

Fig. 3

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UNITED STATES PATENT OFFICE.

LOUIS A. BROWN, OF MACEDONIA, IOWA, ASSIGNOR OF TWO-THIRDS TO THOMAS J. YOUNG AND STEPHEN D. LANE, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 421,903, dated February 25, 1890.

Application filed July 13, 1889. Serial No. 317,480. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. BROWN, a citizen of the United States, residing in Macedonia, in the county of Pottawattamie, in the State of Iowa, have invented a new and useful Cultivator, of which the following is a specification.

My invention relates to cultivators for cultivating listed corn—that is, corn that is listed or planted by a lister. I obtain these results by the medium of the devices illustrated in the accompanying drawings.

Figure 1 is a top view of the entire machine. Fig. 2 is a vertical section of the entire machine, taken from the side of the machine. Fig. 3 is an illustration of one of the adjustable cross-beams with its shovels.

Similar letters refer to similar parts throughout the views.

The construction of the machine is as follows: Two runners A—something in the form of sled or sleigh runners, shod with iron or steel—are placed side by side and parallel, about twelve inches apart, forming an open box with an open space about twelve inches wide, and held in place firmly by means of a metallic arched cross-beam C, which is fastened by bolts or screws to the two wings or floats B B, which are thus firmly fastened to the respective runners by the iron or steel plates or bolts P P. The runners themselves are also held in place relatively to each other by two adjustable cross-beams D D′, which are pivoted to metallic strips or plates fastened by bolts or screws to the said runners, said pivots being marked, respectively, N′. The runners are constructed about four feet six inches in length. The hitch or draft is attached to projections on the cross-beam C, or the same are riveted or bolted to the wings by means of iron rods or other appliances.

The adjustable cross-beams D and D′ possess extensions on each arm, to which are attached at their extremities curved shovels. These extensions are movable upon the arms of the cross-beams by means of holes or slots in the beams and extensions through which bolts with screws pass, with nuts to fasten the arms of the cross-beams and the extensions and hold them rigidly at such distances as may be desired. The holes or slots and the bolts and screw are shown at o and o' and p and p' in Fig. 3, and by this means the shovels E and F may be brought nearer to or farther from the sides of the runners A and their relative distances adjusted. The extensions on the arms of the cross-beams are bent downward, as at N′, Fig. 3, so that the upper portion of the shovels may be firmly attached by rivets or bolts. The shovels are constructed so as to present in their forward motion a cutting-edge, but are curved so that the lower line of the blade is curved inwardly, the entire blade being concave toward the side of the runner, something like the mold of a plow. The narrower cross-beam is located about one foot distant from the front of the runners, and is pivoted to the runners by bolts on each side, respectively. The wider cross-beam D is in like manner pivoted to the runners about the center of their length, as shown, between the cross-beams and upon the runner. On the right-hand side is attached a ratchet-segment H, by which the lever I, with its pawl movable on its pivot, is held in any desired position. The cross-beams are connected with the lever I by means of the two rods J and J′ and pivots d y, so that the movement of the lever I upon the pivot K as a center will cause the cross-beams D and D′ to swing upon their pivots, and will cause the shovels E and F to be raised or depressed at will.

Attached to the outer sides of the runners A near their center, but somewhat in front of the line of the opposite shovels E F, are shovels G, concave in form and with their concave surfaces away from the runners and facing toward the shovels E F. These shovels are bolted to the runners and their lower edges are placed on a level with the lower line of the runners; but they may be pivoted, and by means of cross-beams and levers may be raised or depressed. They are attached so that the lower lines of their blades are level and in plane with the lower line of the runners.

The operation of my corn-cultivator is as follows: When corn is planted with a lister, a furrow is made about six inches in depth, leaving a bank or small ridge of soil on each side of it. The corn is planted or drilled in the furrow. Weeds grow between these furrows and upon the banks or ridges and adjacent to them, which must be removed and destroyed, and the banks and ridges themselves must be worked down, and the surrounding soil worked and cultivated when the corn is young. In operating the cultivator it is driven so that the open box straddles a row of corn and the sides or runners prevent the young corn from being covered with clods of soil as the shovels proceed to cut and tear up the weeds, break down the banks or ridges, and turn over and level the soil. The shovels cut and tear up the weeds, and cut and pulverize the soil, lifting it up and tending to turn it over, the two shovels turning it in toward the runners, and the shovels attached to the runners receiving portions thereof, lifting the same and turning it, and also the torn and broken weeds, away from the line of corn, and preventing it from being covered up, and at the same time allowing the finer soil to fall around the roots of the corn behind the box as the cultivator passes along. By means of the lever I and the adjustable arrangement of the shovels in connection therewith the shovels may be set to cut more or less deep within the soil, and when meeting obstructions or becoming entangled with weeds may be lifted up and freed therefrom by means of the adjustable arms and extensions on the cross-beams. The relative distance between the shovels and the box may be adjusted to meet the distance between the furrows of corn, and for other purposes.

Located in the rear of the cross-beam D′ is a seat for the driver upon the supports L, which are bolted to the runners.

Having thus described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. In a cultivator, the combination of an open box constructed of two runners, each armed with a curved concave shovel extending downwardly, adjustable cross-beams with extension-arms, respectively holding outwardly-extending curved concave shovels, said cross-beams being pivoted to said runners and connected by rods to a lever with its pawl, and a segment of a ratchet-wheel, all for the purpose and as substantially set forth.

2. In a cultivator, the combination of two or more curved concave shovels rigidly attached to adjustable extension-pieces upon the arms of two or more cross-beams pivoted to an open box or other support and connected by rods, and a pivoted lever and ratchet-wheel, substantially as set forth.

3. In a cultivator, the combination of one or more pairs of curved and concave shovels with the concave surfaces of each member of the pair facing each other, with one or more pair of curved and concave shovels with the convex surface of each member of the pair facing each other, the latter shovels arranged interiorly to the other and in different lines, and adjustable cross-beams and extensions on which said shovels are rigidly fixed, and means for rocking said cross-beams, substantially as set forth.

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Witnesses:

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