(No Model.)

W. Y. SMITH.

LISTER CULTIVATOR.

No. 456,005. Patented July 14, 1891.

Fig. 1.

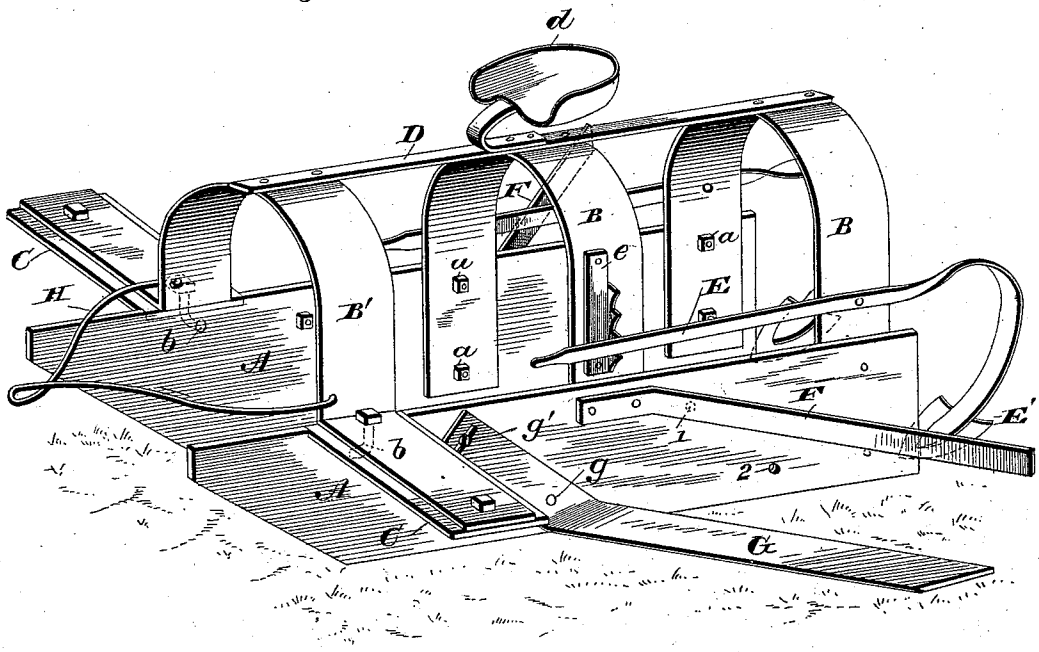
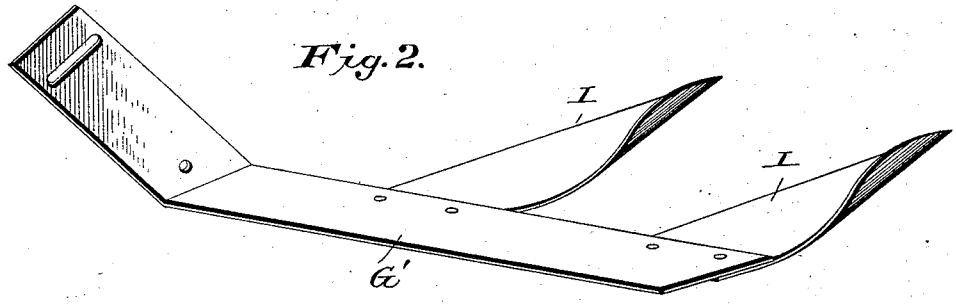


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM Y. SMITH, OF ESBON, KANSAS.

LISTER-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 456,005, dated July 14, 1891.

Application filed January 17, 1891. Serial No. 378,127. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM Y. SMITH, a citizen of the United States of America, residing at Esbon, in the county of Jewell and State of Kansas, have invented certain new and useful Improvements in Lister-Cultivators; and I do hereby 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, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of farm implements known as "lister-cultivators."

The object of the invention is to provide a simple, cheap, and effective cultivator which is so constructed as to provide adjustable laterally-extending wings and adjustable shovels, so that the same frame can be used in cultivating the corn the first and second time by attaching proper cultivating-blades to the main frame.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a lister-cultivator constructed in accordance with my invention, showing the same arranged for the first cultivation of the crop. Fig. 2 is a detail perspective view of one of the blades.

The frame of the cultivator is made up of the runners A A, which are rigidly connected to each other by arches B B and B′, the lower ends of which are secured by bolts *a a* to the runners A. The front arch B′ has its ends laterally extended, and these laterally-extended ends lie immediately above plates C, which are secured at their inner ends to the upper edges of the runners, which are recessed at this point, curved bolts *b* being employed for attaching the plates C and front arch B′ to said runners. The ends of the bolts *b* lie in countersunk openings, while their screw-threaded ends extend upwardly and are provided with nuts, as shown. The outer ends of the front arch are also secured to the plates C by ordinary straight bolts, as shown.

The three arches B B and B′ are connected to each other by a bar D, which is bolted to said arches and is provided with perforations at suitable points, so that the seat *d* can be adjusted upon said bar, it being desirable that the seat be located so that the occupant thereof can rest his feet upon the laterally-extended ends of the front arch.

To the central arch B are secured ratchet-plates *e*, with which the ends of levers E, pivoted to the rear arch above the runners, engage, so that said levers, which carry the shovels, can be adjusted to cause said shovels to enter the ground at a proper depth, and it will be observed that the shovels E′ lie slightly within the line in which the runners A travel. To the sides of the runners about on a line with the central arch are secured bars F, which diverge rearwardly, as shown, the same being located rear of the cutting-blades G, which are secured to the runners by means of a pivoted bolt *g* and the bolt *g′*, which passes through a slot in said blades, and by providing a pivot-bolt and slot the angle of these blades may be varied to suit the conditions of the ground to be cultivated.

The draft-clevis H is secured to the front arch and the doubletree attached thereto, so that the draft-animals will travel in front of the plates C. In cultivating a field of corn for the first time the parts of the cultivator are organized as shown in Fig. 1, and the plates C will depress the weeds while the blades G enter the soil, the weeds left standing being thrown down and outward by contacting with the bars F. The soil adjacent to the plants, which are in rows, is cultivated by the shovels E′.

The runners A are provided rear of the bars F with perforations 1 and 2, through which pass bolts for connecting to said runners the laterally and rearwardly extending bars G, which carry the mold-boards I I, so that the same can be attached to the runners for turning the soil when loosened by the boards G, which precede the same. In cultivating the ground the second time, for the blades G, I substitute blades similar to those shown in Fig. 2, which are provided with curved mold-boards I, which tend to turn the soil and throw the same toward the runners.

It will be observed that the lister-cultivator hereinbefore described is made up entirely of metal, though, if desired, the runners A

could be made of wood. I however prefer to construct the runners of metal, as they will be much stronger and will enter the ground deeper to better protect the plants between them.

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

1. In a lister corn-cultivator, the combination of the parallel runners A A and arches B B B′, rigidly secured thereto, the front arch B′ having laterally-extended ends, plates C, secured to the upper edge of the runners and to the ends of the front arch, the rearwardly-diverging bars F, a draft-clevis H, and seat-supporting bar D, rigidly secured to the upper portion of each of the arches, substantially as set forth.

2. The combination, in a lister-cultivator constructed substantially as shown and comprising parallel runners A A, rigidly secured to each other by arched plates, said runners carrying laterally and rearwardly extended bars F, which are rigidly secured to the runners, of blades G, pivotally secured to the runners near their lower edges and provided with slots and adjusting means for varying the angles thereof, and shovel-blades or spring-teeth pivoted to the rear arched bar and provided with forwardly-extended portions adapted to engage the ratchet-plates carried by the central arch, the front arch having laterally-extended portions secured to the runners by curved bolts *b*, the parts being organized substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM Y. SMITH.

Witnesses:
J. R. GREEN,
M. H. RICH.