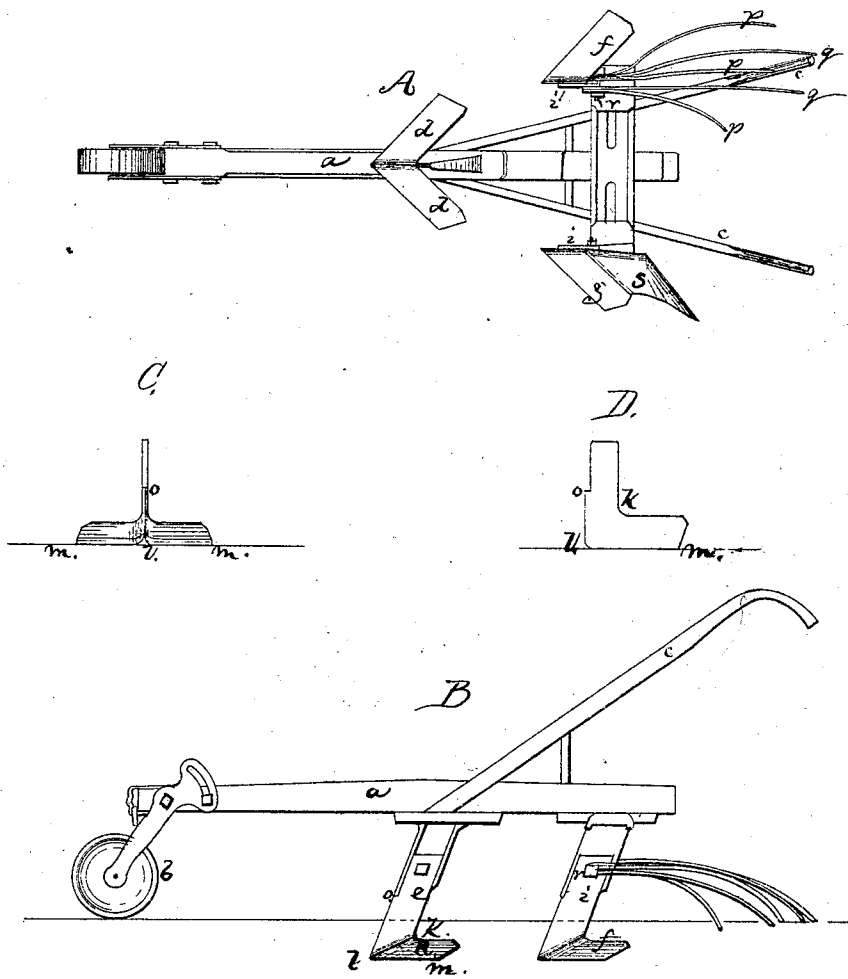


E. D. REYNOLDS & O. B. REYNOLDS.

Cultivators.

No. 134,166.

Patented Dec. 24, 1872.



Witnesses.
 H. W. Frothingham.
 L. H. Latimer.

Edmund S. Reynolds.
 Oliver B. Reynolds.
 By their Attys.
 Crosby & Gould.

UNITED STATES PATENT OFFICE.

EDMUND D. REYNOLDS AND OLIVER BRADFORD REYNOLDS, OF NORTH BRIDGEWATER, MASSACHUSETTS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **134,166**, dated December 24, 1872; antedated December 20, 1872.

To all whom it may concern:

Be it known that we, EDMUND DUNBAR REYNOLDS and OLIVER BRADFORD REYNOLDS, both of North Bridgewater, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Horse-Hoes; and we do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

United States Letters Patent No. 75,460 were granted to us in 1868 for an improved gang-hoe having a forward gage-guide and supporting-wheel, and at the rear handles by which the machine is propelled forward by hand, said machine having center forward blades, and, in rear of said blades, side blades, each blade being attached to a standard, and being adjustable laterally and as to height. Our present invention embodies, to a great extent, the construction shown in said patent. In our present construction we form the machine to be drawn by a horse, and each hoe has a vertical blade inclining forward, and a horizontal blade inclining rearward, this construction being effectual in bringing the weeds up to and laying them upon the surface of the ground. This arrangement of the blades constitutes one feature of the present invention. Each blade is formed from a plate of steel cut into a right-angular shape, and then bent on the diagonal line from the angle of the outer edges to the angle of the inner edges, until the lower or front entering-edge of the blade is in a horizontal plane, the standard standing in proper inclined vertical position. The blade thus formed by cutting a blank into right-angular shape and bending it at the angles of the inner and outer edges constitutes another feature of the invention. In the rear of one or either of the rear hoe-blades is a rake composed of spring-teeth, which, extending from the standard, have their points in different planes, some behind the others, and opposite the spaces between them, so that the soil is more perfectly stirred and pulverized; and such arrangement of the teeth and their divergence from the standard constitute features of the invention. To each or

either of the rear hoe-blades a mold-board may be attached to turn over a furrow; and this mold-board, in connection with the hoe-blades, also constitutes a part of the invention.

The drawing represents a hoe embodying our invention.

A shows a reversed plan of the hoe. B is a side elevation of it. C is a front view of the center and forward hoe-blades. D is a view of the form of the hoe-plate or blank before it is bent.

a denotes the beam; *b*, the gage-wheel; *c*, the handles; *dd*, the front blades extending in opposite directions from the standard *e*. *fg* denote the rear hoe-blades extending from the standard *i*, the standards *e* and *i* being secured to their respective support-plates, as shown in our patent No. 75,460. Each of these support-plates inclines forward as it extends down from the beams, the standard applied thereto having a similar inclination, as seen at B, while each hoe-blade inclines rearward from the forward inclining standard, the blades having such inclination necessarily, and the inclination of the front edge of each standard causing the weeds to ride upward, and to be left laid out upon the surface of the ground, where they will be killed by the sun. The blade-blank being cut from a piece of sheet-steel, in the form shown at D, the steel is bent on the line *kl*, between the outer and inner angles, the bend being so made that the lower and entering edge *lm* shall be in a horizontal plane, when the front edge *lo* stands at the angle it is to have when the standard is applied to the beam-plate. The blade being thus formed and its front edge grooved, and the metal hardened and tempered, the blade is finished ready for application to the beam-plate. From either or each of the rear standards the rake-teeth *p q* extend. Each tooth is formed of spring-wire, and all are fastened to the standard by a bolt, *r*, and nut, the bolt passing through an eye or bend at the rear end of each of the teeth. The teeth are formed and bent so that they stand divergently from the standard, as seen at A, so as to cover the desirable breadth of space. The points of the teeth *p q* stand in separate rows, the teeth *q* at their points setting opposite the centers of the spaces between the

teeth *p*. By this arrangement the work of pulverization is more perfectly effected, and the teeth in the rows are not near enough together to take up or gather the weeds lying in their paths.

In cultivating or hoeing between rows of plants it is sometimes desirable to turn over a furrow at one side of the plants, and for this purpose a mold-board, *s*, may be attached to each or either of the outer hoes.

By practical use we have found the hoe constructed as described to be a very valuable implement for use upon farms and market-gardens, for the rapid and effective destruction of weeds.

We claim—

1. The gang of hoe-blades, each formed with

the blade and its standard both inclined in the directions as shown and described.

2. In combination with the hoe-blades, the spring rake-teeth fastened to the hoe-standard, and inclining downward and diverging therefrom, substantially as shown and described.

3. In combination with the hoe-blades, constructed and arranged as described, the mold-board *s*, substantially as shown and described.

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Witnesses:

JONA. WHITE,

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