May 31, 1927. 1,630,585

P. SIMONS

COMBINED CULTIVATOR TOOTH AND SWEEP

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Fig. 1.

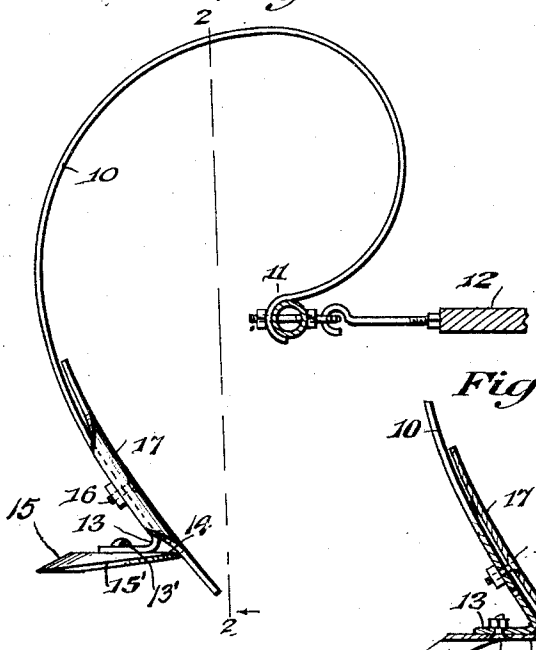


Fig. 2.

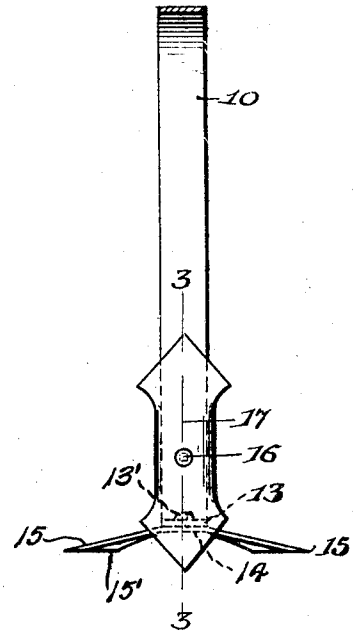


Fig. 3.

Fig. 4.

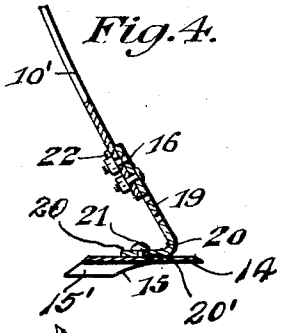


Fig. 5.

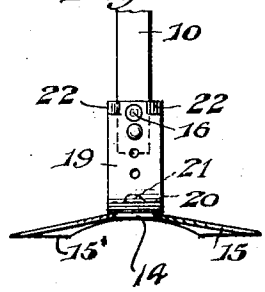


Fig. 8.

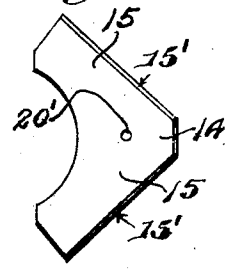


Fig. 6.

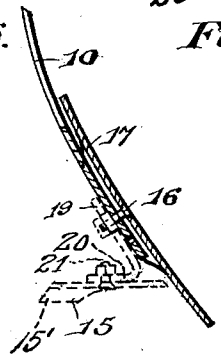


Fig. 7.

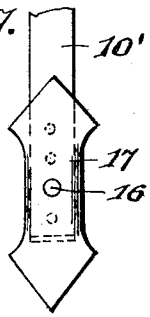
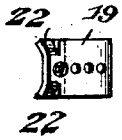


Fig. 9.



INVENTOR.
Philip Simons,
BY
Geo. P. Kimmel.
ATTORNEY.

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Fig. 10.

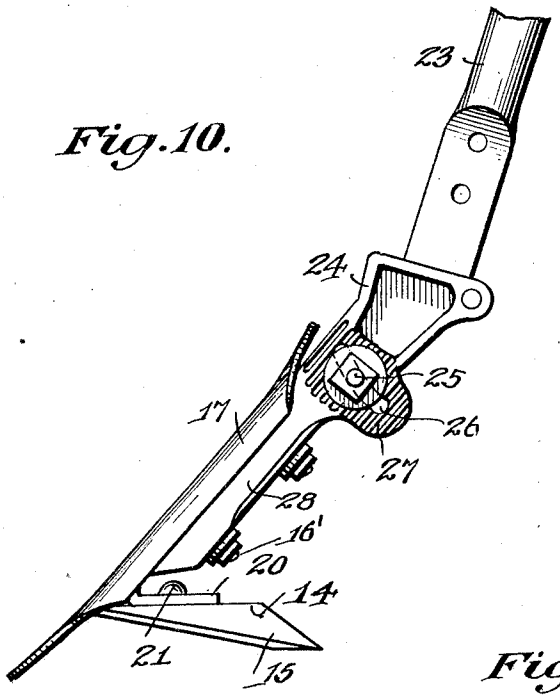


Fig. 11.

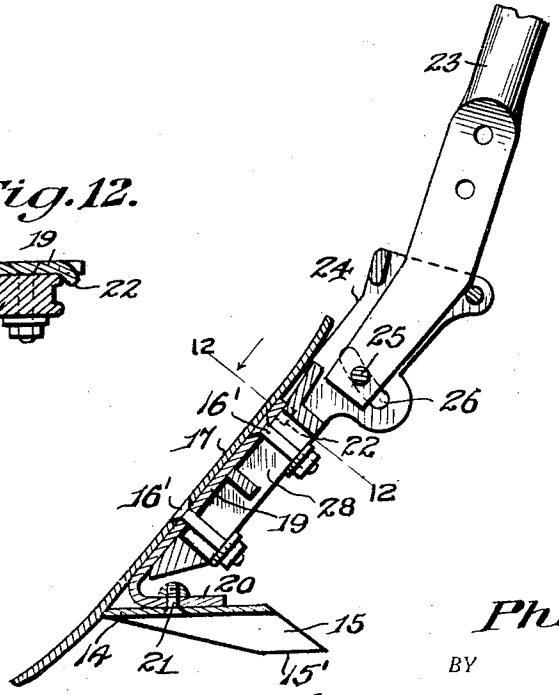


Fig. 12.

INVENTOR.
Philip Simons,
BY
Geo. P. Kimmel. ATTORNEY.

Patented May 31, 1927. 1,630,585

UNITED STATES PATENT OFFICE.

PHILIP SIMONS, OF PEWAMO, MICHIGAN.

COMBINED CULTIVATOR TOOTH AND SWEEP.

Application filed December 3, 1924. Serial No. 753,668.

This invention relates to improvements in harrows, and like implements, and has for one of its objects to provide a device of this character including a standard having a holder carrying a harrow tooth and laterally directed cutters or sweeps, and means for adjustably coupling the sweeps to the standard, having means for independently attaching a cultivator shovel or tooth, or a sweep element, thereto, and means whereby the shovel or tooth element and the sweep element may be employed together or separately, as required.

Another object of the invention is to provide a device of this character combining a standard having means for independently attaching a cultivator shovel or tooth, or a sweep element, thereto, and means whereby the shovel or tooth element and the sweep element may be employed together or separately, as required.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention—

Figure 1 is a side elevation of the improved device with the support therefor in transverse section.

Figure 2 is a front elevation with the supporting standard in section on the line 2—2 of Figure 1.

Figure 3 is a vertical section on the line 3—3 of Figure 2.

Figure 4 is a sectional detail illustrating a modification in the construction.

Figure 5 is a front elevation of the parts shown in Figure 4.

Figure 6 is a sectional detail illustrating the manner of employing the improved device as a cultivator alone.

Figure 7 is a front elevation of the parts shown in Figure 6.

Figure 8 is detached plan view of the cutter or sweep.

Figure 9 is a plan, detached, of the supporting bracket employed in the modified construction shown in Figures 4 and 5.

Figure 10 is a view similar to Figure 1, illustrating a modification in the construction.

Figure 11 is a vertical section of the construction shown in Figure 10.

Figure 12 is a transverse section on the line 12—12 of Figure 11.

The improved device may be applied to tooth standards of various forms and construction, but for the purpose of illustration is shown in Figures 1—3—4—5—6 and 7 applied to a conventional spring or resilient standard 10 attached at 11 to a conventional beam 12, and in Figures 10 and 11, is shown attached to an ordinary standard, a portion of which is shown at 23. Any required number of the standards and their attachments may be employed in each harrow and arranged in the ordinary manner.

Figures 1 and 3 illustrate the lower terminal portion of the standard 10 as directed rearwardly substantially at right angles, and the said lower terminal portion is indicated at 13, and is secured by a hold-fast device 13′ against the central portion of the upper face of a cutter or sweep member which is substantially of V-shaped contour. The cutter or sweep member is formed from a single piece of metallic material of the desired rigidity and comprises a flat intermediate portion 14 and a pair of rearwardly extending oppositely inclined wings 15. The wings 15 project rearwardly from the intermediate portion 14 and extend in opposite directions with respect to each other, and further each wing inclines downwardly from its inner towards its outer edge throughout. The outer edge of each of the wings 15 terminates at the forward edge of the intermediate portion 14. The outer sides of the wings 15 are bevelled to provide cutting edges 15′, which extend from the rear to the forward end of the wings. When the terminal portion 13 of the standard 10 is secured to the intermediate portion 14 of the cutter or sweep member, the latter projects forwardly from the said terminal portion.

As shown in Figures 1, 2 and 3, the lower portion of the standard 10 is provided with a plurality of spaced apertures to selectively receive a clamp bolt 16 whereby a cultivator tooth or shovel 17 is adjustably attached to the standard.

The tooth 17 may thus be adjusted vertically within the range of the apertures in the standard to enable the point of the tooth to be arranged for operation at a greater or less distance below the line of the sweep.

The device may thus be easily adapted to

varying conditions of the soil or the quality or growth of the weeds which it is desired to eradicate.

The sweep device may be detached when the tooth element only is required, or the tooth may be detached when the sweep only is required.

Figures 4 and 5 illustrate a modification and which consists in the utilizing of an angle-shaped bracket or coupling member between the sweep and the standard. The bracket or coupling member comprises an upwardly directed and rearwardly inclined arm 19 and a horizontally disposed arm 20, arranged at the lower end of the arm 19 and directed rearwardly therefrom. The arm 20 is provided with an opening 20′ for the passage of a hold-fast device 21 to secure such arm to the intermediate portion 14 of the cutter or sweep device. The arm 19 is formed with a plurality of spaced apertures for the passage of fastening devices, to adjustably connect the lower end of the standard 10′ to the arm 19, and the upper end of the latter is slitted and the material freed by the slits is bent to form tongues engageable with the standard 10′ to prevent lateral displacement of the latter. By the arrangement shown in Figures 4 and 5, the cutter or sweep member may be supported independently of the cultivator element.

In Figures 10, 11 and 12 there is illustrated a means for the purpose of adapting the cutter or sweep member and the angle-shaped bracket or coupling member in connection with a cultivator tooth support, and the latter comprises a head member 24 for the reception of the lower end of a standard 23. The head member 24 is formed with transverse slots 26, and extending therethrough as well as through the lower end of the support 23 is a clamping screw 25. The outer face of the head member 24 is serrated, as at 27. The cultivator tooth support further includes a slotted extension 28 and below the lower end of the slot in the extension 28 there is extended through the latter a bolt 16′ for securing a shovel member 17 in position. The bolt 16′ also extends through the arm 19. The bolt 16′ carried by the arm 19 passes through the slot in the extension 28. The arm 19 is positioned between the shovel 17 and the extension 18.

By this simple arrangement, the sweep member and its support may be readily adapted to a conventional cultivator standard and its shoe or shovel, and without making any material change in the construction of any of the parts.

The improved device is simple in construction, can be inexpensively manufactured, and adapted without material structural change to cultivator standards of various constructions.

The preferred embodiment of the invention is disclosed in the drawings and set forth in the specification, but it will be understood that modifications within the scope of the claimed invention may be made in the construction without departing from the principle of the invention or sacrificing any of its advantages.

Having thus described the invention what is claimed is:

1. The combination of a harrow tooth, and a triangular horizontally disposed blade provided with a shank at its tip secured to the rear side of said tooth supporting the blade with its apex at the rear of the tooth and in spaced relation to the point of the tooth, said blade being upwardly and inwardly curved from each cutting edge thereof.

2. The combination of a harrow tooth, and a triangular horizontally disposed blade secured to said tooth with its apex at the rear of the tooth and in spaced relation to the point of the tooth, said blade being upwardly and inwardly curved from each cutting edge thereof.

3. The combination of a harrow tooth, and an A-shaped horizontally disposed blade, the arms of said blade being upwardly curved transversely of the arms, the curve being continued to the apex of said blade, the outer edges of the blade being upwardly beveled, said blade being secured with its apex at the rear of said tooth and in spaced relation to the point thereof.

In testimony whereof, I affix my signature hereto.

PHILIP SIMONS.