(No Model.)

S. L. ALLEN.

SHEET METAL STANDARD FOR CULTIVATOR TEETH.

No. 280,114. Patented June 26, 1883.

FIG. 5.

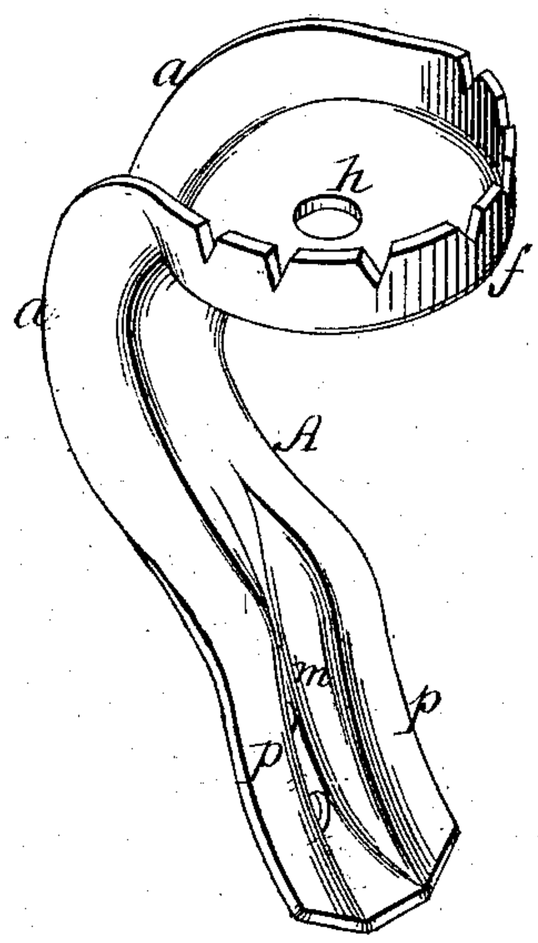


FIG. 3.

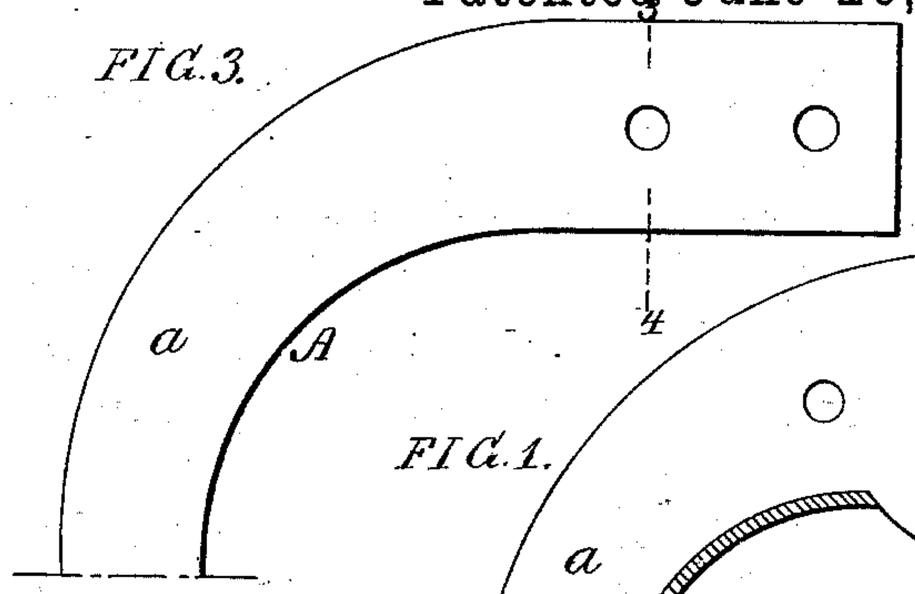


FIG. 9.

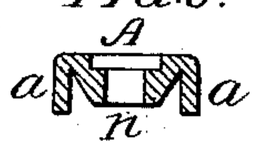


FIG. 10.

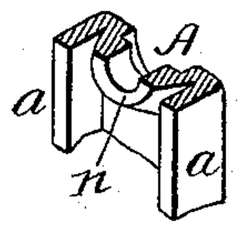


FIG. 4.

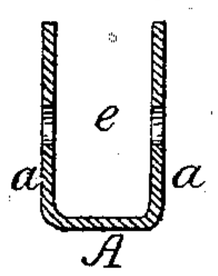


FIG. 1.

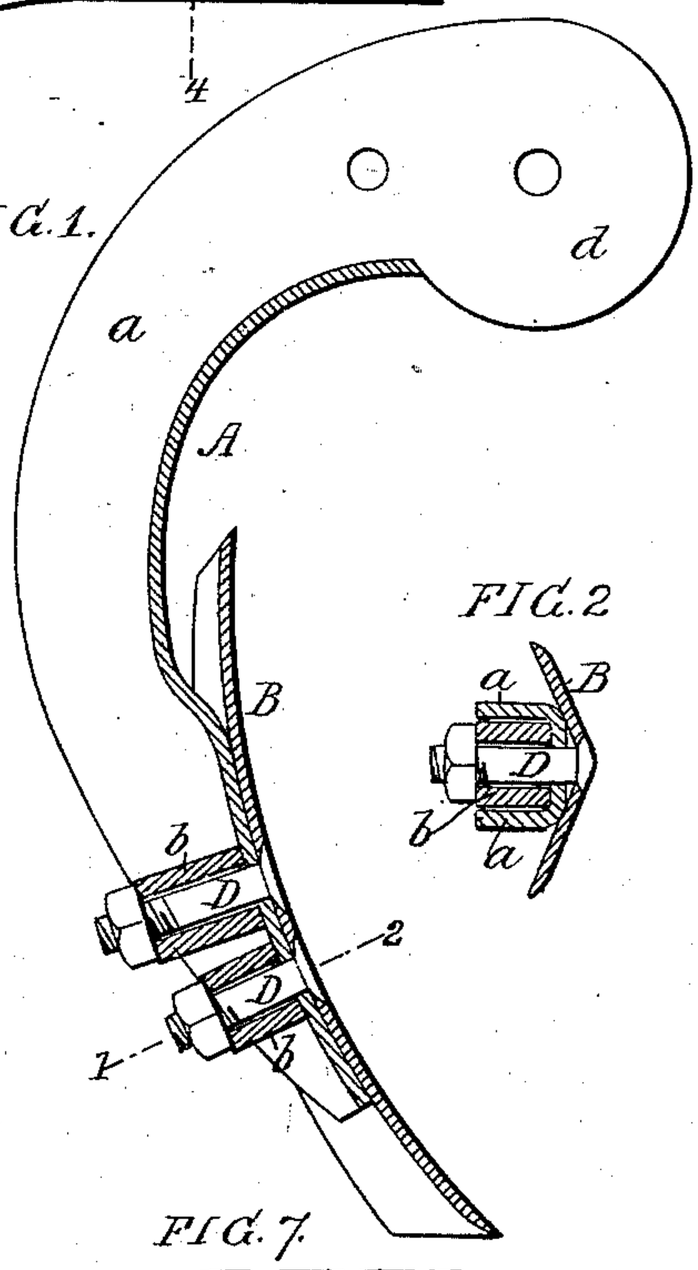


FIG. 2.

FIG. 6.

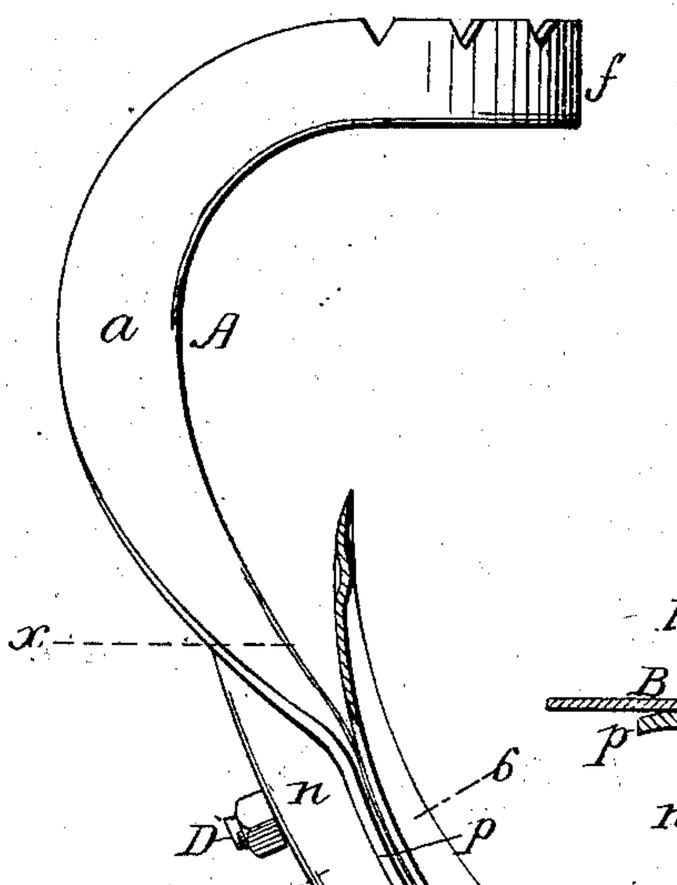


FIG. 8.

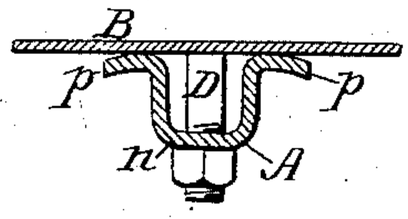
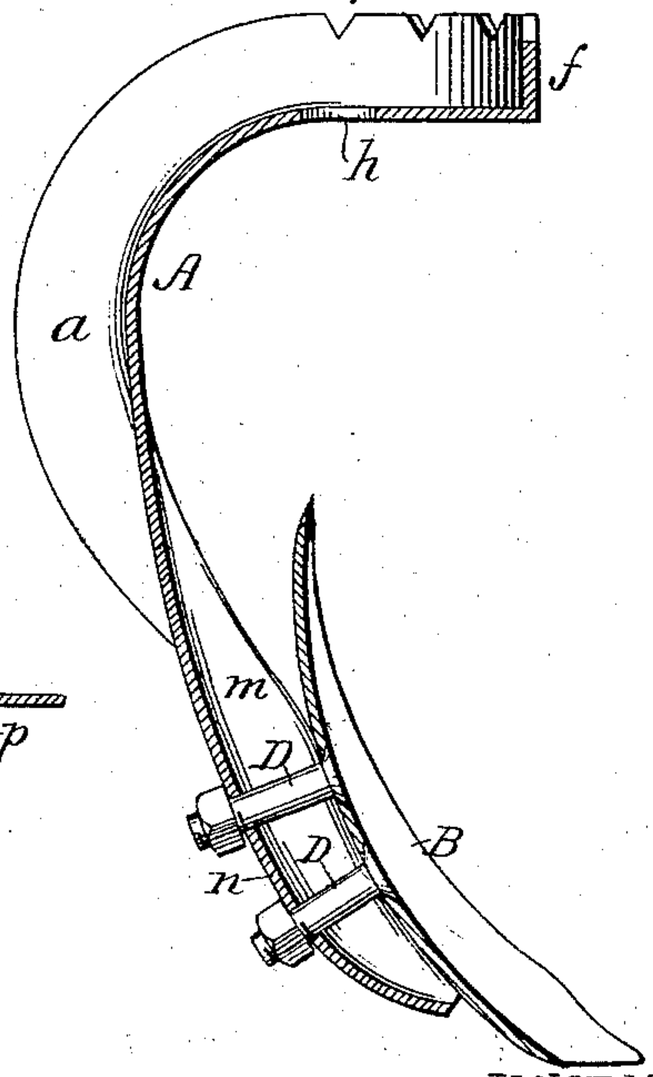


FIG. 7.



WITNESSES:
Hamilton D. Turner
Harry Drury

INVENTOR:
Samuel L. Allen
by his Attys
Howson & Sons

UNITED STATES PATENT OFFICE.

SAMUEL L. ALLEN, OF CINNAMINSON, NEW JERSEY.

SHEET-METAL STANDARD FOR CULTIVATOR-TEETH.

SPECIFICATION forming part of Letters Patent No. 280,114, dated June 26, 1883.

Application filed February 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. ALLEN, a citizen of the United States, and a resident of Cinnaminson, Burlington county, New Jersey, have invented Improvements in Standards for Cultivator-Teeth, of which the following is a specification.

My invention relates to an improvement in the standards which are secured to the frames of cultivators, and to which are attached removable blades or teeth, the main feature of my invention being the combination of a standard made of struck-up steel and having strengthening ribs or flanges with a tooth or blade attached to the standard, all substantially as described hereinafter, the object of my invention being to make a cultivator-standard which shall be tougher, less liable to bend, better adapted to resist torsion, and at the same time lighter and cheaper than an ordinary standard of forged wrought-iron.

In the accompanying drawings, Figure 1 is a vertical section of my improved standard for cultivator-teeth; Fig. 2, a transverse section on the line 1 2; Fig. 3, a side view of part of a standard with a head differing from that shown in Fig. 1; Fig. 4, a section on the line 3 4, Fig. 3; Fig. 5, a perspective view of a modified form of standard; Fig. 6, a side view of Fig. 5, showing the blade of the cutter attached to the standard; Fig. 7, a vertical section of Fig. 6; Fig. 8, a transverse section on the line 5 6, Fig. 6; and Figs. 9 and 10 views representing further modifications.

Referring to Figs. 1 and 2, A represents the improved standard; B, the cultivator blade or tooth attached thereto.

Instead of being a solid forging of wrought-iron, as usual, the standard is made of sheet-steel struck up while hot by the aid of dies, and a drop-press to reduce the plate to the curved shape represented in Fig. 1, or a shape approximating thereto, and two ribs or flanges, *a a*, being at the same time formed to add rigidity and strength to the standard, these flanges extending from end to end of the same, or nearly so.

The front of the lower portion of the standard is shaped to accord with and form a bearing for the tooth or blade B, which is secured by one or more bolts, D—two in the present instance. The nuts of these bolts must be at the rear of the standard, for the heads are adapted to countersunk holes in the tooth or blade; and in order that a suitable wrench may have proper access to these nuts, I interpose between them and the standard ferrules *b*, contained between the flanges *a a*. I much prefer, however, the plan described hereinafter of avoiding the necessity of resorting to these ferrules.

The upper portion of the standard is bent abruptly, and terminates in a head composed of two cheek-pieces, *d*, which are continuations of the rear ribs, *a*, the head being thus constructed so that it can receive part of the cultivator-frame to which it has to be secured; or the upper bent end of the standard can be made of the shape shown in Fig. 3.

Referring to Figs. 5, 6, 7, and 8, which show the standard so constructed as to dispense with the ferrules shown in Fig. 1, it will be seen that a depression, *m*, extending from about the line *x* to the lower end of the standard, is made in the front of the same, thereby forming a protuberance, *n*, at the rear, a flange, *p*, projecting on each side of the depression, Fig. 5, the flanges forming a bearing for the back of the cultivator tooth or blade B. Two bolts with beveled heads adapted to countersunk holes in the blade pass through the rear protuberance, *n*, of the standard, so that the nuts are exposed and can be easily turned by a wrench. In this case there are the two rear strengthening-flanges, *a a*, as in the first example; but they do not extend from end to end of the tooth, but gradually merge into the flanges *p p*, the loss of strength in the standard due to this change in the direction of the flanges being counteracted by the rear protuberance, *n*, caused by the depression *m*.

The head of the standard in Figs. 5, 6, and 7 differs from that shown in Fig. 3, but forms no part of my present invention. The rear strengthening-flanges, however, may be continued to the lower end of the standard, and yet permit the formation of a rear protuberance for the nut of the bolt to bear against. Thus, in Figs. 9 and 10 the protuberance consists of an annular projection made during the striking up of the plate to form the standard, this protuberance affording a bearing for the nut.

It has been found that cultivator-standards made in the manner described of steel plates

are stronger and more capable of resisting the torsion to which they are subjected than ordinary forged standards of wrought-iron; at the same time they are lighter, for comparatively thin steel may be used, owing to the strength imparted to the standards by the flanges, and additional strength may be imparted to the standards by a proper tempering of the steel after the plates have been struck up to the desired shape. My improved standards, moreover, are as cheap as ordinary solid wrought-iron standards, for much less metal is used in their construction, and they can be rapidly made by suitable dies and a drop-press.

I claim as my invention—

1. A cultivator-standard of struck-up sheet-steel, having at the rear flanges *a a* and at the bent top cheek-pieces *d d*, which are continuations of the said flanges, and having at its lower portion and in front a bearing for the cultivator-tooth, substantially as set forth.

2. The combination of a standard composed of a struck-up steel plate, having flanges *a a* and a rear protuberance or protuberances, with a blade or blades, and with a bolt or bolts, D, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL L. ALLEN.

Witnesses:

HARRY DRURY,

HARRY SMITH.