Dec. 31, 1940. L. O. WIESE 2,226,884

FABRICATED CULTIVATOR SWEEP

Filed July 23, 1937

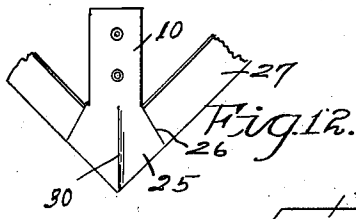


Fig. 12.

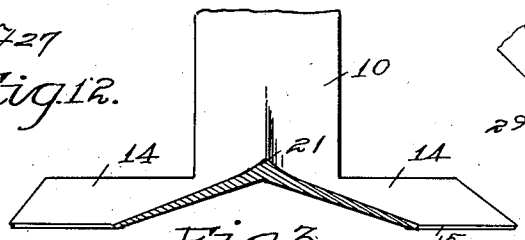


Fig. 3.

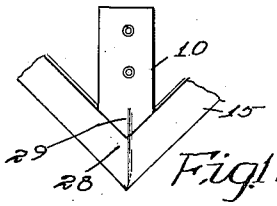
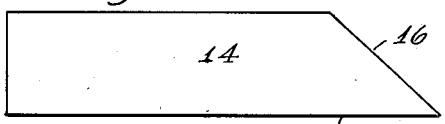


Fig. 11.

Fig. 4



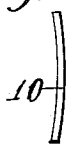


Fig. 6.

Fig. 5

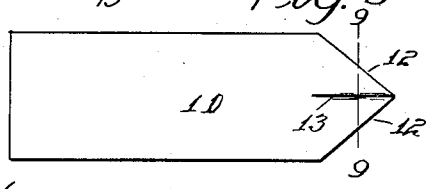
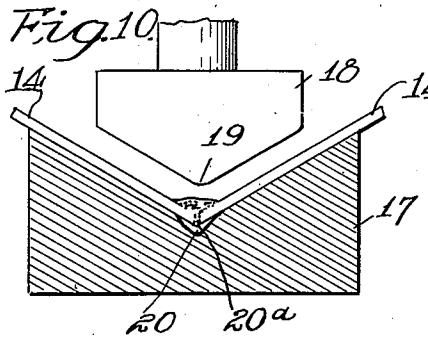


Fig. 10.



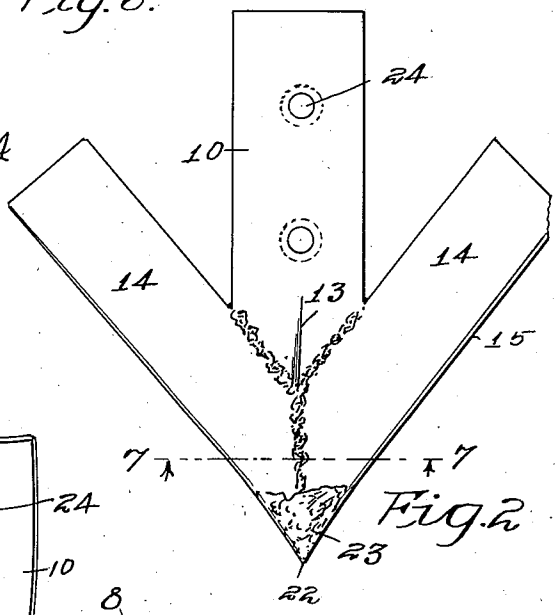


Fig. 2.

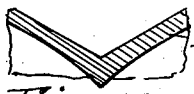
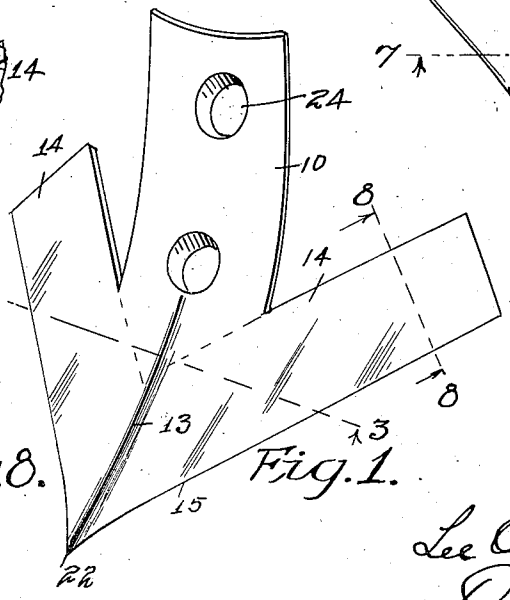


Fig. 7.



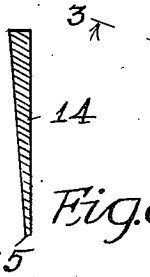


Fig. 8.

Fig. 1.

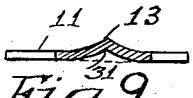


Fig. 9.

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2,226,884

FABRICATED CULTIVATOR SWEEP

Lee O. Wiese, Perry, Iowa

Application July 23, 1937, Serial No. 155,249

4 Claims. (Cl. 29—14)

This invention relates to improvements in cultivator sweeps and particularly the type of cultivator sweep that is used for surface cultivation, employing an upright body member and laterally and rearwardly inclined cutting elements connected to the lower end of the body.

Heretofore this type of cultivator sweep has been formed from a single piece of sheet metal, the same being first blanked from the metal by suitable dies. On account of the peculiar shape of the device a considerable amount of waste of metal is encountered. Furthermore, difficulty is encountered in obtaining the most desirable shape by the stamping process, it being desirable to provide on the sweep a rib extending from the point of the shovel and terminating in the upright body portion so as to form a dividing element to assist in separating the material as it is moved past the lower end of the body member in two directions.

I have found that by forming the sweep of a number of pieces of stock material and welding the adjoining edges of the pieces together to form a unitary sweep member, the cost of the construction of the sweep may be considerably reduced and at the same time provide a sweep having a better and more desirable shape.

It is, therefore, the object of my invention to construct a cultivator sweep of the type having a vertical body member and laterally and rearwardly extending cutter elements projecting from the lower end of the body member formed of sections of stock sheet metal, and welding the sections together to accomplish the desired results.

A further object of my invention is to provide in a cultivator sweep of the type above described, improved means for increasing the life of the point of the sweep.

My invention further consists in an improved method by means of which the sweep of the type above described may be easily and efficiently constructed.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a perspective view of my improved cultivator sweep.

Figure 2 is a bottom elevation of the same.

Figure 3 is a detail sectional view taken on the line 3—3 of Figure 1.

Figure 4 illustrates one of the cutter portions as blanked from stock material.

Figure 5 is a plan view of the body member of the sweep.

Figure 6 is an end view of Figure 5.

Figure 7 is a detail sectional view taken on the line 7—7 of Figure 2.

Figure 8 is a detail sectional view taken on the line 8—8 of Figure 1.

Figure 9 is a detail sectional view taken on the line 9—9 of Figure 5.

Figure 10 is a diagrammatical sectional view of the jig used in assembling the cutter and body portions, together with the forming die used in connection therewith for forming the dividing rib of a sweep; and

Figures 11 and 12 show modified forms of my improved sweep.

My improved sweep comprises a body portion 10 blanked from stock bars of steel or other suitable material having one end provided with beveled portions 12 to form a pointed end. The member 10 is then placed in a die and curved as indicated in Figure 6, a rib 13 being formed at the pointed end, as indicated in Figure 9, said rib being projected upwardly from the front or working surface of the body. The sweep is provided with cutter members 14, also blanked from steel bars, the bars being first passed through suitable rollers so that they may be tapered as indicated in Figure 8, so as to provide a cutting edge 15. Each bar has one end provided with a beveled portion 16, said cutters being formed right and left. The body portion 10 and the cutter portions 14 are then placed in a suitable jig 17, with the beveled portions 16 of the members 14 nearly adjoining, and the bevels 12 of the member adjoining the upper edges of the inner ends of the members 14, the members 14 being inclined relative to the horizontal when the device is in its normal working position. The beveled edges 12 and 16 are then welded together, as illustrated in Figure 2, with a small amount of the hard welding material between the beveled edges 16 to form a hard seam 20*a*, as illustrated in Figure 10, the sweep being placed in the jig preferably in an inserted position and with the jig supported beneath a forming die 18, having a pointed end 19 supported above the seam uniting the beveled edges 16. As soon as the said edges 16 have been welded together, then the die 18 is lowered so as to press the welded ends 16 into a groove 20 formed in the jig 17, so as to form a rib 21 connecting with the rib 13 of the body 10, or in some cases, both the

ribs 21 and 13 may be formed by a single operation, said forming operation taking place while the seam is hot from the welding process. The cavity in the pointed end 22 of the sweep is filled with a non-abrasive alloy 23 by an electric welding method. This provides means for reinforcing the pointed end and at the same time providing a very hard tough substance which will withstand a comparatively large amount of wear.

Holes 24 are formed in the body member by means of which the sweep may be attached to a cultivator shank by suitable bolts. The front and upper surface of the sweep is then finished and polished and the edge 15 is sharpened, the sweep being finished with a comparatively short and distinct rib 21 on its upper surface. Said ribs greatly assist in separating the two streams of earth formed by moving the sweep therethrough.

Figure 11 illustrates a modified form of my device in which the lower end of the body 10 is pointed in the manner above described. A V-shaped cutter element 28 is then provided, the beveled edges of the pointed end of the body 10 being placed adjacent to the adjoining inner and upper edges of the member 28, after which the said edges are welded together. A rib 29 is then formed in the apex end of the front surface of the member 28, all as clearly illustrated in Figure 11.

In Figure 12 I have illustrated another modified form in which the lower end of the body 10 is provided with an enlarged portion 25 having shoulders 26 to receive the adjoining ends of the cutters 27. These are welded together in the manner before described. A separating rib 30 may then be formed in the enlarged portion 25.

Thus it will be seen I have provided a cultivator sweep which is simple, durable and of comparatively cheap cost, and one which may be easily manufactured with a comparatively small amount of equipment, as it will readily be seen that sweeps of various dimensions may be easily constructed by simply increasing or decreasing the length of the cutter members 14 and a single jig used for the assembling of the device if the angle of the cutting edges is the same, one relative to the other. Different shaped sweeps may be easily provided by simply changing the angle of the beveled edges 12 and 16 and providing suitable jigs for the assembly, or an adjustable jig can easily be provided, in which case a single jig would be sufficient to permit the manufacturer to assemble sweeps of various shapes and sizes. Heretofore it has been necessary in providing sweeps of different sizes, to provide a complete set of blanking and forming dies for each different size or shape, so that the initial cost of manufacturing applicant's sweep has been greatly decreased from that necessary to manufacture sweeps of a single piece.

I claim as my invention:

1. The method of forming a fabricated cultivator sweep, comprising an upright body and a portion provided with laterally diverging and projecting cutter portions, which consists in stamping the body and cutter portions separately of sheet metal, then welding the parts together to form a unitary sweep structure, then pressing by suitable dies one of the welded seams while hot from welding, to form on the upper and forward surface of the sweep an upwardly and rearwardly extending dividing rib.

2. The method of forming a fabricated cultivator sweep, comprising an upright body and a portion provided with laterally diverging and projecting cutter portions, which consists in stamping the body and cutter portions separately of sheet metal, then supporting the stampings in a jig in the desired form, then welding the parts together to form a unitary sweep structure, then pressing by suitable dies one of the welded seams laterally into a suitable groove formed in one of the dies while hot from welding, to form on the upper and forward surface of the sweep an upwardly and rearwardly extending dividing rib.

3. The method of forming a fabricated cultivator sweep, comprising an upright body and a portion provided with laterally diverging and projecting cutter portions which consists in stamping the body and cutter portions separately of sheet metal, then supporting the stampings in a jig in the desired form, then welding the adjoining ends together with hard welding material in such quantities as to form a seam or rib on the under surface of and between the adjoining ends of the cutters, then pressing the seam thus formed, outwardly from said inner surface into a suitable groove in the supporting jig while hot from welding, to form behind and between the adjoining edges of said cutter portion a hardened and upwardly and rearwardly extended dividing rib.

4. The method of forming a fabricated cultivator sweep, comprising an upright body portion provided with laterally diverging and projecting cutter portions which consists in stamping the body and cutter portions separately of sheet metal, the cutter portions being formed of sheet metal previously rolled to a taper to form a cutting edge, then supporting the body and cutter portions in proper relation to each other, then welding the adjoining ends together with a hard welding alloy to form a seam or rib on the under surface of and between the adjoining ends of the cutters, then pressing the seam thus formed, outwardly from said surface into a suitable groove in the supporting jig while hot from welding, to form behind and between the adjoining edges of the cutter portion an upwardly and rearwardly extended dividing rib.

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