PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Earth Working Implements

We, VIKTOR SCHAUBERGER, an Austrian Citizen, of Steingasse 5, Salzburg, Austria, and FRANZ ROSENBERGER, an Austrian Citizen, of Schiesstattstrasse 42, Salzburg, Austria, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention is concerned with improvements in or relating to earth working implements for example, harrows and ploughs.

Numerous tests have shown that a substantial increase of produce from the land can be obtained, if instead of the usual iron or steel earth working implements, those having a surface consisting of copper or copper alloy are employed. This distinction is the more marked in appearance the faster the earth working implement is moved through the ground and the greater is the friction between the soil and the relevant part of the earth working implement. This surprising effect of the use of copper or copper alloy is probably traceable to a catalytic process which possibly results in an increase of the water content of the land and accordingly an increase in the yield.

According to the invention, therefore, an earth working implement is characterised in that the operative surface of those parts of the implements which are moved through the soil consists of an overlay or coating of hard copper or copper alloy carried by a support of other material e.g. iron or steel.

The use of hard copper or copper alloy sheet or the like for the overlay or coating has proved particularly advantageous, which is probably traceable to the fact that, the mechanical stresses developed in the sheet in the hardening by hammering, rolling etc., are converted into magnetic stresses which are conducive to the desired object.

A copper alloy which has been found particularly suitable for use in the coating or plating applied to the iron or steel supporting part consists of 97% copper, 2% nickel, 0.8% silicon and 0.2% iron.

In the drawings two embodiments of implements constructed in accordance with the invention are schematically illustrated and there are shown in figures 1 and 2 a side view and a section on the line 2—2 of figure 1 respectively, of the operative part of a plough and in figures 3 to 5 a side view, a longitudinal section and a cross section of a harrow.

In the plough illustrated in figures 1 and 2, 1 is a ploughshare manufactured in the usual way from steel but which can however be produced from a suitable copper alloy. This part cuts smoothly through the soil and consequently there results no substantial friction between it and the earth. It is different with the mould board of the plough 2 by whose upper surface clods of earth are turned over under considerable pressure. It is, accordingly, provided with a coating 3 of copper sheet which is screwed to the mould board 2 by means of sunken screws 4. For the development of the requisite hardness the copper sheet 3 stretched on the mould board 2 is hammered in the same way as a scythe is whet by hammering.

The harrow tooth 5 according to figures 3 to 5 is provided with a rearwardly opening sheath 6 of copper sheet. The usual bolts employed for fastening a harrow tooth in the harrow position etc. serve for fastening to the harrow in that the sheath 6 is carried above the bolt hole 7 of the harrow tooth 5 on one side and is provided with a corresponding perforation 9. It is also suitable here to hammer the copper sheet after its application to the harrow tooth.

In a similar way the iron parts of other earth working implements are provided with coatings of copper or suitable copper alloy.

What we claim is:—

1. An earth working implement characterised in that the operative surfaces of those parts of the implement which are moved through the soil consist of an overlay or coating of hard copper or copper alloy carried by a support of other material e.g. iron or steel.

2. An earth working implement having an operative surface coated or overlaid with copper or copper alloy substantially as described and with reference to the accompanying drawings.

3. A method of manufacture of an earth working implement having a coating or overlay of hard copper or hard copper alloy as claimed in either of the preceding claims characterised in that the parts under consideration are coated with hard copper sheet or the like which is hammered after its application to the support.

4. A method of manufacture of an earth working implement having a coating or overlay of hard copper or hard copper alloy substantially as described and with reference to the accompanying drawings.

Dated this 14th day of February, 1950.

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689,183
1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale.

Fig. 1

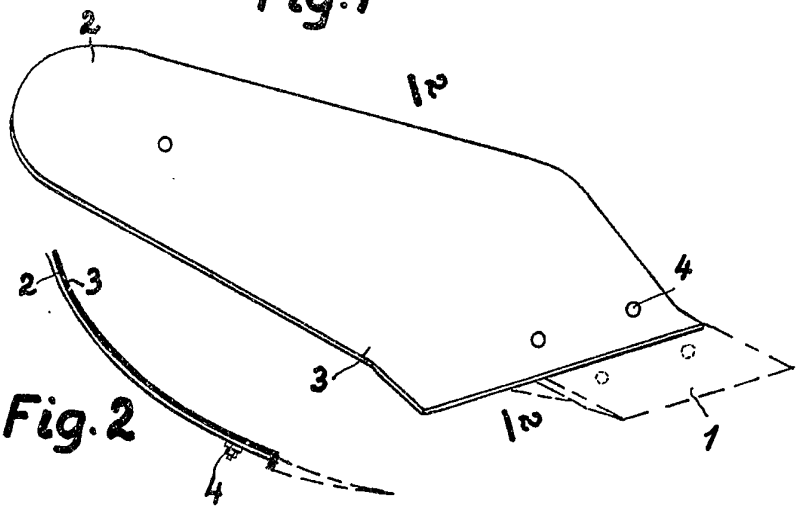

Fig. 2

Fig. 3

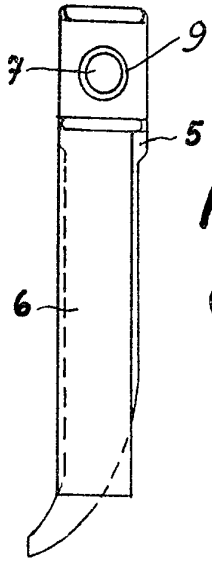

Fig. 4

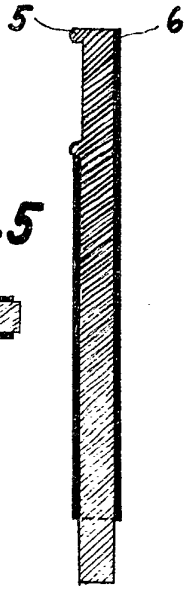

Fig. 5