

CHAPTER 3. SEEDBED PREPARATION

3.6 MAINTENANCE AND REPAIR

3.6.3 REPLACEMENT PARTS FOR THE CULTIVATOR

INTRODUCTION

The shape of the points for the cultivator or scarifier tines are very important if good work quality is to be achieved. Worn or damaged points will not penetrate correctly nor control the weeds adequately. They can also lead to damage to the tine support arms.

REVERSIBLE POINTS

The reversible points used for scarifying can be made from scrap leaf spring of 8 mm thickness. This is heated and the shape chiselled out using a template. The holes are punched out with a square punch and the nuts and bolts may also be made by the blacksmith.

The working tips are forged and the final curved shape of the point checked against a template (Fig.1). It is then reheated and quenched in oil to make it more durable.

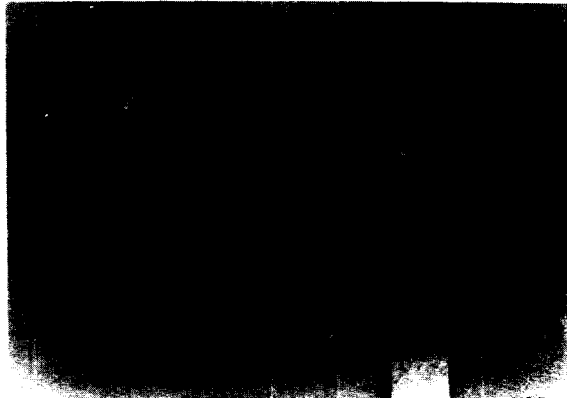


Fig. 1 The stages for making a reversible point from a scrap piece of 8 mm leaf spring. It is finally quenched in oil.

Source: FAO, 1991

NOTE: All photographs used in this Module are reproduced from the FAO Filmstrip "Training for Rural Blacksmiths". Maintenance and repair of tillage and transport equipment. FAO, Rome, 1991. Authors: B.Mignolet and W.Spettel: Photos: M.Sinko and J. Van Acker.

DUCK FOOT POINTS

These are made from 4 mm thick sheet metal and the shape is first traced out using a template. The duck foot is cut from the sheet with a chisel and the holes punched (Fig.2). The final shape is hot forged, copying the form of an original new part (Fig.3).

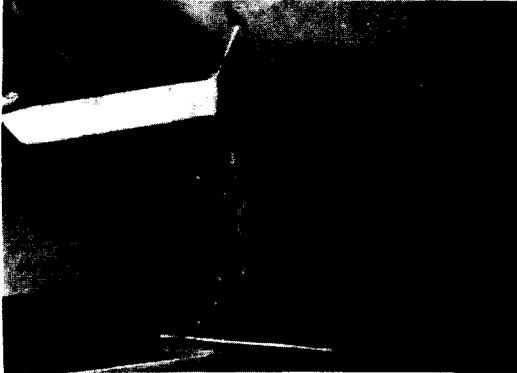


Fig. 2 The fixing holes are punched with the 10 mm round punch, countersunk and then finished with a 10 mm square punch.

Source: FAO, 1991



Fig. 3 The duck foot is shaped whilst hot, over the rounded end of the anvil.

Source: FAO, 1991

BLADES FOR LIFTING GROUNDNUTS

These are also shaped from 4 mm thick sheet metal and can be made in the three different widths of 200 mm, 350 mm or 500 mm. They are cut out using a template and shaped to the final form (Fig.4).

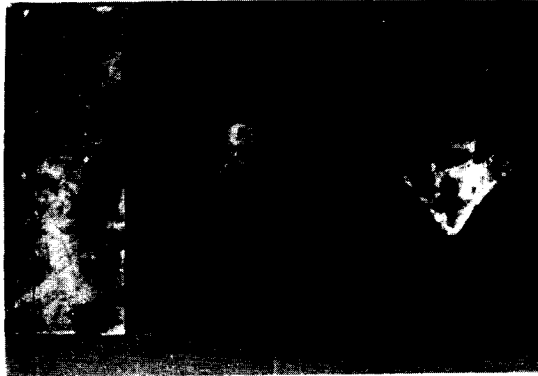


Fig. 4 The different stages needed to make the 350 mm groundnut lifting blade.

Source: FAO, 1991

THE POINT FOR THE RIDGER

The ridger point is cut out from a piece of 8 mm thick leaf spring which is hot forged over the tip of the anvil (Fig.5). Once it has been finished, it is heated up and quenched in oil for hardening.

REPLACEMENT OF OTHER PARTS

Many other parts of animal traction equipment can be replaced or repaired by the local blacksmith. A couple of examples are indicated below (Figs.6 and 7).



Fig. 6 The stages needed to make an Arara type fixing clamp.

Source: FAO, 1991

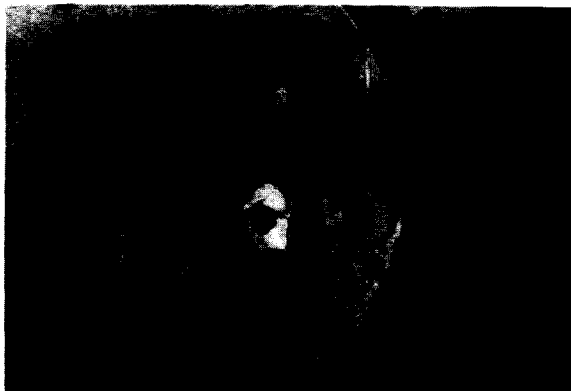


Fig. 7 Cutting off excess metal from a support wheel after replacing the bush and casting the hub with aluminium.

Source: FAO, 1991