Factsheet

Hand tools

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RECOFTC
THE CENTER FOR PEOPLE AND FORESTS

Hand tools

RECOFTC - The Center for People and Forests

Bangkok, Thailand

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Hand tools

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1. Axes

If locally made, axe handles should be fabricated from a well-seasoned piece of wood with straight grain. The handle should reach from the cutter's armpit to fingertips and from his hand to the ground (Figure 1-1). If an axe handle is not available as a model, use the dimensions pattern (Figure 1-2). Enlarge and trace the outline of the side of the handle on a piece of wood. Cut away excess wood on the top with a chisel and saw. Trace the outline of the top of the handle. Cut away excess wood. Finish shaping the handle with a knife. File and sandpaper to the dimensions of the cross sections shown below. The finished handle should be comfortable to hold.

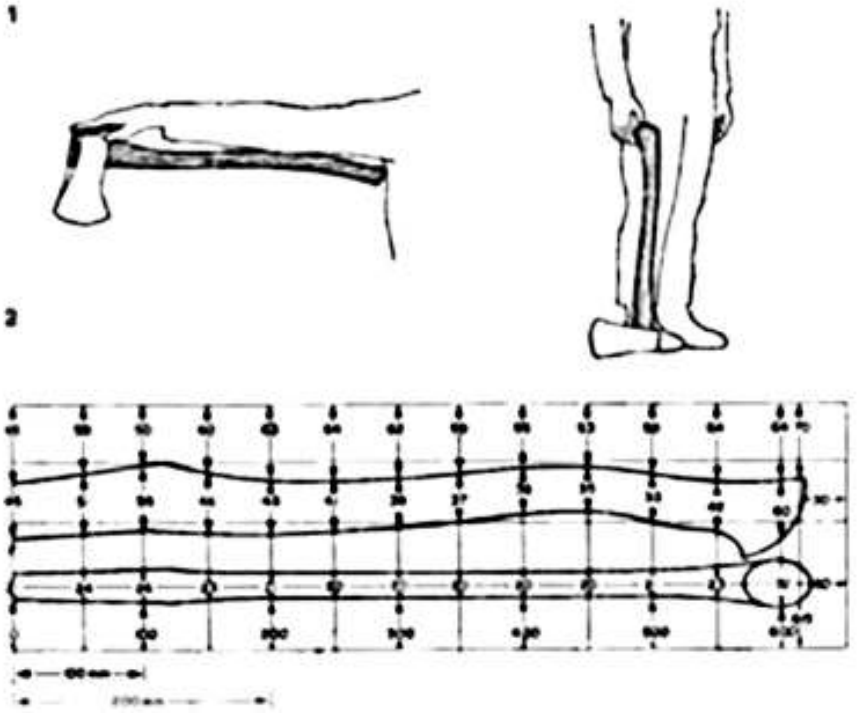

Figure 1. Axe with handle specifications

2. Two-man handsaws

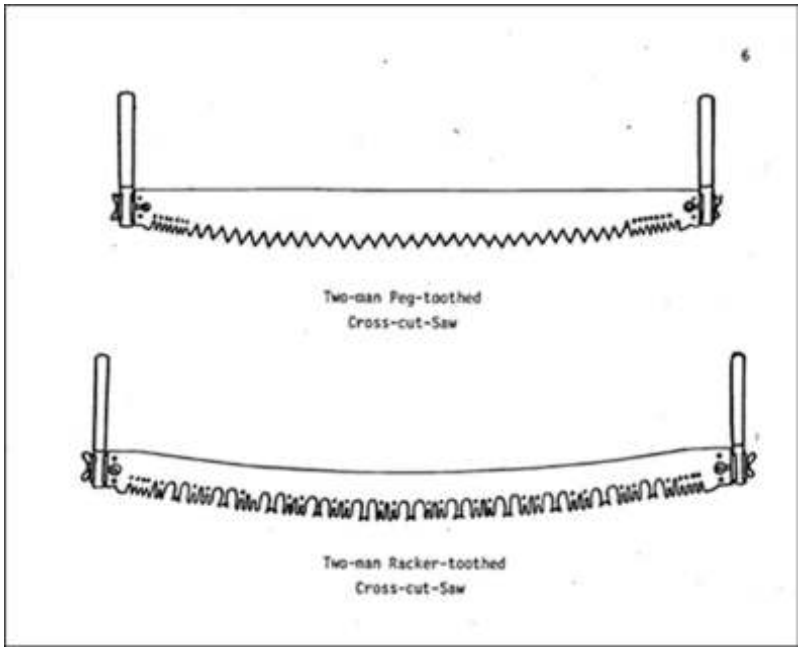

Figure 2. Two-man handsaws with different tooth specifications (Siddiqui 1990)

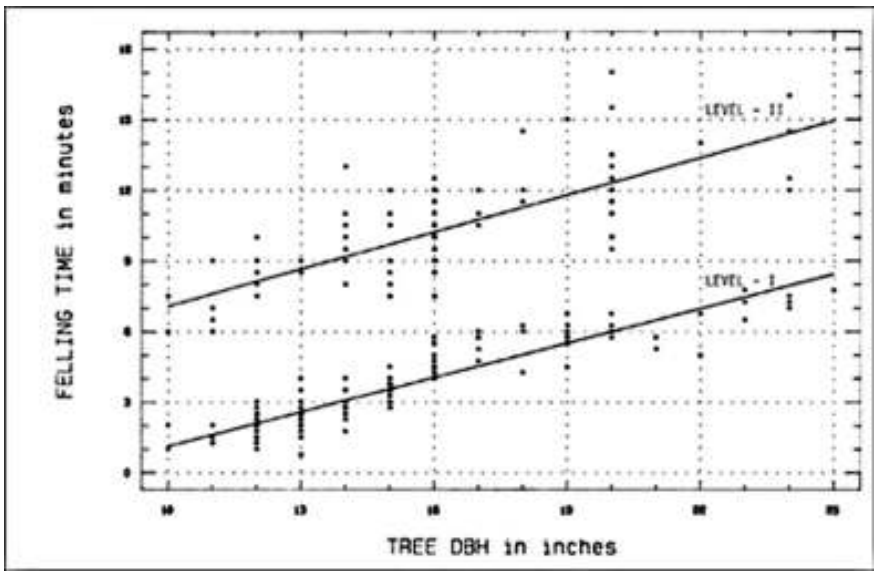

Figure 3. Comparison of felling time for chainsaw (Level 1) and two-man handsaw (Level 2) in relation to diameter at breast height (DBH) in *Pinus roxburghii* (Chir pine) plantations in Pakistan (Siddiqui 1990)

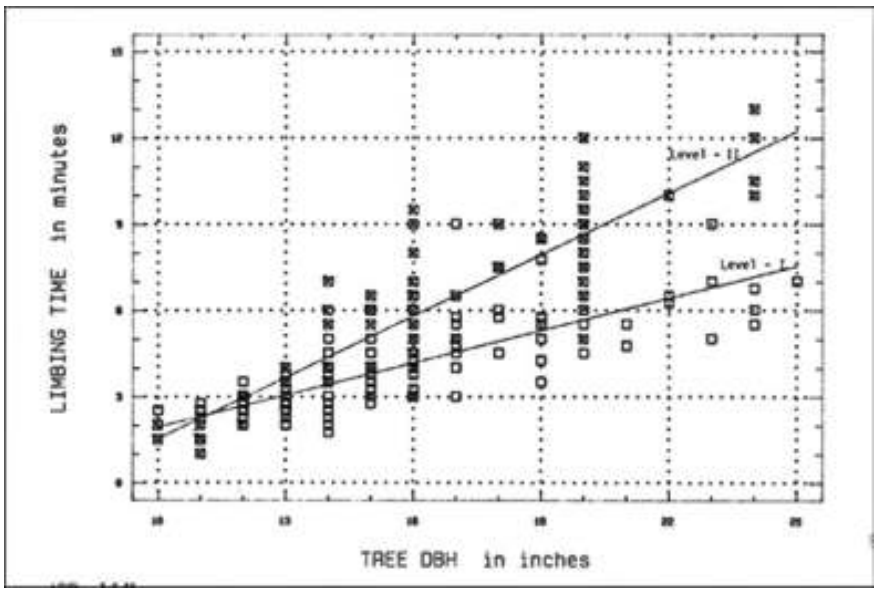

Figure 4. Comparison of delimbing time for chainsaw (Level 1) and one-man hand saw/axe (Level 2) in relation to DBH in *Pinus roxburghii* (Chir pine) plantations Pakistan (Siddiqui 1990)

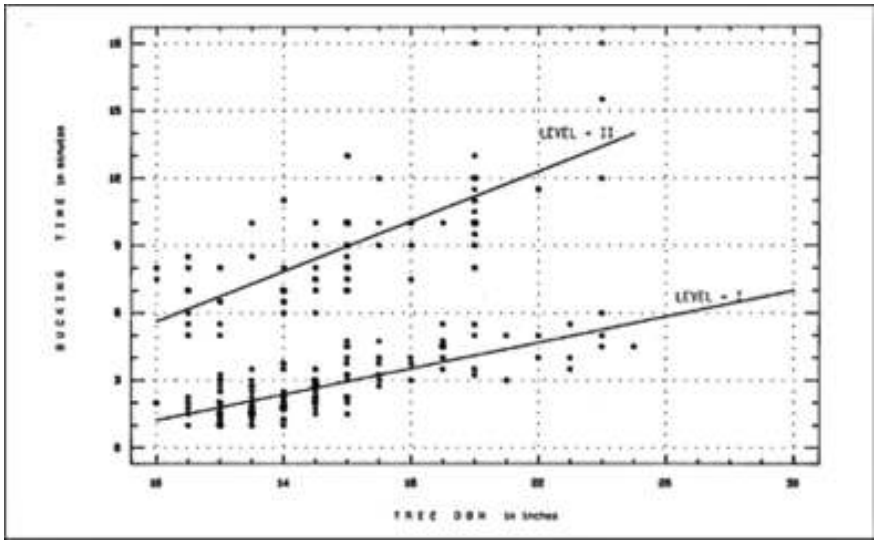

Figure 5. Comparison of bucking time for chainsaw (Level 1) and two-man crosscut saw (Level 2) in relation to DBH in *Pinus roxburghii* (Chir pine) plantations Pakistan (Siddiqui 1990)

3. Cant hooks

Cant hooks are used to lift, turn, drag or load small logs. Shapes of the hook and the handhold are shown in Figure 3. The tool can be cut and welded from one piece of iron 280 x 20 x 5 millimeters (mm) (hook). One piece of iron 230 x 20 x 5 mm (handhold), one iron pin 10 mm x 120 mm and a handle from one piece of wood or rubber (handle cover).

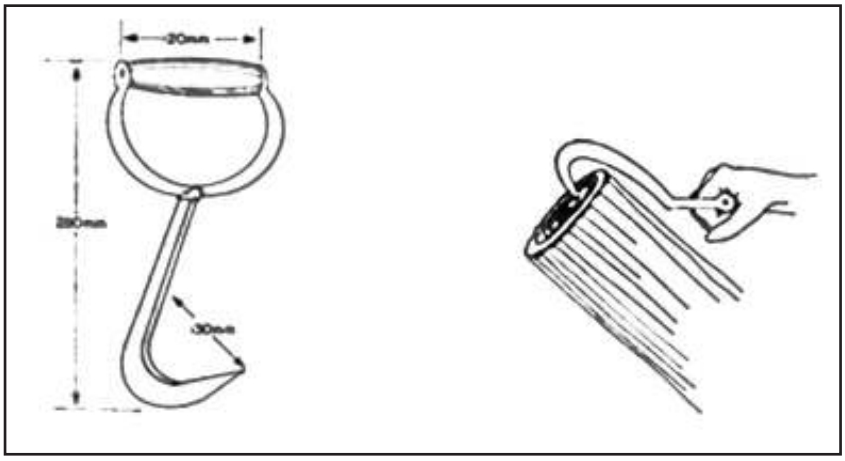

Figure 6. Cant hooks

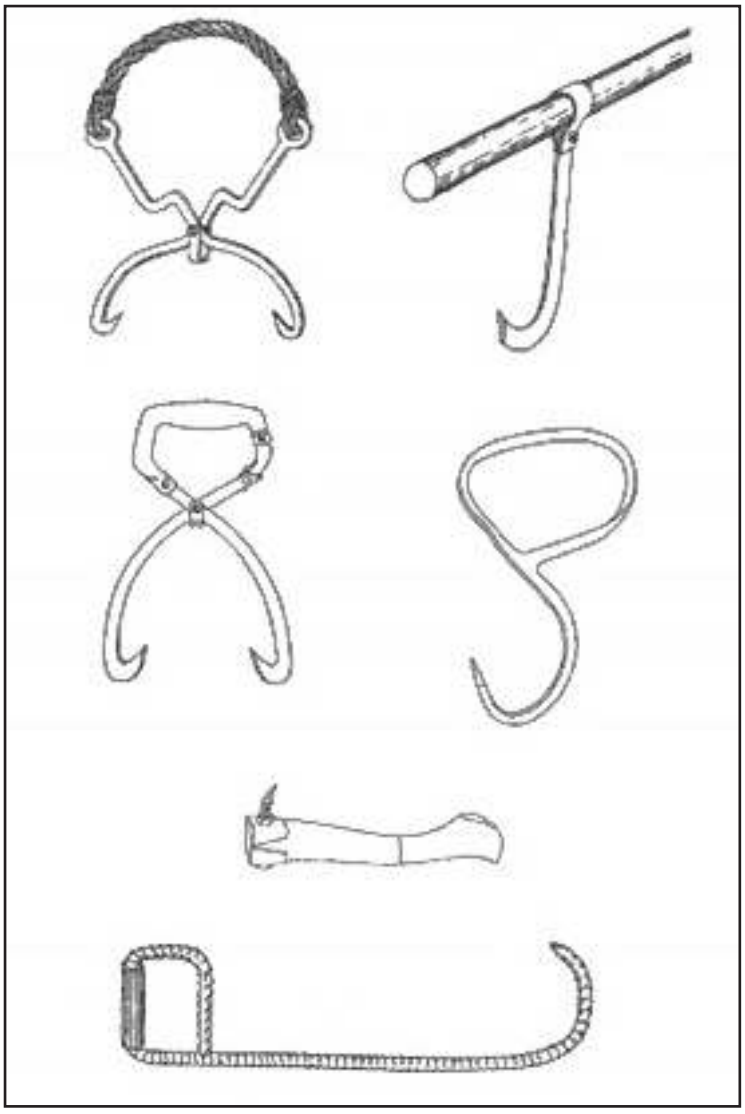

Figure 7. Additional kinds of cant hooks

4. Sappie or pickaroon

Sappies are used as levers or hooks to, like cant hooks, lift, turn, drag or load logs. They can be made by forging one piece of good quality steel 275-320 x 140 x 60 mm and one wooden handle 1 100-1 300 mm (somewhat longer, but similarly shaped as an axe handle).

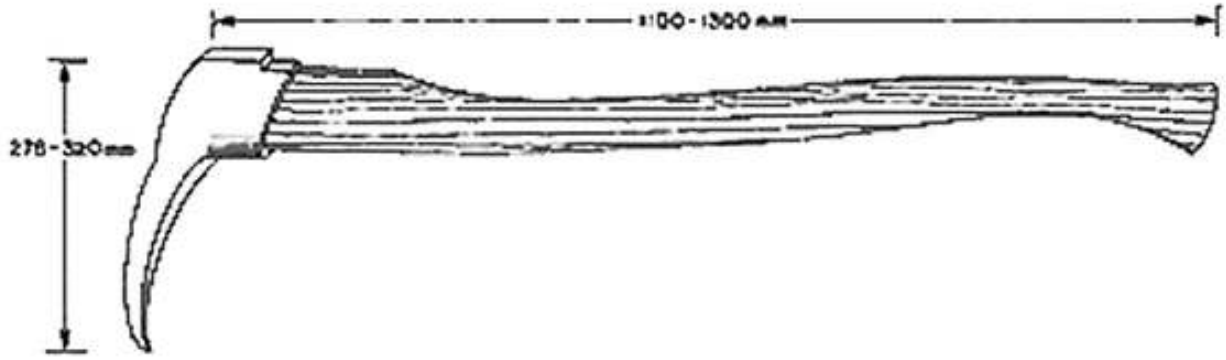

Figure 8. Sappie with specifications

Figure 6 shows various applications of the Sappie. It can be used point up as a lever to clear logs caught on obstacles or it can be driven point down into a log to pull it over rough ground. In harvesting on steep terrain, these make ideal tools to keep logs moving (see factsheets on manual downhill skidding and log chutes). They can also be used for loading, unloading or moving logs short distances on level ground.

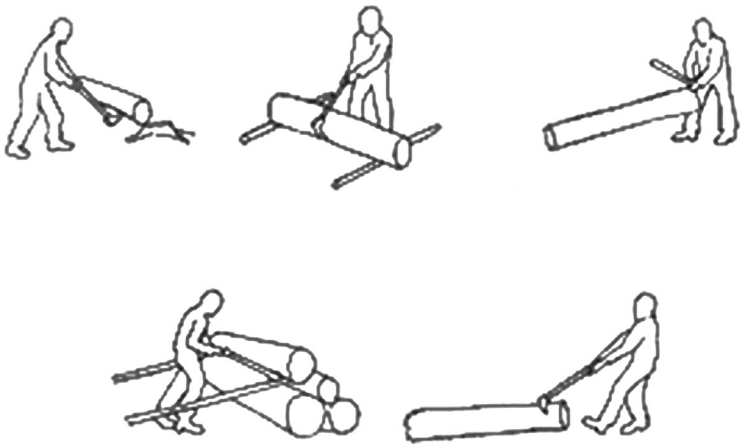

Figure 9. Application of sappies

5. Pike and log hook for rafting

This hand tool is used to push, pull or guide floating logs. It can be made from a sheet of flat iron 180 x 180 x 5 mm, a pole 3 000-4 000 mm and four 50 mm screws. The straight spike is for pushing logs. The angled spike is for pulling logs.

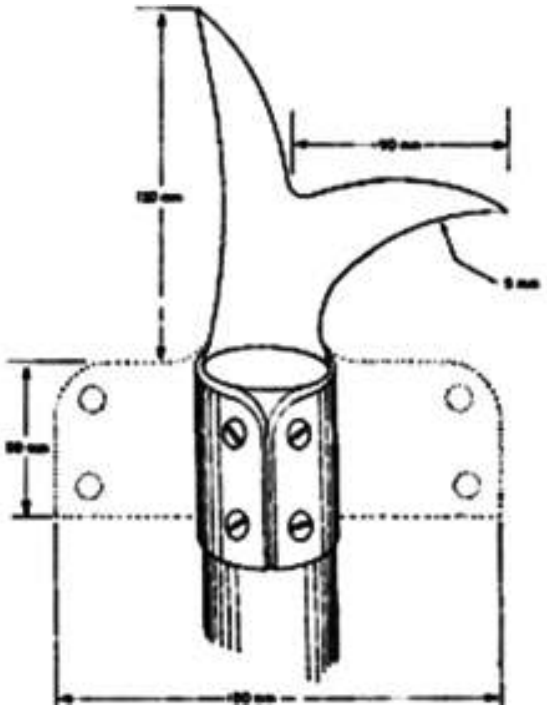

Figure 10. Pike and log hook for rafting

6. Log jacks

Log jacks are used to move or turn logs and take down lodged trees. A basic type is presented in Figure 8. They can be made from one iron bar 300-350 x 20 x 13 mm, another iron bar 125 x 50 x 10 mm, one piece of pipe 40 mm inner diameter x 70 mm length, one piece of hardwood 55 mm x 350 mm for the handle, one screw and two bolts 12 mm x 85 mm, and one bolt 12 mm x 40 mm with nuts and washers.

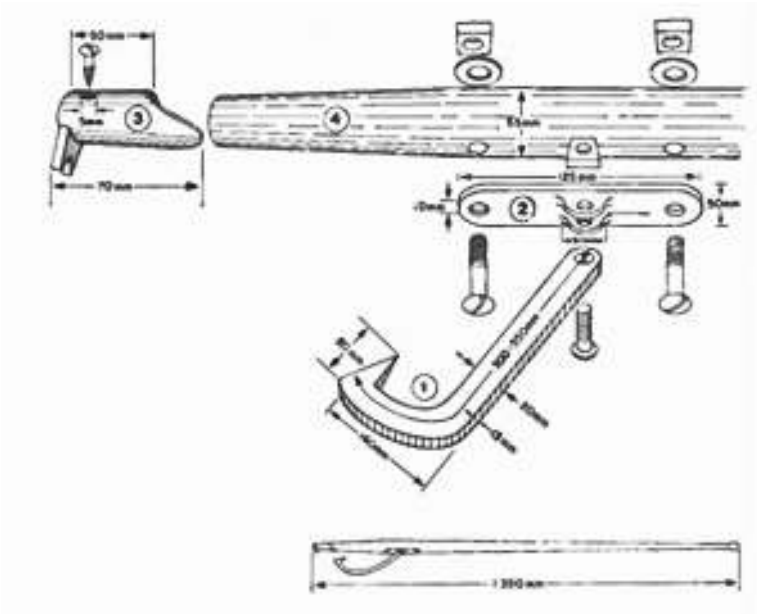

Figure 11. Basic log jack design

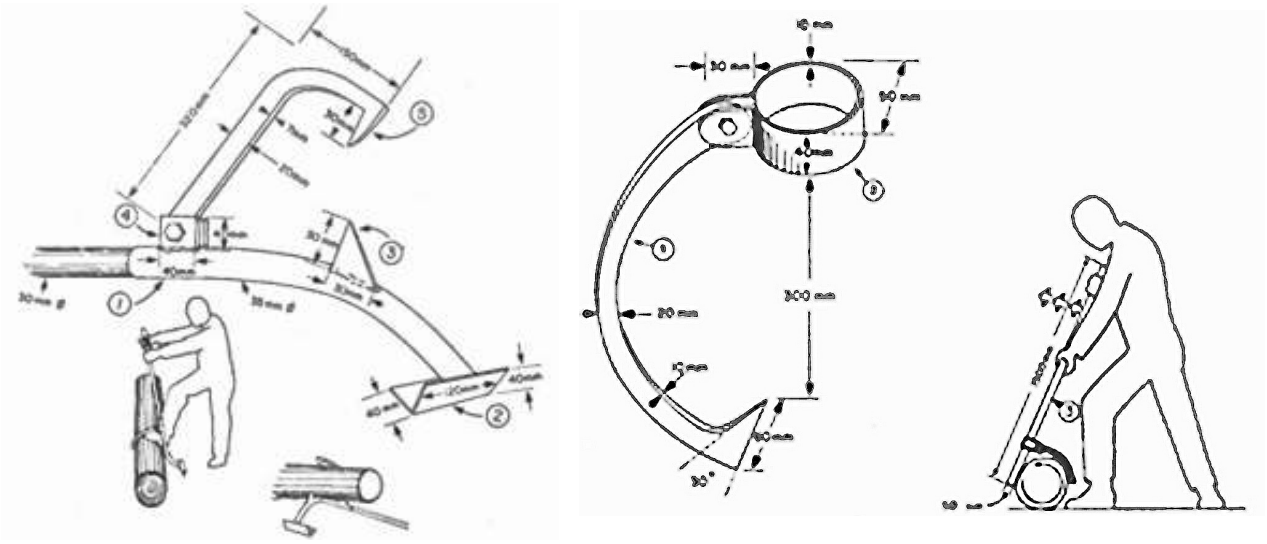

Figure 12. Log tongs for ground dragging

7. Log tongs

These tools are used by a single person or team to drag and lift logs. They can be made from two 15 x 25 x 600 mm iron bars, one 15 x 25 x 110 mm iron bar which are heated and bent to form the tong arms, one rivet 10 mm x 70 mm, a length of rope and one round piece of wood 50 mm x 700 mm,. Each arm should have an eye at one end and a point. Two kinds of points are illustrated below.

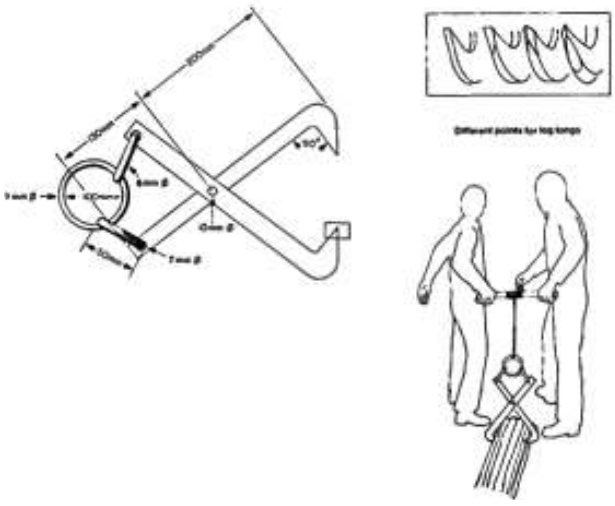

Figure 13: Tongs for log-lifting in a two-man team

Figure 14: Tongs for log-lifting in a four-man team.

8. Debarking tool

Debarking tools are used to strip bark from logs. They can be made from a piece of steel of a used truck spring 130 x 90 x 7 mm, one mild steel rod 15 mm x 1 220 mm, and two pieces of rubber hose or tube with 15-mm inner diameter.

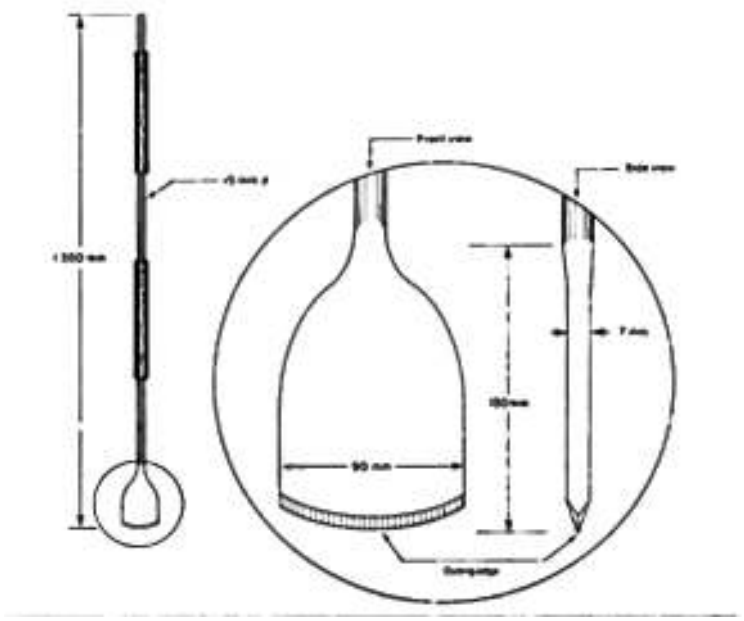

Figure 15: Debarking tool with specifications

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