

HAND AND PORTABLE POWER TOOLS

hardened and tempered, only an emery wheel, grindstone, file, or oilstone need be used to keep the head in shape and the edges clean and sharp.

Never grind hardened tools until after they have been drawn or tempered. Grind in easy stages with no attempt to take off much metal at one time. While grinding, keep the tool as cool as possible with water or other cooling medium.

Shock tools that require a soft or medium-soft edge should be dressed as soon as they begin to mushroom (Fig 30-4). A slight radius ground on the edge of the head when it is dressed will enable the tool to stand up better under pounding and will reduce the danger of chips being knocked off. Tests have shown that a radius of $\frac{1}{8}$ to $\frac{3}{16}$ in. is satisfactory on ordinary hand tools.

A file, rather than an abrasive wheel, is recommended for re-forming screw driver tips and for sharpening pike poles and axes. With a file, there is less danger of drawing the temper.

A wood-cutting tool, because of its feather cutting edge, should be shaped on a wet grindstone with plenty of water, or on a grinder having a wheel recommended by the manufacturer for that type of tool. To prevent overheating or burning, the tool should not be pressed too hard against the grinder. Frequent dipping in water will help to keep it cool.

To shape wood chisels, an oilstone set securely in a wood block placed on a bench can be used. The oilstone should never be held in the hand because a slip off the face of the stone could cause a severe hand injury.

After a wood-cutting tool has been shaped, it should be whetted on a clean oilstone to produce a sharp cutting edge (Fig 30-5). Often a few finishing strokes on a leather strop will produce a keener edge.

Metal cutting tools and hammer-struck surfaces, because they have greater body, can be dressed and sharpened on an emery wheel. Care should be taken that the tool does not overheat from too much pressure against the grinder. The manufacturer's recommendations for type and kind of grinding wheel should be followed. Each cutting edge should have the correct angle according to its use and be finished off with a file.

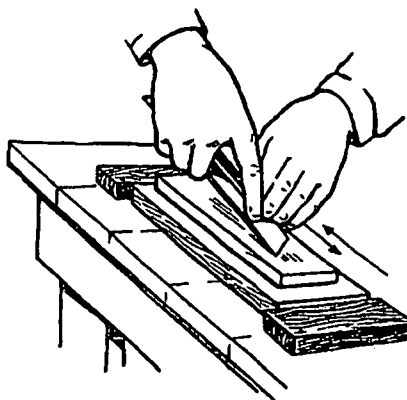


Fig. 30-5. This figure shows the correct way to whet a wood chisel or a plane iron on an oilstone to produce a sharp cutting edge. The bevel should be placed on the stone with the back edge slightly raised.

Handles

The handles of hand tools should be of the best straight-grained material, preferably hickory, ash, or maple, and should be free from slivers. To make sure that they are properly attached, handles should be fitted to tools only by an experienced person. Poorly fitted handles make it difficult for the worker to control the tool.

Loose handles in sledges, axes, hammers, cold cutters, and similar tools create a hazard. No matter how tightly a handle may be wedged at the factory, both use and shrinkage will loosen it. In some cases, tapping the wedge will take up the shrinkage. In others, the head of the tool can be driven back on the handle and the protruding end of the handle cut off.

Eventually, any tool will have to be re-wedged. The wedge is picked out and the handle is driven off. If the wood of the handle does not bear against the head eye at all points, shave the handle until it fits snugly. Then replace the handle in the tool and sight along it to be sure that the head is properly centered. After the handle is properly fitted into the head eye, replace the wedge.