SPANNERS and devices for TIGHTENING and LOOSENING

WORKSHOP HINTS and TIPS

By GEOMETER

IN general assembling and dismantling work, even an extensive standard tool kit sometimes fails to deal with a special nut, bolt or screw which has been used to meet some demand of design. Often, too, standard nuts, bolts and screws are awkwardly situated, and when they must be loosened and tightened for servicing work special spanners or adaptations of standard types are clearly worthwhile.

Of course, in restricted locations, standard spanners with jaws at an angle can be used in various ways, turning flat types over to change the angle of attack and so rotate a nut or bolt a fraction of a turn. Flat ring spanners, in themselves and when turned over, admit of still finer angular application, and do not require so much clearance for their use as open types.

Limitations of some locations can be overcome by using curved or cranked spanners, open or ring types; while other normally inaccessible places can be reached by tubular box spanners or socket spanners, sometimes used with a ratchet wrench. Nevertheless, it is surprising how often such variety proves inadequate.

When a welding torch is at hand, a modern chrome spanner can be quickly bent or cranked to deal with a special situation-or a cranked spanner can be slightly straightened or reset. Heat from the torch should be concentrated in the area where bending or straightening is to be done. One end of the spanner is in the vice. The other end is pulled to angle. If you have an old vice, this work, like any other involving heat, should be done in it.

For a large ring nut, which may be awkward to turn, a spanner can be made from rectangular mild steel bar. The dimensions of such a nut defeat proper use of an adjustable spanner with limited depth of jaws, though their opening may be ample. The nut may be in a recess and thus inaccessible, or so thin that it squeezes to the thread. Occasionally an octagon nut will be used, to limit the size over comers.

The spanner is as at ***A.*** To make it, a piece of steel is machined the width of a flat on the nut; it can also be the length across two flats. if the nut is not very large. Then using it as a former, the spanner material can be bent in two pieces for a hexagon 1, or an octagon 2. The former serves again for welding the pieces -holding in the vice or a clamp. Then the box spanner is welded to a backing piece 3. Any welder can do the job with the pieces prepared.

Extra reach is given to a tubular box spanner, B, by a solid or tubular extension fixed with a rivet or bolt. The extension can take a tommy bar, or a nut can be welded to it to take a ring spanner. Another idea for a tubular box spanner is to slot one hole, so that the tommy bar can be moved from a right-angle-which, at times, is necessary to clear obstructions. Slotting is done by drilling an extra hole,_ or holes,. and running mto the ortginal one with a round file.

The problem of loosening a slender cap can usually be solved with a piece of strong cord and a bar, C. The cord is wound two or three times round the cap, tied, and twisted up by the bar, which is used as a lever. Such a cap distorts if it is gripped in a vice, or the corresponding part may be easily broken, so that an all-round grip is essential.

A flange may be stopped from rotating, while its securing nut is tightened or loosened, by a piece of flat bar held by a bolt to abut to another bolt, ***D.*** Alternatively, with a cut-away on the bar, two bolts can be used through it.

For turning large screws, or screws in awkward places, a driver **can** be made from flat mild steel, ***E,*** its two ends bent initially at right angles and then one twisted at 45 deg. to improve angular working. For a screw or cap requiring a pin-spanner, rod can be bent U-shape and used in a tool-maker's clamp, or bar can be drilled and pins driven in, ***F.***