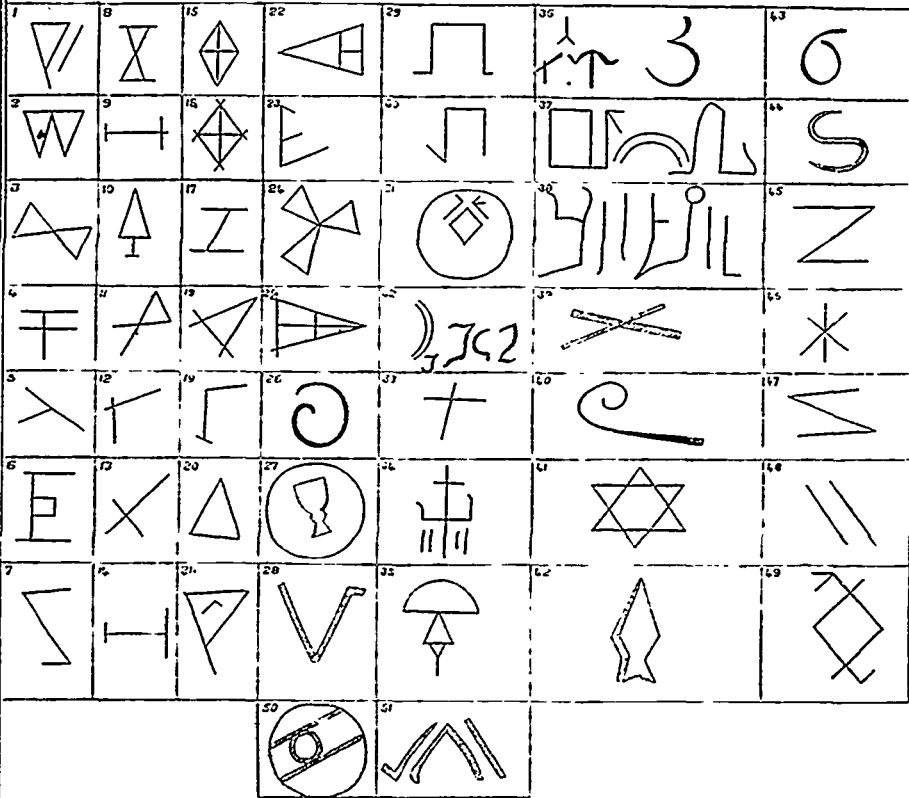


CUTTING SCREW THREADS WITH A HAND CHASER.



length, and should have top rake. For cast iron, the top face of the teeth should be level, or they will cut too freely and rip the threads. For brass, the teeth should be ground at an angle of which the points of the teeth are the lowest. The cutting edge of the chaser should be above the horizontal center of the work; and the body of the chaser should be held as nearly horizontal as will permit the teeth to cut, otherwise the positive or negative rake of the teeth will cause them to cut a thread deeper than themselves.

At the termination of the thread, it is necessary to cut a recess as deep as the thread, in order to give the chaser clearance, and prevent it from ripping into the shoulder, which would form the termination of the thread in the absence of a recess. It is a very common practice to cut this groove or recess with a V tool or graver point, instead of with a round nosed tool, thus producing a recess having a conical instead of a curved outline: the result being to very seriously impair the strength of the bolt, and cause it, under severe strains, to fracture across the section of the bottom of the groove.

In a series of experiments made a few years ago, by the English Government, upon targets representing ship's armor, the bolts were found to be unable to withstand the shock caused by the cannon shot striking the target; and it being observed that the fracture nearly always occurred across the section above referred to, the clearance grooves were made with a hollow curve, which obviated the defect. In this connection we may also remark that threads whose tops and bottoms are rounded are much stronger than are those whose angles terminate in a point or angular corner (a fact also demonstrated on the trial above referred to); hence those cut by hand are, in this respect, superior to those cut by the lathe.

Inside or female threads, that is to say, threads cut in the bore of anything, are cut by hand with an inside chaser, which cannot, under any circumstance, have rake upon the top face of the teeth, as the latter necessarily cut at a distance from the lathe rest; and were they made to cut freely, they would rip in, and more power would be required to hold them than can be sustained by the hands of the operator. It is a good plan to

MASONS' MARKS, FROM TARTUS AND JEBEL, IN THE NORTH OF SYRIA.