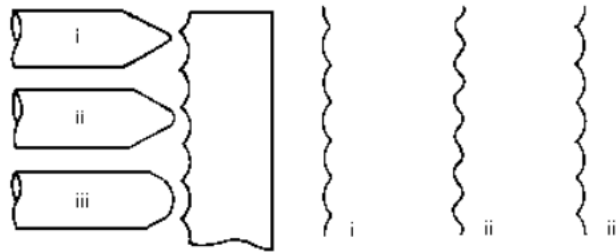


Technical Reference

Pattern Bars and Touches - How They Work

The raq or pattern bar is the engine turner's wavy ruler. The means of cutting a line that is not straight, but usually wavy or zig zag in profile. There is no requirement for the profile of the pattern bar and cut to have a regular repeat like a wave, but it usually does.

Begin by examining the way that the shape of the touch affects the cut profile on a simple regular pattern bar.



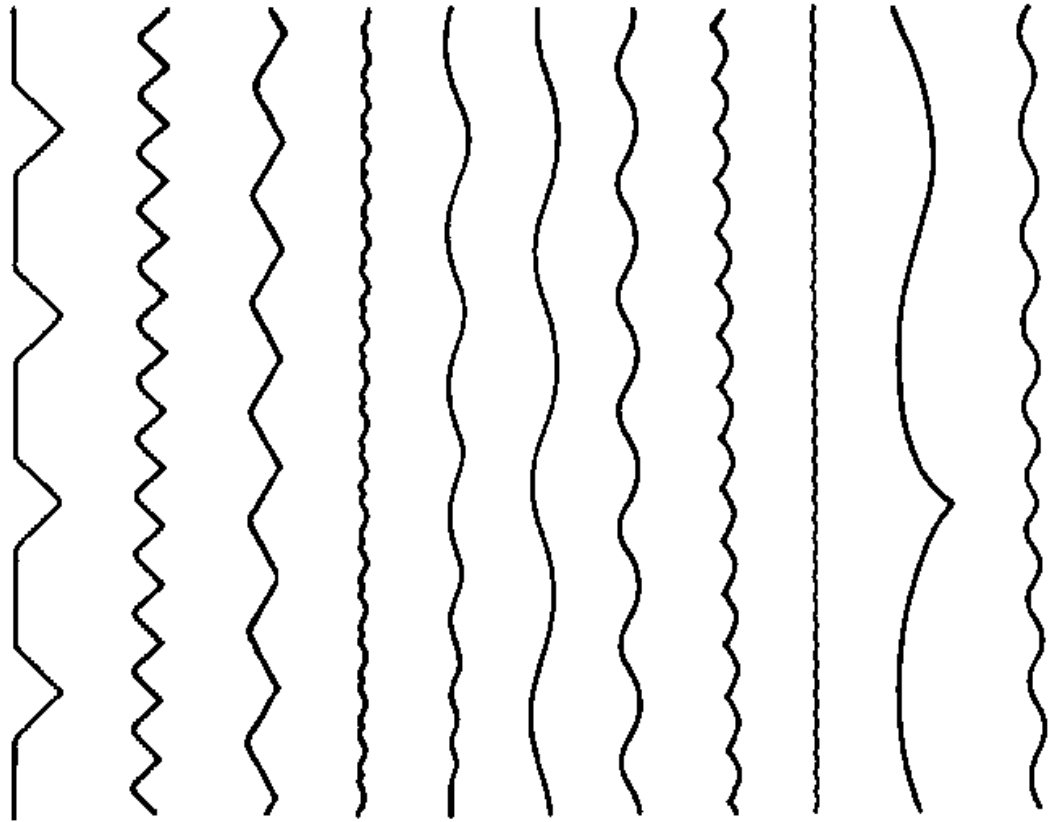
Different Touch Profiles alter the shape of the wave on a Pattern Bar

This illustration shows the patterns produced by the movement of three touches on the same pattern bar

The two extremes and the median symmetrical wave are shown here. Hopefully the diagram is self explanatory - Touch i produces wave i, touch ii wave ii etc. Notice (particularly in i and iii) that the wave form is mirrored left to right, this is because it is the workpiece and touch that are moving together; the tool and pattern bar are stationary. Use your hand and finger or moving paper and stationary pen to simulate the movement if you don't understand.

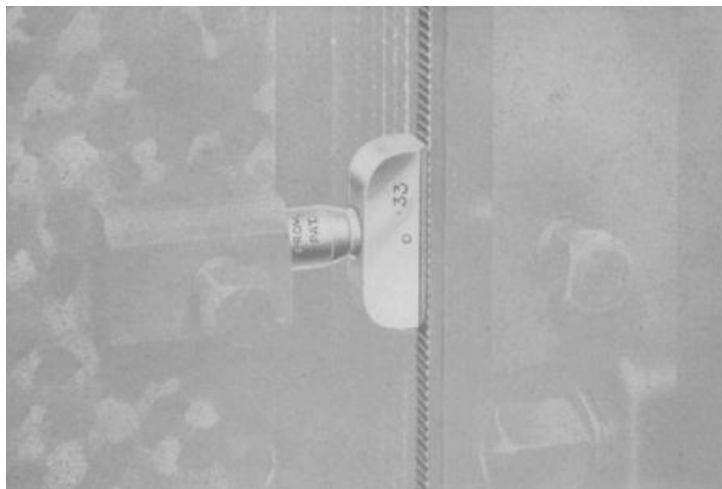
One may find it helpful to refer to the schematic drawing of a straight line machine to see how the motion of the touch following the pattern bar works.

A Few Pattern Bar Profile Examples



Sample Profiles Remember: the line produced in each case will be a mirror image of the profile, influenced by the touch profile as above The sharper the touch profile, the nearer the line shape to the mirrored bar profile

The Plant Patent Multiple Touch

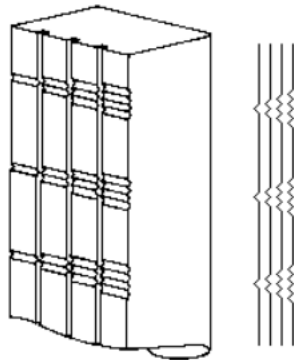


A multiple touch and a .33 barley pattern bar Invented in 1931 by G Plant & Son, this device spreads the wear on a fine wave pattern bar for patterns such as barley and at the same time improves the quality of the work Each multiple touch is kept with it's own bar as a pair There is a fine spring inside which holds the two halves together when not in use



The Pledge Multiple Touch with much stronger spring and hardened ball joint This example is a 90 degree zig zag that, having been made on an engine turning machine using the same sliderest that is used for engine turning the end product, will produce an exact 90 degree square basket weave for watch dials. It is believed that all examples of this have been sold when the company was liquidated and their whereabouts are unknown

Multiple Pattern Bars



A simple example of a multiple pattern bar. The most obvious pattern created from this is a diamond stipple, the first half of which is illustrated in this sketch. A practical example is demonstrated of this exact bar here

Pattern bars have been created that can produce letters and numbers as well as logos and other graphic icons.