

2. ***Cutting Lines: The basis of all engine turning***

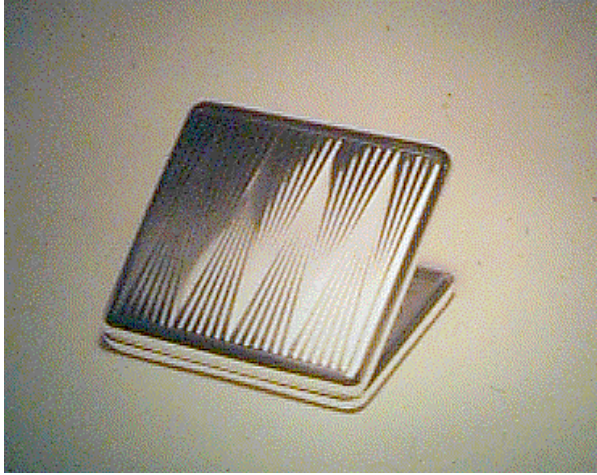
Engine Turning Radiating Lines - Sunray Patterns

By rotating the workpiece through a small angle after each cut, the lines will radiate, producing a sunray pattern. The centre of rotation may be on or off the actual pattern area up to a maximum radius constrained by the size of the machine. Great care is necessary to produce a satisfactory result because of the problem that, particularly near the centre of rotation, the guide will tend to drop into the first few cuts causing a streak which would be unacceptable.

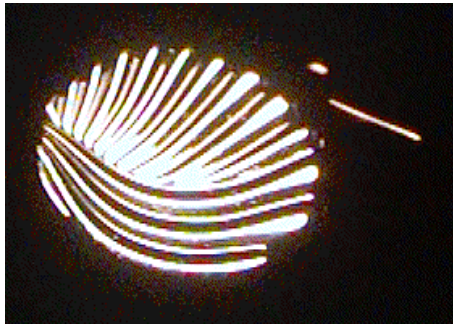


Enamelled picture frame engine turned with sunray lines and spaces. By making a natural break in the pattern, leaving out every 5th cut, the problem of finishing without a noticeable streak is partially alleviated, as explained further below

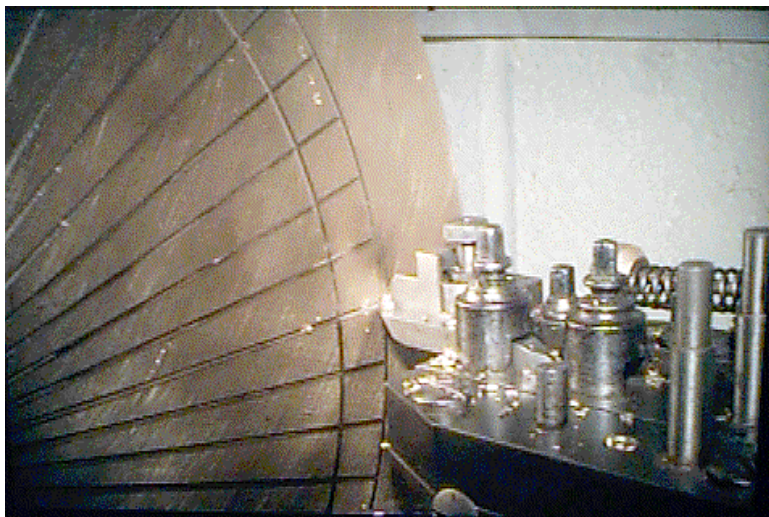
In these two Frames the centre of rotation was the centre of the job and about 4 or 5 cuts made and then a missed cut to accentuate the design. These missed cuts also perform another function which is to allow the guide to rest on uncut metal for the final cut. If the surface being cut is flat then depth stops can also be used to ensure a clean and invisible finish.



There can be more than one centre of revolution as in this silver powder compact. The piece was repeatedly re-centred to create this design from interlocking sunray triangles, reminiscent of the style of a back-gammon game board.



The pattern can consist of wavy lines or even a single curve as with this cufflink. Most patterns that can be cut parallel can also be cut as Sunrays, though with deep waves and crossing for basket type patterns the lines may cross over near the centre of rotation.



A large dial for a clock in a public building, slightly domed. Cutting a successful sunray on a curved surface presents many challenges and requires very careful planning of the design and cutting order.