

WHEN IS AN OVAL NOT AN ELLIPSE?

In Victorian times I believe there was a controversy over the definition of 'oval versus ellipse' which resulted in something like the following:

1. Oval shapes include 'Oblongs', 'Eggs' and 'Ellipses'.
2. An 'Oblong' is somewhat like a rectangle with rounded corners. It is slightly longer than an oval, and its sides are parallel.
3. An 'Egg' is the shape of a globe, where the perimeter has to follow a curve, which is stretched outwards from the poles by different distances so that one end is more elongated than the other.
4. An 'Ellipse' is mathematically determined; however, an approximation may also be formed mechanically in several ways:
 - i the line forming the perimeter may be drawn by a pair of trammels, one point following a horizontal path and the other following a vertical path, both paths intersecting at their centres.
 - ii It may also be taken from a slice (cutting a plane from below the top to above the base) of a cone, at an angle inclined to its axis.
 - iii In ornamental turning terms an Ellipse may be generated by an Ellipse Chuck, the most common form of which has a back-plate which is screwed to the lathe spindle and rotates with it; a slide runs on the back-plate and is moved by pallets (or guides) at each end which embrace a 'cam-ring' that is set on the lathe headstock and may be adjusted horizontally. The cam-ring is moved horizontally beyond the lathe axis (by a distance of one half the chosen difference between major and minor axes of the ellipse to be formed). As the chuck rotates, the cam-ring forces the slide beyond the lathe axis twice for each rotation of the chuck.

John F.Edwards 24-02-2013