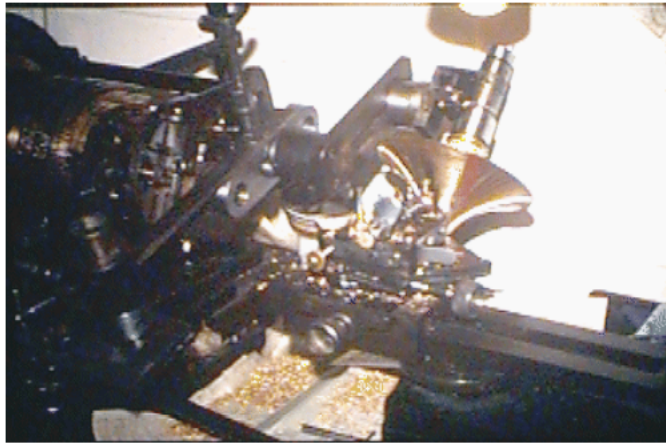


6. *Three Dimensional Circular Work*

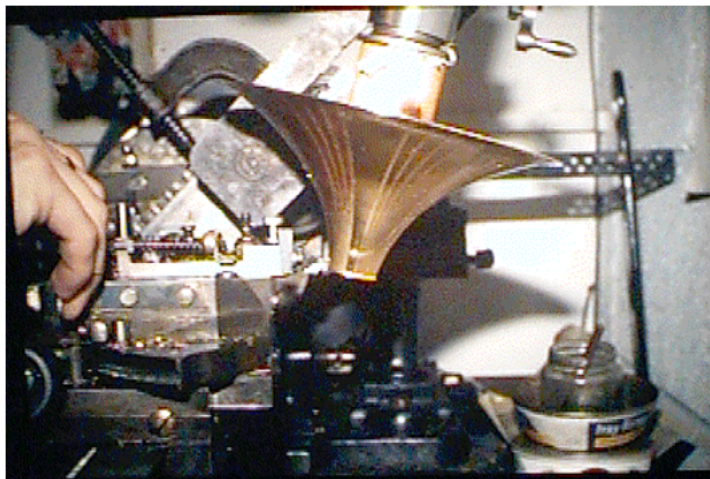
A Recessed Trumpet Shaped Base for a Table Centre Piece

This shows the geometry of cutting along the axis of a concave curved cone. The main difficulty with this sort of shape is achieving a sufficiently rigid setup to prevent tool chatter, and particularly with larger objects (this 18ct yellow gold base was about 200mm in diameter) there is also the problem of balancing the weight in order to let it rotate freely. This particular piece required quite a large weight on a radial arm. The G Cramp holding the weight can be seen here but the weight is outside the picture. This took over a week to do because only small amounts of gold could be removed with each pass of the tool.

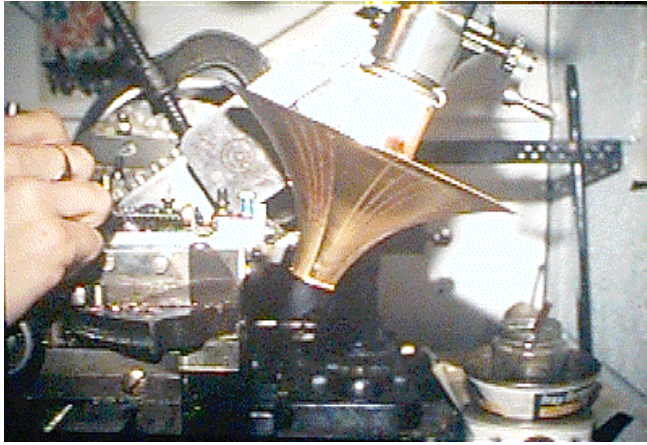


The Basic Set up, balanced ready for cutting

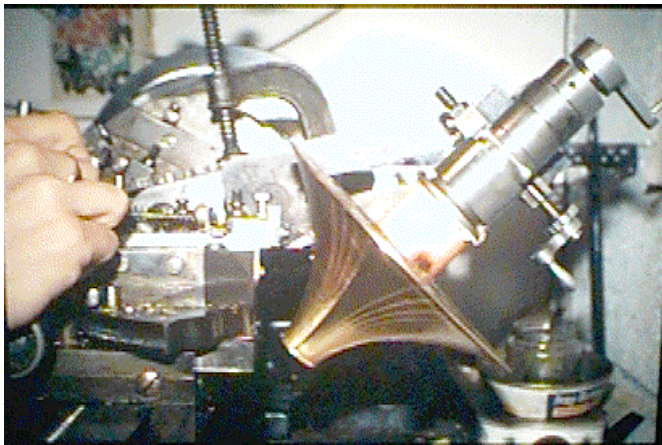
The five pictures below show the movement of the workpiece for cutting the recessed stripes. Trimming out the ends of the stripes was very carefully done with the work reset on a different rose engine. Finally the wide stripes were stoned, prepared and engine turned in a rotary direction with a circular moiré pattern.



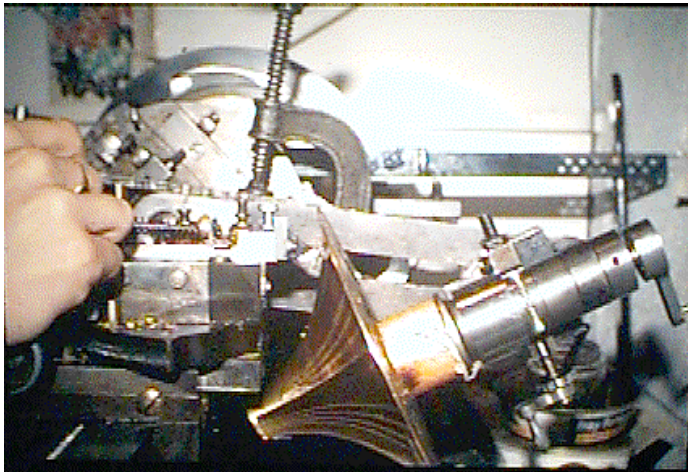
Beginning the cut



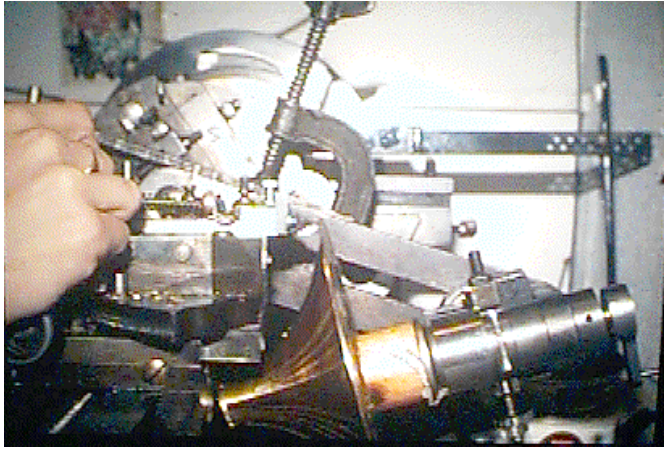
The piece rotates in the opposite direction from normal because cutting is being done with the tool beyond the centre line of the machine, sort of inside-out



The continued motion should be obvious now



Slowing for the end of the cut



Finishing the cut at exactly the right place is both absolutely essential and very difficult with all the weight and momentum. A special stop was made from a small G clamp, made for the purpose, which had to be reset for every single cut.