28th Sept

Doh! - I should have checked my [Spam] folder ---- The Mach3 Licence went in there on the 24th so I could have been using it 3 days ago. No matter, it's installed now and I can press ahead with making the Ratchets & Pawls.

I've always been 'tight' as far as getting the most out of any piece of material - working with Silver makes you very aware of material costs - and since most of the wood I work with is high value that mind-set persists. This attitude however sometimes bites you in the bum! The African Leadwood blank for the Ratchets & Pawls is only just wide enough to accommodate the three Pawls across the width (see Fig-36) and although I have set [Tabs] to stop the components breaking free, they don't help when there is no material beyond the Tab. I now know this because the first two Pawls broke free before the roughing cut had completely finished. This also brought to light the fact that the orientation of the grain is even more important than I had assumed.

The first Pawl that broke free was also damaged due to the grain not being in line with the most important part.

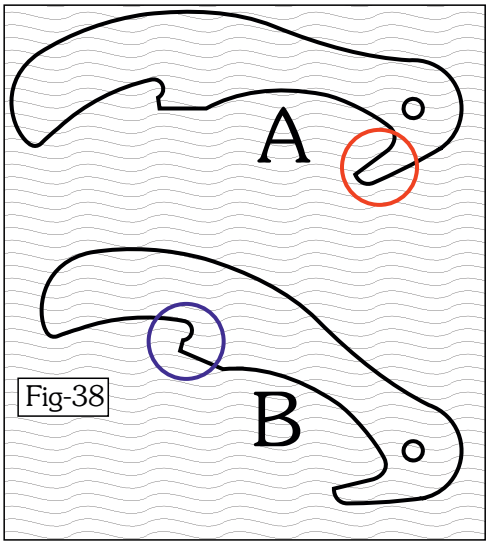

Fig-38

I'd drawn the Pawls in line with the long side of the blank which made the grain lay along the main part of the body but the most important part as far as grain direction is concerned, is the small 'finger' (Fig-38 Red circle) which stops the Pawl from dropping completely away from the Rachet due to gravity. You'll notice that when placed as in [A] the grain runs across the finger but in [B] it runs along the length. This orientation makes no difference to the part that takes the pressure when the Pawl pushes the Ratchet (Blue Circle).

The Ratchets don't have to be cut completely through since they will be finished on the Lathe so the last mm can be sawn through to cut them free from the blank.

I have now finished the Ratchets and nearly have two of what I hoped would be 12 Pawls, I'll make the other ten tomorrow but for now Fig-39 shows one of the Pawls roughly in place on the Ratchet – I've photographed them with the technical drawing in the background since that might give a better understanding.

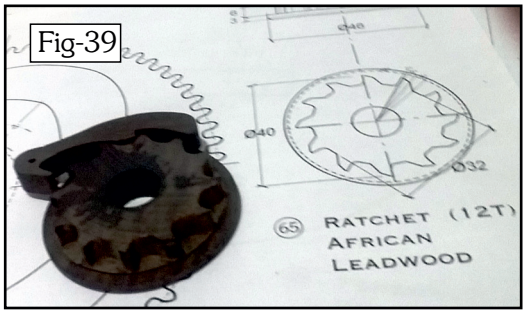

Fig-39

29th Sept

Reviewing my stock of African Blackwood and bearing in mind the need to allow more room for holding the blank, it seems most sensible to keep it at 55mm wide so just taking a 6-7mm thick slice off the billet will do the job. By doing the second stage drawing in CorelDRAW! I can place the Pawl outline so that the orientation of the 'finger' is in line with the grain and duplicate that leaving a suitable space for the cutter between each. Although I know that I need more space for clamping the blank so that I don't run the risk of the Pawls breaking away before they are finished, I'm still conscious of minimizing waste!

My first layout (Fig-40) looked OK but on reflection I thought that there was too much waste so I did a few changes - still bearing in mind the grain orientation with the finger - and found a better solution - Fig-41. This affords better clamping as well as using less timber and although the blank is still 55mm wide, I'll be left with a useable piece 20mm wide rather than 'scraps'.

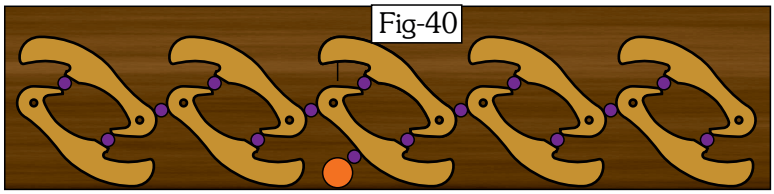
Fig-40

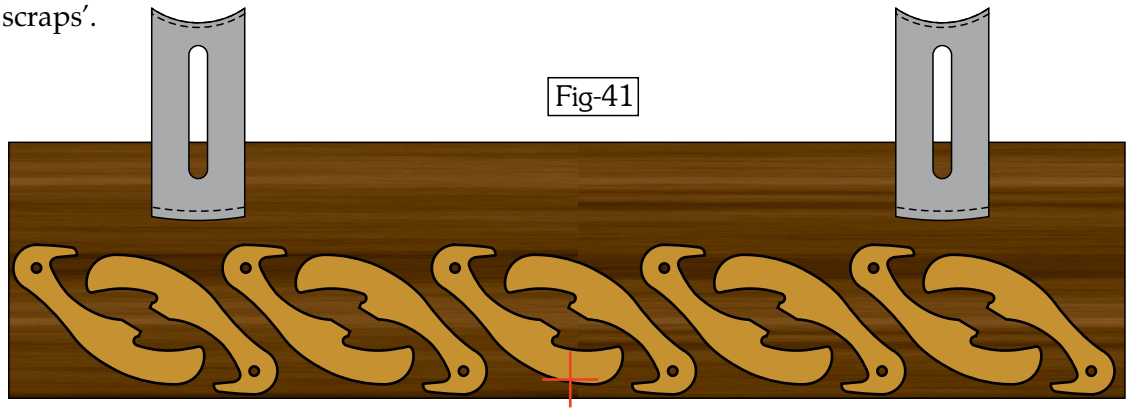
Fig-41

It seems there are many benefits of laying out components prior to creating a .DXF file and although I haven't done anything in the workshop today, it has definitely been 'productive'.