A small tangential tool-holder

I first saw a description of this kind of tool-holder on Gadgetbuilders website : (http://www.gadgetbuilder.com/ToolHolders.html#Tangent), he made his for his quick-change tool-post. I decided to make one with a shaft of approximately 10mm so it could be used on other lathes as well. There is also a good description on Mikes Workshop : (http://mikesworkshop.weebly.com/tangential-tool-holder.html).

I already had a box with 1/8 in. HSS tool-bits and decided to make a small tangential tool-holder for my small lathe. The tool-holder on my small lathe will accept a shaft of up to 12mm, so that gave the size of the shaft.

The tangential tools cut well and it is easy to grind the tool-bits using a simple jig.

I used a piece of 10mm thick steel and started with milling the shaft outline.

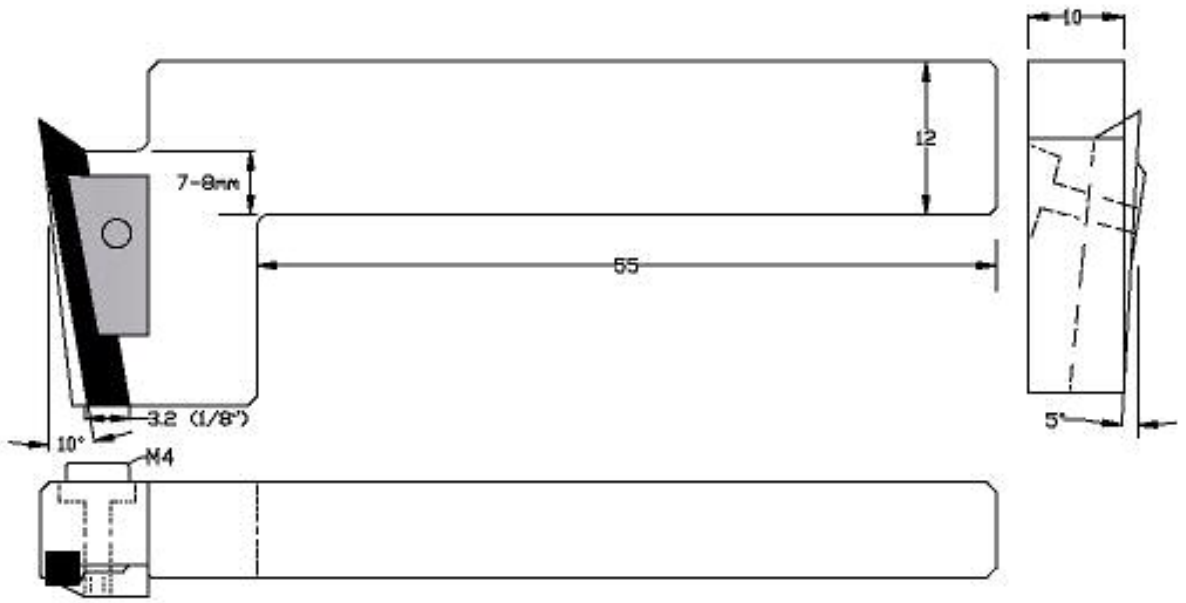
To get the various angles right I used a tilting vice and mounted it so the jaws were slightly angled (about 10°) with respect to the longitudinal travel of the milling table. The vice itself was also tilted.

This way I could mill the side of the tip of the tool-holder (right photo). And with a 3mm end-mill mill the slot for the tool-bit (photo below).

I also drilled a 4 mm hole and made the "nut" that clamps the tool-bit in the slot.

At last I made a small grinding jig for grinding the tip of the tool-bit.

Here are a few pictures of the finished tool:



Title	Tangential Toolholder for square 1/8" toolbits		
Size A4	T.H.		
Scale 2:1	Date		