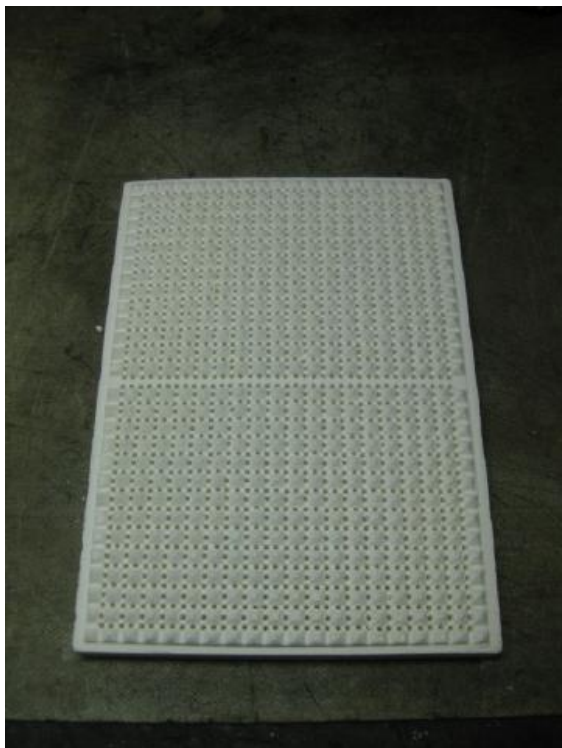


## **Ceramic Burner** from copper stop end pipe fittings. In this case a 28 mm one.



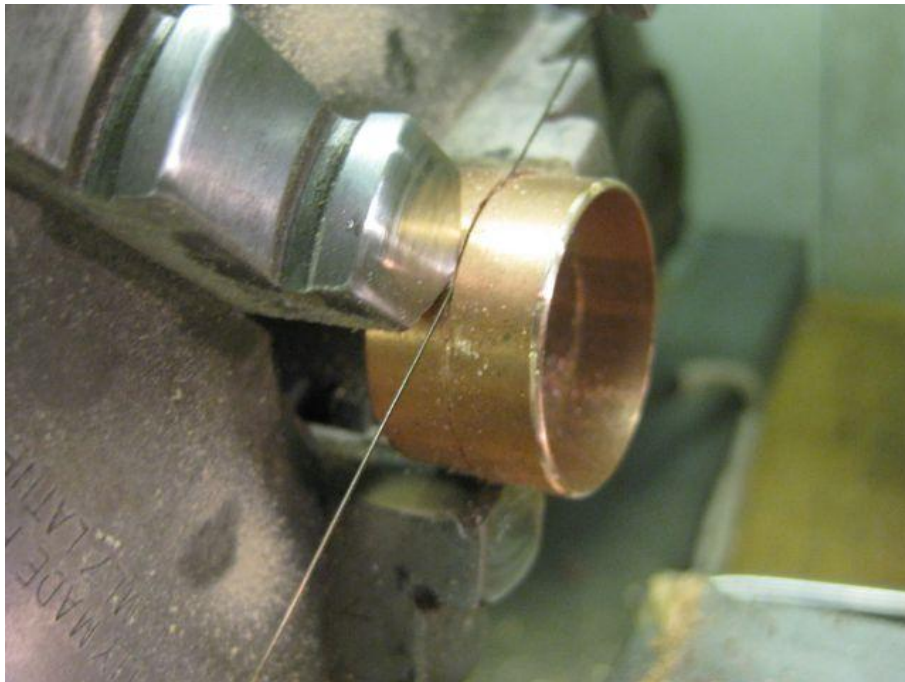
A ceramic tile that is used on portable gas heaters. These heaters use two types of ceramic tiles, one that is hard and cannot be cut, the other soft and can be. There are several styles of these soft tiles.



The components; 28 mm stop end, a section of ceramic tile, a piece of 28 mm copper pipe, a piece of K&S brass tubing 1/4" OD and a No.3 gas jet. The piece of wood is a plug for holding the stop end while machining and drilling it.



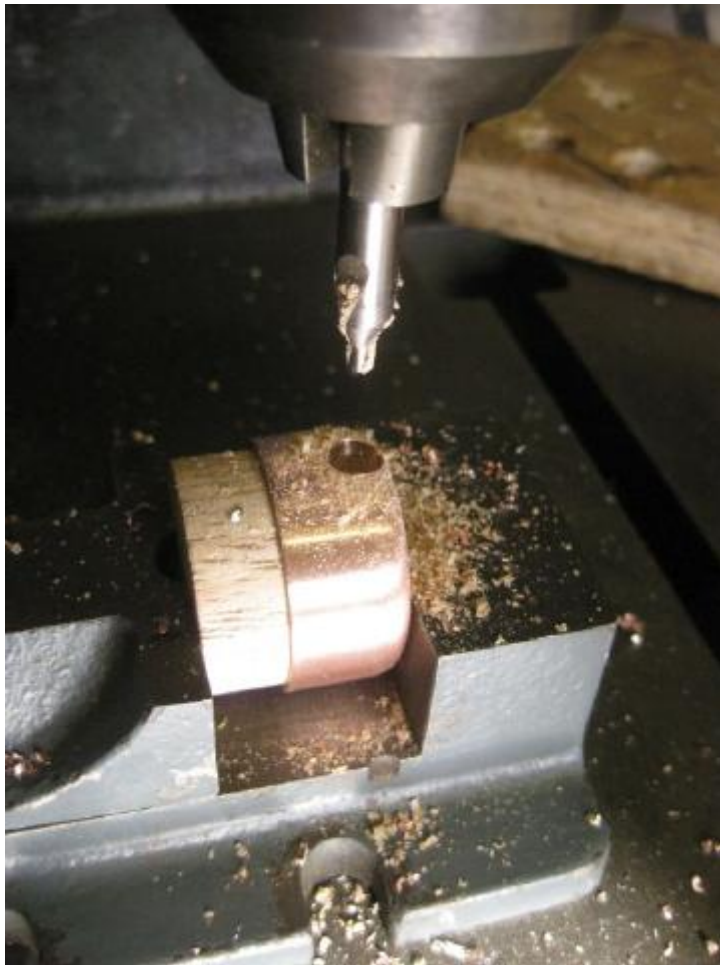
Both the stop end and pipe were cut to length using this technique.



The piece of pipe was hard soldered inside the stop end to support the ceramic when it is in place.



The hole for the feed tube was drilled. I find lubricated centre drills do this very well in annealed copper. Slow rpm and a lubricant help.



The feed tube was hard soldered into the body.



To create the air hole, first a small hole was drilled in the annealed brass tube which was opened out using a broach. For a clear run for the air all burrs must be removed from these holes



Air hole.



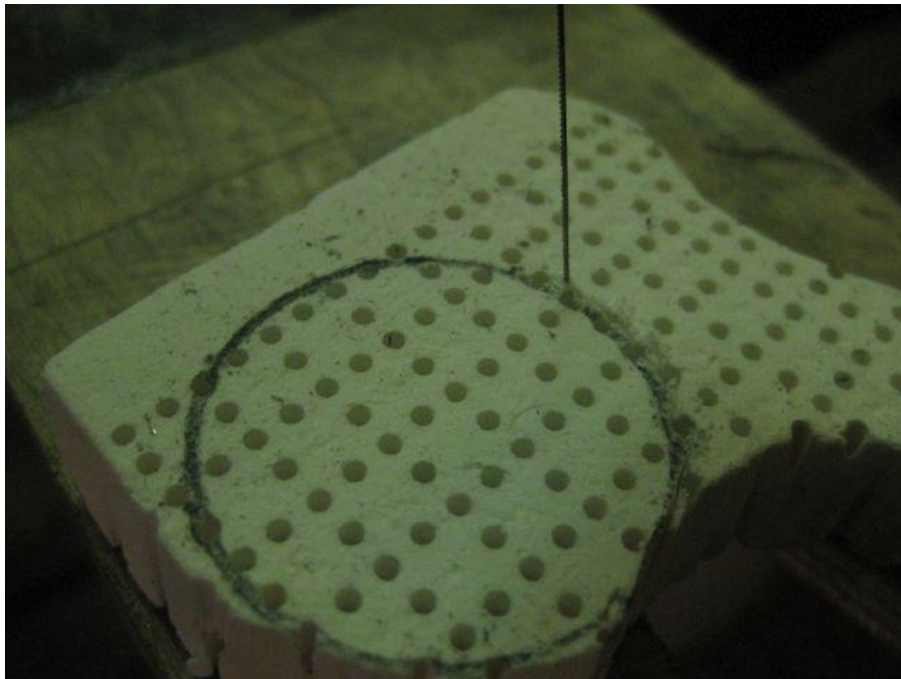
Turning the jet to a slide fit into the feed tube.



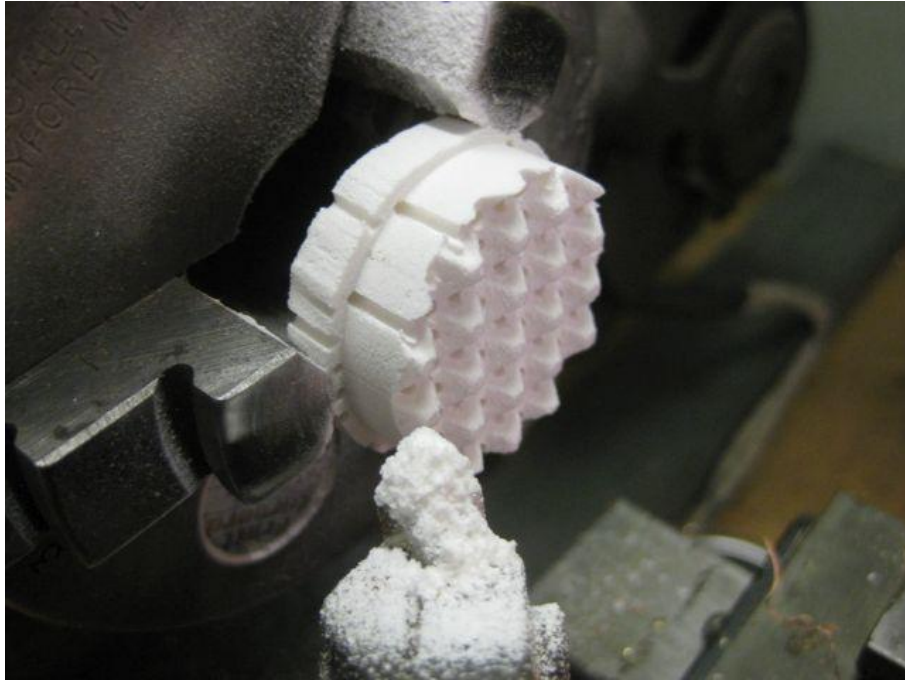
A trial fit of the jet which has been Loctited to a copper pipe.



The ceramic tile is cut over size using a piercing saw.



Turning a shoulder on the ceramic tile.



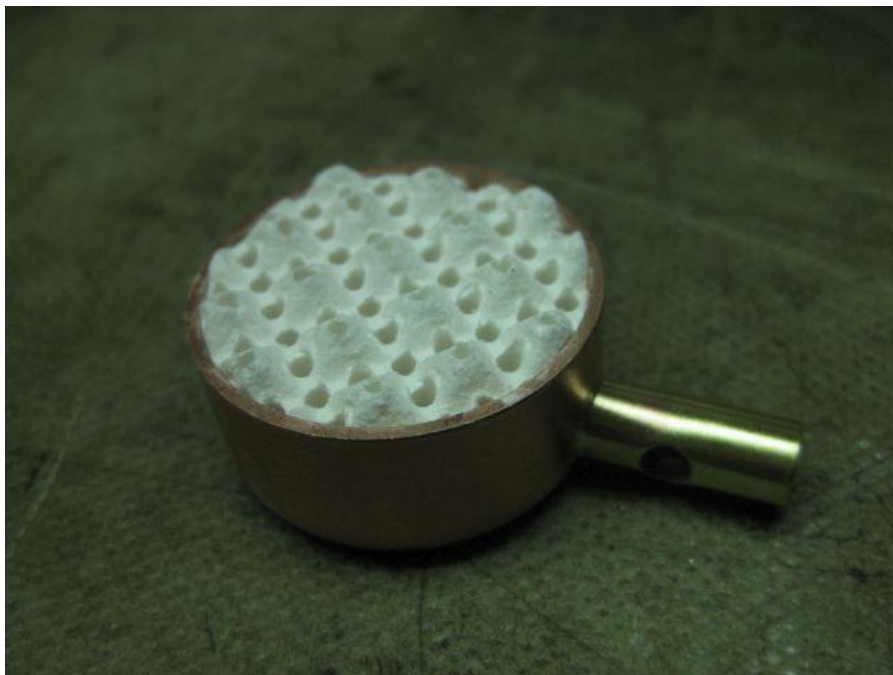
Cutting the turned portion of the tile away.



With small burners I drill extra gas holes in the peaks of the ceramic tile - not all the peaks are shown drilled.



Completed burner.



First test firing shows there isn't enough air.



The air holes have been made larger.



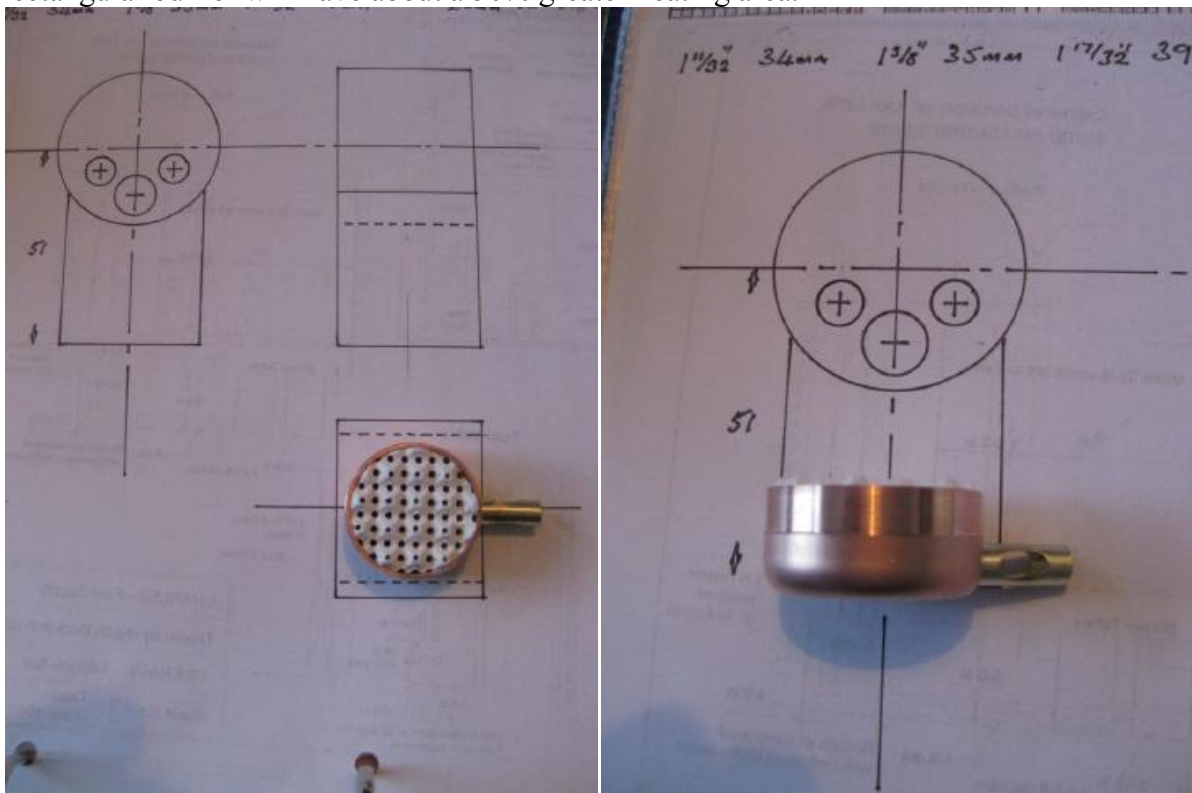
Just about right.



A confined space test shows how the burner will have to operate in the fire box of the model locomotive.

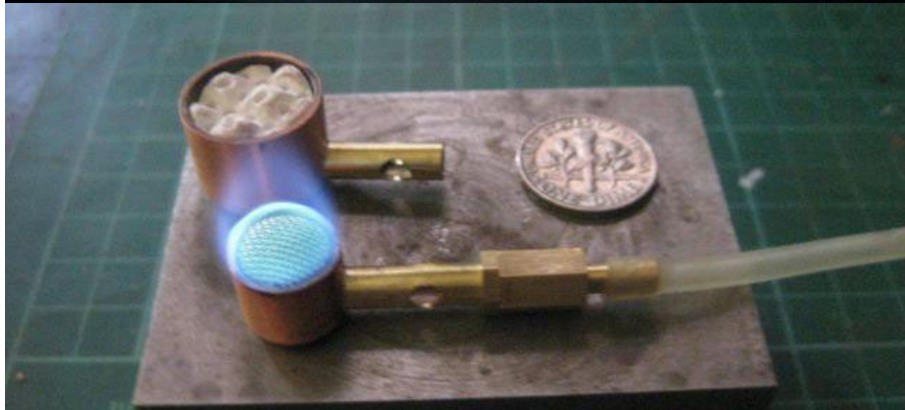
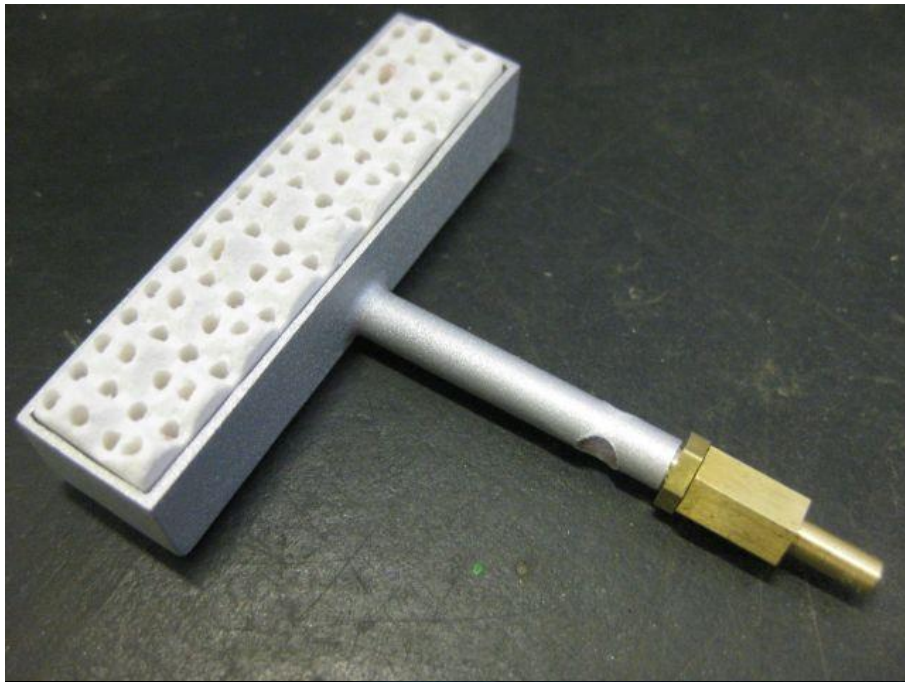


Burner on the drawing of the fire box. If it works but doesn't make enough steam a rectangular burner will have about a 50% greater heating area.



If there are any questions I will try and answer them, I have no training in gas technology, I have just read what others have done and copied them and if the burners didn't work I play with them until I had a certain amount of success.

Other odd ceramic burners I have made.





For many years, just as gas burner technology was starting to take off, I made a great many boilers with gas burners.

But it doesn't seem you have the same sorts of troubles we had, to get the sometimes weird shaped burners to glow all red across the whole surface of the ceramic and to have consistent height to all the blue burning gas tips. On the other hand, we were making some rather larger than yours gas burners, sometimes as much as 3" to 4" diameter or up to 6" x 3" oblong. If you do come across this phenomenon when making your gas burner, I would suggest to put something inside the burner, say a bit of angle brass standing up on its edge with the pointy bit facing the inlet tube, or even a small bit of brass rod or tube silver soldered onto the inside bottom, just where the gas is fired into the chamber under the ceramic, somewhere between 5 and 10mm in from the end of the inlet tube. I used to leave the ceramic loose until after trials, and play about with the position of this diffuser until I got a nice spread across the burner surface. Then gently took out the ceramic material and marked up where the diffuser should go. Then just silver soldered it into position.

We all found that square or long oblong shaped burners required this type of gas diffuser to mix it up a bit before going up into the ceramic. We also used these standoffs to support the ceramic from underneath, by putting a couple of diffusers in there.

Hope that this will assist someone to overcome a maybe problem.



(Blogwitch )