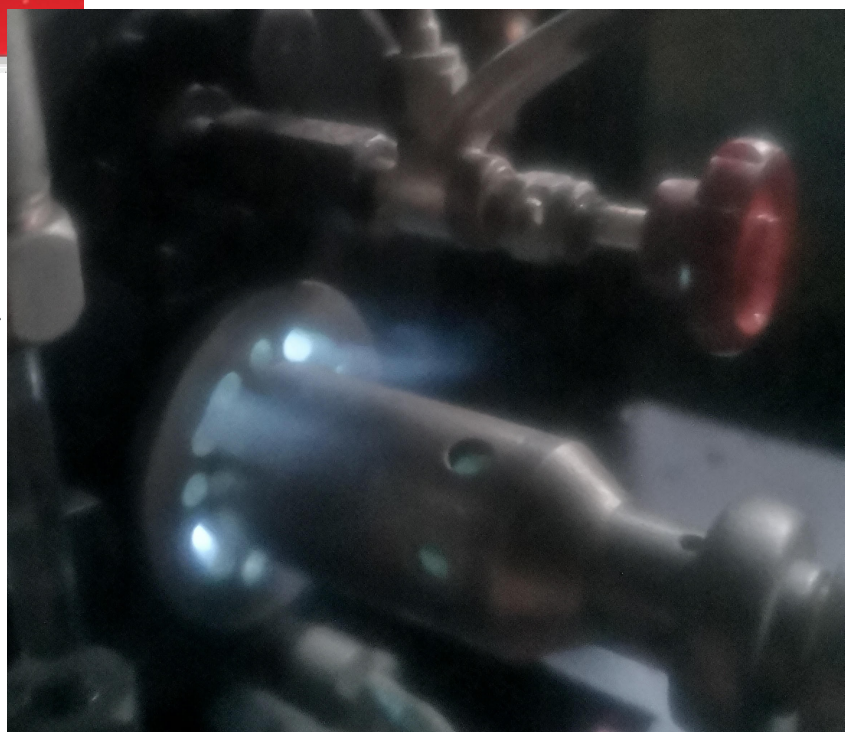
Flue tube burners:

Some examples of burners used inside flue tubes:

Marc Fenner's 3 1/2” Tich burner:

This burner was intended to operate inside a fire-tube 32mm ID, 85mm to first cross-tube.



This shows the burner on Full gas (after re-jetting to get the fiercest flame possible for this application). Blow-back is caused by the excess of exhaust gas (volume) versus the restrictions of the cross-tubes and down-stream pipe. Less restriction (smaller cross-tubes?), or addition of a blower, or simply reduce the LPG gas pressure slightly with the regulator should eliminate the blow-back.

Ken's 1” burner with radiant element for 2” fire-tube:

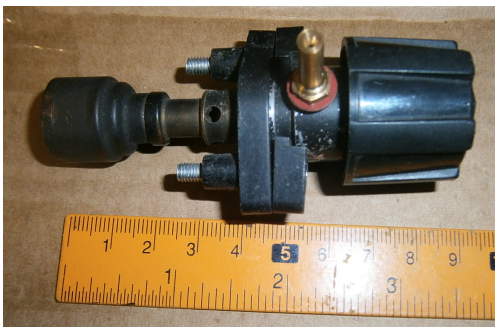
Without the radiant element the burner filled the fire-tube with flame and produced blow-back at this jet size. It was only successful with the next smaller jet. In effect the addition of the radiant element allowed more than 20% more gas to be burned in the firetube without blow-back.

The radiant element is a simple mesh tube (seen through the glowing wire wool), covered in wire-wool and with a thin wire wool end. The 2” fire-tube ended in a plate with 6 smaller (1/2”) flue tubes continuing beyond the end plate.

Stephenson's Rocket fire-tube burner:

A proprietary model 3 ½” gauge Stephenson's Rocket uses a burner very similar to a modeller's blowlamp by Ronson: the Variflame:

The Stephenson's Rocket burner is a valve and burner single assembly. The valve operates a needle in a jet, directly at the air intake, so a small to large flame can be achieved – from pencil flame to almost a roaring flame.



Commercial firetube burner:

Sold as a “pan or firetube” burner for 35mm dia firtube: uses a 12 jet.

Makes a lot of flame...

Big boy burner... but this is for a twin firetube boiler for a model Big-Boy, but only in a small gauge (2 1/2”? - or smaller?)

The burner tubes are covered with fine wire mesh to make a radiant element that shines on the upper half of the fire-tube. Exhaust gases disperse around the body of the burner to heat the remaining surfaces...

Not thought to be as efficient, nor as powerful, as the 1” blow-lamp with radiant above. Which can be scaled up as required....