currently sold by the trade name "Nitmesh" which is a knitted Fecralloy (RTM) mesh with a high insulating factor between its inner and outer surfaces so is particularly good at preventing "flashback".

The metal mesh is preferably attached directly to the outer surface of the tubular body, i.e. contacting each other without intermediary. In other words, the metal mesh is preferably contiguous with (i.e. touches) the outer surface of the tubular body. Attaching the mesh directly to the exterior saves on cost compared with previous methods. This direct attachment may be achieved by welding the mesh to the outer surface of the tubular body.

~~Preferably,~~ the mesh is spaced apart from the area of the slot at the outer surface of the tubular body, i.e. so there is a space located between the mesh and the slot. In use, combustible gas exiting the slot fills the space and is able to exit through all parts of the mesh which are adjacent to the space. Therefore, this arrangement achieves a flow area which is greater than the area of the slot at the outer surface of the tubular body.

The mesh is ~~preferably~~ mounted on a porous layer positioned between the mesh and the slot. The mesh may be mounted to the porous layer by welding. The porous layer may be attached to the tubular body directly, e.g. by welding.

The porous layer is preferably configured so that, in use, it distributes combustible gas in a direction substantially perpendicular to the direction of combustible gas flow through the mesh. This may increase the flow area of the mesh relative to the area of the slot at the outer surface of the tubular body and/or help to distribute the flow of gas through the mesh more evenly. The porous layer may be a perforated metal plate or a wire frame structure.

The porous layer is ~~preferably~~ rigid. This enables the porous layer to support the mesh. This support is especially

CLAIMS:

1. A burner tube for use in an oven, the burner tube including:

a tubular body having an axially extending slot therein and an inlet for combustible gas; and

a metal mesh which covers the slot and is at the outermost surface of the burner tube;

in use, the burner tube defining a flow path for combustible gas so that combustible gas entering the burner tube at the inlet passes through the slot and exits the burner tube through a flow area of the metal mesh;

wherein the metal mesh is spaced apart from the area of the slot at the outer surface of the tubular body so that there is a space located between the mesh and the slot; and

wherein, the flow area of the metal mesh is greater than the area of the slot at the outer surface of the tubular body and a visible flame is anchored to the flow area of the metal mesh when the burner tube is in use.

2. A burner tube according to claim 1 wherein the flow area of the metal mesh is at least 1.5 times, 2 times, 3 times or 4 times greater than the area of the slot at the outer surface of the tubular body.

3. A burner tube according to claim 1 and 2 wherein the metal mesh is a knitted metal fibre.

4. A burner tube according to any one of the above claims wherein the metal mesh is of a material which incandesces at temperatures in the range 600°C to 1200°C.

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Commented [SF1]:
Content moved from dependent claims 7 and 8.

Basis can be found in original claims 8 and 9 of the application as originally filed.

5. A burner tube according to any one of the above claims wherein the metal mesh is of an Fe-Cr-Al steel.

6. A burner tube according to any one of the above claims wherein the metal mesh is attached directly to the outer surface of the tube.

~~7. A burner tube according to any one of the above claims wherein the mesh is spaced by a porous layer provided between the tube and the metal mesh.~~

~~8. A burner tube according to claim 7 wherein the porous layer is ceramic.~~

9. A burner tube according to claim 6 wherein the porous layer is a perforated metal plate.

10. A burner tube according to any one of the above claims wherein the flow area of the mesh is arranged to incandesce when the burner tube is in use.

11. A burner tube according to any one of the above claims having only one mesh structure which covers the slot.

12. A burner tube according to any one of the above claims having a plurality of axially extending slots which are covered by the metal mesh.

13. A burner tube according to any one of the above claims having an outer diameter of less than 100 mm.

14. A burner tube according to any one of the above claims wherein the axially extending slot widens towards an end of the slot.

Commented [JL2]: These claims have been deleted as their subject matter has been incorporated into claim 1.

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~~16~~ 13. A burner tube according to any one of the above claims wherein the tube includes one or more additional openings located at an end of the slot, the additional openings being covered by the metal mesh.

~~17~~ 14. A burner tube according to any one of the above claims wherein the flow area of the metal mesh widens towards an end of the slot.

~~18~~ 15. A burner tube according to any one of the above claims wherein the tubular body has a plurality of axially extending slots therein, with the slots being linearly arranged end on end with bridges in the tubular body therebetween.

~~19~~ 16. A burner tube according to any one of the above claims additionally including a distributor having at least two distribution pipes for supplying different flow rates of combustible gas to at least two zones which are axially distributed within the tubular body.

~~20~~ 17. An oven including one or more burner tubes according to any one of the above claims.

~~21~~ 18. An oven according to claim ~~19~~ 17 additionally including a tunnel.

~~22~~ 19. An oven according to claim ~~20~~ 18 including a conveyor having a surface for transporting a product through the tunnel thereon.

~~23~~ 20. An oven according to claim ~~21~~ 19 wherein each of the burner tubes is mounted with its axis transverse to the

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direction of motion of the conveyor and substantially parallel to the plane of the conveyor surface.

~~22~~21. An oven according to claim ~~20~~19 wherein each of the burner tubes is mounted with its axis substantially perpendicular to the direction of motion of the conveyor.

~~23~~22. An oven according to claim ~~21~~20 or ~~22~~21 wherein a line is defined which extends perpendicularly from the axis of the tubular body and passes through the centre of the slot is inclined towards the conveyor surface.

~~24~~23. An oven according to claim ~~23~~22 wherein said line also passes through the conveyor surface.

~~25~~24. A method of producing a burner tube according to any one of claims 1 to ~~22~~21 including:

forming an axially extending slot in a tubular body by laser cutting.

~~26~~25. An apparatus substantially as herein described, with reference to and as shown in the accompanying drawings.

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