

12 **EUROPEAN PATENT APPLICATION**

21 Application number: 81305987.0

51 Int. Cl.³: **F 23 D 13/10**
F 23 D 13/12, F 24 C 3/08

22 Date of filing: 21.12.81

30 Priority: 02.01.81 GB 8100090

43 Date of publication of application:
14.07.82 Bulletin 82/28

84 Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

71 Applicant: **EWARTS LIMITED**
P.O. Box 5 Burnt Tree Works
Dudley West Midlands Dy1 4RH(GB)

72 Inventor: **Walker, Stephen James**
6 Summervale Road West Hagley
Stourbridge West Midlands DY9 OLY(GB)

74 Representative: **Hands, Horace Geoffrey et al,**
LEWIS W. GOOLD & CO. Whitehall Chambers 23,
Colmore Row
Birmingham B3 2BL(GB)

54 Gas burners.

57 A gas burner of lightweight construction for caravans or the like in which gas is induced to supply a series of jets along a burner tube of substantial length, by introducing the gas partway along the length of the burner tube and causing it to flow in opposite directions from the introduction point with the aid of a baffle in the tube.

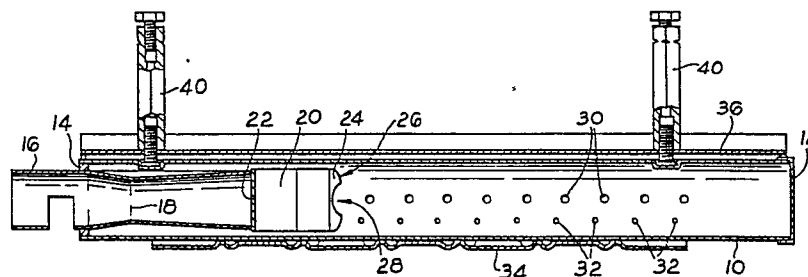


Fig. 1

1.

DESCRIPTION
GAS BURNERS

This invention relates to gas burners particularly for heating or cooking appliances. The invention aims to provide a construction which is simple to manufacture and is light in weight so as to be suitable
5 for use in caravans, boats and the like, although the construction may be found useful elsewhere.

Similarly, the aim is to provide a construction suitable for use with liquid petroleum (LP) LP gas for example Butane, but the construction with appropriate
10 modifications to deal with the different calorific values involved may be found useful with natural gas or town gas.

In accordance with the invention, a gas burner comprises a tube formed with a plurality of jet
15 apertures distributed at least along the length, a gas/air supply tube extending within the said burner tube and part way along the same, the delivery end of said supply tube being associated with a baffle arranged to restrict gas/air flow to the
20 jets located beyond the baffle and hence improve gas/air flow to the jets located in the portion of the burner tube surrounding the supply tube.

The supply tube may be a venturi.

By these means a substantial length of burner tube can be used with equal jets of flame along its length. It is preferred to use a heat dissipating screen so as to make the heat distribution uniform over a hot plate on the burner tube.

One presently preferred embodiment of the invention is now described by way of example only, and with reference to the accompanying drawings, wherein:-

10 Figure 1 is a sectional elevation;
 Figure 2 is a plane; and
 Figure 3 an end elevation.

In the drawings, the burner tube 10 is a stainless steel tube of circular cross-section having one end closed by a cap 12. The opposite end is provided with an annular plug 14 and a supply tube 16 is fixed within the plug and forms an aerator sleeve to receive the jet orifice of a gas tap (not shown).

20 The supply tube extends for about one third of the length of the burner tube (this is a typical dimension, although in some constructions it may need to extend for as much as half of its length) and may be generally concentrically arranged therein, if desired with supporting lugs or apertured washers.

25 The supply tube is a venturi having a waist 18 for the purpose of improving flow through the aerator and into the burner.

30 The end of the supply tube which is located in the burner tube is provided with a baffle 20. Conveniently, this is formed of sheet metal folded to substantially V configuration with its apex 22 nearest to the inlet end 16, and with the free ends 24 of the limbs of the V curved divergently from

-3-

one another and the extremities of those limbs shaped along their edges 26 so as to conform to the internal cross-section of the burner tube. Said free edges are notched at 28 to permit gas flow through the baffle to reach the portion of the burner tube located on the opposite side of the baffle to the supply tube. The divergent limbs act as deflectors to encourage gas flow within the burner tube in the opposite direction to that of gas flow within the supply tube, so as to reach the end of the burner tube adjacent the aerator, and the arrows A in Figure 2 indicate this gas flow.

The burner tube is provided with two rows of jets in the form of regularly spaced apertures 30 located for example 180° apart on the surface of the tube and spaced apart over its whole length, and when the tube is in a particular position the jets are equi-spaced about a vertical plane.

Additional jet apertures 32 are provided, at 180° spacing and symmetrically arranged with the respect to the main jet apertures, and these additional apertures open into a narrow space defined between the exterior of the burner tube and a sheet metal deflector 34 fixed to the burner tube. The deflector is of arcuate cross-section and extends about the burner tube periphery to a position approaching the main jets, and the result is that gas led through the subsidiary jets emerges along the edge of the deflector to provide a continuous ribbon like flame which, for example, ensures that all of the main flames provided by the main jets become ignited when any one of them is ignited. The deflector may likewise be made of stainless steel and can be for example spot-welded to the burner tube.

The burner tube is supported below and generally

-4-

parallel to a structure comprising a sheet metal hot plate 36 and a generally parallel sheet of wire mesh, expanded metal or the like 38 to act as a heat dissipator, the two being connected together at a plurality of points, and the burner tube being connected to these for example by a series of posts 40 secured to the burner tube and to the plates. Hence, substantially the whole area of the hot plate can be used for cooling.

CLAIMS

1. A gas burner comprising a tube formed with a plurality of apertures distributed at least along its length, and a gas/air supply tube extending within said burner tube, characterised in that said
5 gas/air supply tube extends partway along the length of the burner tube, the delivery end of said supply tube is provided with a baffle, and the baffle restricts gas/air flow to the jets located beyond the baffle and improves gas/air flow to the jets located in
10 the portion of the burner tube surrounding a supply tube.
2. A gas burner as claimed in Claim 1 wherein the supply tube is a venturi.
3. A gas burner as claimed in Claim 1 or Claim
15 2 wherein a deflector, of similar cross sectional shape to that of the burner tube, is located about the burner tube, and ones of the jets open into the narrow space between the two.
4. A gas burner as claimed in any of Claims 1
20 to 3 wherein a heat dissipating and distributing grid like member is disposed above the burner tube, and a hot plate above the grid.

1/2

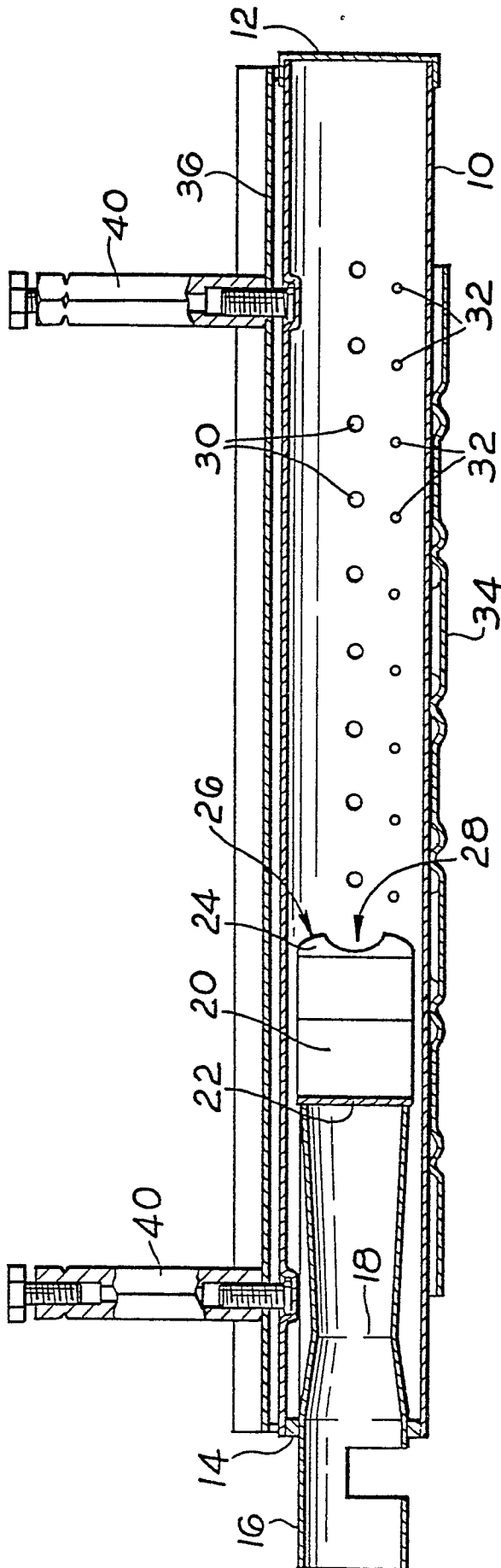


Fig. 1

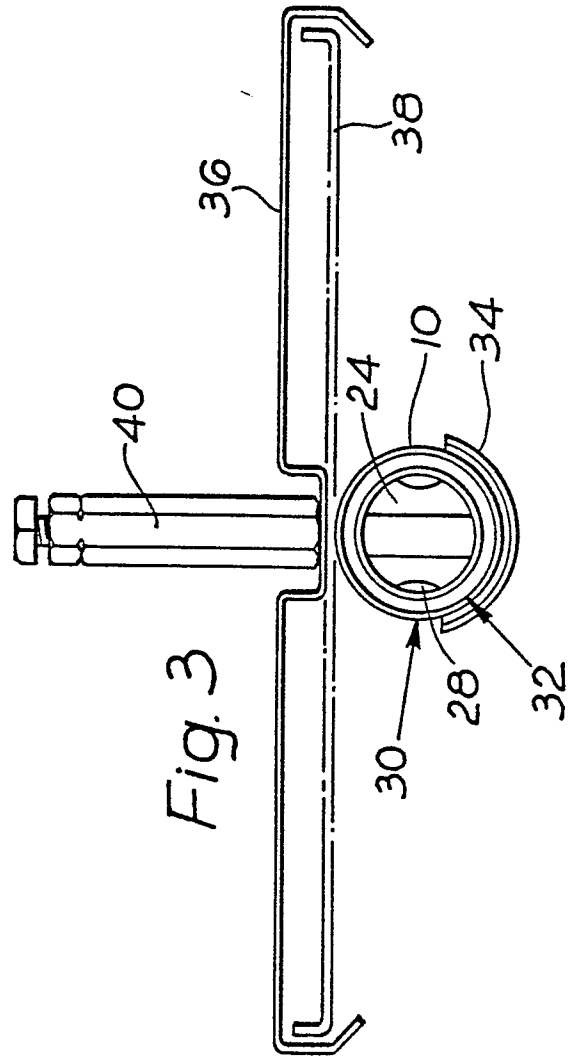


Fig. 3

2/2

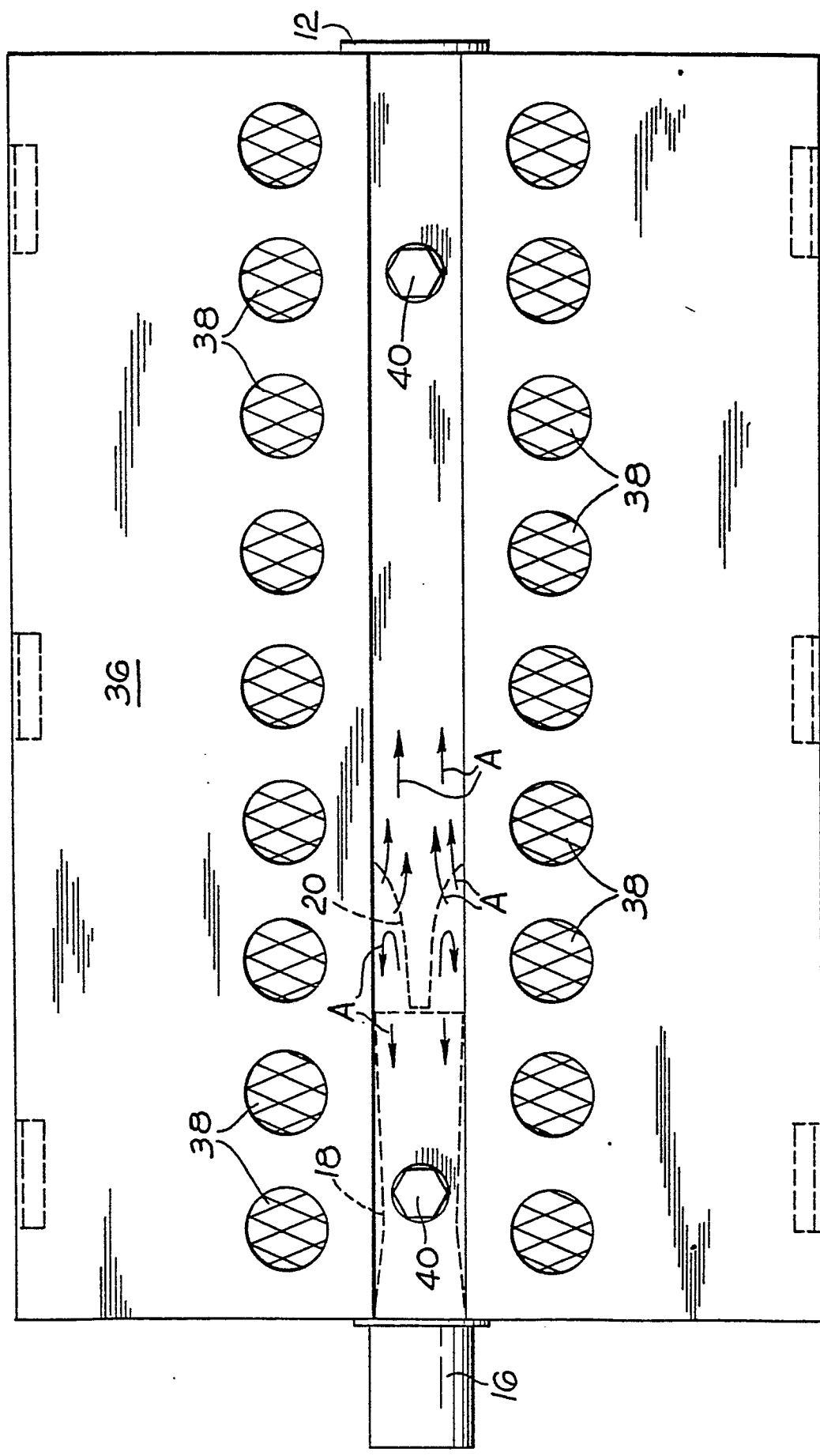


Fig. 2