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L. V. D. SCORAH

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SELECTIVE FLAME NOZZLE BLOWPIPE

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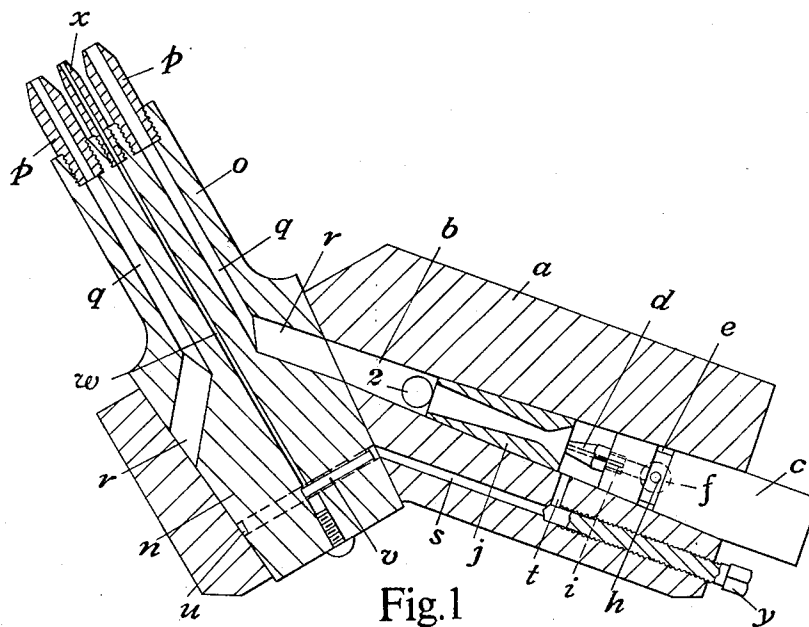


Fig. 1

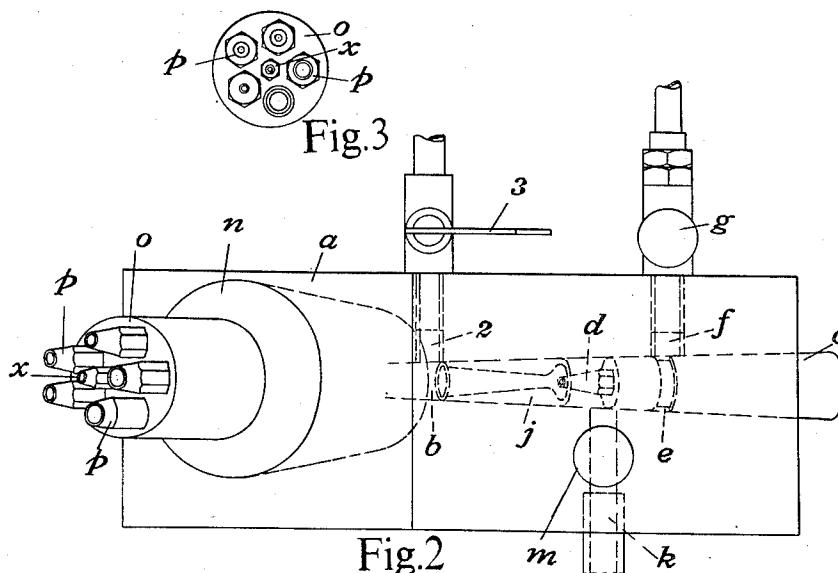


Fig. 3

Fig. 2

Inventor
L. V. D. Scoriah
By *Clarence Downing Turbell*
Attys.

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SELECTIVE FLAME NOZZLE BLOWPIPE

Leslie Vivian Donald Scolah, King's Norton,
Birmingham, England

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1 Claim. (Cl. 158—27.4)

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This invention relates to glass workers' or other blow-pipes or like gas burners, and has for its object to provide an improved construction whereby the size of the flame can be varied over a large range in a simple and convenient manner. The invention is more particularly intended for burners designed to operate with a mixture of coal (or other) gas and oxygen, and it not only enables the desired variation of flame size to be obtained but it also enables the oxygen to be utilised in an economical manner.

In the accompanying drawings:

Figure 1 is a sectional side elevation and Figure 2 a plan of a burner embodying the invention.

Figure 3 is a plan of the burner nozzles.

Referring to the drawings, the body part *a* consists of a block of metal of rectangular cross section and shaped to a shallow inverted V-form, this body part being such that it can be placed on a work bench. Along one of the members of the body part is formed a bore *b* of any convenient diameter and which is preferably of gradually tapering form, the outer and larger end of this bore being closed by a plug *c* on the inner end of which is formed an injector nipple *d*. Around the plug is formed a groove *e* communicating with a passage *f* connected with a tap *g* through which (for example) oxygen can be supplied to the burner. A radial hole *h* extends from the groove *e* to an axial bore *i* leading to the nipple. At an intermediate position in the said bore *b* is inserted a bush *j* forming a gas mixing chamber, and in the body part is formed a passage *k* provided with a tap *m* and pipe connection by which (for example) coal gas can be supplied to the region of the bore between the nipple *d* and the mixing tube.

In the other portion of the body part *a* is formed a tapered hole of relatively large size which provides the seating for a tapered plug *n* formed on one end of a rotary cylindrical part *o* which at its other and outer end is provided with an annular arrangement of burner nozzles *p* of different sizes. In the said rotary part are formed a number of longitudinal passages *q* which extend from side holes *r* in the plug to the nozzles, and the positions of the side holes are such that by rotation of the part carrying the nozzles, any one of the holes can be placed in communication with the adjacent smaller end of the bore *b*.

In addition there is formed in the body part parallel with the bore *b* a passage *s* which (by way of a short side passage *t*) communicates with the region between the injector nipple *d* and the bush *j*, and extends to an annular groove *u*

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formed on the rotary plug, this latter groove being in communication (by way of a radial passage *v*) with an axial passage *w* in the rotary part, the outer end of this passage terminating in a central pilot nozzle *x*. Control of the supply of coal (or other) gas to the pilot nozzle is effected by any convenient screw-threaded plug *y* or other valve provided in the body part.

When it is required to be able to supply combustible gas mixture to an auxiliary burner carried by (for example) a flexible pipe, a passage *2* controlled by a tap *3* is provided in the body part in communication with the bore *b* at a position between the bush *j* and the rotary plug *n*.

When the apparatus is in use, the flow of oxygen through the injector nipple *d* promotes the flow of coal (or other) gas and the required intimate admixture of the gases, the relative proportions of the gases being controlled by the associated tap or taps. The mixture flowing along the bore in the body part then passes to the nozzle *p* which has by rotation of the plug *n* been turned into communication with the bore *b*, and is ignited by a flame on the pilot nozzle *x*. Variation of the size of the working flame is effected by bringing into action the appropriate nozzle (by rotation of the part carrying the nozzles), and also (if necessary) by appropriate adjustment of the control tap or taps. When it is required to supply gas to the auxiliary burner, the plug *n* is turned to a position in which the nozzles *p* are isolated from the bore *b*.

A continuous supply of coal (or other) gas is maintained at the pilot nozzle, in all positions of the plug *n* carrying the nozzles, and the gas discharged therethrough is burnt by admixture with the surrounding atmospheric air.

By this invention, a glass-worker's or other blow-pipe or like burner is provided in a very convenient form, and by its use the variation of flame size and control of the gas supplied thereto can be effected in a very simple and reliable manner.

The invention is not, however, restricted to the example described, as subordinate constructional details can be modified to suit different requirements.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

A glass worker's or other blow pipe or like gas burner, comprising in combination a body part provided with a longitudinal bore, a pair of gas inlet passages spaced axially of and leading to the longitudinal bore, and a pilot gas passage

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communicating with the longitudinal bore at a position adjacent to one of the gas inlet passages, a gas injector nipple and a gas mixing chamber arranged coaxially in the longitudinal bore and respectively communicating with the gas inlet passages so that gas flowing under pressure from one of the passages through the nipple to the mixing chamber can promote flow of gas from the other passage to the mixing chamber, a plurality of burner nozzles of different sizes arranged parallel with and adjacent to each other, a pilot nozzle arranged centrally between and parallel with the burner nozzles, and a rotatably adjustable member mounted in a transverse bore in the body part and carrying the burner and pilot nozzles, the said member being provided with a passageway which establishes constant communication between the pilot nozzle and the pilot gas passage in the body part, and with a plu-

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ality of means including passages whereby the burner nozzles can be selectively brought into communication with the longitudinal bore in the body part by rotational adjusting movements of the rotary member.

LESLIE VIVIAN DONALD SCORAH.

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