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AUTOMATIC PILOT CONTROL AND MOUNTING THEREFOR

Original Filed Feb. 1, 1951

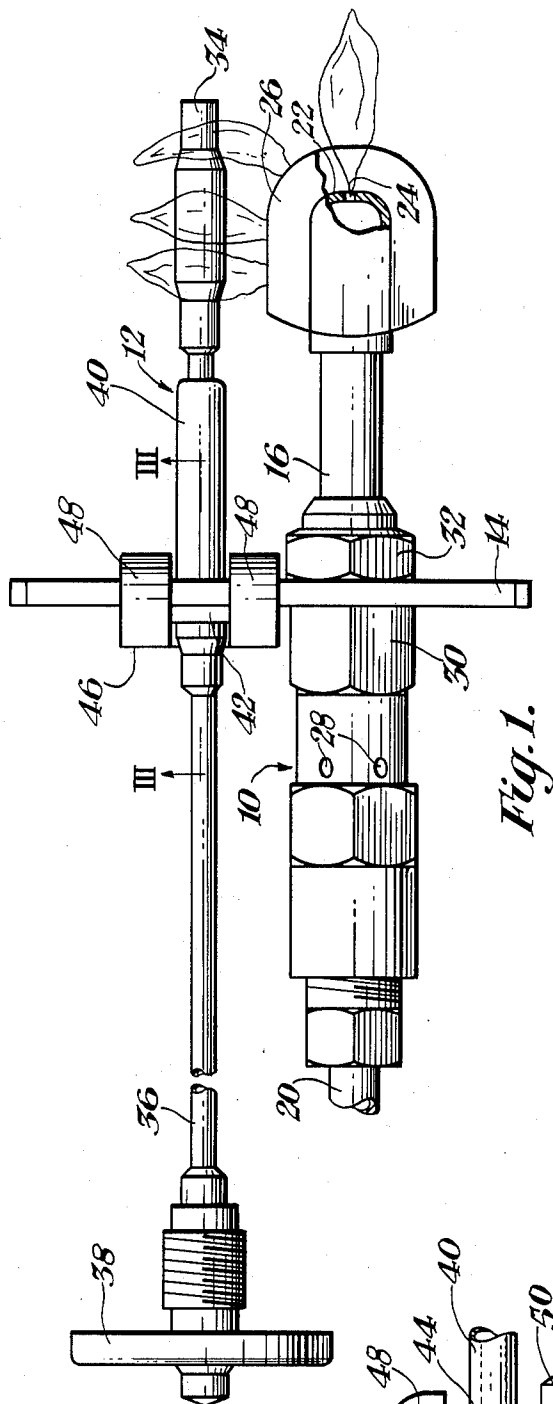


Fig. 1.

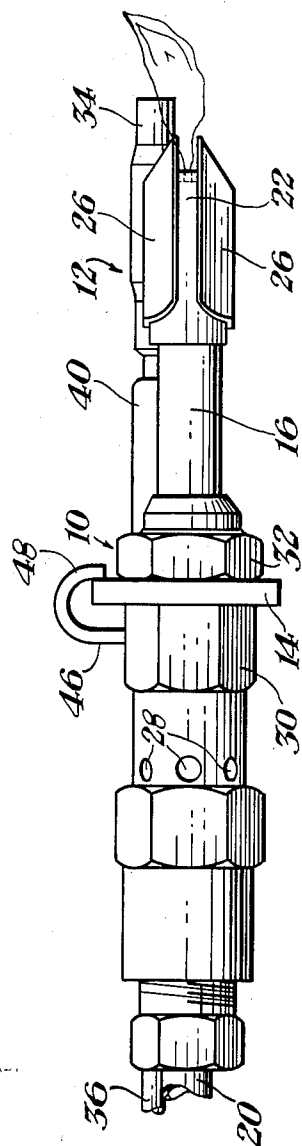


Fig. 2.

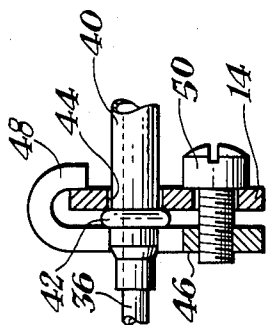


Fig. 3.

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AUTOMATIC PILOT CONTROL AND MOUNTING THEREFOR

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Original application February 1, 1951, Serial No. 208,871. Divided and this application April 2, 1953, Serial No. 346,387

1 Claim. (Cl. 248—56)

This application is a division of our copending application Serial No. 208,871, filed February 1, 1951, now abandoned.

This invention relates to automatic pilot burner devices and more particularly to a gas pilot burner assembled as a unit with a thermal element arranged to be heated by the pilot flame.

It is an object of this invention to facilitate assembly of the pilot burner and thermal element in correct relative positions without special skill or the use of special tools.

Another object of this invention is to simplify removal of the thermal element without interference with the pilot burner.

Another object of this invention is to clamp a thermal element to a pilot burner assembly without involving the application of compressive or crushing forces to the thermal element.

With these and other objects in view, a bracket having a plurality of apertures therein is provided with the apertures adapted to respectively receive a pilot burner and a thermal element. Abutment means are carried on the thermal element and are arranged to abut the bracket, being held against the bracket by a clamp having a hooked end engageable with the bracket and means engageable with the clamp and bracket for securing the clamp against the abutment means.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawings wherein:

Fig. 1 is a plan view of an automatic pilot burner device embodying this invention;

Fig. 2 is an elevation of the device shown in Fig. 1; and Fig. 3 is a sectional view taken on the line III—III of Fig. 1.

Referring more particularly to the drawings, the automatic pilot burner device is shown as comprising a pilot burner component 10 and a thermal element 12 adapted to be mounted in substantially parallel relation with the burner on a bracket 14.

The pilot burner component 10 comprises a tubular body portion 16 having one end connected to a conduit 20 which communicates with a source of gaseous fuel (not shown). The other end of the burner body 16 carries a burner tip 22 which is provided with an orifice 24 located on the axis thereof to project a jet of combustible gas-air mixture along the axis of the burner body 16 extended. The burner tip 22 may also include a plurality of orifices (not shown) adapted to project streams of gas-air mixture substantially normal to the axis of the burner body. To prevent the pilot flame from being accidentally extinguished, a pair of shield members 26 of a type well known in the art are mounted on the burner tip 22.

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The medial portion of the burner body 16 is provided with the usual Venturi (not shown) through which gaseous fuel flows to entrain air supplied through a plurality of orifices 28 to thus provide the aforementioned combustible gas-air mixture supplied to the burner tip 22. Threaded on the medial portion of the burner body 16 is a pair of nuts 30, 32 which abut opposite sides of the bracket 14 to secure the burner body rigidly thereto.

The thermal element 12 may be of any known type and is here shown as an expansible fluid filled element having the usual bulb 34, capillary tube 36, and expansible element 38. The bulb 34 is mounted to be exposed to a flame emanating from the burner tip 22 and, to this end, the capillary tube 36 is secured to the bracket 14. The capillary tube 36 is preferably enclosed over a portion of its length by a reinforcing sleeve 40 having a flange or collar 42 formed on its outer periphery. The sleeve 40 extends through an aperture 44 formed in the bracket 14, the dimensions of the aperture 44 being such that passage of the collar 42 therethrough is prevented.

One face of the collar 42 is maintained in engagement with the bracket 14 by a bifurcated clamp 46 which abuts the other face of the collar 42. The two legs of the bifurcated clamp 46 straddle the sleeve 40 and each is provided with a hooked end portion 48 adapted to be hooked over the bracket 14. The end of the clamp 46 opposite the hooked end 48 is secured to the bracket 14 by a screw 50 threaded therethrough.

It will be apparent that the disclosed structure for mounting the thermal element 12 on the bracket 14 is capable of preventing axial movement of the thermal element 12 without exerting forces thereon which might tend to crush it. Furthermore, the means for mounting the thermal element 12 herein disclosed provides for quick and easy removal or installation of such an element without the use of special tools and without disturbing an adjacent pilot burner.

It will also be apparent to those skilled in the art that the illustrated embodiment may be variously changed and modified or features thereof, singly or collectively, embodied in other combinations other than that illustrated without departing from the scope of the invention as defined in the appended claim.

It is claimed and desired to secure by Letters Patent: In a device for clamping a tubular member having a flange carried thereon, in combination, a bracket having an aperture therein for receiving said tubular member with one side of said bracket abutting one face of said flange, a clamp having an aperture in the medial portion thereof for receiving said tubular member and abutting the other face of said flange, said clamp having a hooked portion at one end thereof engageable with the other side of said bracket, and screw means disposed at the other end remote from the hooked end of said clamp for securing said clamp against said flange and urging said hooked end into engagement with said other side of said bracket.

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