April 26, 1932. B. G. ENGLUND 1,855,545

ADJUSTABLE FUEL BURNER

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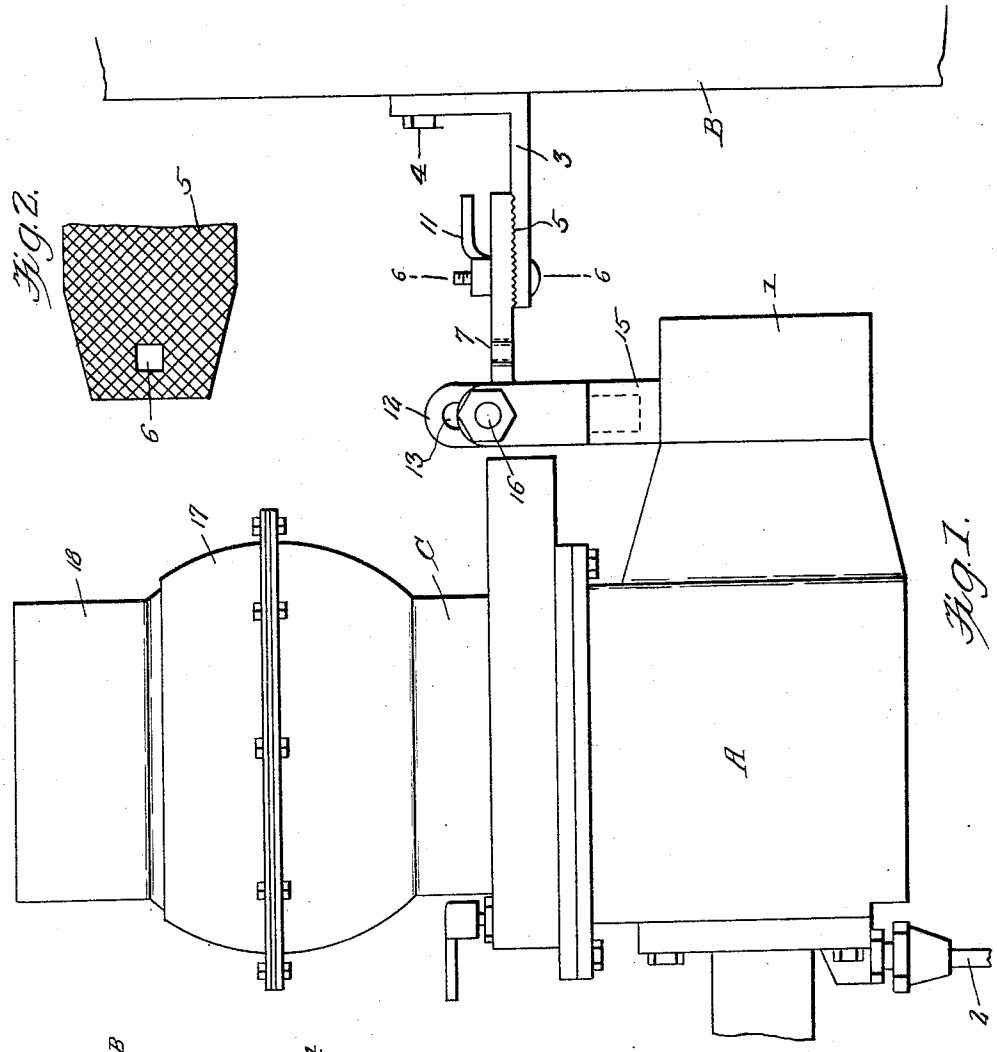

Fig. 1.

Fig. 2.

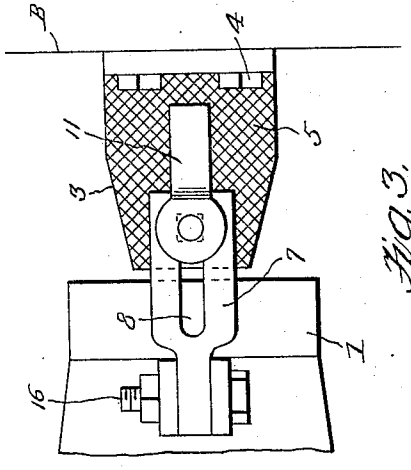

Fig. 3.

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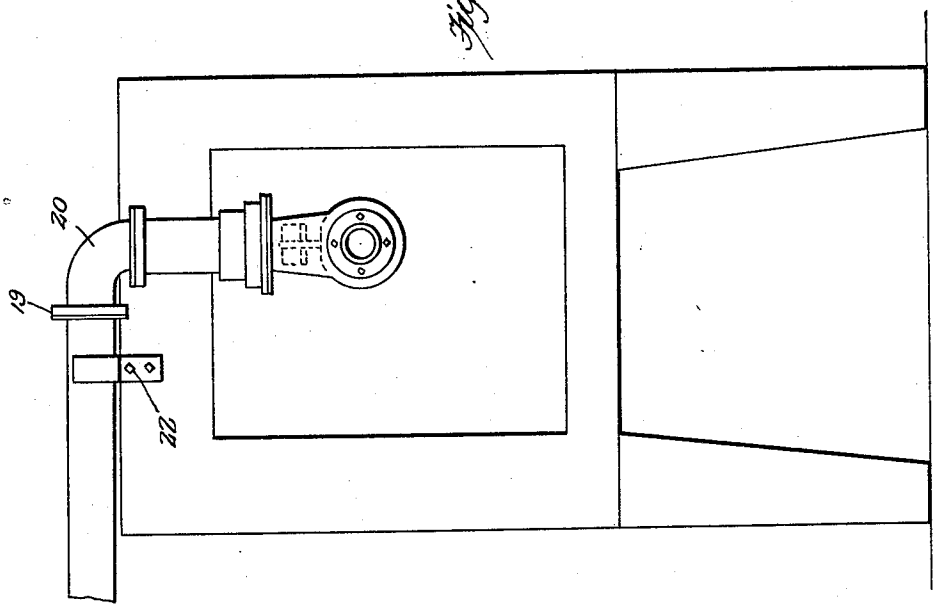
Fig. 8.



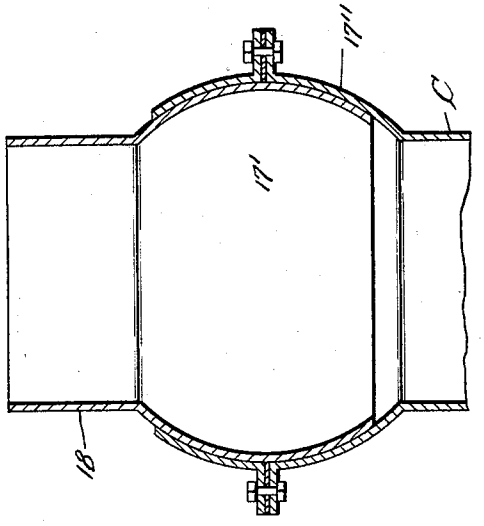


Fig. 4.

Fig. 9.

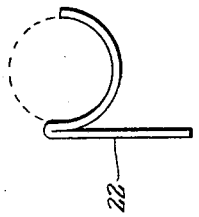
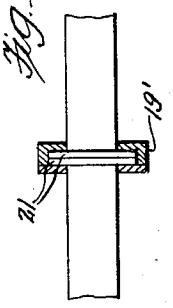


Fig. 10.



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ADJUSTABLE FUEL BURNER

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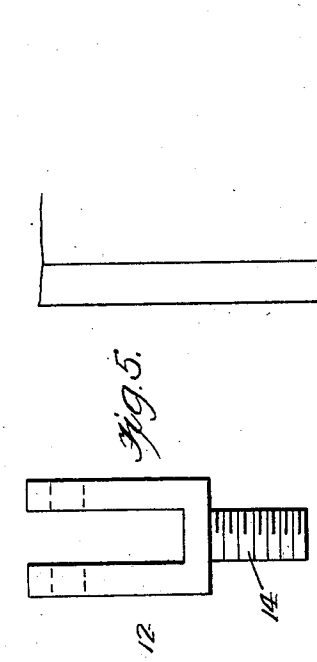

Fig. 5.

Fig. 7.

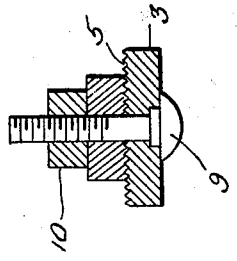

Fig. 6.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE FUEL BURNER

Application filed May 26, 1931. Serial No. 540,172.

This invention relates to a liquid fuel burner for furnaces and the like, the general object of the invention being to provide means for adjusting the burner so as to direct the flame therefrom to different parts of the furnace for the purpose of getting an even distribution of the heat in all parts thereof so as to overcome all hot and cold spots in the fire by shifting the oil spray from the burner up or down or to either side, as is necessary.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is an elevation showing the same applied to one form of furnace apparatus.

Figure 2 is a fragmentary top view of one of the supporting brackets.

Figure 3 is a top plan view showing how a part of the burner is connected with the brackets.

Figure 4 is a sectional view through the ball and socket connection shown in Figure 1.

Figure 5 is a view of the forked member which is connected with the burner.

Figure 6 is a section on the line 6—6 of Figure 1.

Figure 7 is a view showing the invention applied to another form of furnace apparatus.

Figure 8 is a front view of Figure 7.

Figure 9 is a view of the support for the horizontal pipe shown in Figure 8.

Figure 10 is a view of the rotary connection between two of the pipes.

In the drawings, the letter A indicates the burner body the discharge end 1 of which is so located with respect to the furnace B as to direct the flames into said furnace and the letter C indicates the air conduit for introducing air into the burner A, oil being introduced into the burner through the pipe 2.

In carrying out my invention, I attach an angle shaped bracket 3 to the front of the furnace by the bolts 4 and the horizontal limb of this bracket is corrugated on its upper face as shown at 5 and has an opening 6 therein adjacent its outer end.

A plate 7 has its under face corrugated to engage the corrugated face of the bracket 3 and this plate is also formed with a slot 8 through which passes a bolt 9 which also passes through the hole 6. A nut 10 formed with a handle 11 is threaded on the bolt to hold the parts in adjusted position. As shown in Fig. 6, the bolt 9 is held against rotary movement in the horizontal part of the bracket 3, but as the circular part of the bolt passes through the slot 8, in the plate 7, for loosening the nut 10, the plate 7 can be partly lifted from the bracket 3 and partly turned on the bolt to adjust the burner body in a horizontal plane and by moving the plate 7 away from or towards the furnace the burner body can be adjusted toward and away from the furnace. Plate 7 is formed with a head 12 which is vertically arranged and which has a slot 13 arranged therein, and a forked bolt 14 is threaded in an upstanding projection 15 on the burner body and a bolt 16 passes through the upper ends of the forks of the bolt and through the slot 13.

From the foregoing it will be seen that the burner body can be adjusted towards and away from the furnace and it can be turned about the bolt 9 to direct the flames into either side of the furnace and can also be turned about the bolt 16 to direct the flame into the lower or upper part of the furnace as well as the central part and the burner can also be

adjusted vertically through means of the bolt 16 passing through the slot 13.

In order to permit this movement of the burner body the conduit C is formed with a spherical joint 17 which consists of a substantially spherical member 17′ on the lower end of the part 18 of the conduit fitting in a substantially spherical part 17″ in the lower part of the conduit. Thus the part 17″ will turn on the part 17′ during the adjustment of the burner body A.

In the form of the invention shown in Figure 7 the conduit C′ is formed with the rotary joint 19 which connects the elbow 20 with the vertical and horizontal parts of the conduit, one of these joints being shown in detail in Figure 10 and comprises a sleeve 19′ fitting over a pair of flanges 21 on the abutting ends of the two parts of the conduit when the burner body is swung about a horizontal axis the upper end of the elbow 20 will turn in the upper joint 19 in Fig. 8 and when the burner body is turned about a vertical axis, the lower joint 19 will turn about a lower end of the elbow 20.

A bracket 22 supports the horizontal part of the conduit, this bracket being shown in detail in Figure 9. Figure 7 shows in dotted lines 23 how the oil spray can be directed downwardly and upwardly or in a straight line, and as before stated, the spray can also be directed to either side of the furnace or to the center thereof.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes will be within the scope of the appended claims.

I claim:

1. In a furnace apparatus, a body located at the front thereof, brackets connected with the front of the furnace and having a limb extending forwardly, a plate engaging said forwardly extending part and having an elongated slot therein, a bolt passing thru the forward part of the bracket and the slot in the plate, a nut on the bolt, said plate having a vertically arranged head at its outer end having an elongated slot therein, vertically arranged fork members connected with the body, a bolt passing through the prongs of the fork and through the slot in the head, means for introducing liquid fuel and air into the body.

2. In a furnace apparatus, a burner body located at the front thereof, a bracket connected with the front of the furnace and having a limb extending forwardly, a plate engaging said forwardly extending part and having an elongated slot therein, a bolt passing through the forwardly extending part of the bracket and through the slot in the plate, a nut on the bolt, said plate having a vertically arranged head at its other end having an elongated slot therein, a vertically arranged forked member connected with the body, a bolt passing through the prongs of the fork through the slot in the head, means for introducing liquid fuel into the body, and an air conduit in communication with the body and composed of sections, and means for movably connecting the sections together whereby adjustment of the body can be made without interference from the conduit.

In testimony whereof I affix my signature.

BERTHEL G. ENGLUND.