Aug. 30, 1938. C. G. FREDRICKSON 2,128,356

WICK FOR OIL BURNERS

Filed May 6, 1936

Fig.1.

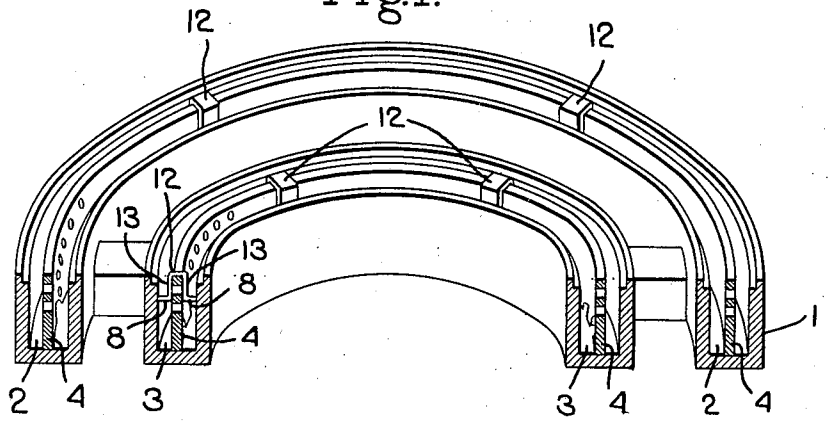


Fig.2.

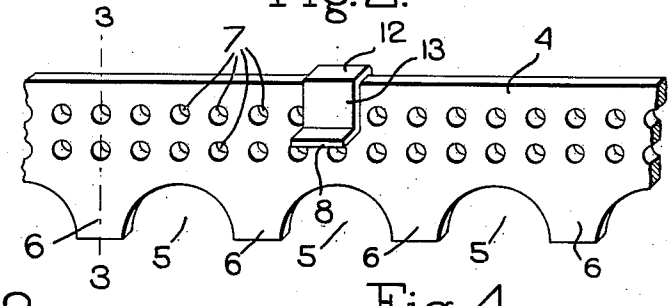


Fig.3.

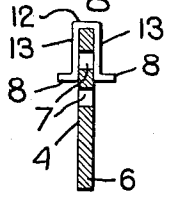


Fig.4.

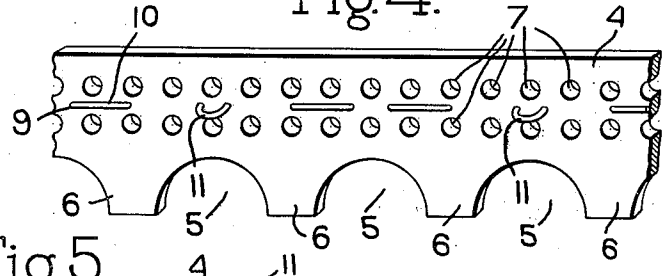


Fig.5.

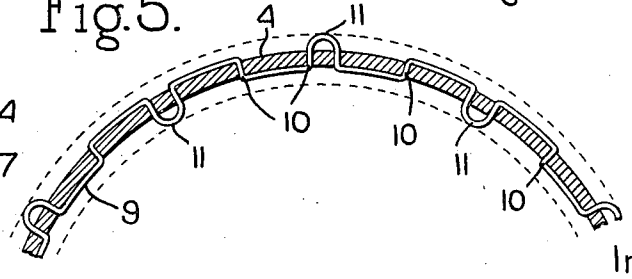
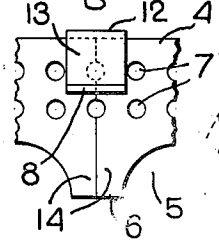


Fig.6.



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WICK FOR OIL BURNERS

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Application May 6, 1936, Serial No. 78,160

2 Claims. (Cl. 67—69)

This invention relates to wicks such as are used in oil burners for oil ranges or oil heaters, and it has for some of its objects to provide a wick formed on its lower edge with supporting legs or feet of absorbent material, so that when the oil is delivered to the burner groove prior to lighting the burner the oil can flow freely through the groove, and yet the wick will rapidly become saturated with the oil due to the capillary action in the absorbent supporting legs; to provide a wick having perforations in its body portion which allow the air necessary for combustion to be more readily delivered to the wick at the time the burner is lighted, thereby producing better combustion during the time that the burner is becoming heated; to provide a wick having positioning projections on opposite sides which engage the walls of the burner groove and hold the wick properly positioned centrally of the groove; and to otherwise improve wicks for burners in various ways as will be hereinafter set forth.

In the drawing wherein I have illustrated a selected embodiment thereof,

Fig. 1 is a fragmentary perspective view of a portion of a burner having my improved wick therein.

Fig. 2 is a fragmentary perspective view of a portion of a wick embodying my invention.

Fig. 3 is a section on the line 3—3, Fig. 2.

Fig. 4 is a fragmentary perspective view showing a wick embodying a different form of the invention.

Fig. 5 is a horizontal section through the wick shown in Fig. 4.

Fig. 6 is a fragmentary detail showing the form of positioning projection illustrated in Fig. 2.

Referring to Fig. 1, 1 indicates generally a portion of an oil burner which is illustrated as having the two burner grooves 2 and 3 in each of which is situated a wick 4 as usual in oil burners.

My improved wick 4 is made of some suitable non-combustible but absorbent material such, for instance, as asbestos, and it may be in the nature of a woven fabric or a felted fabric or may be made in any way in which asbestos sheets or strips are usually made. Such an asbestos wick, whether in the form of a woven fabric or a felted fabric, would present a body portion formed of closely compacted fibrous material (asbestos being fibrous in nature) and such a wick would be non-combustible but absorbent.

The wick 4 has a naked body, that is, it is not enclosed or encased in a metal sheath or casing. It is formed on its lower edge with absorbent supporting feet or legs. As herein shown the wick may be made from a strip or ribbon of asbestos, the lower edge of which is cut out at intervals, as shown at 5, to form supporting legs or feet 6 between the cut-out portions. These supporting legs 6 are of the same absorbent material as that composing the body of the wick, and when the wick is placed in the grooves 2 and 3 it is supported on legs 6 of absorbent material.

This construction is highly advantageous when the burner is being lighted. The operation of lighting the burner consists in first feeding sufficient oil to the burner grooves to saturate the wick and then shutting off the oil supply. The wick is then lighted and allowed to burn until the burner has become sufficiently heated to vaporize the oil as it is delivered to the vapor grooves, at which time the supply valve is again opened to allow oil to be delivered to the heated burner.

The use of the wick with the absorbent legs is highly advantageous because the legs support the body of the wick above the bottom of the groove, thus allowing the oil to flow freely along the groove bottom from the admission port, and at the same time the absorbent quality of the legs results in the oil being rapidly carried up into the body of the wick through the legs by capillary attraction so that the wick will rapidly become thoroughly saturated with oil. The wick thus provides for a free flow of oil along the bottom of the burner groove from the inlet port and at the same time the absorbent legs 6 facilitate the saturation of the wick with oil. Since the legs 6 rest on the bottom of the groove, and since they are absorbent, the oil will begin to be carried up into the body of the wick through the legs by capillary attraction as soon as it is delivered to the grooves with the result that substantially all the oil which is first fed to the grooves is absorbed by the wick and there is no pool of oil in the bottom of the grooves when the burner is first lighted and during the time that it is becoming heated.

According to another feature of the invention the naked body of the wick is perforated or provided with a plurality of through openings 7 which are relatively large compared to the normal interstices of the body of the wick whether said wick is of a woven fabric or a felted fabric. Each opening 7 extends clear through the wick and is open on both sides thereof. The advantage of this construction is that when the wick is first lighted the openings 7 provide for feeding air into the body of the wick to support combustion, thereby giving a hotter and better flame

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when the wick is first lighted and while the burner is becoming heated to the temperature required to produce the desirable blue flame.

When an oil burner with a non-perforated wick is first lighted the flame produced is frequently more or less smoky, this being due to imperfect combustion. With the wick supplied with the perforations 7, however, the combustion is improved greatly, thereby reducing the smokiness of the flame which is produced while the burner is becoming heated. Moreover, with a wick provided with perforations such as herein shown, the flame will be generated substantially throughout the entire vertical dimension of the wick when the burner is first lighted, thereby producing a hotter flame and reducing the length of time required to heat the burner to the point necessary to vaporize the oil as it is delivered thereto. A burner equipped with my improved wick, therefore, has the advantage that when it is lighted a less smoky flame is produced and the burner base is more quickly heated to the oil vaporizing point.

In order that the wick may function properly it is desirable that it should be maintained at the central portion of the groove, and I accomplish this herein by providing the wick with positioning projections on opposite sides which engage the walls of the grooves 2 and 3 and thus hold the wick properly centered. In Figs. 1, 2 and 3 the wick is provided with projections 8 extending laterally from each side thereof. While these projections may be formed in various ways I have shown them as the ends of a strap member 12 which is bent to provide the U portion 13 adapted to fit over the top edge of the wick, and with the lateral extensions 8 which form the positioning projections. This member 12 may be made of asbestos, metal or any other suitable non-combustible material and as many of these positioning members 12 may be used as desired. Usually four or six will be sufficient for each wick.

I will preferably place one of the centering members 12 on the wick at the point where the ends 14 of the wick meet, as shown in Fig. 6, said positioning member 12 thus serving to assist in holding the two ends of the wick in proper relation.

In Figs. 4 and 5 I have shown a construction wherein the positioning projections are formed by a wire 9 which is threaded through the wick. This wire may be passed back and forth through the body of the wick, as shown at 10, and at intervals the wire may be formed on either side of the wick with a loop or projection 11 which is adapted to engage the walls of the burner groove and thus hold the wick properly positioned therein.

While I have herein illustrated some selected embodiments of my invention I do not wish to be limited to the constructional features shown.

I claim:

1. A wick for oil burners having a naked body of closely compacted fibrous non-combustible absorbent material which has integral therewith on its lower edge spaced supporting legs of the same absorbent material as that comprising the body of the wick, the body of the wick being provided with relatively large air feeding apertures extending therethrough, each open aperture being open on both sides of the body.

2. A wick for oil burners having a naked body of closely compacted fibrous non-combustible absorbent material which has integral therewith on its lower edge spaced supporting legs of the same absorbent material as that comprising the body of the wick, the body of the wick being provided with relatively large air feeding apertures extending therethrough and open on both sides of the body, and U-shaped positioning members embracing and closely fitting the top edge of the wick, the lower ends of the legs of each member being bent outwardly and adapted to engage the walls of the burner groove.

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