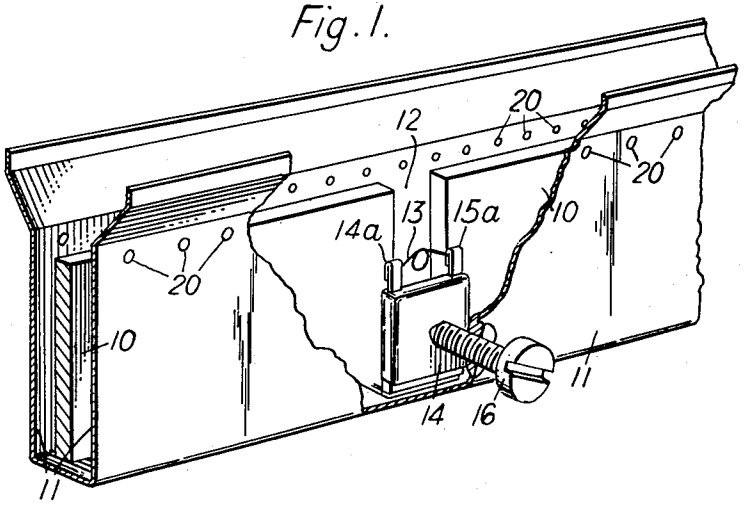
June 26, 1962 A. K. HASLEHURST 3,040,804

WICK-TYPE BURNERS HAVING ELECTRIC IGNITING DEVICES

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Fig. 1.



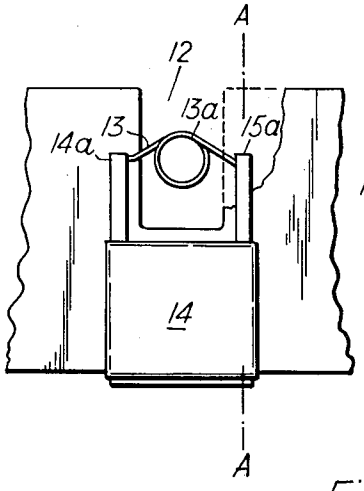


Fig. 2.

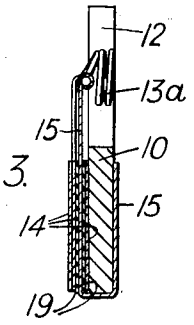


Fig. 3.

WICK-TYPE BURNERS HAVING ELECTRIC IGNITING DEVICES

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Fig. 4.

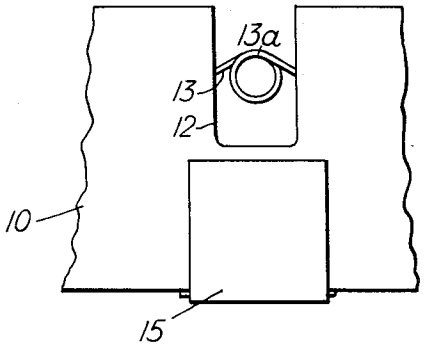


Fig. 5.

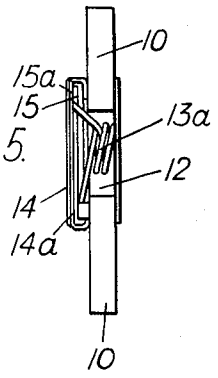
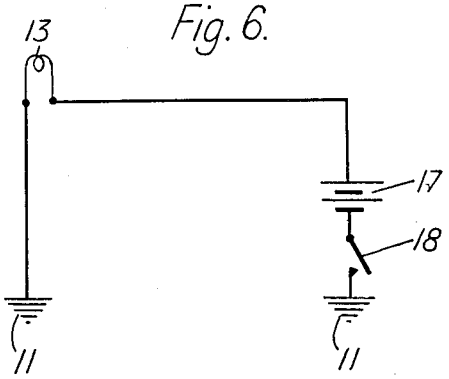


Fig. 6.



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Fig. 7.

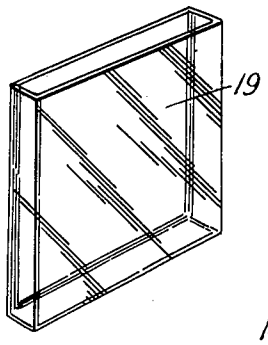


Fig. 8.

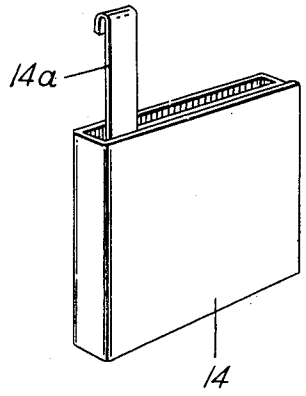


Fig. 9.

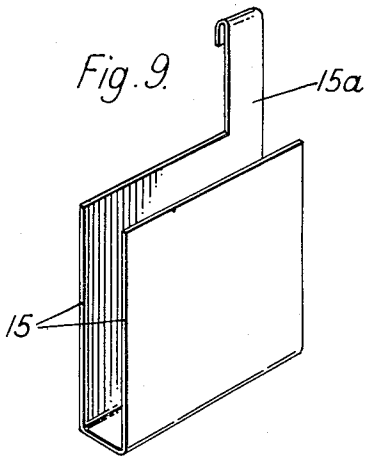
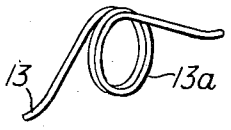


Fig. 10.



United States Patent Office

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WICK-TYPE BURNERS HAVING ELECTRIC IGNITING DEVICES

Arthur Kinder Haslehurst, Derby, England, assignor of one-half to Joseph Sankey & Sons Limited, Bilston, England, a British company

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Claims priority, application Great Britain June 18, 1959
2 Claims. (Cl. 158—94)

This invention relates to wick-type burners having electric igniting devices.

The invention is more particularly concerned with the mounting of an electric radiant element in such proximity to the wick of a paraffin or similar burner that when an electric current is applied to the element it will glow and ignite the wick.

A difficulty in any such arrangement is that the element is liable to overheat and be destroyed by the heat of combustion after the wick has been ignited.

This invention consists in mounting the radiant element in such a position relative to the wick that a relatively cool draught will flow past the element as soon as the wick is ignited so that the temperature of the radiant element will tend to be lowered rather than increased when the lighting of the wick has occurred.

The invention can be applied to burners of a wide variety of designs, for example those employing a circular wick or those in which the wick is straight.

A constructional form of the invention will now be described with reference to the accompanying drawings in which:

The accompanying drawings show, by way of example, a wick-type paraffin burner, having an electric igniting device, and constructed and arranged in accordance with the present invention.

FIGURE 1 of the said drawings is a perspective view of part of the said burner.

FIGURE 2 is a front elevation of a portion of the wick, and shows also the igniting device.

FIGURE 3 is a section on line A—A of FIGURE 2.

FIGURE 4 is a rear elevation.

FIGURE 5 is a plan.

FIGURE 6 is a diagram showing an electrical circuit.

FIGURES 7 to 10 show separately and to a larger scale certain parts of the igniting device, said parts being shown in a folded condition.

FIGURE 7 is a perspective view of a piece of insulating material.

FIGURE 8 is a perspective view of a piece of conductive material.

FIGURE 9 is a perspective view of another piece of conductive material.

FIGURE 10 is a perspective view of a radiant element.

Referring to FIGURE 1 of the drawings, a wick **10** is mounted in any suitable or conventional kind of holder such as a channel **11**, and at a convenient position, which may in the case of a straight wick be at about the midpoint in its length, the wick has a U-shaped or V-shaped gap or notch **12** extending downwards from its upper edge for a suitable distance. The element **13** is positioned part way down this gap or notch, to allow sufficient air to come in at the bottom of the gap or notch for initial combustion.

The element **13** consists of a short length of resistance wire, made of any of the conventional materials capable of withstanding repeated heating to the temperatures necessary for igniting the paraffin or other fuel with which the wick is impregnated from the channel **11**. This wire **13** is anchored at each end to a contact member **14**, **15**. As shown the contact members **14**, **15** each have an upstanding tab **14a**, **15a**, to which the wire **13** is attached, and the wire itself has a looped formation **13a**. The tabs **14a**, **15a** are situated at opposite sides of the gap **12** in the wick. One of the contact members **14** is pressed against an insulated point on the inside face of one wall of the channel **11** by means of a set screw **16** passed through the opposite wall of the channel **11** and bearing against the other contact member. The set screw is earthed to the channel **11** and the contact members are insulated from each other. A convenient assembly of the contact members is shown in FIGURES 7 to 10. The contact members **14**, **15** each consist of a flat strip of metallic foil each with its upstanding tabs **14a**, **15a**. They are, during assembly, placed flat one upon the other, separated from physical contact by means of a flat strip of insulating material such as mica **19**. They are folded over together so that they assume the shapes where one contact member **14**, together with the mica **19**, are wrapped round the other contact member **15** by vertical folds, leaving the unenclosed portion of the contact member **15** depending downwards. The contact member **15** is then folded by horizontal folds under the lower edge of the wick and up the other side of it.

A suitable electrical arrangement is illustrated in FIGURE 6. One end of the radiant element wire **13** is connected to the channel **11** and so to earth. This is by way of the contact **15** and screw **16**, FIGURE 1. The other end of the wire **13** is connected via contact **14** and the insulated contact in trough **11** to one side of a battery **17**, usually a dry battery. The other side of the battery **17** is connected to one side of a switch **18**, which may be any conventional type of switch such as one operated by a press button. The other side of the switch is connected to earth and so to the channel **11**.

As soon as a flame is produced from the wick, a cooling draught which is initially of air but which is later of inflammable vapour, will be drawn in below the glowing element. Once the initial air has enabled ignition to take place the flame naturally rises away from the electric radiant element, and the inflammable vapour from below will not ignite in the vicinity of the element, but only when it encounters air supplied at a higher level, for instance through holes **20** near the top of the channel **11**. If the user fails to release the press button and thus disconnect the current immediately the wick is ignited, no harm will be done to the radiant element, whereas without the cooling draught at this point it would almost certainly be overheated and frizzle to destruction. The device can either be incorporated as an integral part of a complete appliance or be made as an accessory to light a pilot wick from which the main wick of an appliance will be lighted.

I claim:

1. A wick-type burner for a liquid-fuel burning appliance, the said burner having: a channel-sectioned wick holder; a wick mounted in said holder and formed with a notch extending downwards from the upper edge of the wick; an electric radiant element mounted adjacent the wick and energisable to ignite the latter, said radiant element being positioned part way down said notch to allow sufficient air to come in at the bottom of the notch for initial combustion and to create a cooling draught past the radiant element as soon as the wick is ignited; a contact assembly mounted on that part of the wick which is below the notch, said contact assembly comprising two contact members insulated one from the other by interposed insulation and connected one to each end of the radiant element, said contact assembly having, at one side of the wick, an outer face formed by a face of a portion of one of said contact members, and said assembly having, at the other side of the wick, an outer face formed by a

face of a portion of the other contact member; a circuit for energising the radiant element; and means for applying clamping pressure to said two outer faces of the contact assembly to connect the contact members electrically into said energising circuit.

2. A wick-type burner according to claim 1, wherein each of the two contact members of the contact assembly consists of a metal strip provided with an integral tab for supporting the respective end of the radiant element, the one strip being folded, with the interposed insulation, over one end of the other strip by vertical folds, and

the unenclosed portion of the other strip being folded over the lower edge of the wick by horizontal folds.

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