No. 648,543. Patented May 1, 1900.

F. WILKE.

ELECTRICAL ATTACHMENT FOR HYDROCARBON OR OTHER BURNERS.

(Application filed June 10, 1899.)

(No Model.)

Fig. 1.

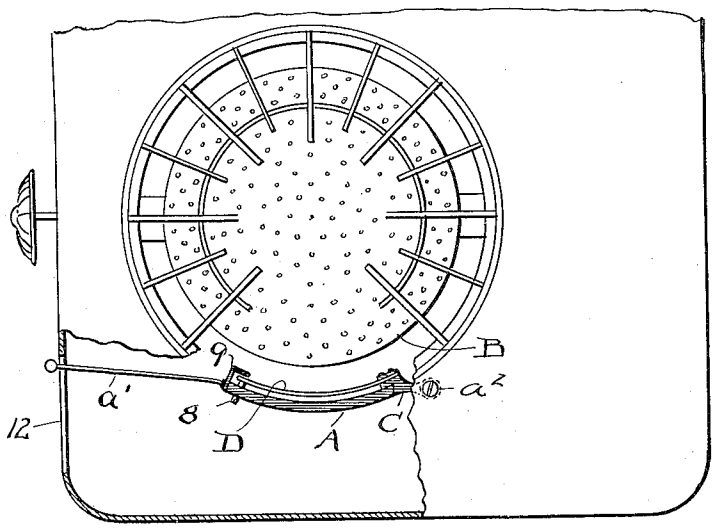


Fig. 2.

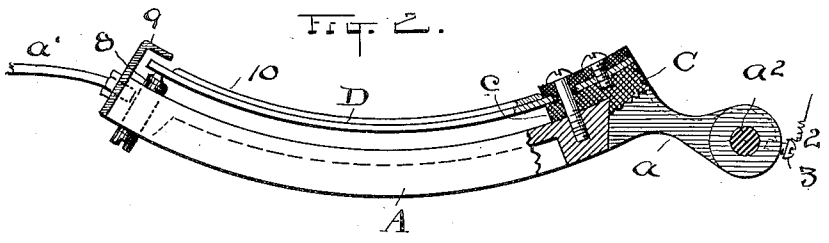
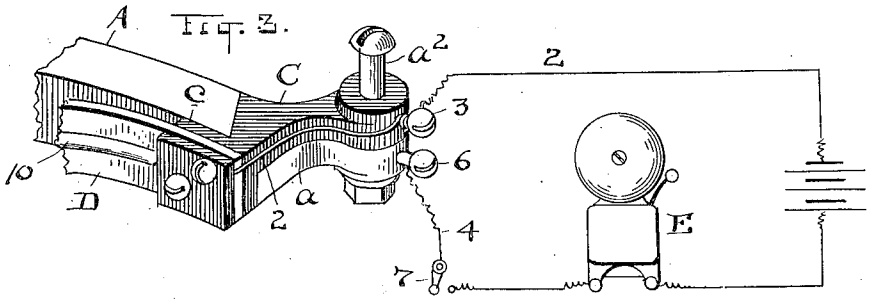


Fig. 3.



ATTEST

H. E. Mudra.

INVENTOR.

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ATTY

UNITED STATES PATENT OFFICE.

FERDINAND WILKE, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES A. LEY, OF SAME PLACE.

ELECTRICAL ATTACHMENT FOR HYDROCARBON OR OTHER BURNERS.

SPECIFICATION forming part of Letters Patent No. 648,548, dated May 1, 1900.

Application filed June 10, 1899. Serial No. 720,001. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND WILKE, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Electrical Attachments for Hydrocarbon or other Burners; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an electrical attachment to hydrocarbon-stoves and for like uses; and the object of the invention is to provide an attachment which will tell when the burner has gone out, so that danger from overflow of oil may be prevented.

Frequently in the use of hydrocarbon-burners, particularly in gasolene-burners, the wind or a sharp draft will blow out the flame, especially if the flame be turned low, but the vapor and oil will continue to flow. This state of things often continues for some time, while all the time the burner is supposed to be at work. Then when the true condition is discovered and a match is struck in the presence of the vapors which fill the atmosphere an explosion follows with all the direful consequences so repeatedly related in the columns of our daily papers. It is the object of my invention to reduce all danger on this account to a minimum by the use of a very sensitive device which will ring an alarm practically as soon as the flame of the burner is extinguished or so soon thereafter that no material or dangerous flooding of oil can ensue.

In the drawings, Figure 1 is a plan view of the attachment operatively mounted on a stove. Fig. 2 is an enlarged plan view, partly in section, of the attachment alone. Fig. 3 is a perspective view of part of the attachment with electrical connections shown in diagram.

To these ends the invention comprises a stove attachment consisting of a metallic and preferably segmental arm A, provided with a pivot or hinge projection a at its rear and having a handle-arm a' at its front to control its position to or from the burner B. A pivot-pin a^2 on the stove-frame serves in this instance to support arm A. The arm A has a recess at its top above the pivot projection a, into which is set an insulating or non-conducting piece C, fixed to arm A and having a part in the pivot on pin a^2, as plainly shown in Fig. 3. This non-conducting piece has an offset or shoulder c, projecting outward beyond the inner side of arm A, and to said offset portion is secured the sensitive plate or blade D. This blade is curved in a segment following the curvature of arm A and is fixed to the shoulder c in such manner as to avoid all metallic contacts, and electrical connection is made therewith through a wire 2 and supporting and connecting post 3. The other wire 4 of the circuit connects with the metallic arm A through post 6, and a switch 7 at any convenient point on the line or in the circuit serves to turn the current on or off. At its opposite end the blade D is free between a contact-point 8 in or on arm A and a non-conducting bracket 9 on the end of the arm in position to serve as a stop to the blade opposite to point 8. The blade is normally in contact with point 8, and if the switch 7 be closed the bell E will ring and continue to ring as long as these conditions last or until the battery is exhausted. Hence the effect of the heat on blade D is to curve it away from or out of contact with point 8, and said blade is constructed to have this effect. One way to do this is to use a soft and responsive metal, like brass, for the blade proper and a steel-wire rod 10, laid centrally on the said blade lengthwise. The steel is less sensitive to the heat than the brass, and hence a very slight degree of heat comparatively will show itself on the blade and cause it to curve away from the point 8, and it will remain away while the burner is in flame, even though it be turned low. Evidently with this closed-circuit arrangement of the parts as their normal relation a switch for throwing the current in and out is necessary, and the current is not intended to be turned on until the burner is going nor to be used when the burner is out; but if it should be on it will at once tell the fact by ringing the bell, and this will be notice to open the switch. This makes strictly an emergency device in which there can be no danger in or from itself as an article, but will prevent practically the only dan-

ger that can arise from accidental overflow or waste of oil in an open stove.

When the device is not used, it should be carried away from the burner, and the stove-skirting is shown at 12 as slotted to allow the handle to be moved sufficiently for this purpose.

Obviously the device is not limited to hydrocarbon-burners in application and use and may be employed in any other connection where it may be found of practical service.

What I claim is—

1. The attachment substantially as described comprising a metallic arm, a sensitive blade fixed through insulation to one end of said arm and an electrical-contact point between said parts at the other end, and a pivot on which the arm is free to swing, substantially as described.

2. A safety attachment for hydrocarbon-burners and the like comprising an arm constructed at one end to be pivoted to swing to and fro and having at its other end a contact-point and an insulating-stop, and a blade sensitive to heat fixed to insulating material on the pivot end of said arm and having its free end between said contact-point and the insulating-stop, and electrical connections with the inner ends of said arm and blade, substantially as described.

3. The combination of a hydrocarbon-burner with an electrical safety attachment for said burner consisting of an arm pivoted to swing to and from the burner and provided with electrical-circuit opening and closing mechanism, substantially as described.

4. A gas or vapor burner, in combination with an electrical attachment comprising an arm pivoted to swing horizontally to and from said burner and a blade on said arm constructed to close the circuit when cold and to open the circuit when warm, and electrical connections with the inner ends of said arm and blade, and a handle to swing said arm to and from the burner, substantially as described.

Witness my hand to the foregoing specification this 23d day of May, 1899.

FERDINAND WILKE.

Witnesses:
HAROLD MCNICHOL,
CHAS. A. LEY.