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ELECTRIC CUT-OUT FOR STILLS AND THE LIKE

Filed May 12, 1926

Fig. 1.

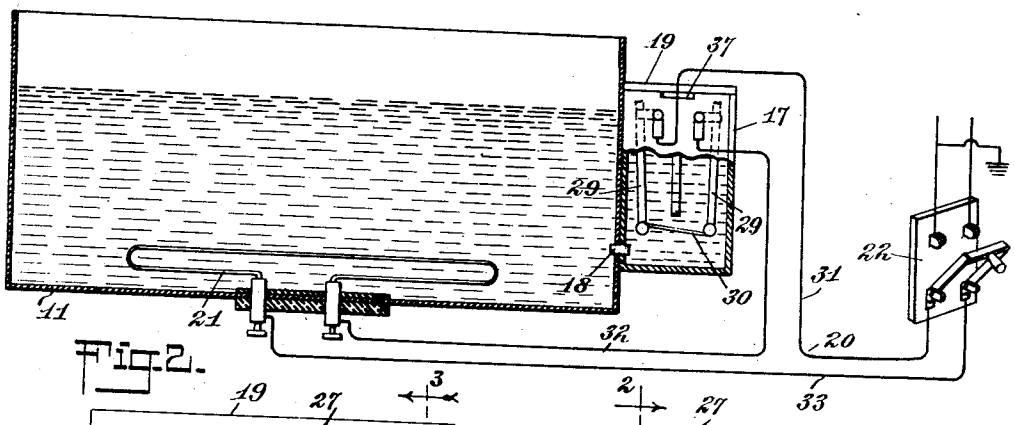


Fig. 2.

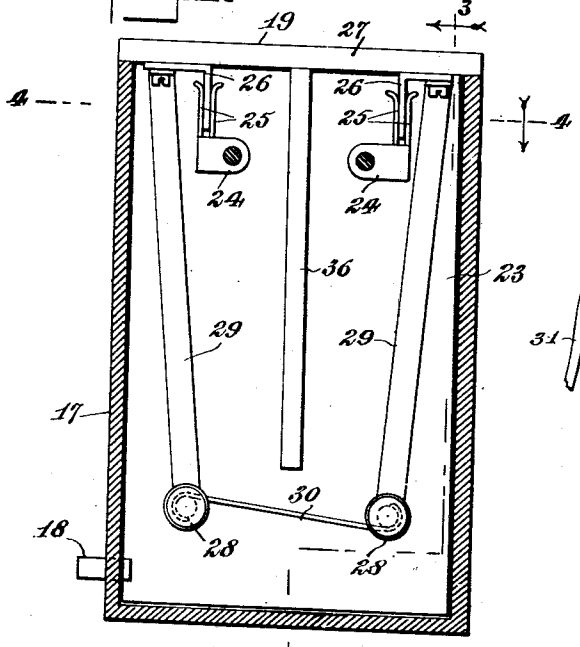


Fig. 3.

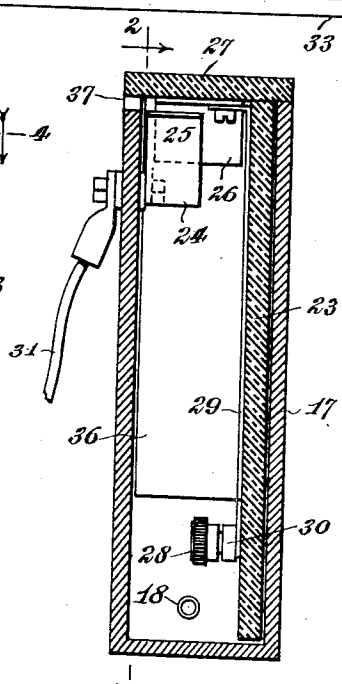
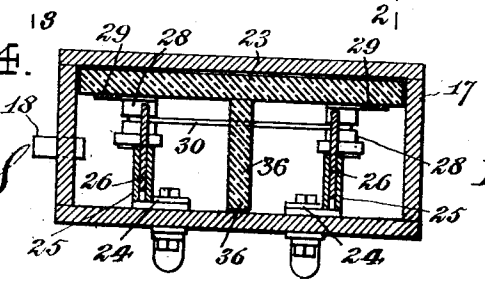


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ELECTRIC CUT-OUT FOR STILLS AND THE LIKE.

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This invention relates to means for breaking an electric circuit serving for heating purposes in connection with stills and the like in order to prevent the same from becoming overheated or burned out.

An object of the present invention is the provision of a device in an electric circuit having a heating appurtenance, which device when submerged in a body of liquid functions to maintain a continuous flow of current, and which device includes a means which breaks the circuit as a result of its destruction when the body of liquid in which the device is submerged is diminished to an extent to uncover the means which is destroyed.

With the foregoing and other objects in view the invention resides in the novel combination, connection, arrangement and construction of the parts hereinafter fully described, illustrated in the drawings, and pointed out in the claims.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawing, in which—

Figure 1 is a diagrammatic and sectional elevation of one embodiment of the present invention.

Fig. 2 is a sectional elevation of the cut-out of the present invention in place in a well which is shown in section, the section being taken on the line 2—2 of Fig. 3, and looking in the direction indicated by the arrow.

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2, and looking in the direction indicated by the arrow.

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 2 and looking in the direction indicated by the arrow.

The present invention has a wide range of application, and is therefore not to be deemed limited to the present embodiment in which it is shown in connection with a boiler or heating vessel 11 of a still or the like. The vessel 11 or its equivalent for holding a body of liquid to be heated is essential in one embodiment of the invention, and the said vessel is in communication with a well 17 by virtue of a connection 18. The well 17 by being in communication with the vessel 11 receives a quantity of liquid which nearly fills the well.

In order to prevent over-heating, and to prevent the vessel 11 from burning out as the body of liquid therein is evaporated or vaporized, there is provided a cut-out device 19 parts of which are electrically connected in a circuit 20 which will include a heating element 21. The heating element may be of any preferred type and is arranged within the vessel 11 for heating the body of liquid therein when the current is flowing. The circuit 20 also includes a blade switch 22 which may be of any preferred type which serves as an independent means for opening and closing the circuit 20.

The device 19 includes a supporting base 23 of insulating material. There are provided clips 24 whose flexible contact members 25 respectively coact with terminals 26 attached to a top member 27 of insulating material. The base 23 has arranged thereon binding posts 28. Arranged between each of the binding posts 28 and one of the terminals 26 is any preferred form of conductor 29, the same being electrically connected between these parts. A fusible element 30 is employed. The fusible element 30 is connected between the binding posts 28 as shown most clearly in Fig. 2, the connection being detachable and electrical. It is to be noted that the device 19 is adapted to be positioned within the well 17, and that the top member 27 rests upon the upper edges of the well to support the device in a manner in which the fusible element 30 will be disposed near the botom of the well. One of the clips 24 is connected to the grounded side of switch 22 by a conductor 31, whereas, the other clip 24 is connected to one terminal of the heating element 21 by a conductor 32, the other terminal of the heating element is connected to the other side of the switch 22 by a conductor 33.

When the distilling process is being carried out there will be a quantity of liquid in the well 17, as before stated. Therefore, when the switch 22 is closed the current will pass to the heating element 21 thus causing the liquid in the vessel 11 to be heated which will result in vapor being generated. As the body of liquid in the vessel 11 is diminished, the liquid in the well 17 will also be diminished. While the liquid in the well remains above the fusible element 30 current will pass through the conductor 33, through the heating element 21, through the conductor 32 to one of the conductors 29, through the fusible element 30 to the other conductor

29, and then through its connected parts through the conductor 31. While immersed the fusible element 30 will not be fused or destroyed due to the fact that it is cooled by the liquid in the well. The circuit will be opened as a result of the fusing or destruction of the fusible element 30 when the liquid in the well 17 is diminished to an extent to uncover said fusible element. This uncovering of the fusible element will take place as the liquid flows out of the well 17 which may be due to the fact that the liquid within the vessel 11 has been vaporized to the extent of diminishing the same to a level below the connection 18.

In order to prevent arcing or electric flashes to occur between the conductors 29, there is provided a flash barrier 36 of insulating material which is secured to the base 23, the said barrier being arranged between the conductors 29 as shown most clearly in Fig. 2.

The well 17 is cut-out as at 37 to provide the well with a vent to relieve the well of any pressure.

The cut-out of the present invention may be diversely formulated, and it is to be understood that no limitations are necessarily made to the embodiment of the invention illustrated in the drawing and described hereinbefore, but that changes, modifications, and alterations may be resorted to whenever it is deemed advisable or necessary in accordance with the claims hereunto appended.

I claim:

1. Means for opening an electric circuit consisting of a bare fusible element electrically connected in said circuit, which fusible element is immersed in a quantity of liquid, and which circuit is opened as a result of the destruction of the fusible element after the liquid has been diminished to an extent to uncover said fusible element.

2. Means for opening an electric circuit consisting of a bare fusible element electrically connected in said circuit between two conductors, which fusible element and conductors are immersed in a quantity of liquid, and which circuit is opened as a result of the destruction of the fusible element after the liquid has been diminished to an extent to uncover said fusible element.

3. An electric device comprising a base of insulating material, clips secured to the base, each of said clips having flexible contacts, terminals secured to a portion of said base, each terminal engageable between the contacts of one of said clips, a conductor connected to each of said terminals, binding posts carried by said base, the lower ends of the conductors electrically connected respectively to the binding posts, and a fusible element which is adapted to be detachably connected between said binding posts.

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