T. S. PERKINS & E. E. ROSE.

ELECTRICALLY HEATED STOVE.

APPLICATION FILED JULY 24, 1911.

1,090,339.

Patented Mar. 17, 1914.

Fig. 1.

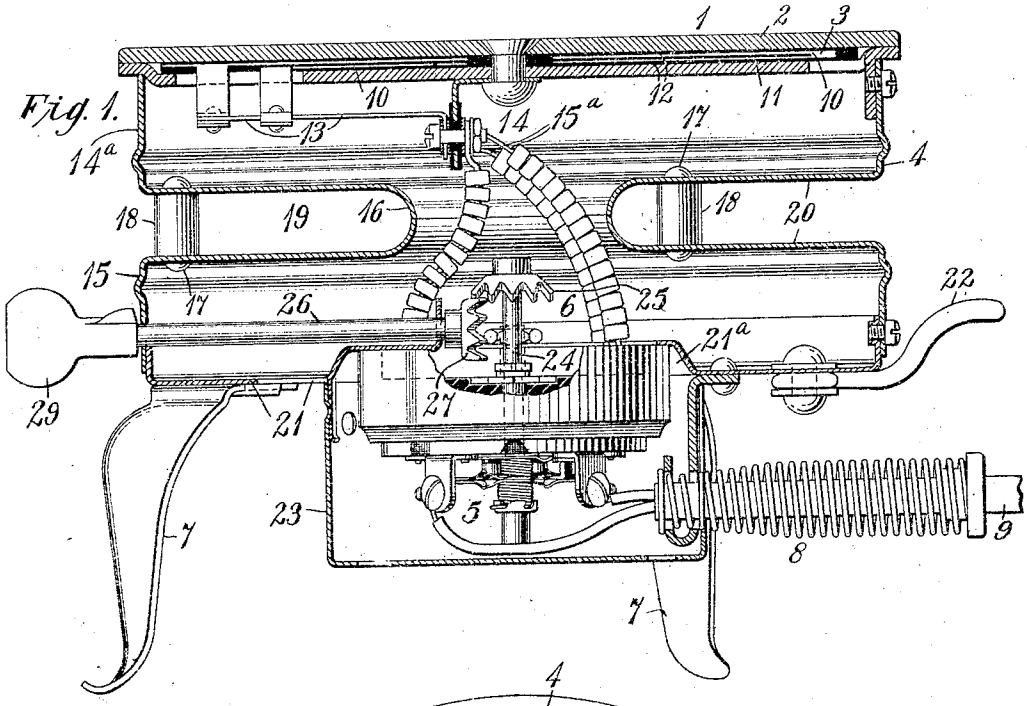
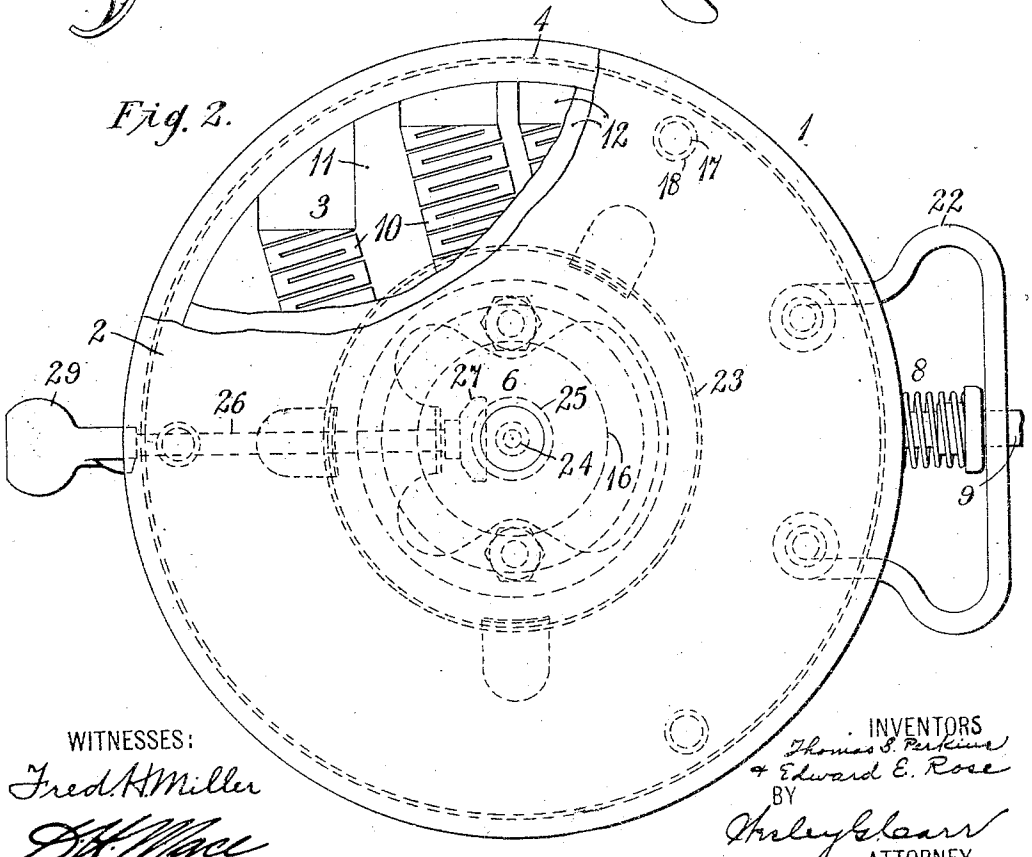


Fig. 2.



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ELECTRICALLY-HEATED STOVE.

1,090,339. Specification of Letters Patent. Patented Mar. 17, 1914.

Application filed July 24, 1911. Serial No. 640,288.

To all whom it may concern:

Be it known that we, THOMAS S. PERKINS and EDWARD E. ROSE, citizens of the United States, and residents, respectively, of Pittsburgh and Swissvale, both in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electrically-Heated Stoves, of which the following is a specification.

Our invention relates to electrically heated stoves or the like, and it has for one of its objects to improve and simplify the construction and operation of devices of the above-indicated character and to provide a unitary structure having a switching device permanently mounted beneath it and adapted to be operated from the side of the stove.

Another object of our invention is to provide adequate means for protecting the switching device against excessive temperatures.

It is the usual practice to provide electrical heating apparatus with means for controlling the electrical connections thereof that constitute separate devices to be connected to the service cord. This arrangement is cumbersome and inconvenient and it is partially to avoid this difficulty that our invention is provided.

According to our invention, we secure a quick-break switching device to the under side of the stove where it occupies a space which is not usually utilized, and also preserves a symmetrical and neat appearance, and we arrange to operate this device from the exterior of the stove through the agency of suitable shafts and coöperating gearing. Furthermore, we provide a casing or shell embodying an air space or chamber and having a deep annular groove or recess on its exterior, said casing being interposed between the heater unit and the switch device. The air space or chamber serves as a non-conductor of heat and prevents a free radiation thereof to the switching device, while the annular groove assures liberal exterior ventilation. The walls of the groove are highly polished and are adapted to reflect the heat between them, thus tending to reduce the transfer of heat to the switching device, in accordance with well known principles.

Our invention may best be understood by reference to the accompanying drawing, in which—

Figure 1 is a view, partially in side elevation and partially in section, of a device constructed in accordance with our invention, and Fig. 2 is a plan view of the apparatus shown in Fig. 1, a portion thereof being broken away.

Referring to the drawings, an electrically heated device 1, comprises a circular top plate or working member 2, a circular heater unit 3 suitably secured beneath the plate, a substantially cylindrical shell or casing 4 to which the plate 2 and the heater unit 3 are secured, a switching device 5 disposed beneath said casing, mechanical means 6 for operating said switching device, a plurality of legs or supports 7, and a terminal member 8 for attaching a service cord 9 to the switching device.

The heater unit 3 may be of any well known construction, but preferably comprises a slotted resistance ribbon 10 which is wound in the form of a flattened helix upon a notched insulating disk 11 that is interposed between suitable insulating plates 12. Inasmuch as the arrangement and structure of the heater unit is shown and described in detail in Patent No. 890,856, granted June 16, 1908, to the Hadaway Electric Heating & Engineering Co., a further description thereof is considered unnecessary.

The heater unit 3 is provided with a plurality of leads 13 which are brought to a suitable terminal board 14 where they are electrically connected to a plurality of insulated conductors 15^a which transmit electrical energy from the switching device 5 to the heater unit. It will, of course, be understood that the heater unit 3 may be provided with any number of leads and may be adapted, in conjunction with the switching device 5, for any desired number of different degrees of heat.

The shell or casing 4 comprises an upper portion 14^a and a lower portion 15 which are of like construction and which comprise a cylindrical member having a neck portion 16 of materially reduced diameter. The upper and lower portions 14^a and 15 are assembled and united with the neck portions thereof in engagement and are suitably held in position by means of rivets 17 and spac-

ing members 18. By thus assembling the component parts of the shell 4, a deep annular groove or recess 19 is provided which affords ample exterior radiation and ventilation. As hereinbefore stated, the walls 20 of the recess 19 are highly polished in order to reflect the heat between them, thus preventing the switching device 5 from being subjected to injurious and excessive temperatures. Secured to the lower edge of the shell 15, is a bottom plate 21 to which the legs 7 and a handle 22 are attached. The plate 21 is also provided with a centrally located recessed portion 21ª to receive the switching device 5, and with a shell or casing 23 for the purpose of inclosing and protecting said switching device.

The switching device 5 is preferably of the quick-break type and may be of any suitable construction. Inasmuch as the construction and operation of devices of this class are old and familiar to those skilled in the art, and as this particular device forms no part of our invention, except as it performs a necessary function in its operation, we do not deem it necessary to give a further description thereof. This switching device is shown and described in detail in Patent No. 966,368, granted August 2, 1910, to George B. Thomas and assigned to the Perkins Electric Switch Manufacturing Company.

A vertical shaft 24, which is centrally disposed within the structure and is associated with the switching device 5, projects upwardly into the air chamber provided within the casing 4 and is provided with a gear wheel 25. The inner end of a horizontally disposed rod or shaft 26 is provided with a gear wheel 27 to coöperate with the gear wheel 25 and the outer end thereof projects through the side of the casing 15 and is provided with a button or handle 29, by means of which the switching device 5 may be readily operated.

The terminal member 8, which projects through the inclosing casing 23 and is secured thereto, serves to protect the service cable 9, which is electrically connected to the switching device 5, in a well known manner.

Such modifications in the structural details and in the arrangement and location of parts as may be effected by those skilled in the art without materially altering the operation or the results secured, are to be understood as included within the spirit and scope of the appended claims.

We claim as our invention:

1. In an electrically heated stove, the combination with a heating element, a supporting standard having internal and external air spaces, and a switching device mounted beneath said standard for controlling the circuit connections of said heating element, of mechanical means embodying shafts and gear wheels for operating said switching device.

2. In an electrically heated stove, the combination with a heating element, and a switching device for controlling the circuit connections thereof, of a casing embodying internal and external air spaces between said heating element and said switching device, said switching device being mounted beneath said casing.

3. In an electrically heated stove, the combination with a heater, a casing for supporting said heater, said casing embodying an air chamber and having a deep annular groove or depression therein, and a switching device secured to the under side of said casing and adapted to control the circuit connections of said heater, of means for operating said switching device from the side of said stove.

4. In an electrically heated stove, the combination with a heater, a plurality of shells or casings embodying internal and external air spaces and disposed below said heater, communicating means between said casings, and a switching device mounted below the lowermost casing and adapted to control the circuit connections of said heater, of means located on the exterior of said stove for operating said switching device.

5. In an electrically heated stove, the combination with a circular heating element, and a cylindrical casing embodying an air chamber and adapted to support said heating element, said casing having a central portion of materially reduced diameter, of a switching device centrally disposed beneath said cylindrical casing and adapted to control the circuit connections of said heating element, and means for operating said switching device from the side of said stove.

6. In an electrically heated stove, the combination with a heating element, a supporting casing having internal and external air spaces, a switching device centrally mounted beneath said casing and adapted to control the circuit connections of said heating element, and an inclosing shell for said switching device, of a centrally disposed shaft associated with said switching device and projecting into said casing, a rod projecting through its side of said casing and having a button on the outer end, and coöperating gear wheels associated with said shaft and said rod.

7. In an electrically heated stove, the combination with a circular heating device, a cylindrical shell or casing embodying an external air space and a centrally disposed portion of reduced diameter to receive the conductors for said heating device, and a centrally disposed switching device secured to the bottom of said shell or casing and adapted to control the circuit connections

of said heating device, of a centrally disposed vertical shaft associated with said switching device and projecting into said shell or casing, a horizontally disposed rod projecting through the side of said shell or casing, and coöperating gear wheels associated with said shaft and said rod.

In testimony whereof, we have hereunto subscribed our names this 20th day of July, 1911.

THOMAS S. PERKINS.
EDWARD E. ROSE.

Witnesses:
FRANK THORNTON, Jr.,
B. B. HINES.