Feb. 19, 1924. 1,484,170

R. S. CANNON

ELECTRIC STOVE

Filed Sept. 6, 1922 2 Sheets-Sheet 1

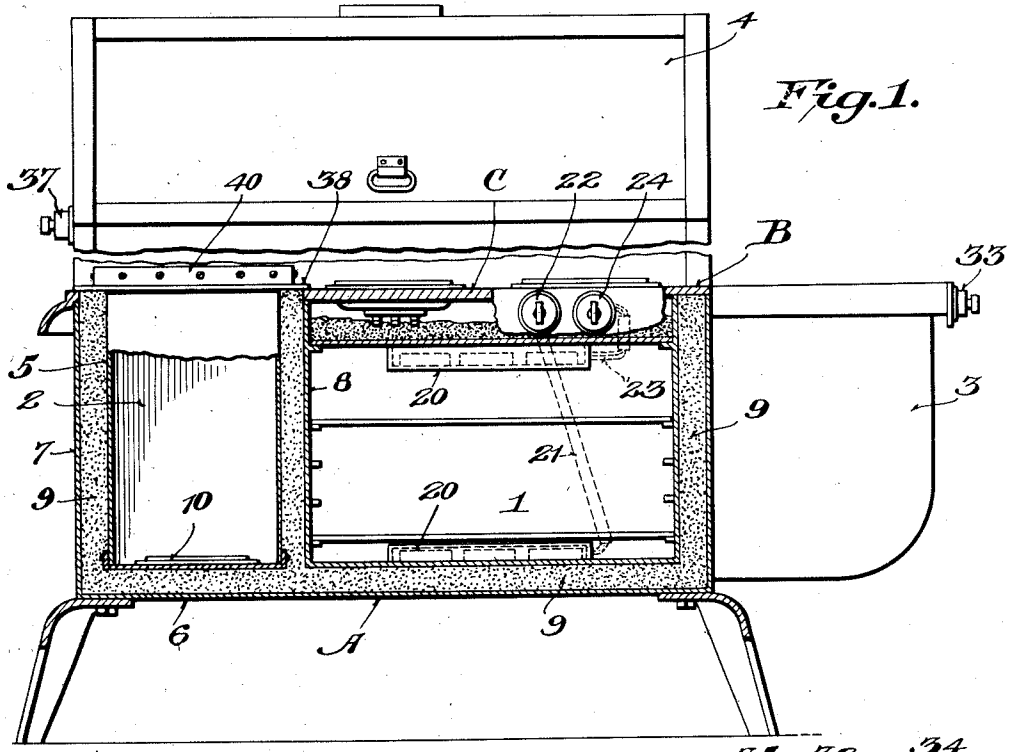


Fig. 1.

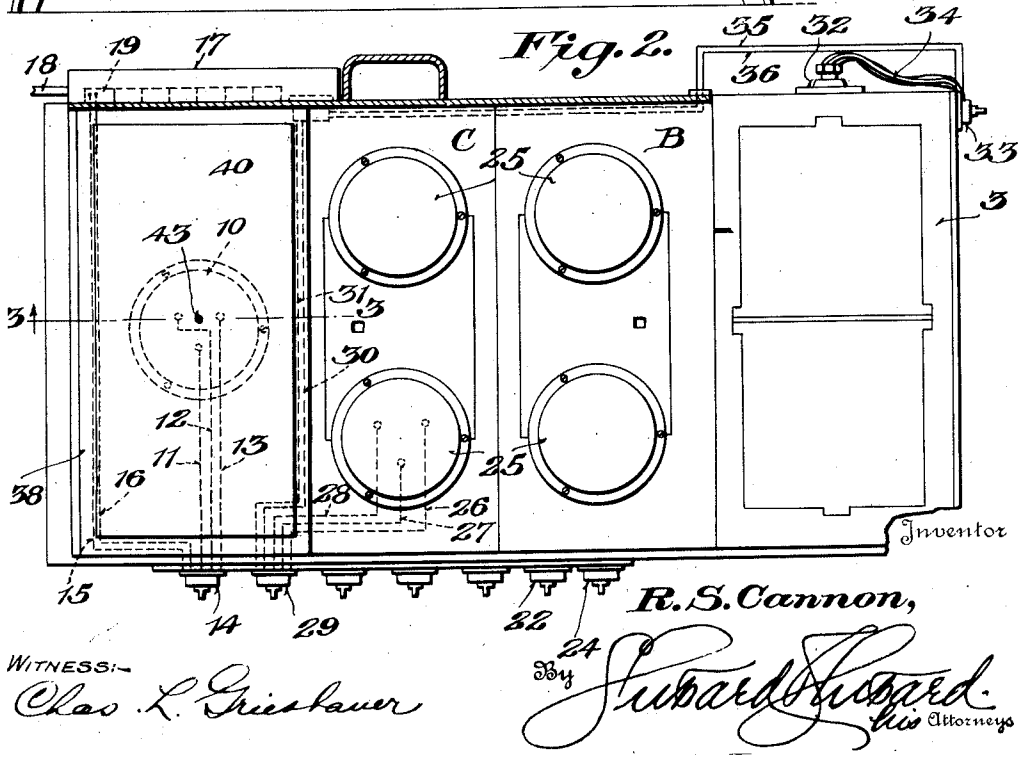


Fig. 2.

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Fig. 3.

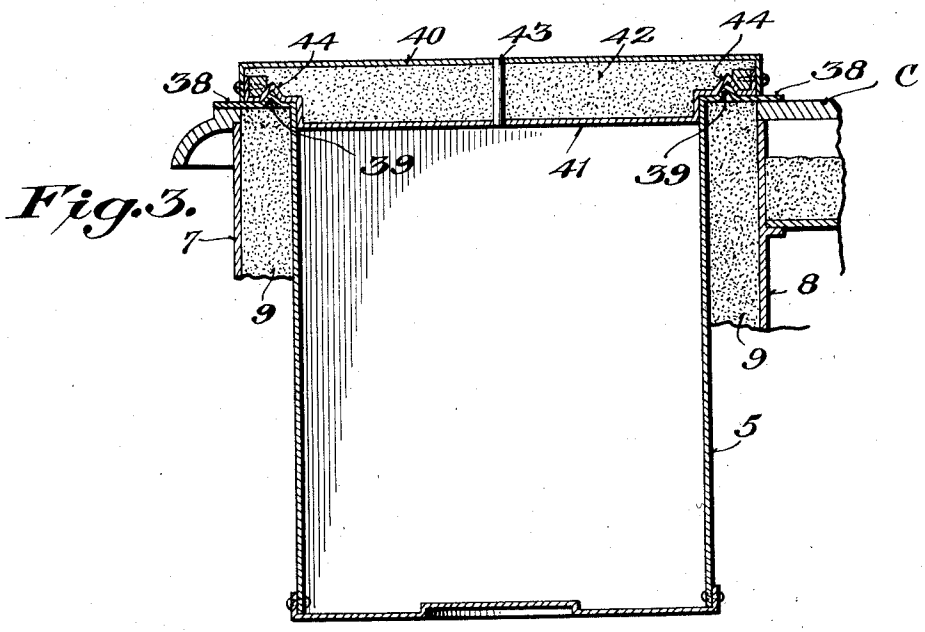


Fig. 4.

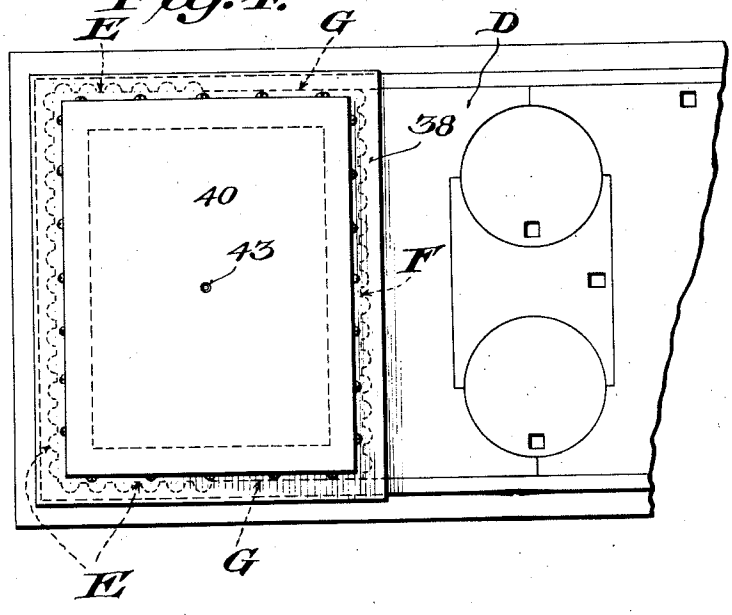


Fig. 5.

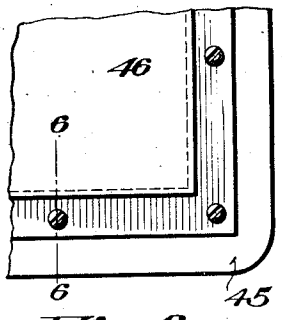
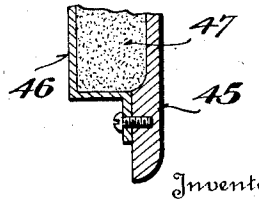


Fig. 6.



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UNITED STATES PATENT OFFICE.

ROSCOE S. CANNON, OF ROCK HILL, SOUTH CAROLINA.

ELECTRIC STOVE.

Application filed September 6, 1922. Serial No. 586,485.

To all whom it may concern:

Be it known that I, ROSCOE S. CANNON, a citizen of the United States, residing at Rock Hill, in the county of York and State of South Carolina, have invented new and useful Improvements in Electric Stoves, of which the following is a specification.

This invention is an electric stove, and the objects of the invention are to convert any ordinary or conventional form of wood burning or coal burning cook stove into an electric stove without materially altering the original stove and to make the stove economical electrically by retaining the heat in its cooking compartments.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing and particularly pointed out in the appended claims, it of course being understood that changes in the form, proportion, size and minor details may be made, within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings,

Figure 1 is a front elevation of an ordinary cook stove with parts broken away to show certain of the features of the present invention,

Figure 2 is a top plan view with certain of the electric circuits shown in dotted lines,

Figure 3 is an enlarged fragmentary sectional view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view of a top of a stove indicating how a part of the stove top is broken out to accommodate the fireless cooker compartment.

Figure 5 is a fragmentary side elevation of the oven door.

Figure 6 is a detail section on the line 6—6 of Figure 5.

In disclosing the present invention, there has been shown in the accompanying drawing an ordinary or conventional form of cook stove which is designated generally by the reference character A. This stove has the usual oven compartment 1 and fire box compartment 2. It is also provided with a hot water compartment 3, and a heating oven or compartment 4 disposed above and at the back of the stove.

In carrying out my invention, I remove the grate and fire brick from the fire box, and introduce into the fire box a sheet metal box or lining 5 which has its bottom spaced upwardly from the bottom 6 of the stove and also has its side walls spaced from the adjacent side wall 7 of the stove and the walls 8 of the oven. This box 5 constitutes a fireless cooker as will hereinafter appear. The spaces around the metallic lining or box 2 is filled with some heat insulating material 9 of any ordinary or suitable character. Within the bottom of the box 2 there is provided any ordinary or preferred form of electric heating device 10 from which extend electric conductors 11, 12 and 13 disposed within the space around the box 2 and leading to a snap switch 14. Suitable conductors 15 and 16 lead from the switch 14 through the spaces around the box 2 to a combined fuse box and terminal casing designated 17 and mounted upon the exterior of the stove, preferably at the back thereof. The terminal casing is provided with a suitable electric cable 18 which is provided with a suitable plug or other means, not shown, for connection with the house circuit. The conductors 15 and 16 lead into any common or approved form of fuse element designated 19 and shown diagrammatically in dotted lines. It will here be explained that each of the conductors 11, 12 and 13 is a double conductor in order to obtain three different degrees of heating for the electric heater 10 as well known in the art and forming no part of the present invention.

By reference to Figure 3 of the drawings it will be seen that the tops of the side walls of the box or lining 5, which constitutes the fireless cooker, are directed downwardly so as to form flanges 38 designed to rest upon the top of the stove. It will of course be understood that the flanges 38 extend entirely around the four sides of the box or lining 5 at the top thereof, and each flange portion is bent or crimped to provide an upstanding rib 39. The removable top or cover for the fireless cooker portion 5 includes top and bottom members 40 and 41 respectively, which are spaced a suitable distance to accommodate insulating packing 42. An open ended tube 43 extends centrally through the removable top or cover and con-

stitutes a vent opening as is common with fireless cookers. The underside of the removable top or cover is rabbeted around its edges so that the central bottom portion of the cover may fit down snugly within the open top of the part 5, the outer peripheral portion resting on the flanges 38 of the box 5. The rabbeted portion of the cover is provided with a groove or seat 44 of a shape and size to snugly receive the upstanding rib 39 thereby to form a snug joint between the cover and the body of the fireless cooker for the purpose of retaining the heat therein.

As shown in Figures 1, 2 and 3, the stove is of that type where the top thereof is divided into independent removable sections, two of such sections being indicated at B and C respectively, in Figure 2, the other section having been removed to accommodate the fireless cooker 5.

In other forms of stoves, such as has been shown in Figure 4 of the drawings, there is an integral stove top portion over the fire box, and in order to accommodate the fireless cooker, it is necessary to break out a part of the integral stove top portion as well as to break out a part of the removable stove top section D. A common expedient for breaking out pieces of cast metal is to drill holes in the metal and then break the metal between the holes, such a break being indicated by the dotted lines E and F in Figure 4 of the drawings. The broken edge indicated by the reference character E is in the integral stove top portion, whereas the broken edge indicated by the dotted line F is in the removable stove top portion D. The dotted straight lines G, Figure 4, indicate the straight edges of the opening in the stove top which accommodate the part of the removable stove top section D which has been broken therefrom.

In Figure 5 of the drawing there has been shown a corner portion of a conventional oven door 45 which is provided with an inner wall 46 spaced from the outer wall 45 so as to form a compartment to receive insulating packing material 47 in order that the oven may be entirely surrounded with insulating material for the purpose of retaining the heat.

The usual spaces between the walls of the oven and the walls of the stove are filled with a heat insulating material 9, and the oven is provided with one or more electric heaters 20 suitably located within the oven and of any common or preferred construction. Conductors 21 lead from one of the oven heaters and through the back of the oven wall and insulated space 9 around the oven to a snap switch 22 provided at the front of the stove, while conductors 23 lead from the other oven burner to a snap switch 24 also provided at the front of the stove.

Conductors of course lead from each of the oven heaters to fuse elements in the combined fuse box and terminal casing 17, such conductors of course leading through the spaces which are filled with insulating material, such conductors, however, not being shown in the accompanying drawing.

The usual lids in the top of the stove and above the oven are removed, and in each of the stove openings there is provided an electric heater 25 of any common or preferred construction, the bottom portions of said heaters extending down into the heat insulating material above the top of the oven, and the top of each heater extending slightly above the top of the stove in order that a cooking utensil may be supported directly on top of the heater so as to obtain the maximum heating effect thereof.

The electrical connections for one of the heaters 25 have been shown in Figure 2 and include double conductors 26, 27 and 28 leading from the heater and through the insulated spaces between the top of the oven and the top of the stove and to a snap switch 29 provided on the front of the stove. Conductors 30 and 31 lead from the snap switch through one of the insulated spaces of the stove and to one of the fuse elements within the fuse box 17. The three double conductors 26, 27 and 28 are for obtaining three different degrees of heating as is commonly the practice with electric heaters.

For heating the water tank 3 an electric heater 32 is mounted in the back of the tank 3 and is connected to a snap switch 33 provided upon the exterior of the stove, the three double connections with the snap switch being indicated generally at 34. Conductors 35 and 36 lead from the snap switch 33 to one of the fuse elements in the fuse box 17, a portion of said conductors lying within the insulated space at the back of the oven, as indicated in Figure 2, while the remaining portion of said conductors are disposed outside of the stove so as to extend around the water compartment 3 to the snap switch 33.

The warming oven or compartment 4 may be likewise heated, but it has not been deemed necessary to illustrate the location of a heater, but there has been illustrated a snap switch 37 at one end of the warming compartment, which switch may be connected to one of the fuse elements and to an electric heater within the compartment 4 in the usual manner.

From the foregoing explanation, it will be readily understood that applicant has provided for conveniently and inexpensively converting any ordinary wood burning or coal burning cook stove into an electric stove, and at the same time preserves all of the important features of the original stove. The only changes or alterations in the stove is the removal of the grate and the fire brick, the positioning of the metallic box constitut-

ing the inner wall of the fireless cooker portion of the stove, the positioning of the heat insulating material 9 and the drilling of holes for the passage of the conductors and the mounting of the snap switches and the fuse box, wherefore it will be understood that a stove whose top has become warped and depressed may be converted into an electric stove for a cost less than the cost of a new wood burning or coal burning stove or a specially constructed electric stove. With the exception of a small portion of the conductors leading to the snap switch 33, the electric conductors are all within the stove and effectually housed and protected in and by the heat insulating material 9. Moreover said heat insulating material is also a non-conductor of electricity, and therefore the conductors are all efficiently protected by being embedded in the insulating material. The appearance of the stove is not materially changed, and all of the snap switches are conveniently accessible at the front of the stove, and the combined fuse box and terminal cabinet 17 is located at the back of the stove, normally out of sight, but still in accessible position for the replacement of blown fuse elements. If desired the snap switch element 33 for the heater 32 may be located at the front of the stove.

What I claim is:

1. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, the fire bricks being replaced by heat insulating material, and an electric heater mounted within the fire box.

2. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, a metal box within the fire box space and spaced from the side and bottom walls of the fire box space, heat insulating material filling the spaces between the box and the walls of the stove, an electric heater within the box, and electric conductors leading to the heater and embedded within and protected by the heat insulating material.

3. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, a metal box within the fire box space, heat insulating material filling the space between the metal box and the walls of the stove, an electric heater within the box, a fuse box on the exterior of the stove, a switch on the exterior of the stove, conductors leading from the fuse box and to the switch, and other conductors leading from the switch to the electric heater, each of said conductors being embedded within and protected by the heat insulating material.

4. An electric stove, comprising a conventional wood burning or coal burning cook stove having a heat compartment, heat insulating material filling the space commonly existing between the walls of the compartment and the walls of the stove, an electric heater within said compartment, and electric conductors for the heater and embedded within and protected by the heat insulating material.

5. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, a metal box disposed within the fire box space, heat insulating material filling the spaces between the walls of the stove and the box and also filling the spaces around the oven of the stove, electric heaters within the box and within the oven, electric conductors extending to the respective heaters and embedded within and protected by the heat insulating material, and switches for the respective heaters.

6. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, heat insulating material surrounding the oven of the stove and surrounding the fire box of the stove, an electric heater within the fire box, an electric heater within the oven, an electric heater in one of the stove holes above the oven, electric conductors leading to the respective heaters and embedded within and protected by the heat insulating material, and switches for the respective heaters.

7. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, heat insulating material surrounding the fire box and also surrounding the oven of the stove, an electric heater in the fire box, another electric heater in the oven, another electric heater in one of the stove holes in the top of the stove and above the oven, electric switches provided upon the front wall of the stove, electric conductors leading from the heaters to the respective switches and embedded within and protected by the heat insulating material, a combined fuse box and terminal casing mounted upon the back of the stove, and electric conductors leading from the switches to the fuse box and embedded within and protected by the heat insulating material.

8. An electric stove, comprising a conventional wood burning or coal burning cook stove having its grate and fire bricks removed, a metal box within the fire box space and spaced from the side and bottom walls of the fire box space, heat insulating material filling the spaces between the box and the walls of the stove, an electric heater within the box, and a removable heat insulated cover for the box.

9. An electric stove, comprising a con-

ventional wood burning or coal burniug cook stove having its grate and fire bricks removed, a metal box within the fire box space and spaced from the side and bottom walls of the fire box space, heat insulating material filling the spaces between the box and the walls of the stove, an electric heater within the box, the box being open at its top and provided around its top with an outstanding flange, and a removable heat insulated cover having a portion resting on the flange, the flange and cover having a tongue and groove joint.

ROSCOE S. CANNON.