

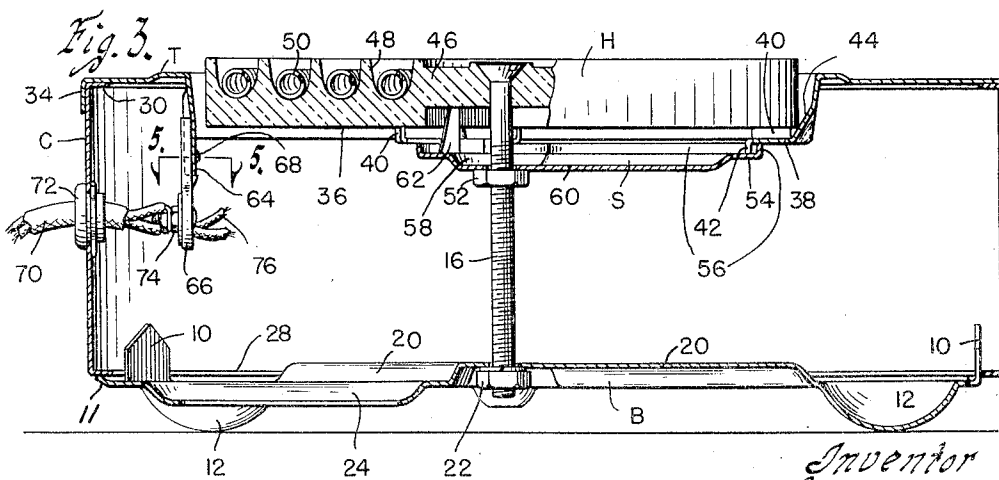
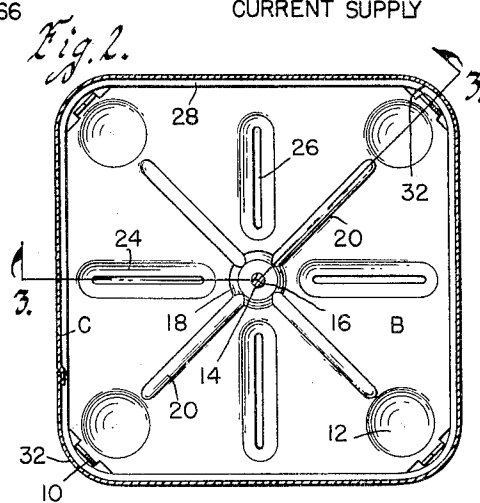
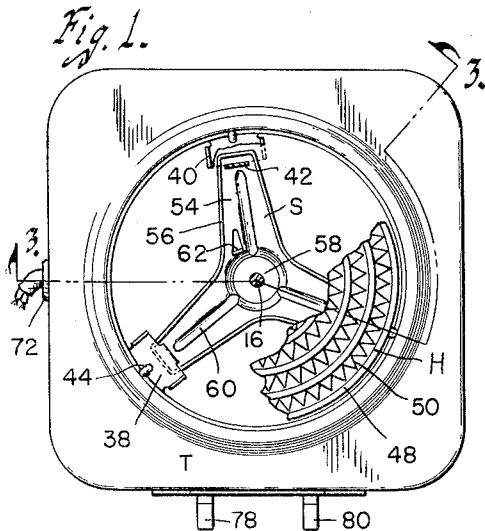
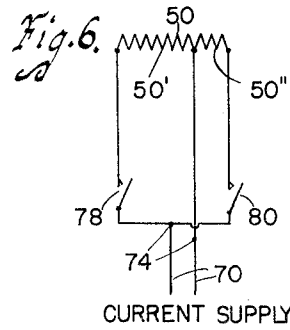
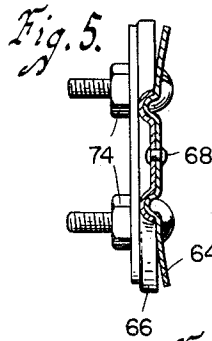
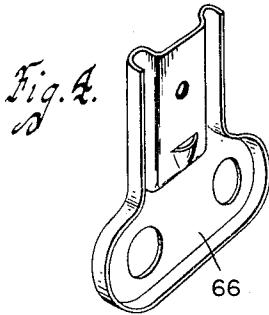
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STOVE ASSEMBLY

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STOVE ASSEMBLY

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An object of my invention is to provide a stove assembly of simple, durable and inexpensive construction.

A further object is to provide an electric stove assembly comprising top and bottom plates and a cylindrical wall interposed between them, together with means for retaining the plates assembled relative to each other and a heating element assembled relative to the top plate.

A further object is to provide a seat in the top plate for a heating element, and a spider under the seat which cooperates with a tie bolt for retaining the heating element in position relative to the top plate.

Another object is to provide a stove assembly having top and bottom plates, a cylindrical wall and a spider all formed of relatively thin sheet metal but so cut and shaped that a very rigid and satisfactory casing for a heating element is provided.

Still another object is to provide a sheet metal spider for retaining a heating element in seated position relative to the top plate of a stove assembly, such spider being formed with upstanding flanges outlining its contour and ribs formed along the arms of the spider to prevent undesired distortion of the spider when a tie bolt connection is tightened.

Still a further object is to provide a bottom plate for a stove assembly having a plurality of radiating, upstruck and downstruck ribs to prevent distortion thereof when a tie bolt is tightened, foot elements being depressed from the material of the base plate to support it spaced above a supporting surface when the stove is in use.

Still a further object is to provide means of coaction between a bottom plate, a cylindrical wall, a top plate and a spider, whereby upon the parts being held assembled by a single tie bolt, there is such inter-engagement between the parts that no other fastening means is necessary.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my stove assembly, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of a stove assembly embodying my invention.

Figure 2 is a horizontal sectional view of the same taken below the top plate, heating element and retaining spider.

Figure 3 is a sectional view, the upper part of which is taken on the line 3—3 of Figure 1 and

the lower part of which is taken on the line 3—3 of Figure 2.

Figure 4 is a perspective view of the terminal clip used in connection with my stove assembly.

Figure 5 is an enlarged sectional view on the line 5—5 of Figure 3 showing the terminal clip mounted in position; and

Figure 6 is an electro diagrammatical view of the heating element and control means therefor.

On the accompanying drawing I have used the reference character B to indicate a bottom plate, C a peripheral wall and T a top plate. These plates are formed of sheet metal and have the following characteristics.

The bottom plate B has adjacent each corner an upstruck tongue 10 and a depressed foot element 12. The marginal edge of the plate B is slightly upturned as at 11. At the center the bottom plate B is perforated as indicated at 14 to receive a tie bolt 16. A depressed boss 18 is provided at the center surrounding the perforation 14. Radiating from the boss 18 are a plurality of upstruck ribs 20 provided to prevent distortion or upward bending at the center of the plate B when a nut 22 on the tie bolt 16 is tightened. The bottom plate B also has downwardly depressed ribs 24 which are slotted as indicated at 26 for air circulation.

The peripheral wall C may be of any desired shape. It is shown as being square with rounded corners. It has an inturned lower flange 28 and an inturned upper flange 30 for reinforcing the side walls against undesired buckling or bowing. The corners of the wall C are indicated at 32. The corners 32 receive the tongues 10 of the bottom plate B for positioning the plate against lateral and/or rotary movement relative to the wall C.

The top plate T has a peripheral flange 34 extending around the outside of the peripheral wall C. The plate T also has a smaller annular flange 36 depending therefrom. This flange at three points has inturned ears 38 for supporting a heating element H. Each ear 38 has a pair of side flanges 40 with which the lower surface of the heating element H contacts, and an inner end flange 42 extending downwardly. At the corner, formed between the flange 36 and each ear 38, I provide an angular rib 44 which serves to reinforce the ear and also space the periphery of the heating element H from the flange 36.

The heating element H comprises a moulded plate 46 of porcelain or the like having a suitable groove 48 formed therein. In the groove a coiled resistance wire 50 is located. The heating element H is retained in position relative to the

top plate T by a nut 52 on the tie bolt 16 engaging a spider S.

The spider S has a plurality of arms 54, the contour of which is outlined by an upstanding flange 56 to reinforce the spider against undesired bending when the nut 52 is tightened. It is additionally strengthened by a central boss 58 and ribs 60 radiating therefrom along the arms 54. The end portions of the arms engage the flanges 42 as shown at the right of Figure 3, and these flanges are confined between the upstanding flange 56 where it passes around the end of the arm, thus insuring proper positioning of the spider S relative to the top plate T.

A tongue 62 extends upwardly from the spider S and engages the bottom of the heating element H to prevent excessive tightening of the nut 52. The flange 36 has a downward extension 64 which is of ribbed contour as shown in Figure 5. A terminal bracket 66 is secured thereto by spot welding or a single rivet 68. The bracket 66 is prevented from turning relative to the extension 64 by having a contour similar thereto so that the parts 64 and 66 inter-fit relative to each other.

A supply cord 70 extends through an insulator 72 into the stove casing and is connected by suitable terminal bolts 74 with the heating element leads 76, as shown in Figure 6.

The resistance wire 50 may be divided into two parts 50' and 50'', which are controlled by a pair of snap switches 78 and 80. When the switch 78 is closed, low heat is provided, when the switch 80 is closed, medium heat is provided, and when both are closed, high heat is provided.

The parts B, C, T, H and S are all held assembled by the single tie bolt 16. The parts are positioned relative to each other as already described, and the projections 44 holding the heating element H spaced from the flange 36 permits atmospheric air circulation upwardly through the slots 26 and then around the periphery of the heating element to effect proper heating of a kettle or the like placed on the stock.

The parts are inexpensively formed of thin sheet metal, yet are rigidly held assembled relative to each other by the single tie bolt and the pair of nuts 22 and 52 thereon. The time required for assembling the parts is very short.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim as my invention:

1. In a stove assembly, a top plate, a bottom plate, a peripheral wall interposed between the top and bottom plates, a seat in said top plate for a heating element, a heating element seated therein, a retaining element for said heating element engaging the bottom of said top plate, a retainer bolt through said heating element and retaining element, a nut thereon to retain the heating element in said seat and said retaining element engaging the bottom of said top plate, said bolt extending through said bottom plate and a nut thereon for retaining said bottom plate and peripheral wall assembled relative to said top plate.

2. In a stove assembly, a top plate, a bottom plate, a peripheral wall interposed between the top and bottom plates, an open bottom seat in said top plate for a heating element, a heating

element comprising a grooved refractory plate seated therein and a resistance wire in the groove thereof, a retaining element for said refractory plate engaging the bottom of said top plate and the refractory plate at spaced intervals thereon, a retainer bolt through said refractory plate and retaining element, a nut thereon to retain the refractory plate and retaining element assembled relative to said top plate, said bolt extending through said bottom plate and a second nut thereon for retaining said bottom plate and peripheral wall assembled relative to said top plate, said retaining element comprising a spider, a plurality of means separated from each other directly supporting said refractory plate for spacing the periphery of said refractory plate from the periphery of said seat, said bottom plate having openings for permitting air circulation upwardly from beneath the bottom plate into contact with the bottom of said refractory plate and outwardly and upwardly in contact with the periphery of said refractory plate.

3. In a stove assembly, a top plate, a bottom plate, a peripheral wall interposed between the top and bottom plates, a seat in said top plate for a heating element, a heating element seated therein including a refractory plate, a retaining element for said refractory plate engaging the bottom of said top plate and the refractory plate at spaced intervals thereon, a retainer bolt through said refractory plate and retaining element, a nut thereon to retain the refractory plate and retaining element assembled relative to said top plate, said bolt extending through said bottom plate and a second nut thereon for retaining said bottom plate and peripheral wall assembled relative to said top plate, said retaining element comprising a spider of sheet metal having ribbed arms, said bottom plate being formed of sheet metal and having a plurality of radially extending ribs to prevent undesired buckling of the bottom plate when said nuts are tightened.

4. A stove assembly including a top plate having a cylindrical flange depending therefrom, said flange having a plurality of inturned supporting ears, a heating element resting on said ears, a spider having arms engaging the bottom surfaces of said ears and a tie bolt connection between said heating element and said spider, said top plate having a plurality of projections extending angularly from said flange to said inturned supporting ears for spacing the periphery and the bottom of said heating element from said flange and ears.

5. A stove assembly including a top plate having a cylindrical flange depending therefrom, a portion of said flange having an extension of ribbed cross section, a terminal support having a connecting portion engaged with said extension and having a contour similar thereto and a single connection between said extension and said connecting portion, said flange having a plurality of inturned supporting ears, a heating element resting on said ears, a spider having arms engaging the bottom surfaces of said ears and a tie bolt connection between said heating element and said spider.

6. A stove assembly including a bottom plate, a peripheral wall, a top plate provided with a ventilating opening and a heating element, a tie bolt connection between said heating element and said bottom plate, said bottom plate having a plurality of ribs radiating from the point of connection of the tie bolt thereto, some of said ribs being depressed downwardly from said bottom

plate and some being depressed upwardly therefrom, said downwardly depressed ribs having elongated ventilating openings formed therein longitudinally thereof adapted to admit ventilating air upwardly through said stove assembly.

5 7. In a stove assembly, a top plate having a peripheral downturned flange, a bottom plate, a peripheral wall interposed between said top and bottom plates and confined at its upper marginal edge within said downturned flange, a heating element supported by said top plate, the lower edge of said peripheral wall having an inturned flange, said bottom plate having a plurality of downwardly dished portions to serve as supporting feet and elevating means for the bottom

plate and having its marginal edge slightly upturned and engaging the bottom surface of such inturned flange, upstruck projections from said bottom plate and spaced inwardly from said marginal edge, said upstruck projections engaging the inner edges of said inturned flange to position said bottom plate horizontally relative to said peripheral wall, and tie means connecting said top and bottom plates together, said tie means retaining said top plate in engagement with the top of said peripheral wall and retaining said marginal edge of said bottom plate in engagement with said inturned flange of said peripheral wall.

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