Feb. 7, 1950 J. W. ALSDORF 2,496,654

ELECTRIC STOVE

Filed May 25, 1948

FIG. 1

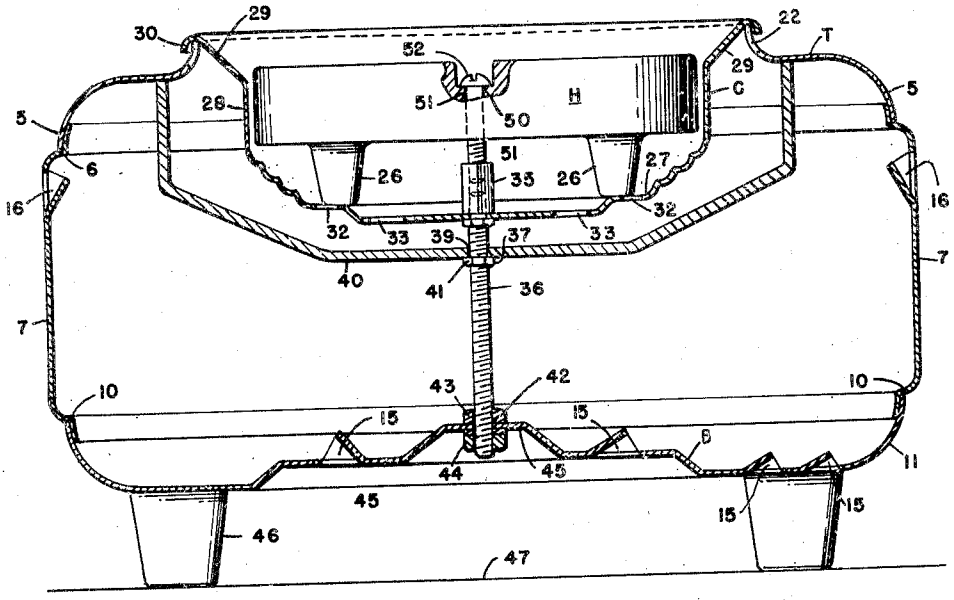


FIG. 2

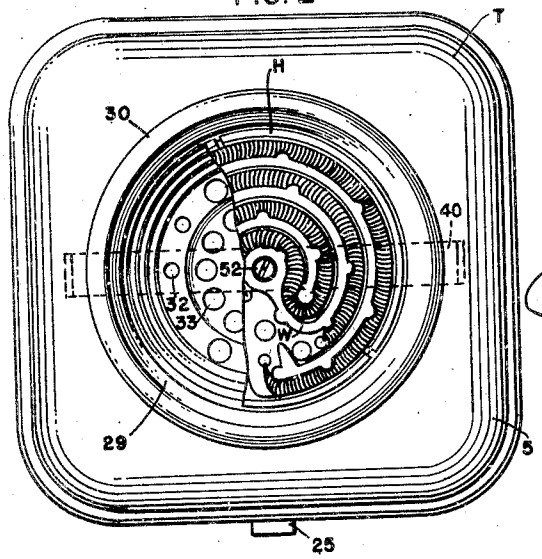
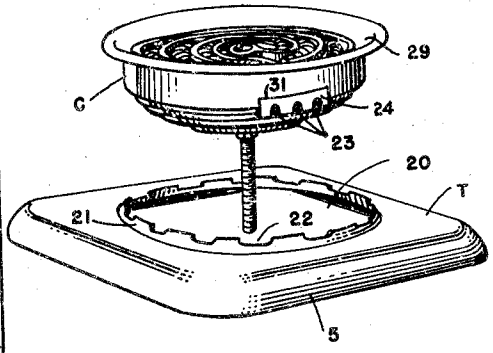


FIG. 3



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ELECTRIC STOVE

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1 Claim. (Cl. 219—37)

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This invention pertains to an electric stove of the kind which is commonly known as a hot plate. It is concerned primarily with a simplified construction which will facilitate assembly of its few parts, and with means specially provided for ventilation whereby the temperature of the stove, when in operation, will be kept within safe limits.

A suggestive embodiment of my invention is set forth in the accompanying drawing wherein:

Figure 1 is a vertical section taken centrally through the stove;

Fig. 2 is a plan view thereof with a part of the so-called brick broken away to exhibit certain parts which otherwise would remain concealed; and

Fig. 3 is an exploded view in perspective of the principal parts of the stove, separated from each other, but arranged in their generally correct relative positions.

The illustrated stove is enclosed within a housing having a top plate T which curves downwardly along its edges at 5 to seat upon a peripheral shoulder 6 which is inset adjacent the upper edge of connected front rear and end walls constituting enclosing sides 7 which adjacent their bottom edges are inset to provide a continuous shoulder 10 against which may be seated the upwardly facing top edges which extend peripherally at 11 from a bottom plate B. Ventilating louvres 15 are provided in the bottom plate and other similar louvres 16 at a higher up point may elsewhere be provided, as for example in one or more of the sides 7.

In the top plate T is a large circular opening 20 surrounded by a flange 21 which, as shown, is upwardly curved from the stove top, the flange being formed along its periphery with a succession of elongated notches 22. In effect, the flange so interrupted by the notches 22 is constituted by a succession of upstanding scallops. In the single unit stove shown, there is but one opening 20, but two or more similar openings may be provided for a multiple unit stove, as is common.

A heating element, here shown as a resistance wire *w* is arranged within certain circular passages in the top face of a heater "brick" H usually made of a ceramic material having a high heat and electrical insulation value. Two such coils may be provided, one for low heat and the other for high heat. These coils are connected to three binding posts (not shown) which are anchored to the brick at points opposite a plurality of slots 23 in a laterally facing terminal

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block 24. Suitable terminals carried in a conventional plug fitting are adapted to engage the binding posts whereby to establish an electrical connection with the heating elements of the stove. A control switch having an operating handle 25 may also be provided, as shown. The term "brick," as used herein, includes the electrical elements that are operatively associated therewith.

The brick is provided with a plurality of depending feet 26 adapted to rest upon an annular ledge 27 which is formed near the base of a cup C having vertical peripheral walls 28 which are flared outwardly at 29 adjacent the top and then rounded over to provide a downturned lip 30. The cup walls 28 are cut away at 31 opposite the terminal block 24 to permit attachment of the plug leading from a source of current. Also the cup base is foraminous in that it is provided with plural off-center openings 32 in the ledge 27 and other similar off-center openings 33 may be provided inwardly of the ledge, as shown.

The top plate T is apertured to receive the cup C whose rounded lip 30 is adapted to rest upon the flange 21 surrounding the opening 20. The elongated notches 22 formed along the peripheral flange 21 remain open to provide ventilating passages exteriorly of the cup leading to the interior of the housing. These openings, however, are concealed by the overlying lip 30 so that small objects, drippings, etc., will be prevented from falling therethrough.

Resting on the cup bottom, centrally thereof, is an elongated nut 35 into which is screwed from the bottom a threaded stud bolt 36 which passes through a central opening in the cup. A lock nut 37 is threaded on to the stud bolt adjacent the under face of the cup bottom and cooperates with the nut 35 to secure these several parts in fixed relation to each other. The stud bolt 36 extends on downwardly from the cup to pass through an opening 39 in a cross bar 40 which extends below the cup in spaced relation thereto, the bar ends being upwardly turned to engage the under side of the top plate T at diametric points outwardly of the cup. A nut 41 screw-threaded on to the stud bolt 36 to engage the under side of the cross bar holds the latter firmly in engagement, at its ends, with the top plate T. By the means described the cup is maintained fixedly in its position within the top plate opening 20 so that the downturned marginal lip 30 of the cup remains tightly in engagement with the top edge of the peripheral flange

21. The construction is one which will remain secure and rigid for an indefinite time.

From the cross bar 40 the stud bolt 36 continues on downwardly to pass through an opening 42 in the bottom plate B. A pair of nuts 43 and 44 are screw-threaded on to the bolt to engage opposite faces of the bottom plate.

As shown, the bottom plate in the region of the stud bolt 36 may be upwardly recessed to provide steps which define one or more annular floors 45 at various elevations. Such a stepped bottom recess, circular in form, tends to stiffen the bottom plate at the point where the units 42 and 43 engage therewith, so as to resist deflection of the plate in response to tension axially of the bolt. Legs 46 may also depend from the bottom plate adjacent corners thereof to rest upon a table or counter surface 47 whereby to maintain a clearance or open space below the housing.

The brick H is provided with a center hole 50 enlarged at the top in axial alignment with the threaded opening of the elongated nut 35. A bolt 51 may then be placed in the hole 50 of the brick to enter into the nut 35 and be advanced therein with the aid of a tool applied to the slotted bolt head 52 which occupies a countersunk position in the top of the brick. When the bolt is advanced into the nut 35, the brick H is then secured firmly in place substantially centrally of the cup C and separated slightly from its walls 28 so that the intervening annular space will form a conduit through which air entering into the cup from its bottom will be free to ascend through to the top of the plate.

The two nuts 43 and 44 which engage opposite faces of the bottom plate B serve as an effective means for holding this plate securely in position against the bottom shoulder 10 of the housing sides; it also holds the top plate T securely against the top shoulder 6 of the housing. These two nuts may be adjusted axially of the stud bolt 36 to the correct position for maintaining the top and bottom plates in pressure engagement with their respective supporting shoulders, and when tightened in place, perhaps with the aid of an intervening spring washer, a friction lock will be provided to assure permanence of this relationship. If necessary, the bottom plate can be removed from the housing without any disassembly of the sides and top plate or the cup and brick mounted therein, thereby affording access to all parts interiorly of the housing. The stud bolt 36 through its connections with the cup C at the top and the cross bar 40 therebelow is the central means whereby the top and bottom plates are maintained tightly against opposite edges of the housing sides and the cup is held securely with the top opening 20, and this same bolt serves also, through the medium of the nut 35 and bolt 51, to secure the brick in its operative position within the cup.

I claim:

An electric stove including a sheet metal housing comprising a top plate having an opening and provided thereat with an upwardly extending marginal flange, said top plate having its outer portion extending downwardly, a bottom plate and sides connecting said plates, a cup fitted within the opening of the top plate and depending within the housing and provided at the top with a marginal lip extending over the flange of the top plate and suspending the cup therefrom, a heater block arranged within the cup and provided with legs supported upon the bottom of the cup, a heating element contained within the heater block, a vertical stud bolt secured at its lower end to the bottom plate and extending upwardly through the bottom of the cup, an elongated nut arranged on the upper end of the stud bolt and engaging the bottom of the cup and adjustable to clamp the cup firmly in engagement with the top plate of the housing, a cross bar having a central opening receiving the stud bolt, said cross bar having upturned ends supporting the top plate adjacent the upwardly extending marginal flange thereof and stiffening and reinforcing the top plate and preventing undue flexing thereof when the cup is clamped against the top plate by said elongated nut, an adjustable nut mounted on the stud bolt and arranged beneath and adjustably supporting the cross bar, and an upper bolt piercing the heater block and having a threaded engagement with the upper portion of the elongated nut for clamping the heater block upon the bottom of the cup, said upper bolt being adjustable and removable independently of the stud bolt and the elongated nut, whereby the heating element and the heater block may be removed and replaced while the cup remains firmly clamped in engagement with the top plate of the housing.

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