Sept. 12, 1950 W. STEPHAN 2,522,002

HEATER UNIT

Filed Oct. 15, 1946 2 Sheets-Sheet 1

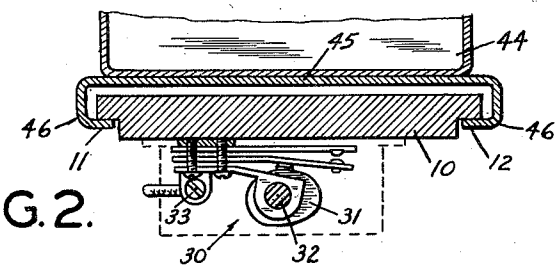


FIG. 2.

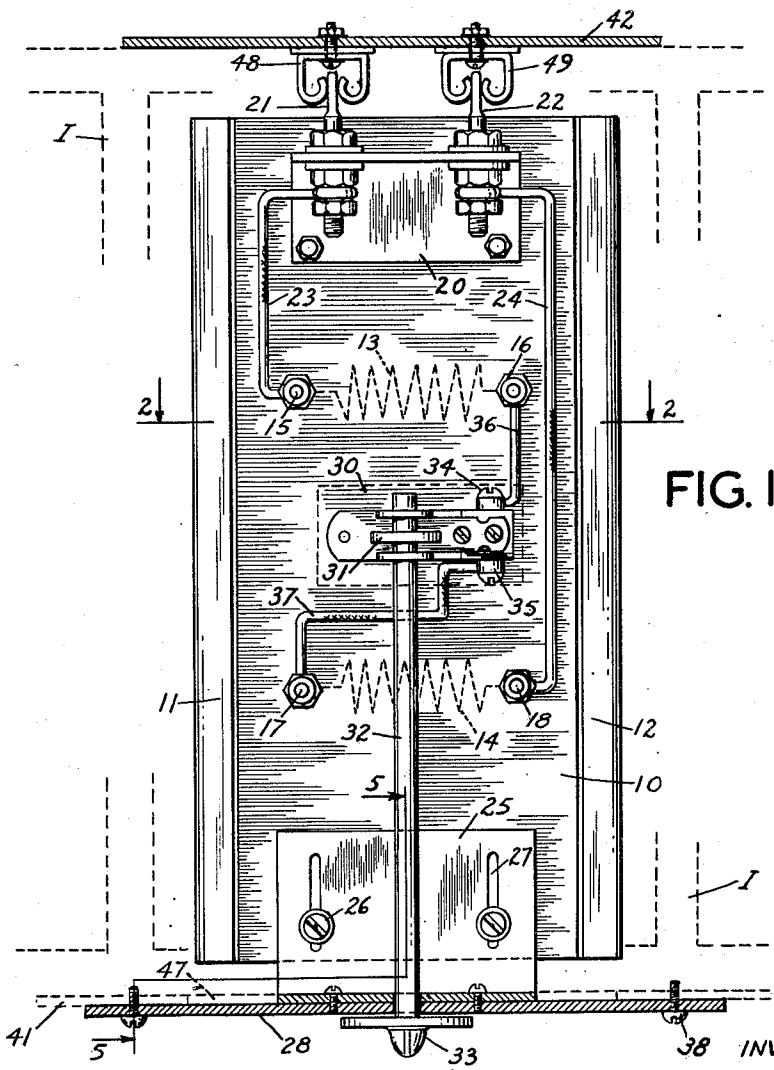


FIG. 1.

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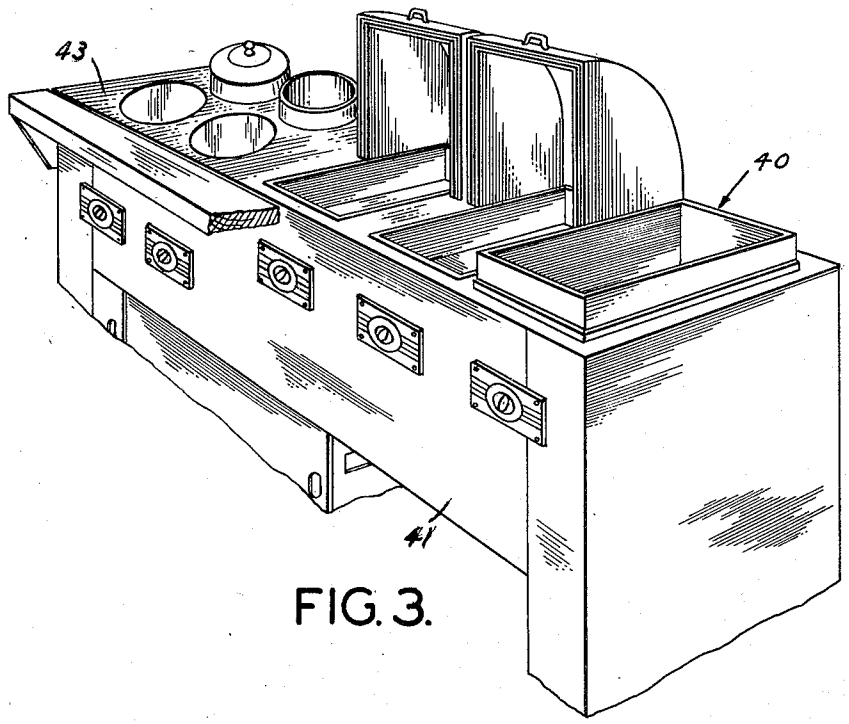
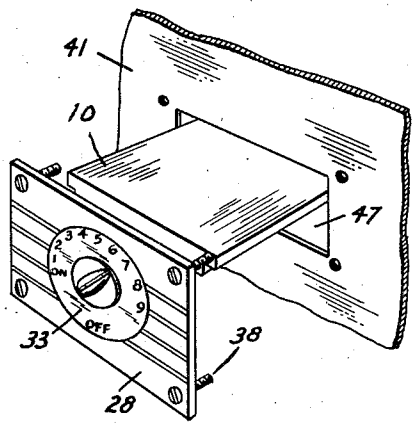


FIG. 3.

FIG. 4.



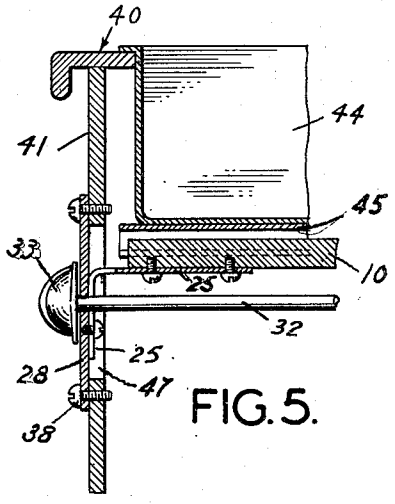


FIG. 5.

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UNITED STATES PATENT OFFICE

2,522,002

HEATER UNIT

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Application October 15, 1946, Serial No. 703,311

3 Claims. (Cl. 219—37)

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This invention relates to an improved heater unit, and its object is to provide a removable self-contained electric heater and its control devices, of simple, inexpensive and compact construction and attractive appearance.

Other objects are to eliminate loose electric conductors, to make all of the parts of the unit readily accessible and to provide units which are interchangeable and easily replaced.

These and other objects of the invention will appear in the following specification, and its novel features pointed out in claims.

Referring to the drawings,

Fig. 1 is a bottom plan view of an electric heater unit which is made according to and embodies my invention, together with parts of a heating table shown in section;

Fig. 2 is a sectional front elevation of the unit shown in Fig. 1 and of a guide therefor. The section in this figure is taken on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of a heating table equipped with a plurality of my novel heater units;

Fig. 4 is a perspective view of a part of the heating table, with one of the units partly withdrawn from it;

Fig. 5 is a sectional side elevation of a part of a heating table and a part of one of the units disclosed herein. The section in this figure is taken on the broken line 5—5 of Fig. 1.

The unit, of which a preferred construction is illustrated, comprises a thin elongated rectangular slab 10, the longitudinal edges of which are undercut, as shown at 11, 12. Within the slab resistance elements 13, 14 are embedded. These elements are indicated diagrammatically in Fig. 1. The terminals of the coils 13 are designated by the reference numerals 15, 16, and the terminals of the coils 14 are designated by the reference numerals 17, 18.

An angle bracket 20 at the rear end of the slab supports a pair of contacts 21, 22, which are disposed in parallelism with the longitudinal edges of the slab. In the arrangement shown, the contact 21 is connected by a conductor 23 to the terminal 15, and the contact 22 is connected by a conductor 24 to the terminal 18. 25 is an angle bracket at the front end of the slab adjustably connected to the slab by means of screws 26, which pass through slots 27 in one of the flanges of the angle bracket into the slab. A face plate 28 is affixed to the other flange of the angle bracket.

30 is an adjustable thermostat, which of itself

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forms no part of my invention. As shown, it comprises a cam 31 affixed to a shaft 32, which passes through the face plate 28 and has a handle 33 on its outer end. The thermostat has a pair of terminals designated by the reference numerals 34, 35. The terminal 34 is shown connected to the terminal 16 by a conductor 36, and the terminal 35 is connected to the terminal 17 by a conductor 37.

It is to be noted that all of the parts thus described are attached directly to the under side of the slab 10, leaving its upper surface unencumbered, and thus its efficiency is enhanced.

40 designates a heating table, having a front plate 41, a back plate 42, and a top plate 43. Several spaced orifices are formed in the top plate for holding flanged receptacles 44. Plates 45 are welded to the bottoms of these receptacles. The edges of these plates are bent downwardly and inwardly to form guides 46 for the slabs 10 (see Fig. 2). Spaced orifices 47 are formed in the front plate 41 for the reception of the units. Spring contacts 48, 49 are affixed to the back plate 42 in alinement with the contacts 21, 22 when the slab 10 is supported on the guides 46. These contacts are to be connected to conductors from an electrical supply.

When the unit is inserted in a heating table through one of the orifices 47 in the front plate, it is pushed in on the guides 46 until its contacts 21, 22 engage the spring contacts 48, 49. Its face plate 28 will then abut the outer surface of the front plate 41, as shown in Figs. 1 and 5, and may then be secured thereto by screws 38. The desired distance between the face plate and the contacts is obtained by adjusting the position of the angle bracket 25 on the slab 10.

Heat insulation, indicated by broken lines, is shown at I in Fig. 1 inside of the front and back plates 41, 42 of the heating table, and also parallel with, but spaced from the longitudinal edges of the slab 10. The latter, when used, divides the heating table into compartments.

As shown in the drawings, the resistance elements 13, 14, and the thermostat 30 are connected in series across the supply line, and a circuit can be established through them by turning the handle 33. This circuit will be broken automatically when a desired degree of temperature, determined by the setting of the thermostat, has been attained. The specific connections shown can be changed to connect the elements 13, 14 in parallel across the line and through the thermostat when it is desired to use the unit with a lower voltage.

Various modifications in construction, mode of operation, method and use of an invention may, and do, occur to others, especially after benefitting from knowledge of such disclosures as that herein presented of the principles involved, but the invention itself is not confined to the present showing.

I claim:

1. A heating table having a receptacle, a flat plate welded to the bottom of the receptacle, with opposing edges of said plate bent downwardly and inwardly to form parallel straight guides and a pair of stationary contacts, combined with a removable unitary heater assembly comprising a rectangular slab having resistance elements embedded therein, said slab having opposite sides undercut to form edges adapted to engage slidably said guides on the plate, and a continuous unemcumbered flat upper surface, a pair of contacts near one end of the slab parallel with said guided edges adapted to engage the stationary contacts on the table, a control device at the other end of the slab, a thermostat intermediate said contacts and control device, and conductors interconnecting the contacts, thermostat and resistance elements, and supports affixed directly to the underside of the slab below the guide-engaging edges for the contacts, control device, thermostat and conductors.

2. A removable unitary heater assembly, comprising a rectangular slab having resistance elements embedded therein, said slab having opposite sides undercut to form edges by which it may be supported and a continuous unemcumbered flat upper surface, an angle bracket having one of its flanges permanently affixed to the underside of the slab near the rear end of the slab, a pair of contacts in the other flange of said angle bracket parallel with the supporting edges of the slab, an angle bracket near the front end of the slab having one of its flanges adjustably attached to the underside of the slab, a thermostat directly affixed to the underside of the slab intermediate said angle brackets, a control device for the thermostat extending through the angle bracket near the front end of the slab, and conductors under the slab interconnecting the contacts, the thermostat and the resistance elements.

3. A heating table having spaced parallel straight guides and a pair of stationary contacts, combined with a removable unitary heater assembly comprising a rectangular slab having resistance elements embedded therein, said slab having opposite sides undercut to form edges adapted to engage slidably said guides on the table, and a continuous unemcumbered flat upper surface, an angle bracket having one of its flanges permanently affixed to the underside of the slab near the rear end of the slab, a pair of contacts in the other flange of said angle bracket parallel with the supporting edges of the slab, an angle bracket near the front end of the slab having one of its flanges adjustably attached to the underside of the slab, a thermostat directly affixed to the underside of the slab intermediate said angle bracket, a control device for the thermostat extending through the angle bracket near the front end of the slab, and conductors under the slab interconnecting the contacts, the thermostat and the resistance elements.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,107,173	Bauer	Feb. 1, 1938
2,277,439	Jepson	Mar. 24, 1942
2,288,510	Brannon	June 30, 1942
2,306,979	Potsdam	Dec. 29, 1942
2,424,412	Myers	July 22, 1947
2,430,194	Snyder	Nov. 4, 1947
2,448,617	Owens	Sept. 7, 1948

FOREIGN PATENTS

Number	Country	Date
80,951	Switzerland	Apr. 16, 1919