

Dec. 18, 1928.

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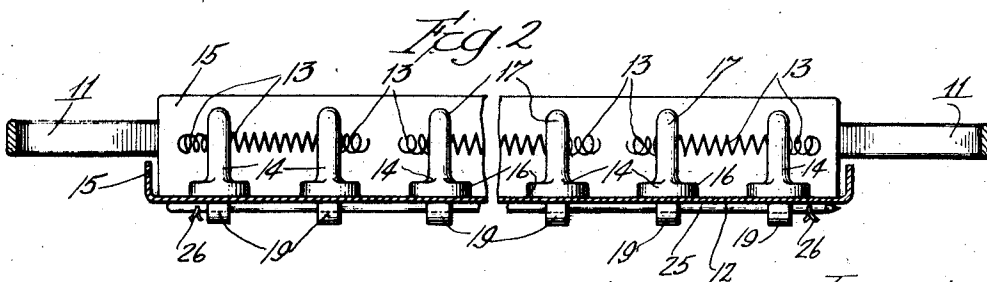
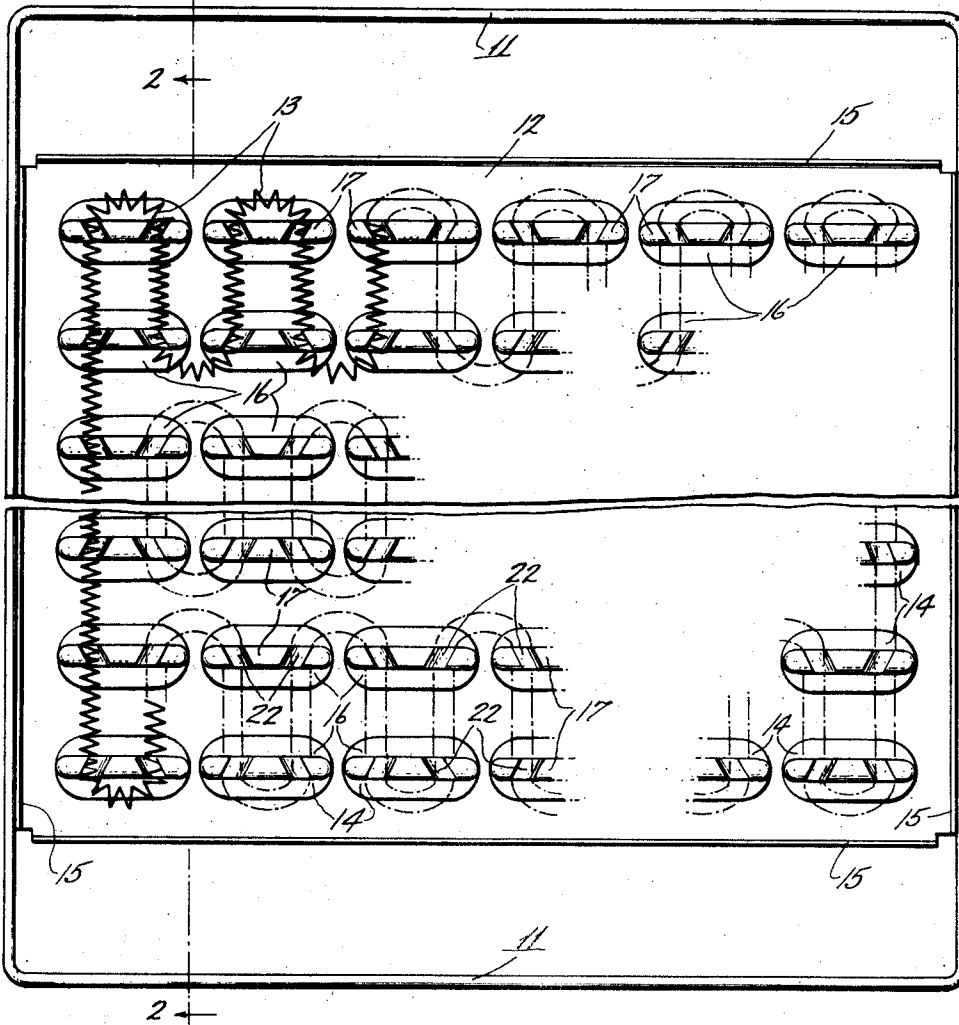
C. M. DIBBLE

ELEMENT SUPPORT FOR ELECTRIC STOVES

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2 Sheets-Sheet 1

Fig. 1



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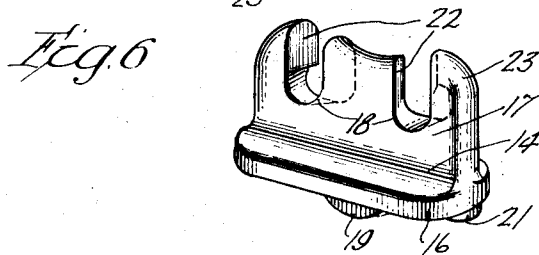
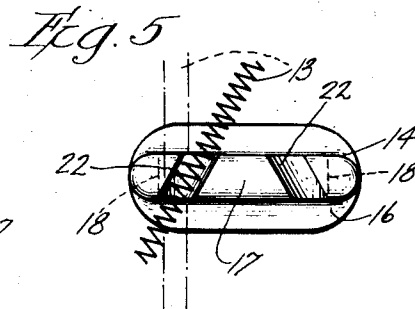
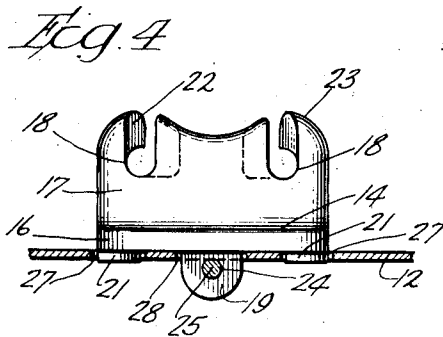
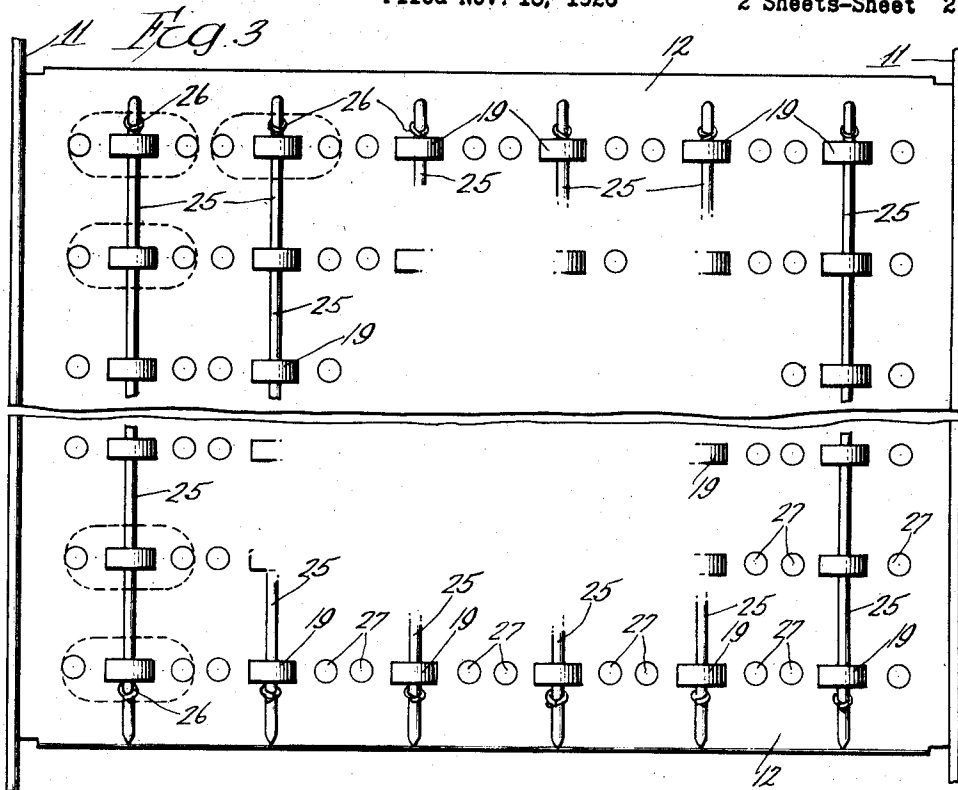
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ELEMENT SUPPORT FOR ELECTRIC STOVES

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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ELEMENT SUPPORT FOR ELECTRIC STOVES.

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This invention relates in general to heating elements and particularly to a support for heating elements of the type commonly used in electric stoves, or the like.

5 An important object in the invention is to provide a heating element wherein the heating coil is supported at a plurality of spaced points by means of supporting devices preferably of insulating material that
10 are or may be interlockingly engaged in a support so that in the event one of the supporting devices is damaged it may be readily removed and replaced and that the original assembly of the heating element will
15 not require riveting, spot-welding, or the like.

Another important object of the invention is to provide a heating element having heating coil supporting devices that are formed
20 to permit of interlockingly engaging the heating coil and the supporting devices at at least one point and preferably two, so that the heating coil may be laced about the supporting devices without threading the
25 entire coil through each supporting device and so that in the event one of the supporting devices is broken after a period of use it is not necessary to remove the coil and re-thread it through all of the supporting
30 devices to replace a supporting device. This is a highly important feature because after a heating coil has been in use for some time the wire becomes delicate and would easily become broken or kinked while thread-
35 ing it through several supporting devices, and if broken it would become useless immediately or, if badly kinked, the kinked spot would become overheated during the next period of use and very rapidly fuse the wire
40 or cause breakage at the kink.

Another important object of the invention is to provide a support for the heating coil and heating element that may be moulded
45 of porcelain or like material and such a device that will require a simple two-part mould that may be cheaply manufactured.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which taken in connection with
50 the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

55 Fig. 1 is a top plan view of a heating element embodying my invention;

Fig. 2 is a section taken substantially on line 2—2 in Fig. 1;

Fig. 3 is a bottom plan view of the device shown in Fig. 1;

Figs. 4 and 5 are a side elevation and plan
60 view respectively of a heating coil supporting device; and

Fig. 6 is a perspective view of the heating coil supporting device shown in Figs. 4
65 and 5.

While this invention may be incorporated in heating elements for various devices, such as space heaters, electrical toasters, fire-places, or the like, I have shown a heating
70 element of the type commonly used in cooking stoves including a frame 11, a pan or supporting member 12, a heating coil 13, and a plurality of heating coil supports 14.

The frame 11 may be of any suitable form and material that is adapted to fit the partic-
75 ular apparatus for which the heating element is to be used and in the present instance I have shown this frame of substantially rectangular form and formed of strap metal.

The pan or supporting member 12 is prefer-
80 ably of sheet metal and of sufficient size to support the required number of coil supports 14 which is determined by the desired heating capacity of the unit or heating element. The supporting member may be at-
85 tached to the frame 11 in any suitable manner and in the present instance is provided with edge flanges 15 extending from a surface thereof, any two or more of which
90 may be secured to the frame 11 by spot-welding, or by means of suitable bolts, rivets, or the like.

The heating element 13 may be any flexible heating element and in the present in-
95 stance I have shown a coiled wire or a heating coil composed of resistance wire laced about the surface of the supporting member 12 and supported thereon and located by the supporting devices 14. Current may be
100 supplied to the heating coil in any suitable manner and parts of the coil may be operated separately or the entire coil operated together to accomplish the desired heating combination or control.

The supporting devices 14 may be formed
105 of porcelain or like material and may also be formed of non-insulating material if the heating coil be insulated at the points of contact with the supporting devices and are formed to provide a base portion 16, a sup-
110

porting rib 17 in which one or more apertures 18 are formed, a tongue 19 and one or more lugs 21. The base 16 may be of any suitable shape, length and thickness and the opposite ends thereof are preferably rounded substantially as shown (Fig. 5). The supporting rib 17 may be of any suitable dimension and is preferably formed substantially as shown and of sufficient height to support the heating coils the proper distance from the supporting member or pan 12. The apertures 18 preferably extend transversely through the rib and may be formed in the rib in the moulding operation. A slot 22 is also preferably moulded in the rib that communicates with the apertures 18 and an edge 23 of the rib. The slots may extend from the apertures to the edge of the rib directly and the shortest distance or in any suitable direction from the apertures and are arranged at an angle to the axis of the apertures 18 and preferably in opposite directions or at an angle to each other.

The tongue 19 may extend from the base 16 in any suitable direction and may form a part of the rib 17 upon occasion. In the present instance I have shown the tongue 19 extending from the base member in a direction opposite the rib 17 and located substantially at the center of the base. The tongue may be of any desired or suitable dimension and is sufficiently long to extend through the supporting member and apertured as at 24 to receive a pin 25 which is preferably a continuous pin extending through several of the coil supporting devices substantially as shown (Fig. 3). An entire row of the supporting devices may be locked in operative position by the pin 25 which may be in turn locked in position by suitable locking devices 26 such as wires extending through the pin 25 and bent thereabout. Any suitable means may be provided to prevent the coil supporting device from moving about the axis of the tongue 19 when assembled and to accomplish this in the present instance I have shown two lugs 21 formed integral with the base and extending therebelow and into apertures 27 in the supporting member, one lug and one aperture being preferably located on each end of the base 16 or spaced from the tongue 19 at the greatest practical distance. Turning movement of the supporting device may also be prevented by the tongue 19 engaging the slot of the opening 28 in the supporting member through which it extends.

The frame and supporting member are assembled to receive a heating coil and its supports and the required number of supports 14 are positioned in the apertures 27 and 28 about the supporting member, the pins 25 are then inserted through the apertures 24 in the tongue 19 and locked in position by the locking devices 26. The heat-

ing unit is then ready to receive the heating coil or coils and where the coil is to be laced into the supporting devices it is positioned in the slots substantially as shown in solid lines (Fig. 5) moved down into the aperture 18 connected with the slot 22, turned slightly or to the position indicated by the parallel dot and dash lines (Fig. 5) and drawn straight. This operation interlockingly engages a coil with a support after which the coil cannot become disengaged and the operation may be accomplished rapidly since it is not necessary to thread the entire coil or the remaining end of the coil through each aperture 18. The proper electrical connections are then made to the coil and the heating unit or element is ready for service or to be installed in the desired apparatus.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A heating element comprising, a base member, a heating coil, and a plurality of supporting devices for supporting said heating coil on said base member, said supporting devices being formed to provide a tongue adapted to extend through the base member to receive a pin for securing the supporting devices to the base member and pins engaging said supporting devices.

2. A heating element, comprising, a base member, a heating coil, and a plurality of supporting devices for supporting said heating coil on said base member, said supporting devices being formed to provide a tongue adapted to extend through the base member to receive a pin for securing the supporting devices to the base member and to prevent turning movement of the support member by engaging the wall of an aperture in the base and pins engaging said supporting devices.

3. A heating element, comprising, a base member, a heating coil, and a plurality of supporting devices of insulating material for supporting said heating coil on said base member, said supporting devices being formed to provide a tongue adapted to extend through the base member to receive a pin for securing the supporting devices to the base member and to prevent turning movement by engaging in a recess in the base and pins engaging said supporting devices.

4. A support for heating elements and the like, comprising, a device formed to pro-

vide a base and a supporting rib extending from said base, an aperture extending through said supporting rib, and a slot extending through said rib and communicating with the aperture and an edge of the rib, said slot extending through the rib at an angle to the axis of the aperture.

5 5. A support for heating elements and the like, comprising, a device formed to provide a base and a supporting rib extending from said base, a plurality of apertures extending through said supporting rib, and a plurality of slots extending through said rib and communicating with the apertures at an edge of the rib, at least one of said slots extending through the rib at an angle to the axes of the apertures.

6. A support for heating elements and the like, comprising, a device formed to provide a base and a supporting rib extending from said base, a plurality of apertures extending through said supporting rib, and a plurality of slots extending through said rib and communicating with the apertures at an edge of the rib, said slots extending through the rib at an angle to the axes of the apertures and at an angle to each other.

7. A support for heating elements and the like, comprising, a device formed to provide a base and a supporting rib extending from said base, a plurality of apertures extending through said supporting rib, and a plurality of slots extending through said rib and communicating with the apertures at an edge of the rib, said slots extending through the rib at an angle to the axes of the apertures, at an angle to each other and in substantially opposite direction.

8. A support for heating elements, comprising, a device formed to provide a base, an element supporting rib extending from

said base in one direction, and a tongue extending from said base in an opposite direction and adapted to extend through a support, said tongue being apertured to receive a pin for locking said device to the support.

9. A support for heating elements, comprising, a device formed to provide a base, an element supporting rib extending from said base in one direction, a tongue extending from said base substantially opposite the supporting rib, means for removably securing said device to a support, and a lug extending from said base and spaced from the tongue for preventing turning movement of said device about the tongue.

10. A support for heating elements, comprising, a device formed to provide a base, an element supporting rib extending from said base in one direction, a tongue extending from said base substantially opposite the supporting rib, means for removably securing said device to a support, and a plurality of lugs extending from said base and spaced from the tongue adapted to engage in recesses in the support for preventing movement of the device when locked in position by the tongue.

11. A support for heating elements, comprising, a device formed to provide a base, supporting rib extending from said base and provided with a plurality of transverse apertures, slots communicating with the apertures and an edge of the rib, a tongue extending from said base opposite the rib and arranged for securing the device to a support, and means engaging the support to prevent turning movement of the device when assembled.

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