Sept. 11, 1956 L. B. PENDLETON 2,762,896

ELECTRICALLY-OPERATED HEAT-GENERATING DEVICES

Filed July 21, 1954

2 Sheets-Sheet 1

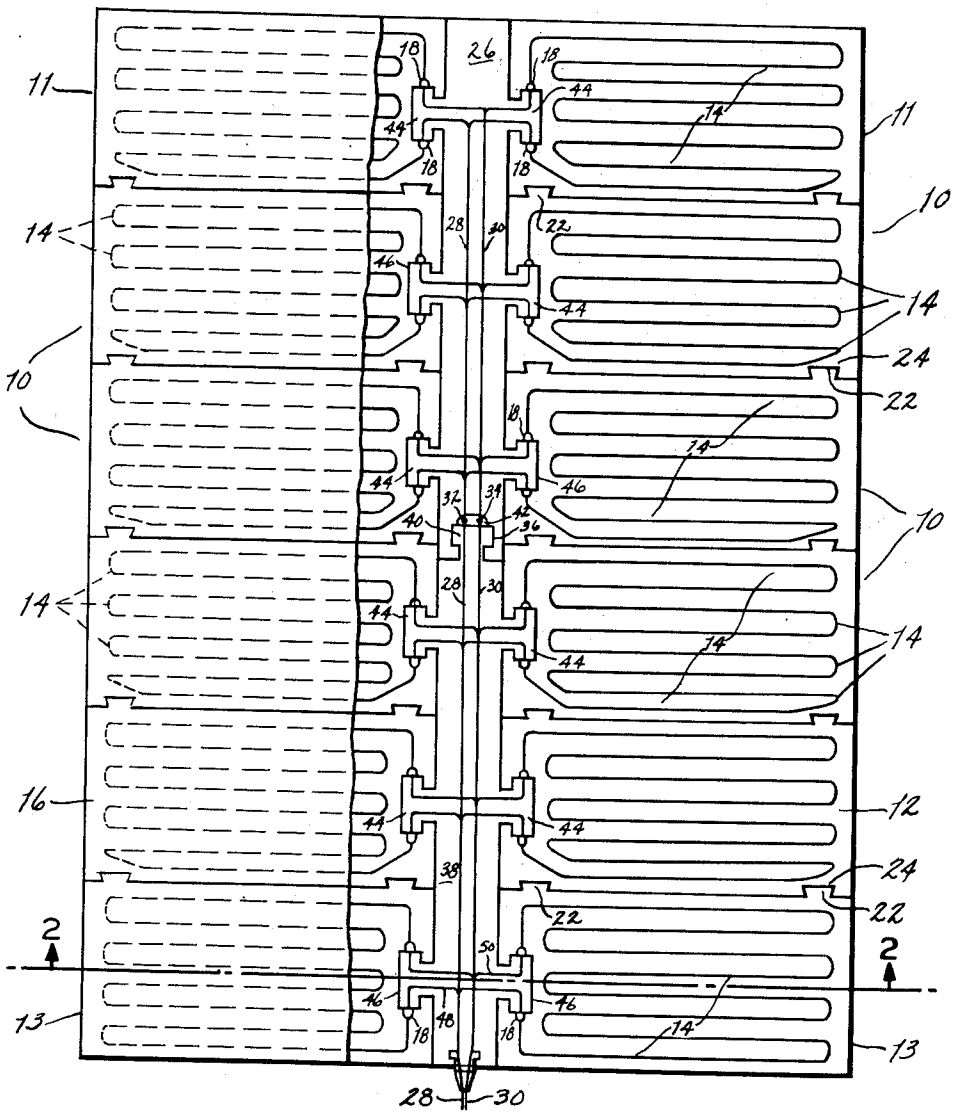

FIG. 1

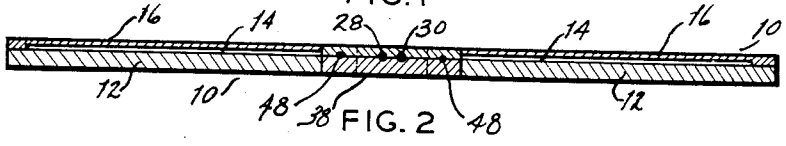

FIG. 2

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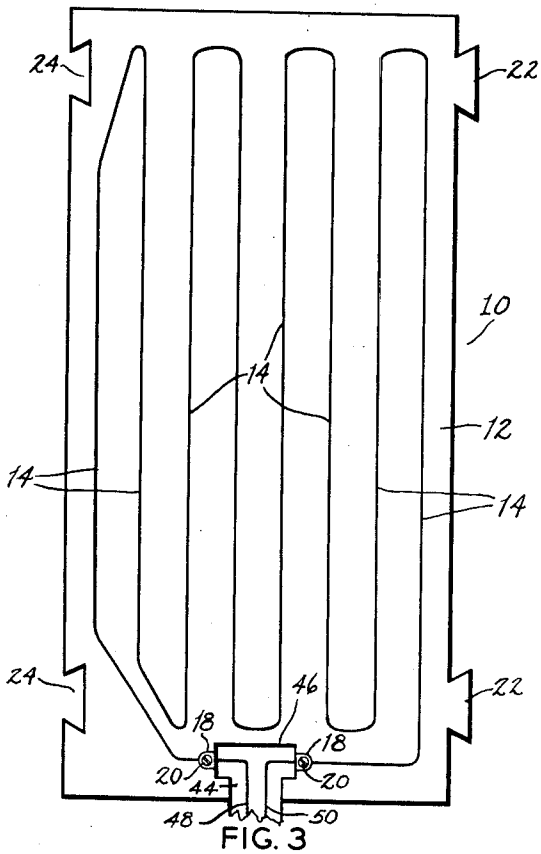

FIG. 3

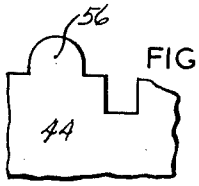

FIG. 6

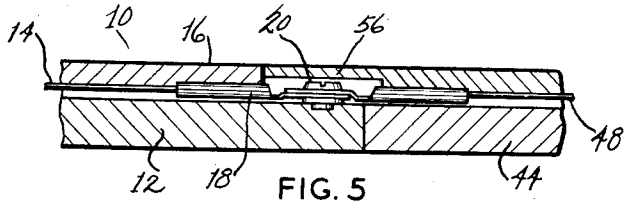

FIG. 5

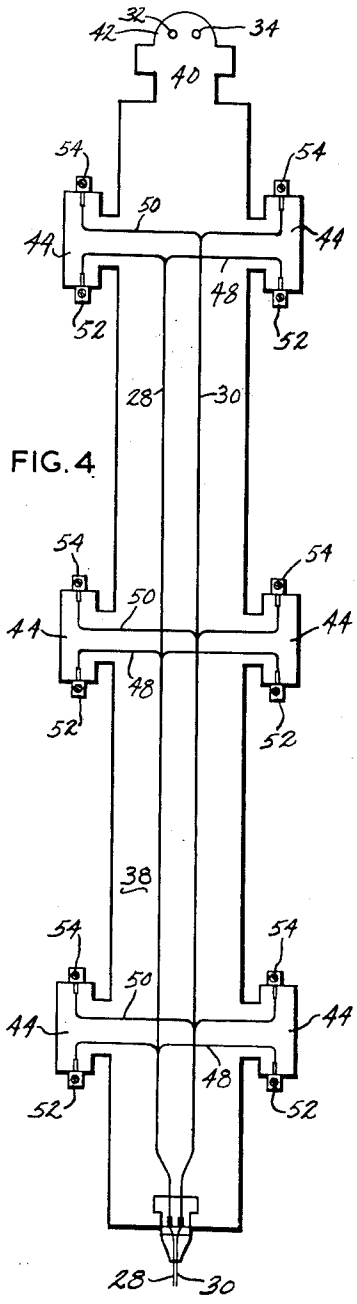

FIG. 4

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2,762,896

ELECTRICALLY-OPERATED HEAT-GENERATING DEVICES

Louis B. Pendleton, St. Louis, Mo.

Application July 21, 1954, Serial No. 444,735

10 Claims. (Cl. 219—19)

This invention relates to improvements in electrically-operated heat-generating devices. More particularly this invention relates to electrically-operated heat-generating devices which can be releasably placed within a structure to heat the area within that structure.

It is therefore an object of the present invention to provide an improved electrically-operated heat-generating device that can be releasably placed in a structure for heating the area within same.

The present invention provides an electrically-operated heat-generating device which can be releasably placed within the structure for the purposes of heating the area within the structure. This device can be installed simply and easily and can be removed with equal ease and simplicity. As a result, there is virtually no installation cost, and the cost of repairs is limited largely to replacement of parts and not to the expenditure of labor. As a result, the overall cost of the electrically-operated heat-generating device provided by the present invention is small. It is therefore an object of the present invention to provide an electrically-operated heat-generating device which can be readily installed within or removed from a structure.

The electrically-operated heat-generating device provided by the present invention can be placed on the floor of the structure and suitably connected to a source of electric current. Heat is readily transferred to the area above the device and will heat that area. This, in turn, will lead to the heating of the rest of the space within the structure. The electrically-operated heat-generating device is merely laid on the floor and need not be permanently associated with that floor. Consequently, the device can be removed readily, either for replacement or for repair. It is therefore an object of the present invention to provide an electrically-operated heat-generating device that can be laid loosely on the floor of a structure and which can be connected to an outlet for electric current.

The electrically-operated heat-generating device provided by the present invention is made in a number of sections. Each of these sections contains a heat-generating element of electrical resistance material and that element can be connected to a suitable source of electricity. Each of the sections can be mechanically interlocked into one large overall electrically-operated heat-generating device. However, by being made in sections, the device can be packaged very conveniently and can be assembled into various sizes. In this way, a standard section can be established and the interlocking of a number of sections can accommodate structures of different sizes. The proper selection and interconnection of the required sections will enable the purchaser to provide full heating of any given structure. It is therefore an object of the present invention to provide a section of an electrically-operated heat-generating device which can be connected with other similar sections to assure full heating of a structure.

The sections of the electrically-operated heat-generating device provided by the present invention have interlocking surfaces. These surfaces permit ready assembly and disassembly of the sections, and they automatically orient the sections relative to each other. In this way, the interlocking surfaces prevent improper assembly of the sections.

The electrically-operated heat-generating device of the present invention is equipped with connecting strips which interconnect the various sections of the device in parallel. In that way, the various sections are assured of substantially the same voltage throughout and the overall heat can be controlled quite readily. The connecting strip is suitably connected to the individual sections by interlocking surfaces so that the connecting strip will coact with the sections to provide a suitably integrated electrically-operated heat-generating device. It is therefore an object of the present invention to provide connecting strips which can be suitably interlocked with the sections of the electrically-operated heat-generating device to provide full electrical voltage for the resistance elements of the sections.

The various sections of the electrically-operated heat-generating device provided by the present invention will have the same thickness. Similarly, the connecting strips for the electrically-operated heat-generating device of the present invention will have the same thickness as do the sections of that device. Consequently, the various sections can be interlocked together and can be interlocked with the connecting strips and still provide a uniform flat surface for the users of the structure. As a part of that flat uniform surface, there will be tabs which are resilient and which can be bent upwardly to facilitate the interconnection of the electrical components of the sections and of the strips. These resilient tabs will then be returned to their normal flat position where they will overlie those terminals and will complete the plane of the top of the electrically-operated heat-generating device.

Purchasers can select the desired number of sections and those sections will be neatly packaged in numbers appropriate to standard sizes of rooms. Those sections can then be taken to the home or to other structures and placed in juxtaposition so that the interlocking surfaces thereof interact to releasably secure the sections together. This placing of the individual sections can be done by unskilled labor. Moreover, these sections need not be cemented to or embedded within the floor, but need only be placed on the surface of the floor. The electrical connections can readily be made by unskilled labor and the resilient tabs which normally overlie those connections can be restored into the plane of the upper surface of the electrically-operated heat-generating device. Once this had been done, a connection can be made to a suitable source of current and the heat will begin to generate.

Other and further objects and advantages of the present invention should become apparent from an examination of the drawing and accompanying description.

In the drawing and accompanying description a preferred embodiment of the present invention is shown and described but it is to be understood that the drawing and accompanying description are for the purpose of illustration only and do not limit the invention and that the invention will be defined by the appended claims.

In the drawing Fig. 1 is a plan view, that is partially broken away, of an integrated electrically-operated heat-generating device composed of a number of sections and of a number of connecting strips,

Fig. 2 is a cross sectional view of the electrically-operated heat-generating device of Fig. 1, and it is taken along the plane indicated by the line 2—2 in Fig. 1,

Fig. 3 is an enlarged plan view of one of the sections of the electrically-operated heat-generating device of Figs. 1 and 2,

Fig. 4 is an enlarged view of one of the connecting strips of the electrically-operated heat-generating device of Figs. 1 and 2,

Fig. 5 is an enlarged cross sectional view of a portion of the interconnecting surfaces of one strip and one section, and

Fig. 6 is an enlarged view in plan of a portion of the connecting surface of the strip of Fig. 4.

Referring to the drawing in detail, the numeral **10** generally denotes a section of an electrically-operated heat-generating device that is made in accordance with the principles and teachings of the present invention. The section **10** consists of two layers and a heat-generating element. The numeral **12** denotes the lower layer of material which forms the bottom of the section **10**. This material is intended to resist the passage of heat through it. Consequently, this material will tend to prevent the loss of heat from the electric heating element to the floor of the structure in which the electrically-operated heat-generating device is installed. This material should be relatively stiff and rigid, and two such materials that meet these limitations are composition boards sold under the trade names "Masonite" and "Celotex." Another such material would be asbestos board. The upper surfaces of the layer **12** should be heat reflecting, as by being glazed with a white enamel, a light colored paint or a metallic paint. The combination of the heat-resisting nature of the material itself, together with the heat-reflecting nature of the coating on its upper surface, will enable the layer **12** to minimize the transfer of heat through it to the floor.

Disposed on the upper surface of the layer **12** is an elongated heat-generating element **14** of electric resistance material. The element **14** is formed in serpentine fashion so that it covers a considerable area while lying flat on the upper surface of the lower layer **12**. This heat-generating element **14** will be suitably encased by electrical insulation of standard and usual type. That insulation will, of course, be designed to resist the heat generated whenever current flows through the element **14**. Nichrome or other resistance wire can be used for the element **14**.

An upper layer **16** of material is provided to overlie the heat-generating element **14**; and it is cemented or otherwise secured to the element **14**. The layer **16** can be formed with a series of channels to receive and accommodate the element **14**, or that layer can be molded around the heat-generating element **14**. This upper layer should be of a material that readily transmits heat and which will have a yieldable surface. One such material is rubber that is designed to have a good heat transferring capacity. Another material is plastic with good heat transferring ability. Where the electrically-operated heat-generating device is to be disposed beneath a rug or other floor covering, the upper layer **16** can be of any neutral color and of any smooth appearance. However, where the electrically-operated heat-generating device is to be exposed, the upper surface of the layer **16** should be suitably ornamented and colored. A number of patterns or designs can be imprinted upon the upper surface of the layer **16**, and a number of different color schemes can be used. In this way, the electrically-operated heat-generating device can be made attractive and pleasing in appearance.

The ends of the heat-generating element **14** terminate in electrical terminals **18**. As indicated particularly in Fig. 5, the terminals **18** have a generally cylindrical portion to receive the ends of the heat-generating element **14** and they have a flat portion with an opening therethrough to receive the screw **20**. The screws **20** and the terminals **18** are of standard form and design and can be manipulated readily by unskilled persons.

The section **10** has two generally trapezoidal tongues **22** at one side thereof. The section **10** also has two generally trapezoidal recesses **24** at the opposite side thereof. The tongues **22** and the recesses **24** are in register with each other, and they interact with the recesses and tongues of other sections **10** and with end sections **11** and **13**. The end sections **11** are equipped only with recesses **24**, while the end sections **13** are equipped only with tongues **22**. The particular advantage of the end sections **11** and **13** is that they complete the shape and form of the electrically-operated heat-generating device and do not leave any projections or recesses which could be unsightly. Electrically speaking, the operation of the sections **10**, **11** and **13** is identical.

The tongues **22** of one section will fit readily into the recesses **24** of adjacent sections, and the tongues and recesses will interact to releasably lock the sections together. However, forces applied to the tongues **22** or to the areas defining the recesses **24** in a vertical direction can readily separate the tongues from the recesses. Hence, it is possible to separate one or more sections if replacement or repair is indicated. Moreover, that separation can readily be effected in the event the user of the structure has to move to still another structure. In this way, ready assembly and disassembly of the sections of the electrically-operated heat-generating device can be effected.

The numeral **26** denotes a section of a connecting strip. This particular section is shown as being disposed between two aligned rows of sections **10**, but if desired a connecting strip could be provided that was usable with just one row of sections **10**. Such a connecting strip would be desirable in a long narrow room or area. The connecting strip **26** is desirable for a room which is long and wide. The strip **26** has two spaced conductors **28** and **30**, and those conductors are electrically isolated from each other. The section **26** is made of two layers, as indicated particularly in Fig. 2. The bottom layer will be generally of the same height as the layer **12** of the sections **10** and the upper layer of the strip **26** will be of the same general thickness as the layer **16** of the sections **10**. The overall height of the section **26** will, therefore, be substantially the same as the overall height of the sections **10**. Consequently, the strip **26** will coact with the sections **10** to provide a uniform, flat upper surface to the feet of the users of the structure.

Terminals **32** and **34** are provided at the ends of the conductors **28** and **30** of the strip **26**. These terminals will be of the same type shown particularly in Fig. 5. As indicated previously, those terminals will have a cylindrical portion to receive the wire or conductor, and will have a flat, perforated portion to receive the screw **20**. These terminals **32** and **34** are disposed immediately adjacent a recess **36** in one end of the strip **26**. These terminals will coact with terminals on the connector strip **38** to supply current to the conductors **28** and **30** of the connector strip **26**. The connector strip **38** has two spaced electrical conductors **28** and **30**, and those conductors will be appropriately connected to the conductors **28** and **30** of the connector strip **26**. The terminals of the conductors **28** and **30** of the connecting strip **38** will be carried by the tongue **40** of that strip. This tongue will fit within the recess **36** of the connector strip **26** and will releasably maintain the two strips **26** and **38** in assembled relation. A resilient flap **42** will be provided on the upper surface of the connector strip **38**, and that resilient flap will overlie the screws **20** and the flat portions of the terminals carried by the connector strips **26** and **38**. The connector strip **26** will have a recess to accommodate the resilient flap **42** as well as the screws **20** and the flat portions of the terminals of the wires **28** and **30** of the connector strips **26** and **38**. In this way, a flat uniform surface is assured for the electrically-operated heat-generating device, while ready access to the screws and terminals is assured. The connector strips **26** and **38** are similar; the principal difference being that

the connector strip **38** has the conductors thereof extending outwardly to a suitable source of current not shown, while the conductors **28** and **30** of the connector strip **26** must be connected to the connector strip **38**. In the event the electrically-operated heat-generating device of the present invention was materially longer than indicated in Fig. 1, as would be the case in an unusually long room, a third type of connector strip would be provided. That connector strip would have a tongue similar to the tongue **40** of the connector strip **38** but would have a recess **36** similar to the recess **36** of the connector strip **26**. By suitable multiplication of the number of this third type of strip, the electrically-operated heat-generating device of the present invention can be made to accommodate extremely long rooms. The conductors **28** and **30** will be of low resistance material, such as copper. Moreover, the cross section of the conductors **28** and **30** will be great enough that no appreciable line drop occurs in the operation of the electrically-operated heat-generating device of the present invention.

The center strips **26** and **38** have a number of tongues **44** projecting outwardly from the sides thereof. These tongues are disposed opposite each other and extend outwardly from the opposite faces of those strips. These tongues will be placed in register with similar recesses **46** in the sections **10**, **11** and **13**. The tongues **44** will interact with the recesses **46** to releasably lock the sections **10**, **11** and **13** to the center strips **26** and **38**. The tongues **44** and the recesses **46** will thus coact with the tongues **22** and the recesses **24** to provide an integrated, but readily separable, series of individual parts. These individual parts will, when interlocked, as shown in Fig. 1, serve as an integrated unit.

The connecting strips **26** and **38** are equipped with transversely directed taps **48** and **50**. The taps **48** are connected to the conductor **28** while the taps **50** are connected to the conductor **30**. These taps are placed in register with the tongues **44**, and they extend into register with, and they are supported by, those tongues. The taps **48** and **50** extend parallel to each other until they reach the tongues **44** and then they diverge from each other and extend to opposite ends of the tongues **44**. This is desirable since it minimizes any possibility of the creation of short circuits between the terminals of the taps **48** and **50** and of the heat-generating elements **14**. The terminals for the taps **48** are denoted by the numerals **52** and the terminals for the taps **50** are denoted by the numerals **54**. These terminals will be in register with the terminals **18** of the heat-generating elements **14**, and they will be releasably secured to them by the screws **20**. To connect the terminals **52** and **54** with the terminals **18**, it is only necessary to remove the screws **20** and to place the terminals **52** or **54** in register with the terminals **18** and then replace the screws **20**. This is a simple process and is one which can be carried out by unskilled individuals.

When the terminals are to be connected or separated, the resilient flap **56** on the upper surface of the tongues **44** of the connecting strips **26** and **38** will be bent upwardly to expose the screws **20** and the terminals **18** and **52** or **54**. Once the connecting or separating operation has been completed, the resilient flaps **56** can be restored to their normal flat position. Thus, these flaps **56** will carry out the plane effect of the upper surface of the electrically-operated heat-generating device provided by the present invention.

The sections **10** will be made of a size which is a uniform fraction of standard areas within homes and other structures. For example, in one preferred embodiment of the present invention, the sections **10** can be two feet by four feet or can be two feet by six feet. Where the sections were two feet by four feet, it would be possible to have those sections heat rooms as small as eight feet by eight feet and to heat rooms that are roughly eight to ten feet wide and are of limitless length. Where the sections are made to be two feet by six feet, they can

heat rooms that are from twelve to fourteen feet in width and are of varied lengths. Furthermore, by using more than one set of sections in a room, it is possible to heat extremely large rooms. Moreover, by using connecting strips that can supply just one aligned row of sections, it is possible to heat extremely narrow rooms. The length of the room will determine the number of sections used and will also determine the kind of connecting strip used. In an extremely short room, the connecting strip **38** would be modified by eliminating the tongue **40**. In that event, the conductors **28** and **30** would terminate short of the upper end of the connecting strip **38**. By using various combinations of sections **10**, **11** and **13**, and by using various combinations of connecting strips **26** and **38**, the present invention makes it possible to heat rooms of many different sizes and shapes. Moreover, by being able to use several groups of electrically-operated heat-generating devices which in turn consist of sections and connecting strips, the present invention makes it possible to heat rooms of even great size and area.

In many instances, the electrically-operated heat-generating device of the present invention will not be used as the sole source of heat. This is particularly true in old structures where the source of heat is already installed but is not completely satisfactory. In such cases, the electrically-operated heat-generating device of the present invention will augment the heat provided by the permanent heating system. If desired, a suitable thermostat can be connected between the conductors **28** and **30** and a source of current. In other cases, manual control of the temperature within the structure can be attained by installing a switch between the conductors **28** and **30** and the source of current.

The electrically-operated heat-generating device of the present invention is largely free of the objectionable heat lag experienced with many heating systems. For example, in the case of radiant heating systems, the heat must be used to warm the entire floor structure before that structure can radiate the heat into the area above it. This often times results in "over-shooting" of temperature, and it leads to unpleasant warmth in times of sudden temperature rises of the atmosphere outside the building. With the electrically-operated heat-generating device of the present invention the response is prompt and it is subject to very close control.

In some instances the overall dimensions of the integrated sections of the electrically-operated heat-generating device will be smaller than those of the rug, where a rug is used, or of the floor where no rug is used. For those instances, filler strips will be provided which will have the same thickness as the sections, and which can be cut to size. Those filler strips will not have electrical wires embedded within them; and hence they can be cut freely.

Whereas the drawing and accompanying description have shown and described a preferred embodiment of the present invention, it should be apparent to those skilled in the art that various changes may be made in the form of the invention without affecting the scope thereof.

What I claim is:

1. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that is releasably disposable on the floor of a structure to heat the area within said structure immediately above said floor and that comprises a plurality of individual sections of prefabricated unitary construction that are selectively securable to or separable from each other, each of said sections having a layer of material that is disposable against said floor having a heat generating element of electrical resistance material that is disposed above said layer, having a layer of material that is disposed above said heat generating element and that transmits heat therethrough to the area immediately above said floor, and having terminals for said heat generating element,

and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within a prefabricated elongated strip of unitary construction, said strip and said sections being of substantially the same thickness, said plurality of conductors having taps that are selectively connectible to or separable from said terminals of said sections, said strip having the exposed surface thereof substantially coplanar with the exposed surfaces of said sections.

2. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that is releasably disposable on the floor of a structure to heat the area within said structure immediately above said floor and that comprises a plurality of individual sections of prefabricated unitary construction that are selectively securable to or separable from each other, each of said sections having a layer of material that is disposable against said floor, having a heat generating element of electrical resistance material that is disposed above said layer, having a layer of material that is disposed above said heat generating element and that transmits heat therethrough to the area immediately above said floor, and having terminals for said heat generating element, and pairs of interacting surfaces on at least one of said layers of said sections that selectively maintain said sections in assembled relation, one interacting surface of each pair of interacting surfaces being a cutout in one of said sections and the other interacting surface of said pair of interacting surfaces comprising a tongue with a lateral projection on another of said sections, said projection lying in back of the portion of said one section that defines said cutout.

3. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that can heat the area immediately adjacent said exposed surface and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are selectively securable to or separable from each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and pairs of interacting surfaces on said sections that selectively maintain said sections in assembled relation, one interacting surface of each pair of interacting surfaces being physically disposed behind the other interacting surface of said pair of interacting surfaces so the shear resistance of said sections prevents separating movement of said sections while said sections lie in said plane, said one interacting surface of said pair of interacting surfaces being a lateral projection on a tongue on one of said sections, said other interacting surface of said pair of interacting surfaces being the portion of another of said sections that defines a cutout complementary to said tongue and projection, said sections coacting to provide a substantially smooth and unbroken heating surface for a structure.

4. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that can heat the area immediately adjacent said exposed surface and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are disposable immediately adjacent each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within an elongated strip, and having taps that are selectively connectible to or separable from said terminals of said sections, said strip lying in said plane and said strip and said sections being of substantially the same thickness, said strip being coextensive with and abutting one edge of each of said sections.

5. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that can heat the area immediately adjacent said exposed surface and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are disposable immediately adjacent each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within a prefabricated elongated strip of unitary construction, and having taps that extend transversely of said strip and are selectively connectible to or separable from said terminals of said sections, said strip lying in said plane, said strip and said sections being of substantially the same thickness, said sections being disposable in side-by-side relation to define a row of aligned sections, said strip being adjacent to and being coextensive with one side of said row of aligned sections.

6. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that is releasably disposable on the floor of a structure to heat the area within said structure immediately above said floor and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are selectively securable to or separable from each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within a prefabricated elongated narrow strip of unitary construction, said electrical conductors having taps that are selectively connectible to or separable from said terminals of said sections, said taps being encased within said strip throughout the greatest portions of their lengths, said sections having flaps overlying said terminals of said heat generating elements to provide access to said terminals for the purpose of interconnecting said taps and said terminals, said strip having the exposed surface thereof substantially coplanar with the exposed surfaces of said sections, and pairs of interacting surfaces on said sections and strip that selectively maintain said sections in assembled relation with each other and with said strip, said sections being disposable in side-by-side relation to define a row of aligned sections, said strip being adjacent to and being coextensive with one side of said row of aligned sections, said heat-generating device being adapted to maintain itself as an integrated unit by the shear resistance of said interacting surfaces and to maintain itself against sideways dislodgment on said floor by gravity-induced friction.

7. An electrically-operated, heat-generating device that is releasably disposable on the floor of a structure to heat the area within said structure immediately above said floor and that comprises a plurality of sections that are selectively securable to or separable from each other, each of said sections having a layer of material that is disposable against said floor, having a heat generating element of electrical resistance material that is disposed above said layer, having a layer of material that is disposed above said heat generating element and that transmits heat therethrough to the area immediately above said floor, and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively se-

curable to or separable from the terminals of said sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within an elongated strip and having taps extending transversely of said strip, said taps being selectively connectible to or separable from said terminals of said sections, and interacting surfaces on at least one of said layers of said sections and said strip to selectively hold said sections in assembled relation with each other and with said strip, said heat generating device being adapted to maintain itself as an integrated unit by the shear resistance of said interacting surfaces.

8. An electrically-operated, heat-generating device that is releasably disposable on the floor of a structure to heat the area within said structure immediately above said floor and that comprises a plurality of sections that are selectively securable to or separable from each other, each of said sections having a layer of material that is disposable against said floor and that resists the passage of heat therethrough, having a heat generating element of electrical resistance material that is disposed above said layer of heat resistance material, having a layer of material that is disposed above said heat generating element and that transmits heat therethrough to the area immediately above said floor, and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within an elongated strip and having taps extending transversely of said strip, said taps being selectively connectible to or separable from said terminals of said sections, and interacting surfaces on at least one of said layers of said sections and said strip to selectively hold said sections in assembled relation with each other and with said strip, said taps being in register with some of said inter-acting surfaces.

9. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that can heat the area immediately adjacent said exposed surface and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are selectively securable to or separable from each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within an elongated strip, and having taps that are selectively connectible to or separable

from said terminals of said sections, said strip and said sections being of substantially the same thickness, said strip being coextensive with and abutting one edge of each of said sections, said taps being encased within said strip throughout substantially all of the lengths thereof, said sections having flaps that normally overlie said terminals of said heating elements but that are movable to expose said terminals for the interconnecting of said taps and terminals.

10. An electrically-operated, heat-generating device that has a substantially plane exposed surface and that can heat the area immediately adjacent said exposed surface and that comprises a plurality of individual sections of prefabricated unitary construction that lie in a plane and that are selectively securable to or separable from each other, each of said sections having a heat generating element of electrical resistance material and having terminals for said heat generating element, and a plurality of electrical conductors that are wholly external of said sections and are selectively securable to or separable from the terminals of said plurality of sections and that are selectively connectible to a source of electricity, said plurality of conductors being encased within an elongated strip, and having taps that are selectively connectible to or separable from said terminals of said sections, said strip and said sections being of substantially the same thickness, said strip being coextensive with and abutting one edge of said sections, said taps being encased within said strip throughout substantially all of the lengths thereof, said sections having flaps that normally overlie said terminals of said heating elements but that are movable to expose said terminals for the interconnecting of said taps and terminals, and pairs of interacting surfaces on said sections and strip that selectively maintain said sections in assembled relation with each other and with said strip, said heat-generating device being adapted to maintain itself as an integrated unit by the shear resistance of said interacting surfaces.

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