J. M. WILLIAMSON.

BASE BOARD HEATER.

APPLICATION FILED MAR. 1, 1906.

898,616.

Patented Sept. 15, 1908.

3 SHEETS—SHEET 1.

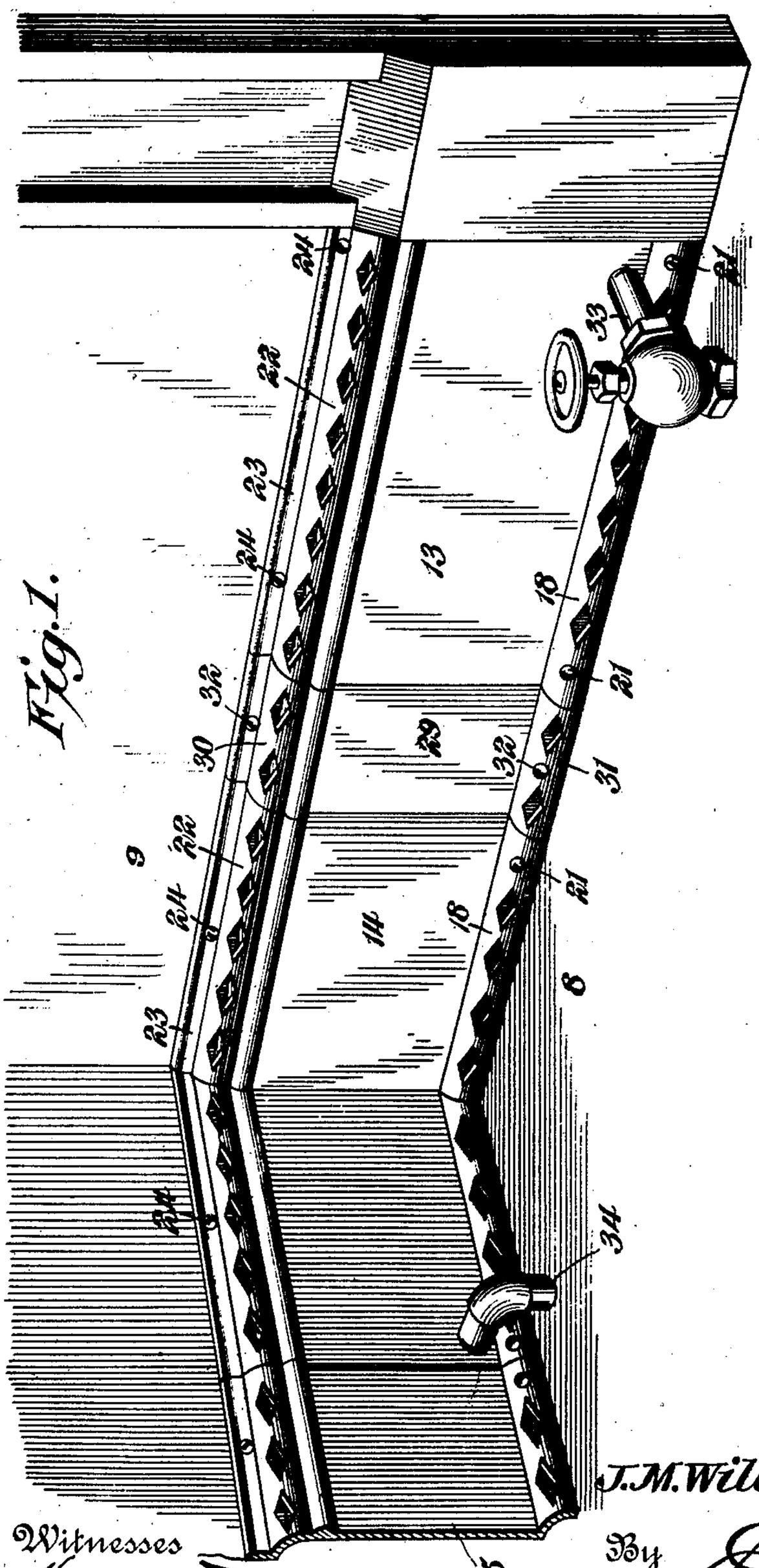

Fig. 1.

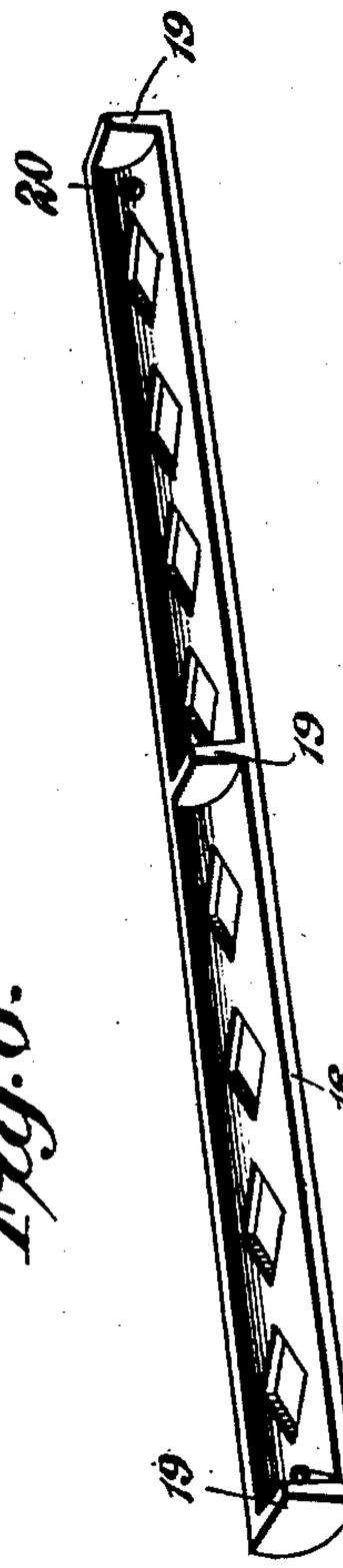

Fig. 6.

Witnesses

Howard D. Orr.

B. G. Foster.

J. M. Williamson, Inventor,

By E. G. Siggers.

Attorney

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3 SHEETS—SHEET 2.

Fig. 3.

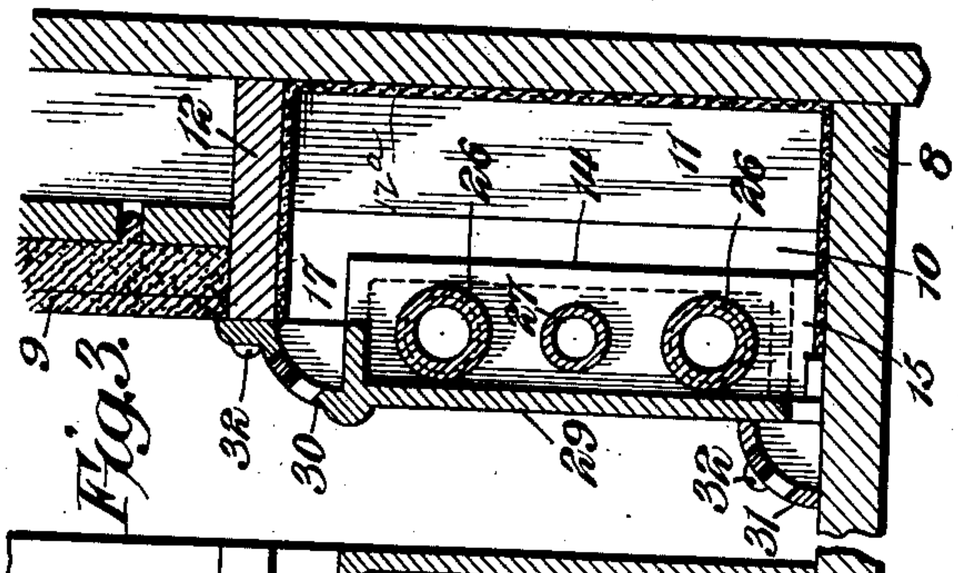


Fig. 7.

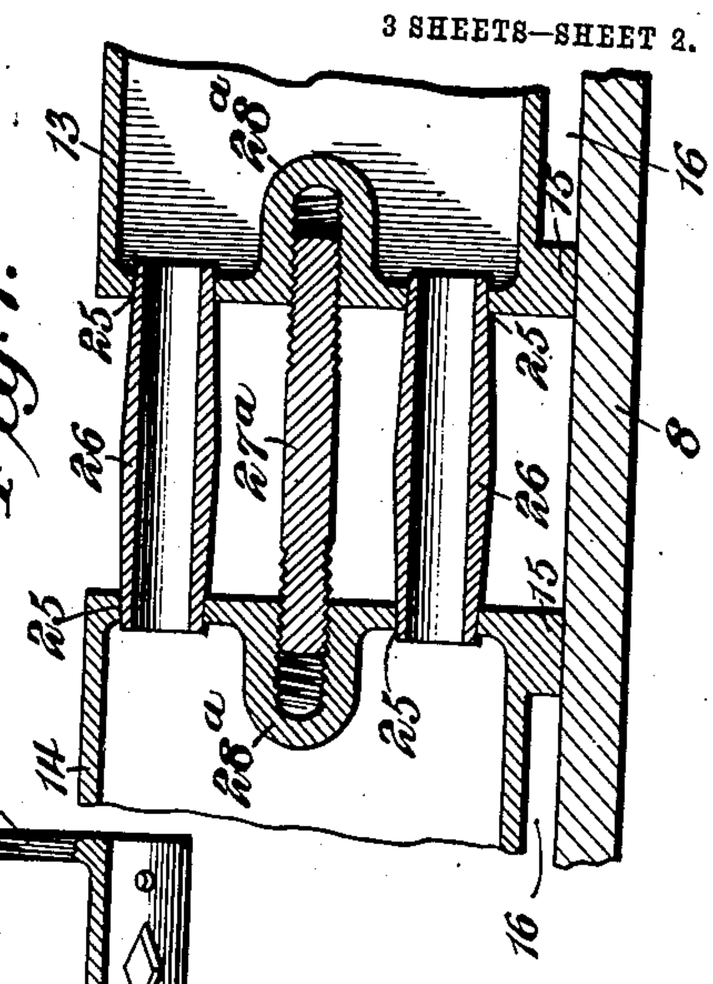


Fig. 5.

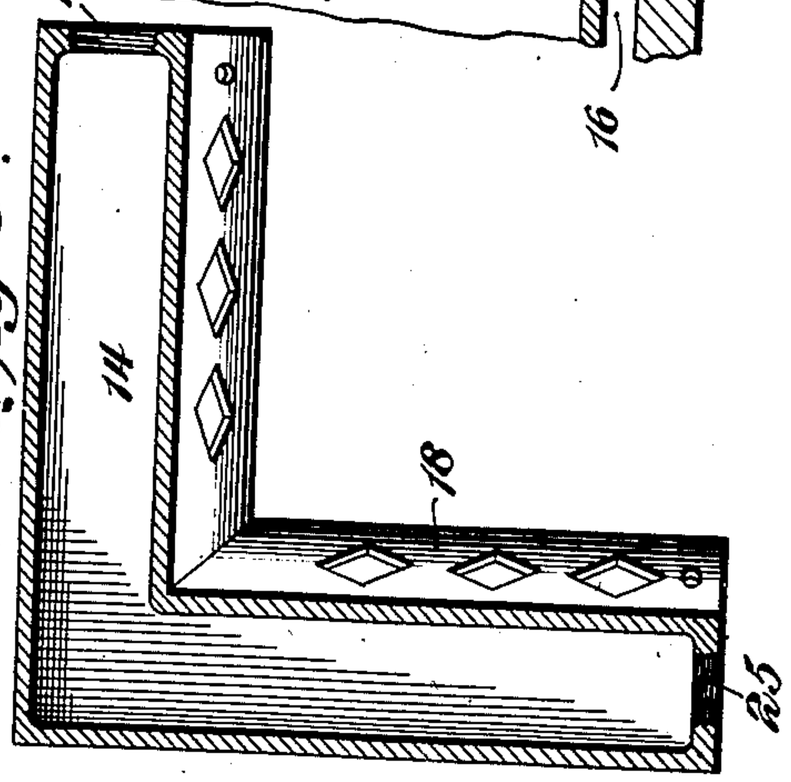


Fig. 2.

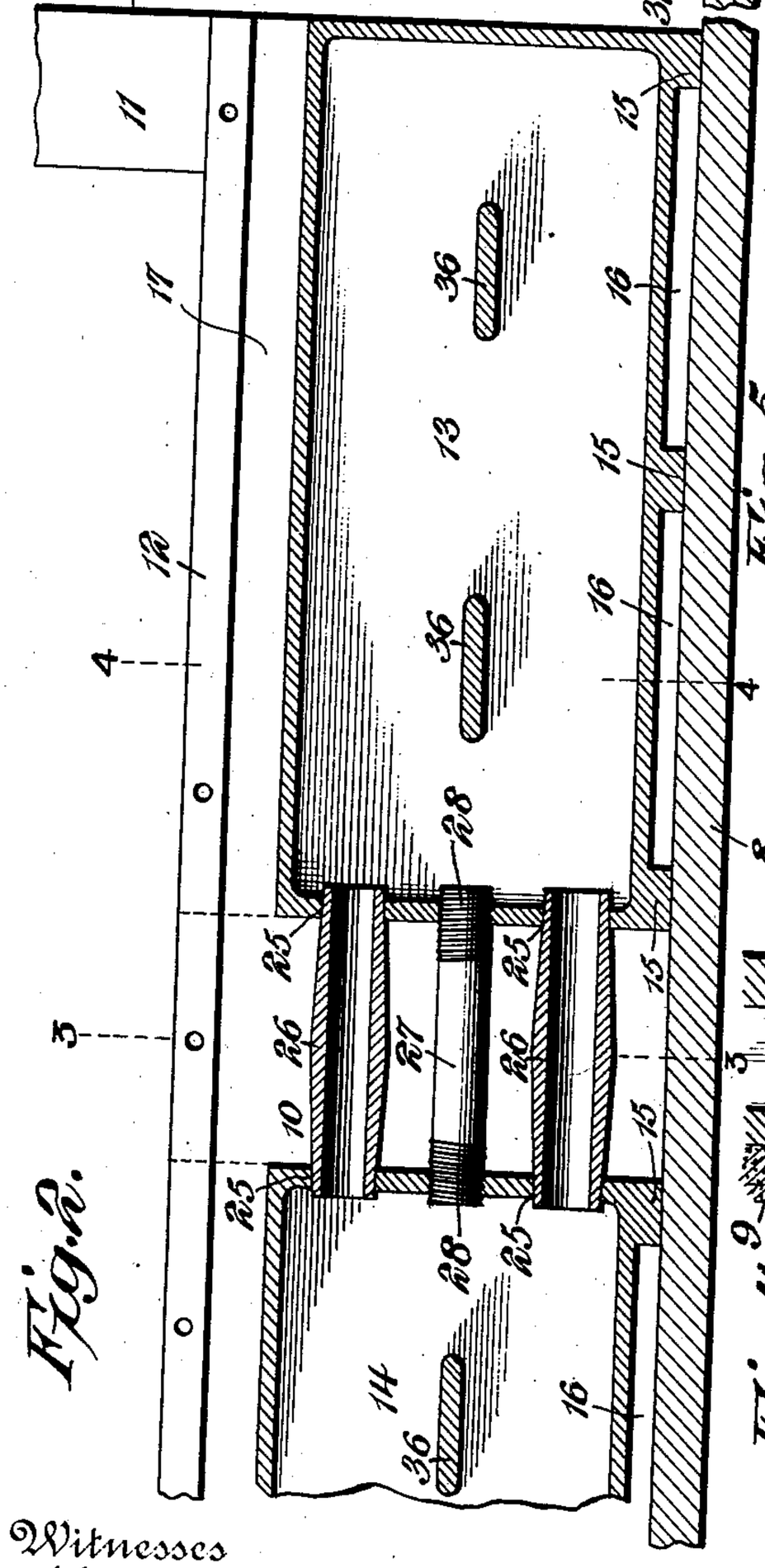
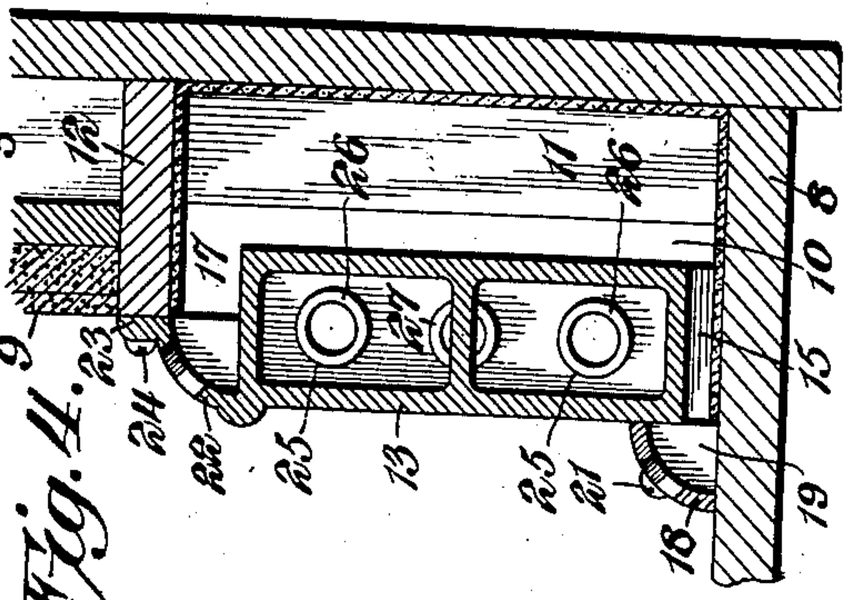


Fig. 4.



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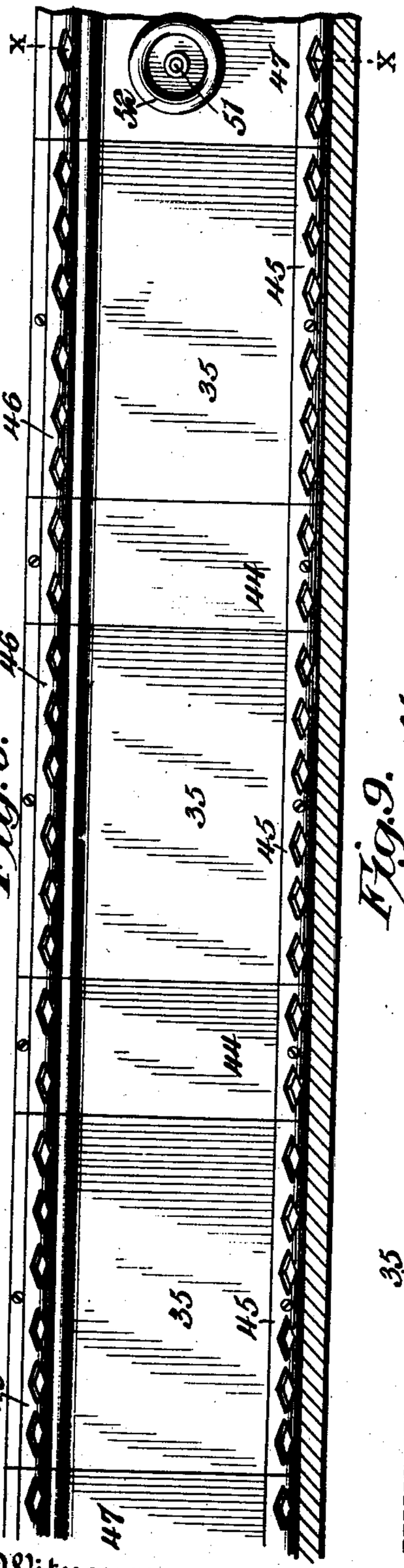
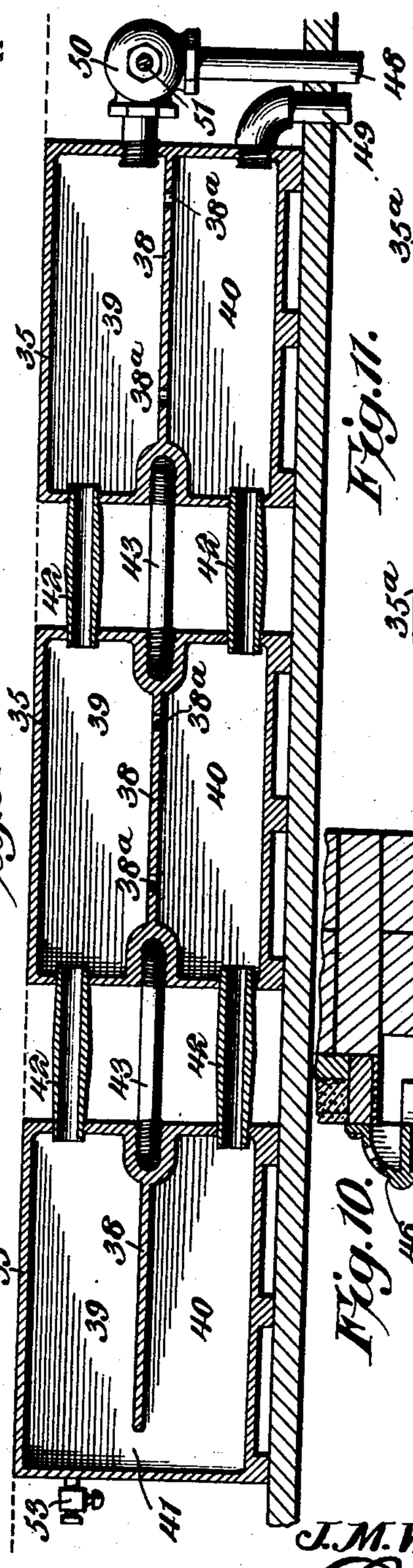
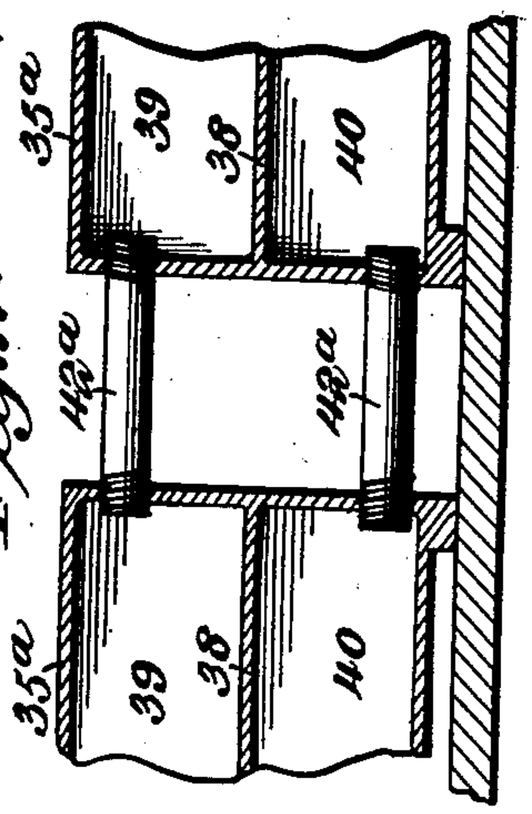
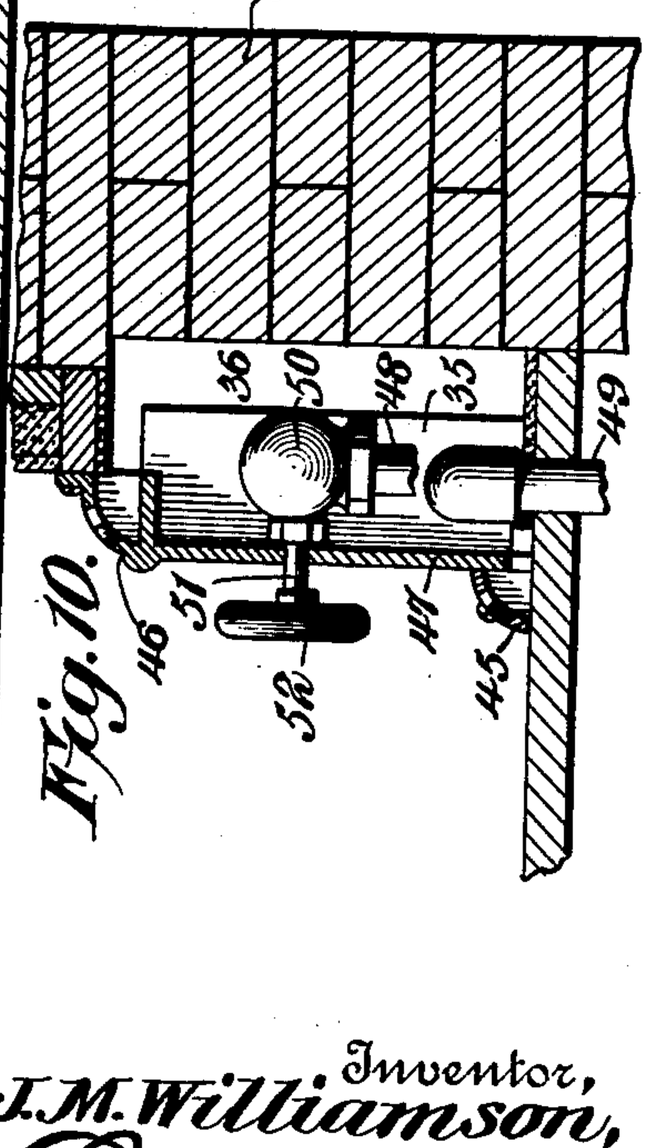
3 SHEETS—SHEET 3.









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UNITED STATES PATENT OFFICE.

JAMES M. WILLIAMSON, OF MOUNDSVILLE, WEST VIRGINIA.

BASE-BOARD HEATER.

No. 898,616. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed March 1, 1906. Serial No. 303,707.

To all whom it may concern:

Be it known that I, JAMES M. WILLIAMSON, a citizen of the United States, residing at Moundsville, in the county of Marshall and State of West Virginia, have invented a new and useful Base-Board Heater, of which the following is a specification.

This invention relates to means, whereby the base board of a room will also constitute a heater or radiator.

One of the principal objects is to provide a novel structure of the above character and of a simple nature that can be readily fitted to practically any room, will constitute an effective heater by taking the cold air directly from the floor and throughout a comparatively great extent, and after heating the same will again deliver it into the room at relatively low points.

A further object is to provide a structure that will occupy no more space in the room than the ordinary base board, may be made ornamental, and if not extended completely around a room, can be continued by a correspondingly shaped casing that will form with the heater a complete and artistic base board.

A still further object is to provide a structure made up of sections, which will permit the ready application and fitting of the heater to a room, said sections being separately removable, so that they may be replaced by new ones if through injury and derangement any should become useless, thus avoiding the expense and objection incident to an entire heater in case of accident.

In the drawings:—Figure 1 is a perspective view of a portion of a room, showing the improved structure in place therein. Fig. 2 is a vertical longitudinal sectional view through a portion of the same. Fig. 3 is a cross sectional view on the line 3—3 of Fig. 2. Fig. 4 is another cross sectional view on the line 4—4 of Fig. 2. Fig. 5 is a horizontal sectional view through the corner section. Fig. 6 is a detail perspective view of one of the molding sections. Fig. 7 is a detail vertical sectional view, showing a modified coupling structure between the body sections. Fig. 8 is a front elevation of a modified form of structure. Fig. 9 is a longitudinal sectional view through the same. Fig. 10 is a cross sectional view on the line *x*—*x* of Fig. 8. Fig. 11 is still another modification of the coupling sleeves between the heater body sections.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated in the first six figures, a portion of the floor of a room is shown, and is designated 8, while the wall is shown at 9. This wall may of course be of any desired or well known structure, but the lower portion thereof, just above the floor, is provided with a recess 10. In the present embodiment, the wall is framed, and therefore has studding 11, which extends vertically through the recess 10. A plate 12 constitutes the top of the recess. The walls of said recess may, if desired, be lined with asbestos, or other suitable material 12[a]. This material is preferably fireproof and a non-conductor of heat.

The heater comprises a base-board or body consisting of sections 13 and 14, these sections being in the form of oblong boxings, and consequently hollow. They may be of any desired length, and the corner sections as 14, are angular, as shown, the angles of course depending upon the angles of the corners in which they are placed. The said body sections have flat inner and outer walls, and are disposed partially in the recess 10, being spaced, however, from the rear wall thereof and from the studding. They are provided with depending feet 15 that rest upon the floor, and support the sections in spaced relation thereto. The tops of the body sections are spaced from the top 10 of the recess. As a result of this arrangement, a heating chamber is formed in the wall in rear of the heater, said heating chamber having lower inlets 16 beneath the body section and having upper outlets 17 over the same. The inlets 16 are guarded or covered by a grating in the form of half-round molding sections 18, perforated in any desired design, and having angular supporting lugs 19. Openings, as shown at 20 are provided at suitable intervals to receive fastening devices 21 that pass through the same into the floor. The molding sections are preferably of the same length as the body sections, and not only constitute gratings for the inlets 16, but also are abutted against the lower portions of the body sections and form retaining or holding means therefor. Outlet gratings in the form of molding sections 22 are carried by the upper portions of the body sections, and are preferably, though not necessarily, integral with the same. These molding sections 22 extend longitudinally along the body section,

and are curved rearwardly, being provided with upstanding flanges 23, perforated to receive fasteners 24 that are engaged in the outer edge of the top 12 of the recess.

The body sections are spaced slightly apart, and have upper and lower alined openings 25 in their adjacent ends. In these openings are fitted the ends of oppositely tapered couplings or push-nipples 26. A tie device in the form of a tubular nipple 27 has its ends oppositely threaded, as shown at 28, into the adjacent ends of the body sections, said tie device being preferably located between the couplings 26. This tie device therefore serves to draw the sections together, and thus bind the same upon the couplings 26, so as to prevent leakage. Instead of the tubular tie device 27, the structure shown in Fig. 7 may be employed, wherein a solid tie bolt 27[a] is employed, located between the couplings 26, and having its ends threaded into sockets 28[a], formed in the ends of the body sections, but having no communication with the interiors thereof. The space between the body sections is filled by a casing section 29, which covers the couplings and completely incloses the same. This casing section is in the form of a plate having upper and lower moldings 30 and 31, corresponding to the moldings 18 and 22 of the sections. Said moldings 30 and 31 are fastened in place by screws or other devices 32. Consequently it will be apparent by reference to Fig. 1 that as the outer configuration of the casing section 29 corresponds to that of the heater sections, a substantially continuous artistic base-board is formed. The heating medium, which may be either steam or hot water, is supplied from a suitable boiler through a valved supply pipe 33 to one of the end body sections, and an outlet or return pipe 34 is connected to the other end section.

Another embodiment of the invention is disclosed in Figs. 8 to 10 inclusive. The heater, as before, is composed of body sections 35, spaced apart, and partly arranged in a recess 36 in the wall, and partly projecting into the room. The recess 36 in this particular embodiment is shown as being formed in a brick wall 37. The body sections 35 are hollow, and are divided by longitudinal partitions 38 into upper channels 39 and lower channels 40. The end section of the series, as shown, has its partition terminating short of the end wall, forming a port 41, constituting the means of communication between the upper and lower channels 39 and 40. The remainder of the body sections preferably have their channels separate, except for small drain openings 38[a], which allow for the complete emptying of the upper channels, if for any reason it should become desirable or necessary to drain off the heater. The body sections are coupled by tubular plug or push-nipples 42, which nipples constitute the means of communication between the upper set of channels 39 and the lower set of channels 40. Tie rods 43 are employed for drawing the sections towards each other, as shown. Instead of these tie rods, the structure disclosed in Fig. 11 may be employed, wherein the sections designated 35[a] are connected by couplings 42[a], having right and left handed threads and screwed directly into the adjacent end walls or body section, thus dispensing with the necessity of the intermediate tie rod. The couplings between the body sections are covered by casing sections 44 corresponding in exterior configuration to the body sections, and all of these sections are provided with the usual lower gratings 45 and upper gratings 46 arranged and operating in the manner already described. At the ends of the heater body, thus formed, are arranged other casing sections 47, and behind one of these sections, the supply pipe 48 and return pipe 49 are arranged, the same respectively communicating with the upper and lower series of channels 39 and 40. The supply pipe 48 has a suitable valve 50, and this valve is preferably provided with an operating stem 51 that may extend through the casing 47, and have the usual exposed hand wheel 52. Suitable air and relief cocks 53 may also be employed, and in fact the usual mechanism provided for this type of heating mechanism is used. With this structure, it will be seen that the supply of heating medium passing through the pipe 48 will enter the upper channel section of the first body section, will pass through the upper portions of the various sections, thence downwardly, will return through the lower sections thereof, and through the return pipe 49 back to the boiler.

With these structures, it will be apparent that the cold air will be taken from the floor of the room, will pass slowly through the heating chamber in rear of the radiator, and also in front of the same, and will be delivered heated in the lower portion of the room. The structure being made of sections, can be more readily installed, and should one of such sections become damaged or deranged, it may be removed without materially disturbing the other parts. Moreover, the said structure not only constitutes a base-board but occupies no more space in the room than the ordinary base-board. As will be seen, nipples or couplings of various characters may be employed, and the gratings or moldings may be cast in any desired length, and of any suitable metal, the body and casing sections being also cast of suitable metal. As shown in Figs. 4 and 10, the structure may be employed either in connection with a frame, brick or other building. It saves the expense of a wooden base-board, also the

plastering back of same, it is not in the way of the carpeting and will not blacken the walls as ordinary radiators will do, because the heat is not centralized in one small space, but is evenly distributed all around the room, and at the lowest possible point in connection with the floor. The shape and configuration of the structure may be altered to correspond or suit the finish of the room in which the system is placed. It is simple in construction, effective in operation, and inexpensive to install, and does away with the necessity of the ordinary heater, which occupies considerable space within a room.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination with a floor and wall, said wall having a recess adjacent to the floor, of a base-board heater comprising a hollow body having its rear portion arranged in the recess and spaced from the rear wall thereof and its front portion projecting beyond the wall to form a base-board therefor, said body having feet that support the same above the floor and in spaced relation to the top of the recess, said arrangement forming a heating chamber in the recess, a lower inlet thereto and an upper outlet therefrom, a grating secured to the wall and covering the outlet, and a grating secured to the floor and covering the inlet, said gratings and their fastenings constituting upper and lower base-board moldings and means for maintaining the heater in place.

2. The combination with a tubular base-board body having means for supporting the lower portion thereof in spaced relation to the floor, of a grating adapted to be placed on the floor, said grating constituting a lower molding for the base-board and a guard over the space between the floor and body, and means for securing the grating to the floor, said grating also constituting retaining means for said body.

3. The combination with a tubular base-board body having means for supporting the lower portion thereof in spaced relation to the floor, of a perforate molding higher than the supporting means and separate from the body adapted to be placed on the floor against the lower margin of the body, said grating constituting a guard over the space between the floor and body and also acting as retaining means for said body, and furthermore forming a lower base-board molding, and means for securing the grating to the floor.

4. The combination with a tubular base-board body having means for supporting the lower portion thereof in spaced relation to the floor, of a lower perforate molding for the body, covering the space between the same and the floor and adapted to be secured to the floor, said lower molding constituting holding means for the lower portion of the body and a guard for the space, and a perforate upper molding for the body located on the same and adapted to be secured to a wall, thereby constituting holding means for the upper portion of the body.

5. The combination with a heater body comprising separate hollow base-board sections, of means detachably coupling the sections together and permitting the passage of the heating medium from one to the other, and a casing detachably fitted over the coupling means between the sections and constituting a continuation of the base-board.

6. The combination with a heater body comprising separate hollow base-board sections, of means connecting the same, said sections having perforate moldings at their tops and bottoms, forming air inlet and outlet gratings, and a detachable casing section that fits between the base-board sections and corresponds in shape to the outer contour of said sections.

7. The combination with a heater body comprising a hollow base-board, of means for supplying heating medium thereto, said base-board having perforate moldings at its top and bottom, forming air inlet and outlet gratings, and a detachable casing shell for continuing the base-board around the room, said casing comprising a plate having an outer configuration that corresponds to the outer contour of the body and constitutes a continuation of the base-board.

8. The combination with a heater body, comprising a plurality of base-board sections having openings in their adjacent ends, of tapered couplings having their ends fitted in the openings and connecting the sections, a tie device having its ends threaded into the adjacent ends of the sections, feet carried by the sections and supporting the same above the floor, perforate moldings carried by the upper portions of the sections, means for securing said moldings to a wall, other perforate moldings disposed against the lower portions of the sections, means for securing the same to a floor, a casing section located between the body sections and having its outer contour corresponding to the outer configuration of the sections, and means for securing the casing section to a wall.

9. The combination with a heater body constituting a base board, of a casing de-

tachably associated with the body and substantially corresponding in shape thereto, a supply pipe located behind the casing and connected to the heater body, and a valve in said pipe, said valve having an actuating element projecting through the casing.

10. The combination with a heater body comprising a plurality of hollow base-board sections for radiating heat directly into a room, of couplings connecting the sections, casings constituting base-board sections disposed between the body sections and covering the couplings, a supply and a return pipe arranged at one end of the body sections and coupled to the adjacent sections, and a casing covering the same.

11. The combination with spaced tubular base-board sections, of tubular couplings bridging the spaces between the sections and constituting passageways for the heating medium between such sections, means for directing currents of air past the sections and couplings and also constituting base-board sections, and means for supplying heating medium to the base-board.

12. The combination with a base-board comprising spaced tubular sections, of means for supplying heating medium to the base-board, tubular couplings bridging the spaces between the sections and constituting passageways for the heating medium between said sections, a casing covering the space between the sections and covering the tubular couplings, said casing being of the same outward contour as the tubular sections and also constituting a base-board section and upper and lower gratings for the sections and casing permitting the passage of air around the same.

13. The combination with separate hollow base-board sections, of couplings between the sections permitting the passage of the heating medium from one to the other, and other base-board sections between the hollow sections, constituting means covering the couplings for directing the passage of air thereover, said sections thus forming a continuous base-board.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES M. WILLIAMSON.

Witnesses.
OSCAR WRIGHT,
J. HARVEY RIGGS.