Nov. 9, 1954 C. M. PREISINGER 2,693,940

BASEBOARD RADIATOR

Filed Oct. 13, 1951

Fig. 1

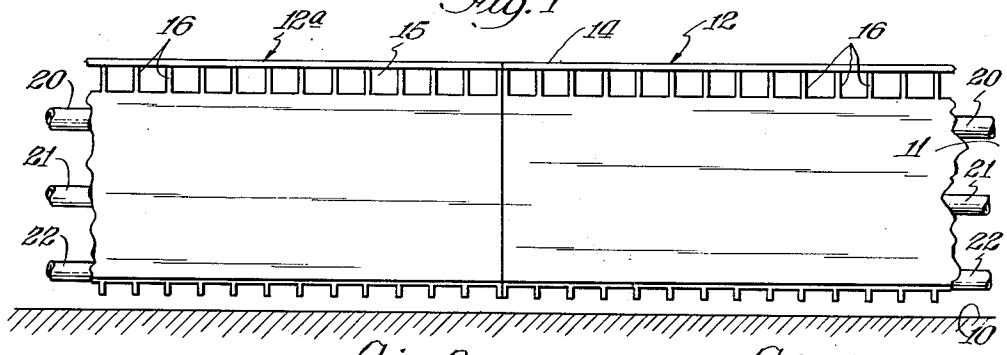


Fig. 2

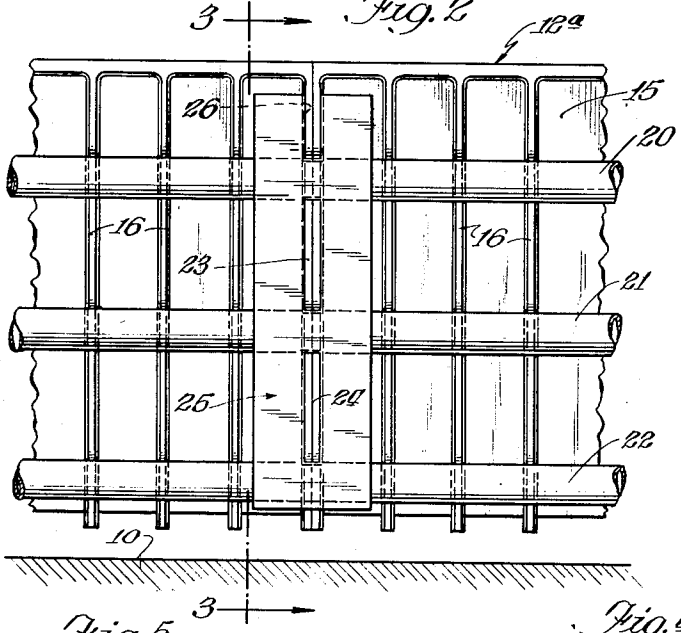


Fig. 3

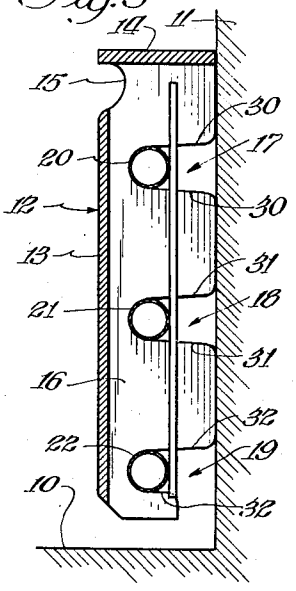


Fig. 5

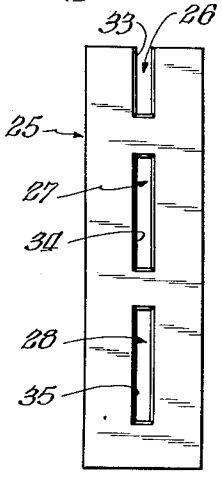
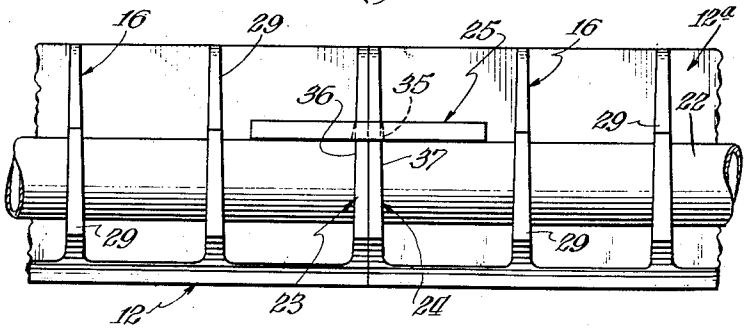


Fig. 4



Inventor:
Carl M. Preisinger
By: Kenneth J. Snow
Attorney.

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BASEBOARD RADIATOR

Carl M. Preisinger, Elmhurst, Ill., assignor of thirty per cent to Kenneth T. Snow, Oak Park, Ill., and ten per cent to Martin Wagner, Berwyn, Ill.

Application October 13, 1951, Serial No. 251,183

4 Claims. (Cl. 257—133)

This invention relates to a new and improved baseboard radiator.

In the past radiators have occupied considerable floor and wall space making it difficult to place furniture as desired. It has thus been the goal of radiator makers to reduce the size of the radiators without detracting from the heat exchange efficiency. Recently radiators have been made to replace baseboards. The purpose of baseboard radiators is to spread the radiation in a room around substantially all of the walls and thus eliminate bulky apparatus. However, in baseboard radiation the radiators must be extremely efficient.

It is thus a principal object of the present invention to provide a baseboard radiator of a minimum size and maximum heat exchange efficiency.

An important object of this invention is to provide a light weight baseboard radiator which is easily handled and erected to any desired length on a job site.

Another important object of this invention is the provision of a sectional baseboard radiator arranged and constructed to be readily joined one to another.

Another important object of this invention is to supply a connector means for baseboard radiator sections.

Still another object is to utilize a baseboard radiator having a housing and integral fins with removable conduit tubing and in combination therewith a connector means for simultaneously joining adjacent sections and locking the tubing in the housing.

A still further important object of this invention resides in the self acting wedge lock connector plate usable in the joining of the several sections of a sectional baseboard radiator.

Other and further important objects and advantages will become apparent from the disclosures in the following specification and accompanying drawings.

In the drawings:

Figure 1 is a front elevational view of the sectional baseboard radiator of this invention.

Figure 2 is a rear elevational view of a portion of the radiator sections as shown in Figure 1 and particularly the juncture between adjacent sections.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a bottom plan view of the sectional radiator.

Figure 5 is a front elevational detail of the self locking connector plate of this invention.

As shown in the drawing:

The reference numeral **10** indicates generally the floor of a room in which the baseboard radiator of this invention is installed. The wall of the room is designated by numeral **11** and the baseboard radiator is shown in part as sections **12** and **12***a*. The radiator is made in sections of any desired length. It is preferable that the sections be of such a length that they may be easily handled to facilitate shipping and moving into and around a job site preparatory to installation.

The radiator sections **12** and **12***a* have cast housings preferably of light weight metals such as aluminum. The housings include a front wall **13**, a top **14**, a transverse opening **15** extending laterally across the front wall **13** of the radiator adjacent the top thereof, and spaced apart fins providing radiating surfaces in the exchange of heat. The spaced fins **16** are integral with the top **14** and the front wall **13** of the cast housings. The fins are spaced at regular intervals along the length of each of the plurality of sections **12**. Further the fins **16** extend from the front wall **13** to the back of the baseboard

radiator whereupon they abut the wall **11** against which the radiator is mounted. It should be noted that the radiator sections **12** are spaced above the floor **10** in order that air currents may pass transversely across the radiator and upwardly from the bottom through the spaces between adjacent fins **16** and then out the transverse opening **15** for effecting quick and efficient transfer of the heat by convection from the radiator to room atmosphere.

The fins **16** are provided with notches **17** aligned transversely adjacent the top of the radiator sections **12** and **12***a*. The notches **17** are opened at the rear end of the fins and the forward ends of the notches are circular in shape. Corresponding notches **18** are transversely aligned in the fins **16** at substantially midway between the top and bottom of the radiator sections. Further notches **19** are similar to the notches **17** and **18** and are transversely aligned in the fins **16** adjacent the bottom of the radiator sections **12**. Each of the three series of notches **17**, **18**, and **19** are adapted to receive cylindrical tubing **20**, **21**, and **22** respectively for the purpose of conducting the heat transfer fluid such as hot water or steam through the radiator. The tubes **20**, **21**, and **22** nest firmly in the circular shaped forward ends of the notches **17**, **18**, and **19** wherein they make substantial contact with each of the many spaced fins **16** for transfer of the heat within the fluid medium to room air by radiation and convection as air passes through the radiator sections from bottom to top.

As best shown in Figures 2 and 4 each of the sections **12** and **12***a* is provided with fin end walls **23** and **24** respectively. The outer surfaces of the end wall fins **23** and **24** are flat and when in abutting relationship the adjoining sections **12** and **12***a* form a continuous unit making it impossible for the casual observer to notice that there is more than one section in the baseboard radiator unit. However the inner surfaces of the end wall fins are tapered at a wedge angle for a purpose to be later described.

A connector plate **25** as best shown in Figure 5 is provided with an upwardly open notch **26**, a central elongated aperture **27** and a lower elongated aperture **28**. The connector plate **25** is adapted to slide over the abutting end fins **23** and **24** of the adjoining sections **12** and **12***a* and thereby hold the sections **12** and **12***a* firmly together. Although the end walls **23** and **24** have been given different reference characters from the fins **16** each of the end walls of the sections **12** and **12***a* in fact constitute an additional fin **16**. The end walls **23** and **24** thus are equipped with notches **17**, **18**, and **19** in the same manner as the other spaced fins **16**.

As best shown in Figure 4 the fins **16** have a slight taper on their side as shown at **29**. Similarly the walls of the notches **17**, **18**, and **19** are tapered as shown at **30**, **31**, and **32** respectively. The connector plate **25** has the side walls of the open notch **26** tapered at a wedging angle as shown at **33** and the elongated openings **27** and **28** have their side walls tapered in a wedging angle as shown at **34** and **35** respectively. The bottom view of the baseboard radiator unit of this invention as shown in Figure 4 discloses the connector plate **25** after it has been forcibly driven down over the abutting fin ends **23** and **24** of the sections **12** and **12***a* thereby holding the sections **12** and **12***a* against separate end-wise movement. The wedge tapered sides **33**, **34**, and **35** of the notch **26** and elongated openings **27** and **28** are of such a degree that they constitute a wedging taper whereby when the connector plate is driven by force over the end walls **23** and **24** as shown in Figure 4 the connector plate becomes wedged or locked in position between adjoining sections **12** and **12***a*. The slight wedge taper of the inner surfaces of the end fins **23** and **24** complements the wedge taper of the slots in the connector plate so that once the connector plate is driven on it is not removable for practical purposes. As shown in the drawing in Figure 4 the tube **22** is also locked in position within the aligned notches **19** in the fins **16** by reason of the connector plate **25** lying closely against the outer periphery thereof. It is thus apparent that the connector plate performs the dual function of holding adjoining sections of the baseboard radiator together in locked integral relationship and further of holding and main-

taining the tubing **20, 21,** and **22** in position in close contact with the radiating fins **16.**

It has previously been stated that the notches **17, 18,** and **19** have their opposed walls tapered as shown at **30, 31,** and **32.** This taper facilitates the wedging of the conduit or tubing **20, 21,** and **22** in the small circular end of each of the respective notches **17, 18,** and **19** whereby there is efficient heat transfer between the conduit tubing **20, 21,** and **22** and the spaced radiator fins **16.** The tubing **20, 21,** and **22** is preferably made of some good heat transfer metal such as copper or the like. The wedge lock of the connector plate **25** is made more certain in its wedging effect by reason of the tapered inner walls **36** and **37** of the end walls **23** and **24.** When the connector plate is driven into position on the sections the tapers of the connector plate are additive in their effect with the tapered end walls **23** and **24** whereby there is guaranteed a wedge lock between the connector plate **25** and the abutting ends **23** and **24.**

It will be readily apparent that in the use of baseboard radiators incorporating the principles of this invention any special heat installation job may be worked out merely by using a sufficient number of the sections **12.** The sections may be preassembled or assembled on the job site by first laying in the necessary tubing **20, 21,** and **22** along a plurality of sections making the desired length baseboard radiator and thereafter applying a connector plate **25** to each of the adjoining ends of the plurality of sections whereby the entire series of individual sections become an integral part of the entire unit baseboard radiator for any particular wall or room. As previously stated the connector plate performs the additional function of maintaining the tubing in locked position in the inner closed ends of the notches **17, 18,** and **19** whereby when the radiator is in use there is good and efficient transfer by conductivity of the heat within the tube or conduit **20, 21,** and **22** to the spaced fins **16** and also the end fins or walls **23** and **24** of the several sections **12** making up the entire unit. The lightness of each unit **12** makes transportation of many of the sections of the baseboard radiator of this invention relatively easy and the assembly of a plurality of sections on the job site makes for relatively easy installation of heating systems incorporating baseboard radiators.

Numerous details of construction may be varied throughout a wide range without departing from the principles disclosed herein and I therefore do not dispose limiting the patent granted hereon otherwise than as necessitated by the appended claims.

What is claimed is:

1. In a baseboard radiator construction having a plurality of baseboard radiator sections, each of said sections having a plurality of laterally spaced apart fins having horizontally aligned notches therein and including end fins, fluid carrying conduit removably positioned in the horizontally aligned notches, and comprising a connector plate for fastening adjoining sections, said connector plate having elongated apertures therein to receive adjacent end fins of said adjoining sections, and means for holding said connector plate on said sections whereby the connector plate performs the dual function of holding the conduit in the notches and joining adjacent sections.

2. A device as set forth in claim 1 in which the side walls of the connector plate elongated apertures are tapered at a wedge angle whereby when the plate is forcibly applied over the end fins it becomes locked thereon.

3. A device as set forth in claim 2 in which the inner surfaces of the end fins of the sections are tapered with a wedge taper whereby the locking effect of the wedge angle taper of the side walls of the plate apertures is materially increased.

4. A device as set forth in claim 1 in which the side walls of the fin notches are slightly tapered whereby when the fluid carrying conduit is applied with force to the notch it becomes wedged therein and is additionally securely held by the adjoining connector plate.

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