March 4, 1924. 1,486,036

F. V. RISINGER

RADIANT

Filed Sept. 9, 1922

Fig. 1

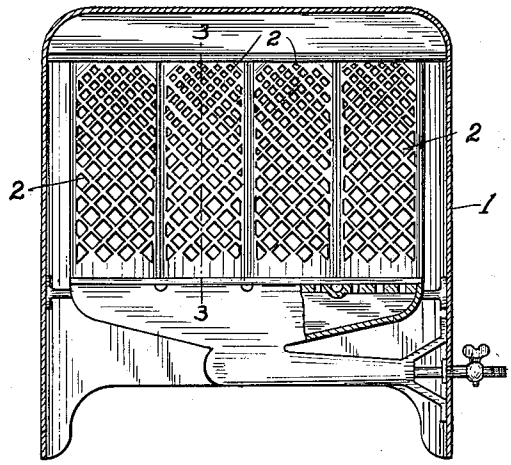


Fig. 6

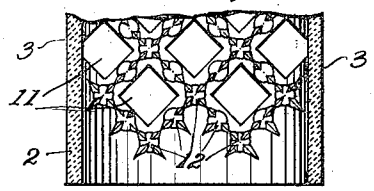


Fig. 7

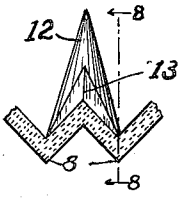


Fig. 8

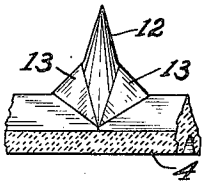


Fig. 2

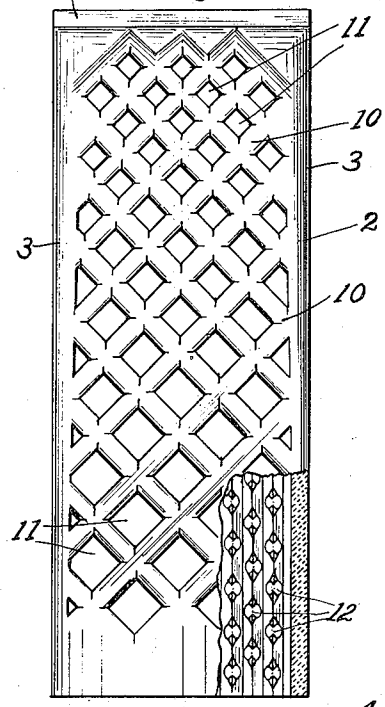


Fig. 3

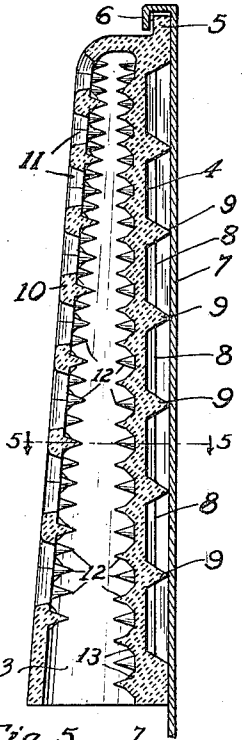


Fig. 4

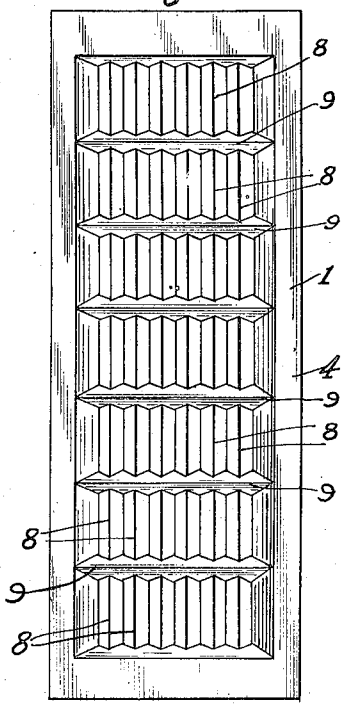
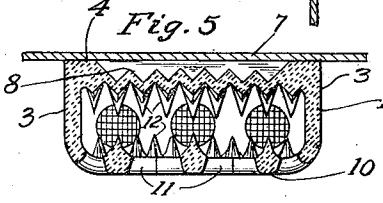


Fig. 5



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UNITED STATES PATENT OFFICE.

FRANK V. RISINGER, OF CLEVELAND, OHIO.

REISSUED

RADIANT.

Application filed September 9, 1922. Serial No. 587,172.

To all whom it may concern:

Be it known that I, FRANK V. RISINGER, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and Improved Radient, of which the following is a full, clear, and exact description.

This invention relates to improvements in radiants and more particularly to a heating element for use in gas stoves, which is known on the market as a radiant, an object of the invention being to provide a radiant which is relatively broad, and relatively narrow in depth, whereby a greater volume of radiating surface and minimum obstruction to the flame is had, and also a larger number of radiating points may be provided and brought in contact with the flame, thus effecting greater heat radiation than is possible with radiants heretofore known.

A further object is to provide a radiant of the character stated, which while presenting the maximum radiating surface requires but a minimum of fuel, thus resulting in economy and greater efficiency in a given space.

A further object is to provide a radiant which insures the entire surface of the radiant becoming brilliantly end evenly heated, the upper portion being as equally radiant as the bottom, this being due in part to the fact that the openings in the front of the radiant are largest at the lower portion of the radiant and decrease in size to the upper end of of the radiant, thereby tending to offer less outlet as the flame moves upwardly and provide sufficient inclosure to insure a brilliant radiation throughout.

A further object is to provide a radiant which functions to throw the heat forward, and which dispenses with the necessity for the ordinary clay backing, and which facilitates the assemblage of any desired number of radiants side by side to give the desired heating surface.

A further object is to provide improved means for constructing and assembling the radiants in a stove.

A further object is to provide a radiant with improved construction and arrangement of back and radiating points, which not only facilitates the formation of the perfect radiant with the desired number of points, but also provides stronger and better radiating points, and gives superior results to radiants as heretofore made.

With these and other objects in view, the invention consists in certain novel features of construction and combinations, and arrangement of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view partly in section of a stove showing my improved radiants in elevation therein.

Figure 2 is a view mainly in front elevation of my improved radiant partly broken away.

Figure 3 is a view in longitudinal section through the radiant and its backing plate, the section being taken on the line 3—3, of Figure 1.

Figure 4 is a view in rear elevation of my improved radiant.

Figure 5 is a view in transverse section on the line 5—5 of Figure 3.

Figure 6 is a fragmentary view in transverse section of the radiant looking forwardly at the rear of the front portion of the radiant.

Figure 7 is an exaggerated view in transverse section illustrating one of the radiating points and a portion of the back plate.

Figure 8 is a view in section on the line 8—8, of Figure 7.

1 represents a stove which may be of any desired shape and size, and which constitutes a gas burner or heater, and which is provided with a series of any desired number of my improved radiants 2.

The radiants 2 are hollow and have parallel side walls 3—3, so that the radiant is of uniform width throughout its height and is appreciably wider than ordinary radiants in general use. The radiant is open at its lower end for the admission of the flame from any desired arrangement of gas burners, and is closed at its upper end. The back wall 4 of the radiant extends above the top of the radiant forming a flange 5 which projects the entire width of the radiant and is adapted to receive an overhanging lip 6 on a back plate 7, to hold the radiants in proper vertical position.

The back of the radiant is flush with the plate 7 throughout the edges of the radiant, but the intermediate portion of the back is recessed and provided with longitudinal

and transverse corrugations or webs 8 and 9, whereby dead air spaces are formed between the back wall of the radiant and the plate 7 to act as heat insulators and obviate the necessity of providing the ordinary clay backing in the stove.

Furthermore, this arrangement and construction facilitates the assemblage of the radiants and reduces the cost of manufacture and the expense of operation and repair.

The back wall 4 of the radiant is vertical while the front wall 10 of the radiant inclines rearwardly from its lower to its upper end, thus reducing the cross sectional area from the lower to the upper end of the radiant. This front 10 of the radiant is formed with any desired design or configuration of openings 11 and it will be noted that these openings 11 are largest at the lower portion of the radiant and gradually diminish in size from the lower to the upper portion of the radiant, thus serving to gradually decrease the outlets from the lower to the upper portion, and insure a full radiation throughout the length of the radiant.

Within the radiant and integral with the front and rear walls 10 and 4 thereof, I provide a large number of radiating points 12, one of these points is shown enlarged and more or less exaggerated in Figures 7 and 8, and I would call special attention to the shape of the point which is sharp and tapering, and which is provided with integral webs 13 at opposite sides of its base, which are disposed at an angle to the point, and also at an angle to the supporting front or back as the case may be.

These webs are angular in transverse section and not only give strength and durability to the radiating point, but they, by reason of their shape and location, facilitate the molding or casting of the points.

To be more specific: In the manufacture of radiants of this character, the walls are formed by metal dies and under pressure, and to prevent sticking the surface of the metal must be oiled, and in pouring the clay or other material forming the radiant, the oil will run into the spaces in which the points are formed and by providing these spaces of the shape corresponding to the shape of the points and the webs above described, the material of the radiant can be squeezed or forced laterally, carrying the oil out of the spaces and insure a formation of all the points without the loss of any.

With radiants such as heretofore made, it is quite impossible to form all of the points desired because the oil interferes with the operation, and by constructing the points of the shape set forth, this defect is entirely overcome. By reason of the construction and arrangement of parts above described, I am enabled to form a radiant which is efficient in its operation, which is of greater width than radiants such as heretofore made, and which insures a full radiation throughout the entire height of the radiant.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A radiant having parallel closed sides, inclined perforated front and straight recessed back, whereby dead air spaces are formed at the back of the radiant.

2. A radiant of the character described, having openings in its front, dead air spaces in its back, and having internal radiating points on its front and back.

3. A radiant, comprising a hollow body having openings in its front, and having longitudinal and transverse webs on its rear face forming dead air spaces.

4. A radiant, having a relatively wide closed back, a relatively wide perforated front, parallel closed sides connecting the back and front, internal radiating points on the front and the back, and angular inclined webs at opposite sides of the points and integral with the points and their supports.

5. A radiant comprising a hollow body having a straight rear wall provided with recesses on its outer face, and an inclined front wall provided with openings, the openings gradually decreasing in size from the bottom to the top, the front and rear walls being provided on their inner faces with radiating projections.

6. A radiant comprising a hollow body open at the bottom and having a straight rear wall provided on its outer face with tapering intersecting ribs forming a plurality of recesses, and an inclined front wall provided with openings, the openings decreasing in size from the bottom to the top, the front and rear walls being provided on their inner faces with tapering projections.

FRANK V. RISINGER.