F. BRELLE, SR.

GAS HEATED RADIATOR.

APPLICATION FILED NOV. 16, 1915.

1,175,120.

Patented Mar. 14, 1916.

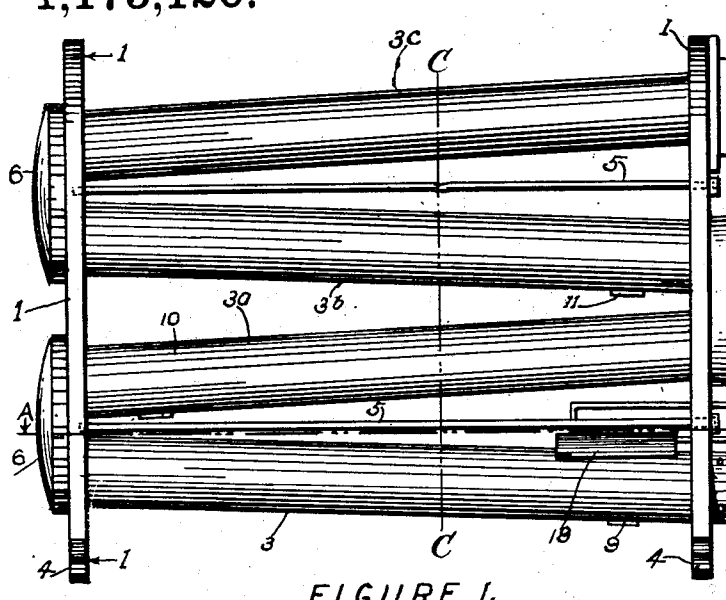


FIGURE 1.

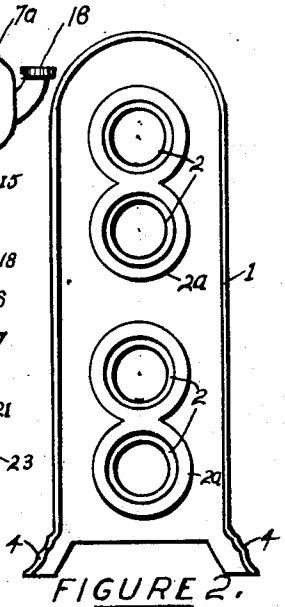


FIGURE 2.

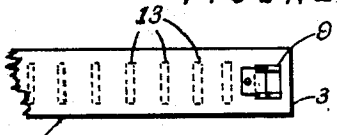


FIGURE 5.

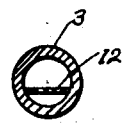


FIGURE 6.

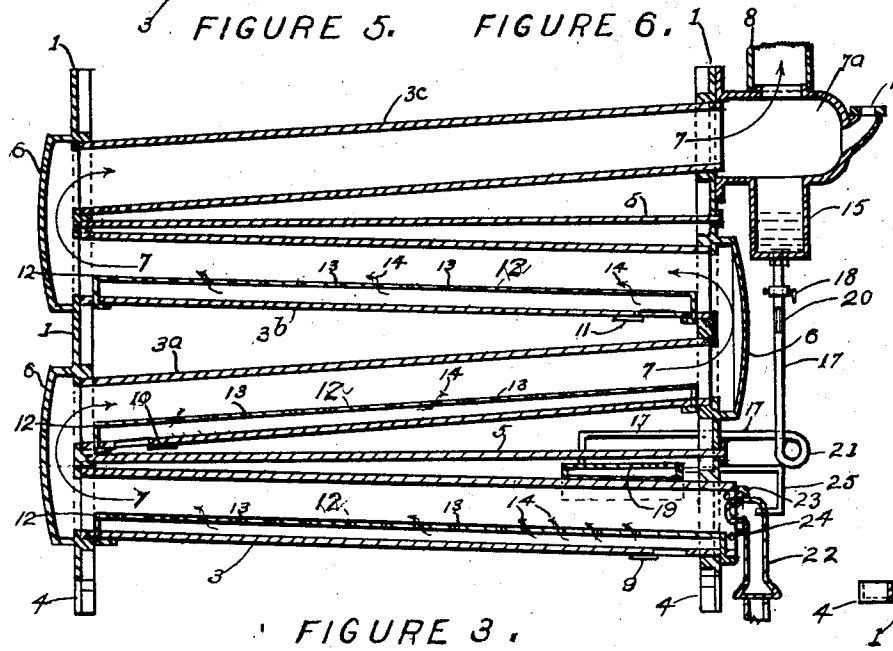


FIGURE 3.

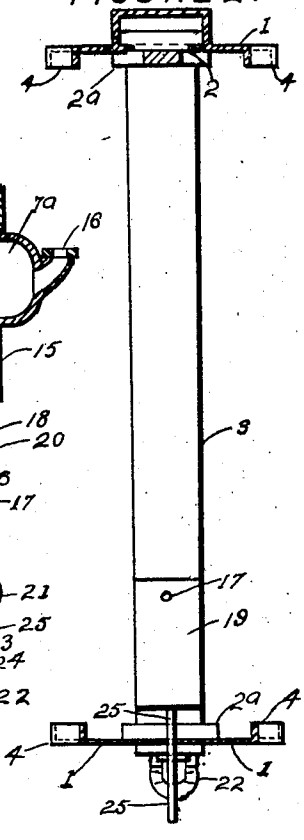


FIGURE 4.

WITNESSES:

E. O. Berger.

O. M. Vrooman

INVENTOR:

Frank Brelle Sr.

BY F. W. Bates

HIS ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK BRELLE, SR., OF SAN JOSE, CALIFORNIA.

GAS-HEATED RADIATOR.

1,175,120. Specification of Letters Patent. Patented Mar. 14, 1916.

Application filed November 16, 1915. Serial No. 61,854.

To all whom it may concern:

Be it known that I, FRANK BRELLE, SR., a citizen of the United States, and a resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Gas-Heated Radiators, of which the following is a specification.

My invention relates to improvements in gas heated radiators, and the objects of my invention are, first, to produce a radiator that can be heated by gas supplied through any burner suitable.

A further object of my invention is to provide a gas heated radiator of simple and durable construction, capable of being used in connection with air and steam inlets, without the necessity of disturbing the valvular arrangement of the gas burner or in any manner altering or changing the construction thereof.

A still further object of the invention is generally to improve this class of radiators so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side view of my gas heated radiator, completely assembled. Fig. 2 is a view of an end plate. Fig. 3 is a sectional view of the radiator, assembled. Fig. 4 is a sectional view on line A—A of Fig. 1. Fig. 5 is a detail plan view of the under side of a portion of a radiator pipe 3, showing slots in dotted lines in a longitudinal plate therein. Fig. 6 is a section on line C—C of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

My improved gas heated radiator forming the subject matter of the present invention, comprises end supporting plates 1. These plates may be made of cast iron, or any other suitable metal, or they may be pressed out of sheet steel, or any other sheet metal desired, or from any other material suitable, and have inward flanged holes 2, adapted to receive radiator pipes 3—3^a—3^b—3^c. The outer flanges 2^a are for strength and support around said pipes when inserted in said end supporting plates 1, said plates 1 having legs 4 adapted to raise said radiator pipes up a distance from the floor, for the purpose of cleaning thereunder. Said radiator pipes are placed in flanged holes 2, in the end plates, and are held in place by bolts 5. Caps 6 are shown covering the ends of said radiator pipes. Said caps 6 are an integral part of end supporting plates 1, and are adapted to cover and connect the openings of said pipes, one with the other, allowing the burnt gases to pass upward through the radiator pipes, as shown by arrows 7, and out through condensing chamber 7^a to chimney connection 8. On the under side of radiator pipe 3 is shown an air draft damper 9—this damper is manually operated and is adapted to regulate the supply of air required at this point. On the underside of radiator pipe 3^a is shown an air damper 10, which is for the purpose of regulating the amount of air required at this point. On the under side of radiator pipe 3^b is shown an air damper 11, the same being for the purpose of regulating the amount of air required at this point. These air draft dampers 9—10—11, are very important factors in my invention, as they supply the air at the required places, and of the required amount to produce a perfect combustion.

In radiator pipes 3—3^a—3^b, are shown plates 12. These plates extend longitudinally therethrough, and are fastened therein as shown in Fig. 6, and have a plurality of air slots 13 cut therein for the purpose of allowing the air to pass upward therethrough, as shown by arrow points 14, for a more perfect distribution of air through said radiator pipes, mingling with the burning gas and steam injected therein. Radiator pipe 3^c is an open pipe leading from cap 6 to condensing chamber 7^a, said chamber 7^a being fastened to supporting plate 1 in any suitable manner, and is for the purpose of receiving the condensed steam and returning the same to reservoir 15. At the under side of said chamber 7^a and an integral part thereof, is water reservoir 15, the same being filled with water through opening 16 in condensing chamber 7^a. Leading down from the under side of water reservoir 15 and connected therewith,

is pipe 17, leading to and connected with boiler 19. A valve 18 is shown connected with pipe 17 and is adapted to gage the amount of water required, and passing through said pipe 17 to boiler 19. A glass sight feed is shown at 20 connected with pipe 17 for the purpose of ascertaining the amount of water feeding down through said pipe 17. Said pipe 17 has a coil 21 at the lower end thereof for the purpose of preventing steam from returning therethrough to reservoir 15 from boiler 19. A gas burner 22 is shown connecting with radiator pipe 3 by cap 23, said cap being fastened to pipe 3 in any suitable manner at the end thereof, said cap 23 having a plurality of air holes 24 therein for the purpose of admitting air to gas burner 22. A steam pipe is shown at 25 connecting with boiler 19, and gas burner 22, for the purpose of admitting steam to gas burner 22 from boiler 19. Said boiler 19 is fastened to the top of radiator pipe 3 near gas burner 22, as the greatest amount of heat is generated from gas burner 22 at this point, thereby producing the required amount of heat to produce the amount of steam required to burner 22 for a more perfect combustion.

The operation of my gas heated radiator is as follows: Water is placed in reservoir 15 through opening 16 in condensing chamber 7^a, and is carried down through pipe 17, and coil 21 to boiler 19, where the same is converted into steam and delivered to burner 22 through pipe 25. Gas is admitted through burner 22, and ignited through air holes 24, the same coming in contact with the steam from boiler 19, and air from holes 24 and dampers 9—10—11, distributed through air slots 13 in plates 12, and producing an intense heat, governed only by the gas and steam admitted through gas burner 22. The water supply to boiler 19 is governed by valve 18, and is seen through glass sight feed 20. By the manipulation of valve 18, and valve connected to burner 22, not shown, any degree of heat required may be obtained.

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

1. In a gas heated radiator of the character described, having end supporting plates, radiator pipes supported by said plates, said plates having inward flanged holes adapted to receive the ends of said radiator pipes, means by which said radiator pipes and said supporting plates are fastened together, end caps adapted to cover and connect the end openings of said radiator pipes, a condensing chamber, a chimney connection through said condensing chamber, a water reservoir, which is an integral part of said condensing chamber, said radiator pipes having air dampers on the under side thereof and adapted to admit air to said radiator pipes, a water boiler positioned on one of said radiator pipes and adapted to produce steam, for the purpose of creating a greater draft through said radiator pipes, a gas burner connected with one of said radiator pipes, and a steam pipe leading from said water boiler and connecting with said gas burner, as and for the purpose described.

2. In a gas heated radiator of the character described, the combination of end supporting plates, radiator pipes supported by said plates, means by which said supporting plates and said radiator pipes are fastened together, air dampers in said radiator pipes, and longitudinal plates in said radiator pipes having a plurality of air slots cut therein, a condensing chamber, a chimney connection leading from said condensing chamber, a water reservoir, and means for filling the same, a boiler attached to one of said radiator pipes, and means by which said boiler is supplied with water, a gas burner and means by which said burner is supplied with steam from said boiler, means by which a back pressure of steam is prevented from returning to said water reservoir from said boiler, means by which said gas burner is fastened to said radiator pipes, and means by which air is admitted to said radiator pipes, as shown and described.

In testimony whereof I hereby affix my signature in the presence of two subscribing witnesses.

FRANK BRELLE, Sr.

Witnesses:
H. L. Partridge,
F. M. Horton.