Jan. 19, 1926. 1,569,929

O. HASELAU

RADIATOR

Filed Oct. 3, 1921

Fig. 1

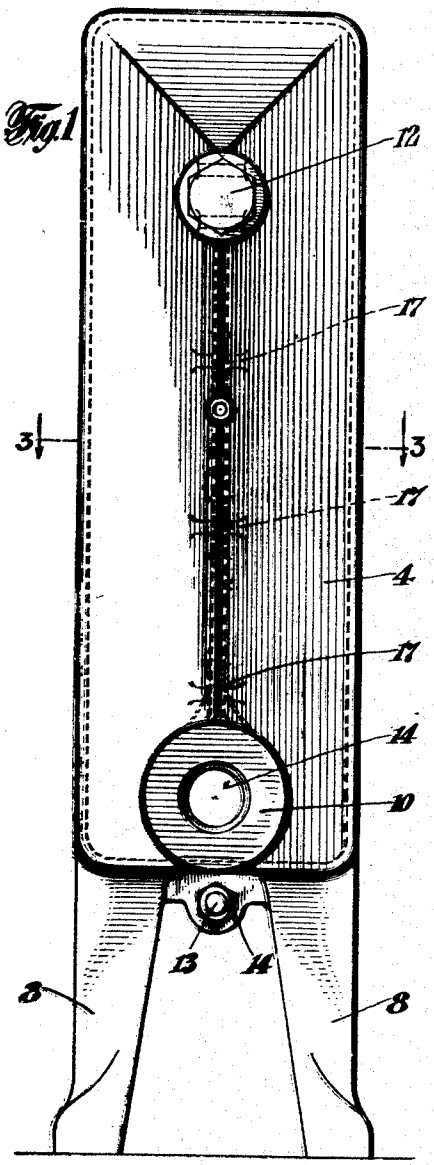


Fig. 2.

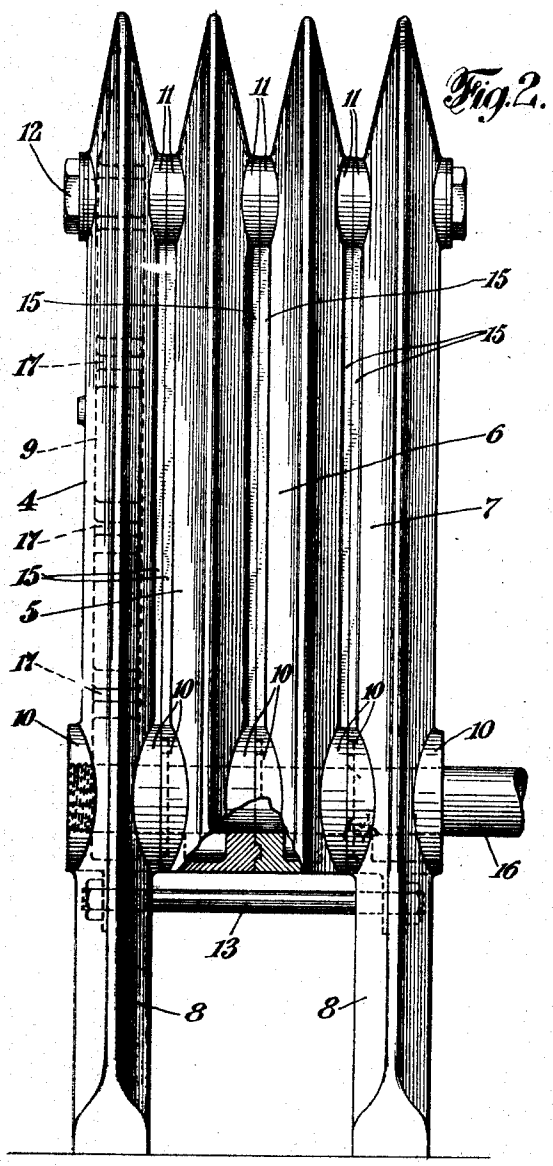
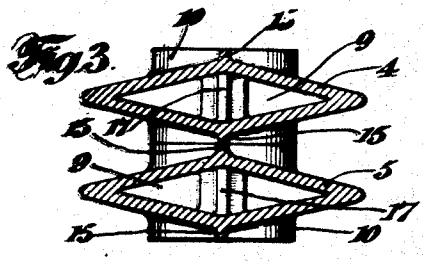


Fig. 3.



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UNITED STATES PATENT OFFICE.

OTTO HASELAU, OF NEW YORK, N. Y.

RADIATOR.

Application filed October 3, 1921. Serial No. 505,167.

To all whom it may concern:

Be it known that I, OTTO HASELAU, citizen of the United States, and resident of 573 West 192nd Street, in the county of New York and State of New York, have invented certain new and useful Improvements in Radiators, of which the following is a specification.

My invention relates to improvements in radiators and more particularly to radiators adapted for the heating of rooms or buildings. The main object of the invention is to provide an improved radiator which is extremely simple and efficient in construction and operation and also sanitary in that it is easily cleaned of dirt and refuse which may accumulate on the outside thereof. Further and more specific objects, features and advantages will more clearly appear from the detail description given below taken in connection with the accompanying sheet of drawings, which form a part of this specification.

In the drawings, Fig. 1 is an end view of a radiator embodying my improvements in a preferred form. Fig. 2 is a side view of the same and Fig. 3 is a horizontal section taken on the line 3—3 through two of the units which go to make up the radiator.

Referring to the drawings, 4, 5, 6 and 7 represent a series of separable hollow cast iron radiator units similar in cross section and alike except that the two end units 4 and 7 are provided with supporting legs 8. Each unit is substantially diamond shaped in cross section as shown in Fig. 3 and is provided with an upright heating fluid space 9 therein which is also substantially diamond shaped in cross section. Each unit is provided with bosses 10 at the lower part thereof which are adapted to abut against one another and also with integral bosses 11 at the upper end thereof which are adapted to abut against one another. The units are held together at the upper end by means of bolt 12 passing centrally through the upper end of the various sections through the bosses 11, while at the lower end the units are held together by means of a bolt 13 passing through flanges 14 depending from the end sections 4 and 7. Each of the units is provided with a passage through the bosses 10 which passages connect the units at the bottom with the upright heating fluid passages therein, said passages through the bosses 10 forming heating fluid passages through the bottom part of the radiator and centrally below the upright heating fluid spaces and entering said heating fluid spaces with an opening substantially the full size of the cross section of the heating fluid passages or spaces. That is, the passages 14 through the bosses 10 open directly into the upright heating fluid spaces in the respective sections. In the preferred form all of the separate units are of the same height and the said connecting passages through the bosses 10 all lie in substantially the same horizontal plane. The various units are also provided with lateral upright integral ribs 15 extending substantially from the passages 14 substantially to the top of the units and said ribs abut one another as shown in the Figs. 2 and 3. The steam or other heating fluid may be admitted to the radiator through a pipe 16 and if desired a drain connection may be applied through the passage 14 in the boss 10 on the outside of section 4. Each of the various units is also provided with integral reinforcing members 17 extending across the upright heating spaces in the various units and intermediate the ends thereof.

From the above it will be seen that the radiator shown and described is not only extremely simple in form but is so constructed that dirt and refuse which frequently accumulates between the uprights of common radiator sections may be easily cleaned and removed from the radiator above described, the units being substantially free of ribs, flanges and projections which would form dirt collecting substantially inaccessible chambers, spaces or pockets. All parts of the outside or radiating surface of the radiator are easily reached with a brush and there are no inaccessible outside surfaces behind the parts. This is largely due to the fact that each unit is made up of a single upright, widest at the central part thereof and tapering outwardly and provided with a single upright heating fluid space. I am enabled to get the desired amount of surface for radiation by making each heating fluid space somewhat larger and strengthening the parts as by the reinforcing lugs or members 17. Also by providing the ribs 15 abutting one another, refuse is less likely to collect between the various units. While the radiator is thus simple and easy to clean and keep clean, it is nevertheless easy to assem-

ble because the various units are all separable and a radiator of any desired size or heating capacity may easily be made up of any suitable number of such units. It will further be noted that all of the heat radiating surfaces open outwardly so that the heat readily radiates away therefrom into the room or space being heated and I am, therefore enabled to get a greater amount of heat radiated for a given radiating surface, the spaces between the units through which the heat is radiated being in no way constricted; and at the same time because of the form used I am enabled to construct various units of cast metal and obtain the advantages thereof.

While I have described my improvements in great detail and with respect to a preferred form thereof, I do not desire to be limited to such details or form since many changes and modifications may be made and the invention embodied in widely different forms without departing from the spirit and scope thereof in its broader aspects.

What I claim as new and desire to secure by Letters Patent is:

1. A radiator having a plurality of separable hollow radiator units each having a single upright heating fluid space with passages connecting the units at the bottom of the upright heating fluid spaces, said passages forming a heating fluid passage through the bottom part of the radiator and centrally below said upright heating fluid spaces, and entering said heating fluid spaces with an opening substantially the full size of the cross section of the heating fluid passages, and said units having upright reinforcing ribs extending toward adjacent units but being substantially free of ribs, flanges and projections which would form dirt collecting substantially inaccessible chambers, spaces or pockets.

2. A radiator having a plurality of vertical separable hollow radiator units each substantially diamond shaped in horizontal cross section and having an upright heating fluid passage therein, and passages connecting the units at the bottom thereof, said last mentioned passages all lying in substantially the same horizontal plane, the central vertical lines of said units being arranged in substantially the same plane and the opposite vertical corner edges of one unit abutting the vertical corner edges of adjacent units and the faces of said units being substantially free of ribs, flanges and projections which would form dirt collecting, substantially inaccessible chambers, pockets or spaces.

3. A radiator having a plurality of separable hollow radiator units each having a single upright heating fluid space with passages connecting the units at the bottom of the upright heating fluid spaces, said passages forming a heating fluid passage through the bottom part of the radiator and centrally below said upright heating fluid spaces, and entering said heating fluid spaces with an opening substantially the full size of the cross section of the heating fluid passages, and said units being all of substantially the same height and said connecting passages all lying in substantially the same horizontal plane, and said units having upright reinforcing ribs extending toward adjacent units but being substantially free of ribs, flanges and projections which would form dirt collecting substantially inaccessible chambers, spaces or pockets, and a bolt for connecting said units together.

4. A radiator having a plurality of vertical separable hollow radiator units each substantially diamond shaped in horizontal cross section and having an upright heating fluid passage therein, and passages connecting the units at the bottom thereof, said last mentioned passages all lying in substantially the same horizontal plane, the central vertical lines of said units being arranged in substantially the same plane and said units having external vertical reinforcing ribs at opposite vertical corner edges thereof which ribs extend toward and abut corresponding ribs on adjacent units.

5. A radiator having a plurality of vertical separable hollow radiator units each substantially diamond shaped in horizontal cross section and having an upright heating fluid passage therein, and passages connecting the units at the bottom thereof, said last mentioned passages all lying in substantially the same horizontal plane, the central vertical lines of said units being arranged in substantially the same plane and said units having external vertical reinforcing ribs at opposite vertical corner edges thereof which ribs extend toward and abut corresponding ribs on adjacent units, the faces of said units being substantially free of ribs, flanges and projections which would form dirt collecting, substantially inaccessible chambers, pockets or spaces.

6. A radiator having a plurality of separable vertical hollow sections diamond shaped in horizontal cross section and having upright heating fluid passages therein and passages connecting the units at the bottom thereof, the faces of said units being substantially free of ribs, flanges and projections which would form dirt collecting, substantially inaccessible chambers, pockets or spaces, and said units having integral internal reinforcing lugs extending across said heating fluid passages intermediate the top and bottom thereof and in a direction lengthwise of the radiator, and connecting opposite corners of the diamond shaped sections.

7. A radiator having a plurality of sep-

arable hollow radiator units each having a single upright heating fluid space with passages connecting the units at the bottom, said passages forming a heating fluid passage through the bottom part of the radiator and centrally below said upright heating fluid spaces and entering said heating fluid spaces with an opening substantially the full size of the cross section of the heating fluid passages, said units being all of substantially the same height and said connecting passages all lying in substantially the same horizontal plane, and said units having reinforcing members extending across the heating fluid spaces intermediate the ends thereof.

Signed at New York, in the county of New York and State of New York this 27th day of September, A. D. 1921.

OTTO HASELAU.