

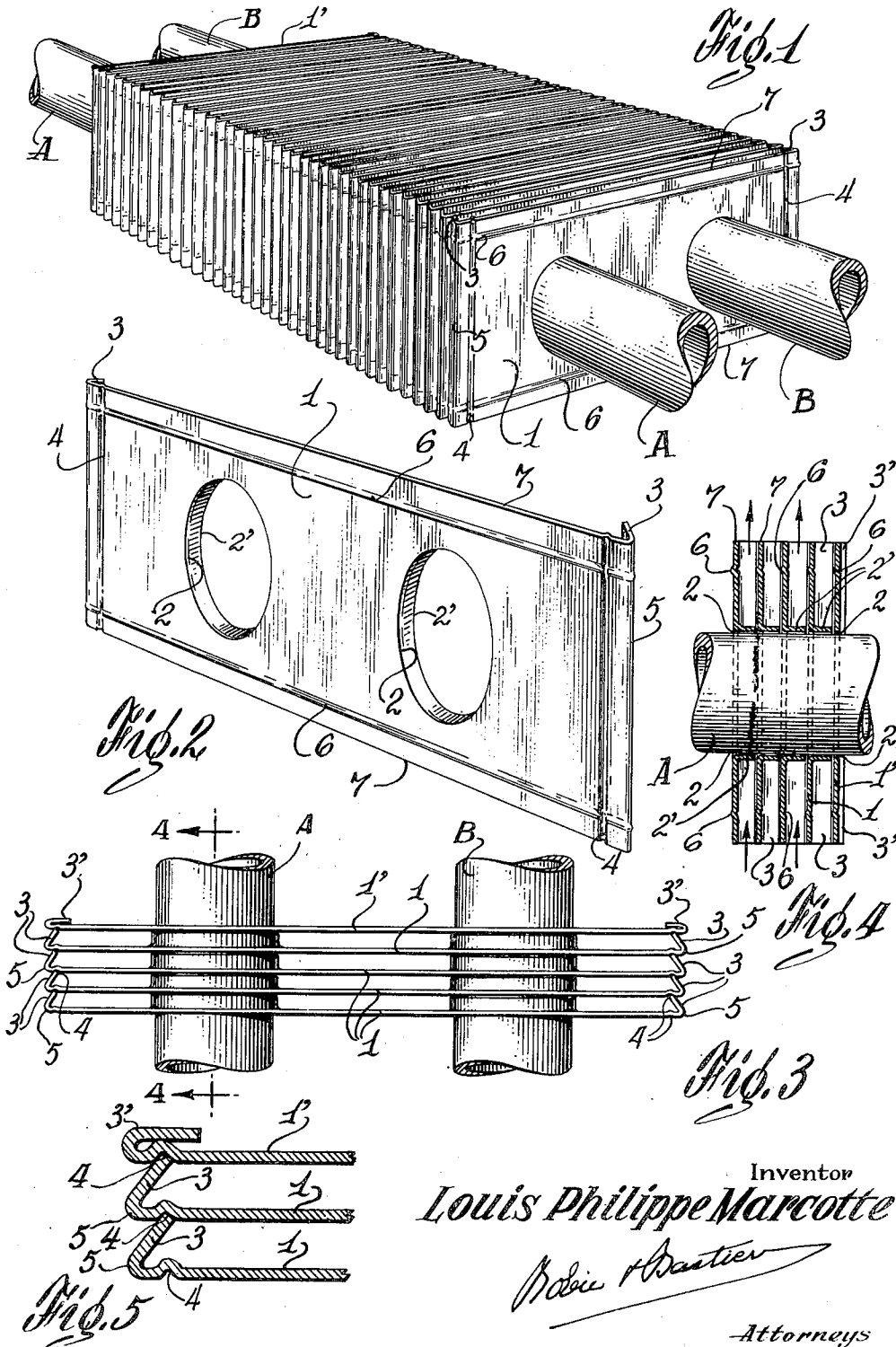
July 8, 1952

L. P. MARCOTTE

2,602,650

FIN TYPE RADIATOR

Filed April 12, 1951



Inventor
Louis Philippe Marcotte

Robie Abantier

Attorneys

UNITED STATES PATENT OFFICE

2,602,650

FIN TYPE RADIATOR

Louis Philippe Marcotte, Montreal, Quebec,
Canada

Application April 12, 1951, Serial No. 220,585

2 Claims. (Cl. 257-262.16)

1

The present invention relates to a fin type radiator and more particularly to a fin type radiator such as used in the hot water or steam heating system of a house.

Conventional fin type radiators comprise a plurality of parallel fins or thin plates preferably of rectangular shape, mounted transversely of one or more heating fluid conducting tubes and maintained thereon in spaced relationship by being welded or otherwise secured at two opposite ends to suitable side plates extending at right angles to said fins. Such a construction is necessary to prevent bending of long radiators and also to protect the fins from damage during transit or in use.

Because the fins of such radiators are relatively closely spaced, welding of each of said fins to the side plates requires a relatively considerable amount of work, and therefore only a limited number of said fins are welded in practice. Therefore, after a certain period of use, or due to damage in handling, one or more fins are liable to become unequally spaced or to come into contact one with the other thereby diminishing considerably the heat radiating efficiency of the fin type radiator and marring its appearance.

Accordingly, the general object of the present invention is the provision in a fin type radiator of means to prevent the above mentioned drawback.

A very important object of the present invention is the provision in a fin type radiator of means for maintaining the fins in spaced position without the requirements of side plates and of the welding operations referred to hereabove.

Still another important object of the present invention is the provision in a fin type radiator of means for maintaining the fins at a constant substantially equal distance one from the other.

Still another important object of the present invention is the provision of a fin type radiator in which all sharp corners have been eliminated, thereby preventing possible injuries especially during handling.

Still another important object of the present invention is the provision of a fin type radiator provided with means for imparting to the fins and consequently to the finished radiator considerably increased rigidity.

Still another important object of the present invention is the provision of a fin type radiator of improved and yet very inexpensive construction.

The foregoing and other objects according to the present invention will become more appar-

2

ent during the following disclosure and by referring to the drawings in which:

Figure 1 is a perspective view of a fin type radiator according to the present invention;

Figure 2 is a perspective view of one of the fin elements according to the invention;

Figure 3 is a plan view of the fin type radiator;

Figure 4 is a cross-section along line 4-4 of Figure 3; and

Figure 5 is a fractional enlarged plan section of the fin elements according to the invention.

Referring now more particularly to the drawings in which like reference characters indicate like elements throughout, the letters A and B denotes two heating fluid tubular conduits disposed in spaced parallel relationship.

These conduits may be connected in series so that, for instance, the conduit B will serve as a return for conduit A.

A plurality of thin plates or fin elements 1, preferably of rectangular shape and made of good heat conducting material are each provided with a pair of spaced circular openings 2 provided with a cylindrical flange 2' for receiving the conduits A and B.

The flanged openings 2 have substantially the same diameter as the external diameter of said conduits so as to provide good contact between the latter and said plates.

The fin elements 1 have substantially the same length and width, and the openings 2 are equally spaced from the end and side edges respectively so as to provide alignment of said edges when the fin elements 1 are mounted on the conduits A and B to form the radiator according to the invention.

The fin elements 1 are maintained in spaced parallel relationship across the tubes or conduits A and B by means of the flanges 2' the outer edge of which abut the next fin element along the edges of the openings 2 thereof, and by means of the opposite end portions 3 of said fin elements 1 which are bent at more than right angle so as to be inclined relatively to the surface of said fin elements and to contact the next fin element along a line spaced from the edge 5 of the latter.

More particularly said line is constituted by a groove 4 made in said fin elements. The free edge of said end portions 3 enters said groove 4 and rests squarely against the bottom thereof thereby preventing further bending and collapse of said end portions 3 upon any outward pressure exerted on the fins.

It is very important that the end portions 3

3

be bent at more than 90° so as to rest squarely on the adjacent fin, thereby providing very efficient means to maintain the fin elements 1 at a constant distance one from the other.

In this manner there will be no possibility of one of the fin elements contacting an adjacent one to decrease the efficient radiating surface or mar the appearance of the radiator according to the invention.

It will be also noted that because the end portions 3 are turned inwardly from the ends of the radiator, no sharp edges project out from the same which might cause injury, more particularly in transit. In the same manner the end fin element 1' is provided with rounded end edges which cannot cause injury, its opposite end portions 3' being bent inwardly flat against its surface.

The fin elements 1 being preferably made of thin sheet metal material, it is necessary to provide the same with integrally formed ribs 6 extending parallel and spaced from the long sides 7 thereof, thereby imparting improved rigidity thereto.

The ribs 6 are preferably stamped directly in the metal.

From the foregoing, it is seen that the radiator construction, according to the present invention, eliminates the use or need of side plates and of welding operations as noted hereabove. Furthermore, according to the invention, the elements 1 are maintained at a constant distance one from the other thereby maintaining the original heat radiating efficiency of the radiator and its neat general appearance.

It is obvious that the device, according to the invention, may be used also as cooling elements for refrigerating apparatus and for other similar uses.

While a preferred embodiment according to the present invention has been illustrated and described it is understood that various modifica-

4

tions may be resorted to without departing from the spirit and scope of the appended claims.

I claim:

1. In a radiator, a supporting conduit, a plurality of plates disposed in parallel planes extending transversely of and around said conduit, the marginal portion of each plate being bent at an acute angle to provide, on opposite ends of each plate, a laterally and inwardly extending straight flange abutting the next plate, each of said plates having a V-shaped groove positioned inwardly from and running parallel with the edge of said plates, the free edge of each flange entering the V-groove of the adjacent plate to prevent side-wise displacement of said free edge.

2. In a radiator having a central conduit, heat radiating fins extending from said conduit and consisting of relatively thin plates secured transversely over the conduit in spaced parallel relation, each plate having the marginal portion of two opposite sides bent back upon itself at an acute angle to define inclined flanges adapted to abut the adjacent plate, each plate having a V-groove formed parallel to the bent flanges, and on the face of the plate opposite said flanges, each groove being so positioned as to receive snugly the free edge of the next abutting flange, the sides of the groove preventing lateral movement of said free edge.

LOUIS PHILIPPE MARCOTTE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,805,116	Trane	May 12, 1931
1,907,036	Belleau	May 2, 1933
1,950,112	Jacocks	Mar. 6, 1934
2,545,561	Spieth	Mar. 20, 1951