July 5, 1927. 1,634,812

T. C. WHITEHEAD

RADIATOR CONSTRUCTION

Filed June 14, 1926

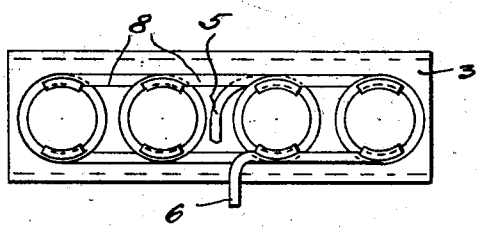
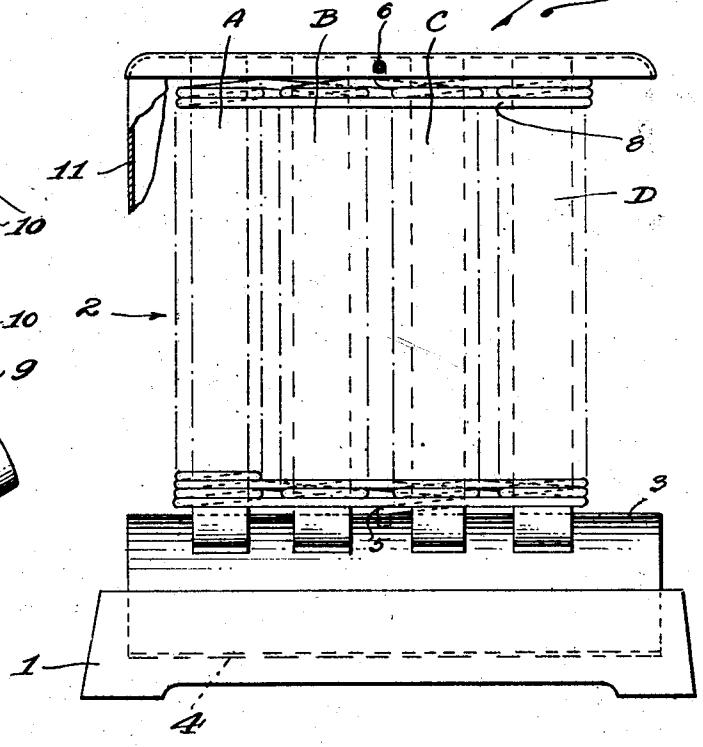


Fig. 2.

Fig. 1.



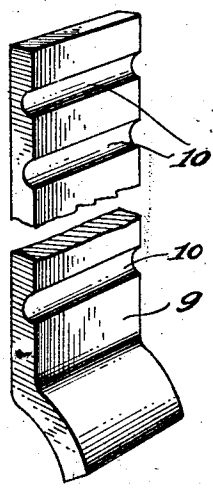


Fig. 4.

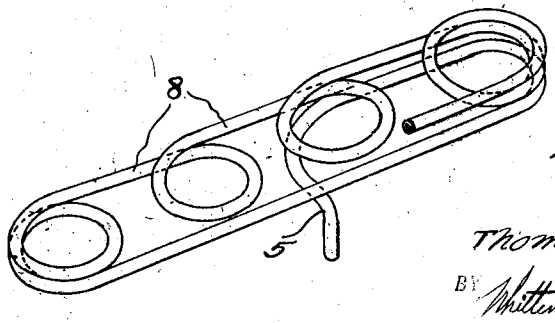


Fig. 3.

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RADIATOR CONSTRUCTION.

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This invention relates generally to condensers designed for use in refrigerating apparatus of the domestic type and consists of certain novel features of construction, combinations and arrangements of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of an apparatus embodying my invention;

Figure 2 is a top plan view thereof;

Figure 3 is a perspective view of a section of the coils;

Figure 4 is a fragmentary perspective view of the supporting bracket.

In the drawings a stand is designated at 1 upon which is mounted the usual refrigerating units, such as a pump, motor, fan and radiator. In the present instance, however, only the radiator is shown, which is generally designated at 2, and consists of four laterally spaced vertically arranged coils A, B, C and D with the convolutions thereof arranged in superposed relation.

These coils are supported upon a common base, which in the present instance comprises a large tube 3 anchored in a suitable trough-shaped recess 4 in the stand. As shown the lowermost convolution of one of the intermediate coils is extended laterally as at 5 and is connected in any suitable manner to the large tube 3, while the uppermost convolution of one of the intermediate coils is extended laterally as at 6, forming an inlet passage in communication with any suitable pump (not shown).

The tube 3 serves as a reservoir for the condensed refrigerating medium and is provided with an outlet opening (not shown) through which the fluid may pass to a brine tank.

To provide an efficient construction the tubing forming the radiator has a relatively small diameter, preferably three-sixteenths of an inch, and is provided with a correspondingly restricted passage for the refrigerating medium.

With reference to the particular construction of the radiator, the vertically arranged coils A, B, C and D are constructed of a single length of tubing forming one continuous passage for the fluid from the inlet 6 to the outlet 5. As shown in Figure 3 all of the convolutions in each horizontal plane are tangentially connected to each other as at 8 in such a manner that the refrigerant flows alternately in a substantially horizontal plane from one side to the other, dropping down to the next lowest plane after it flows through each end convolution.

As shown in Figure 3 the tubing follows the convolutions in the end coils for a portion of their length before continuing into the horizontal portions 8. Vertical supporting brackets 9 extending from top to bottom of the coils are mounted upon the large tube 3 in any suitable manner and are provided with a plurality of grooves 10 which support the convolutions of the coils at diametrically opposite sides. Any suitable casing for enclosing the coils, such as the one shown at 11, may be provided if desired.

From the foregoing it will be apparent that an improved type of radiator has been provided which is very compactly arranged so as to accommodate a greater length of tubing within a given space than has heretofore been possible with the ordinary type of radiators or condensers. Such a construction has the advantage of increasing the radiating surfaces of the tubing in a given area, thereby providing a more efficient radiator.

While it is believed that from the foregoing description, the nature and advantage of my invention will be readily apparent. I desire to have it understood that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim as my invention is:

1. A radiator having a plurality of laterally spaced upright coils, all of the convolutions of each coil being tangentially connected to the corresponding convolutions of each adjacent coil lying in substantially the same horizontal plane.

2. A radiator having a plurality of laterally spaced upright coils, the convolutions of each coil being tangentially connected to the convolutions of each adjacent coil, the uppermost convolution of one of the intermediate coils having a lateral extension forming an inlet passage and the lowermost convolution of one of the intermediate coils having a lateral extension forming an outlet passage.

3. A radiator having a plurality of laterally spaced upright coils, the convolutions of

each coil being connected to the convolutions of each adjacent coil at vertically spaced intervals, whereby fluid passing through the said coils will travel alternately in horizontal planes through the coils from one side of the radiator to the other.

4. A radiator having a plurality of laterally spaced upright coils and substantially horizontal portions extending across the radiator from one outside coil to the other and connecting all the convolutions of each coil with the convolutions of each adjacent coil, the tubing of the outside coils following the convolutions thereof for a portion of their length and then connecting into the said horizontal portions.

5. A radiator having a plurality of laterally spaced upright coils and substantially straight portions extending across the radiator from one outside coil to the other and connecting all of the convolutions of each coil with the convolutions of each horizontally adjacent coil, said coils and straight portions being formed of a single continuous length of tubing.

In testimony whereof I affix my signature.

THOMAS C. WHITEHEAD.