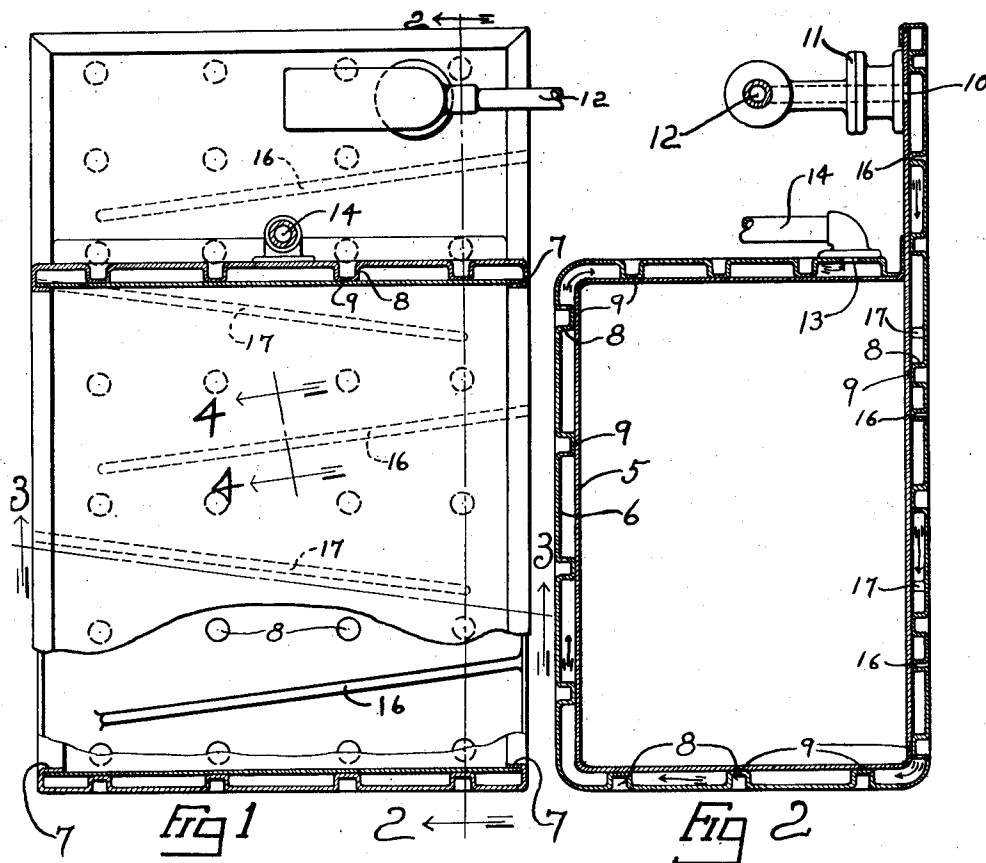
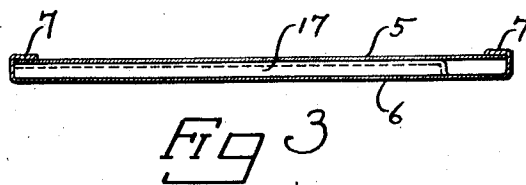
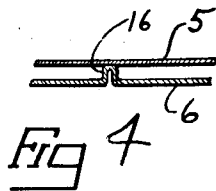


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REFRIGERATING APPARATUS
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REFRIGERATING APPARATUS

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One of the principal objects of my invention is to provide a freezer or expansion chamber for refrigerating apparatus which shall be simple and efficient as well as economical to manufacture.

Specifically, my invention embraces an expansion chamber of the sheet metal type wherein superposed sheets of metal are positioned relative to each other so as to provide a space between them in which refrigerant may expand. It is customary in expansion chamber of this character to weld the faces of the sheets of metal together at intervals, with the expectation that the refrigerant will spread over the faces of the metal. I have found, however, particularly where the refrigerant moves in a downward path, that there is a tendency for the same to follow a relatively narrow course instead of spreading over the face of the sheet metal to thereby utilize the entire area thereof. It is therefore one of the objects of my invention to secure the faces of the sheet metal together over the course of extended spaced lines, which may be staggered with relation to each other, so as to enforce the winding of the refrigerant over the entire face of that portion of the expansion chamber which is so treated.

With the above and other objects in view, my invention consists in the arrangement, combination and construction of the various parts of my improved device as described in the specification, claimed in my claims and shown in the accompanying drawings, in which:

Fig. 1 is a view partly in section and partly in elevation, with certain parts broken away, illustrating an expansion chamber embodying my invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1.

I have shown a sheet metal type expansion chamber comprising sheets 5 and 6, the edges of which are conventionally joined together as at 7 by welding or any other suitable means.

A plurality of depressions 8 are provided in the sheet 6 which suitably space it from the sheet 5 and the bottoms of these depressions are welded as at 9 to the sheet 5 so as to secure the sheets together intermediate their edges. An opening 10 is provided in the sheet 5 which connects with a conventional expansion valve 11 and supply pipe 12 through which the refrigerant may pass to the expansion chamber. An opening 13 is provided in the sheet 6 to which is secured an outlet pipe 14.

It will be observed, by particular reference to Fig. 2, that the right hand side of the expansion chamber, as seen in that figure of the drawing, is vertically disposed so that the refrigerant which enters through the opening 10 follows a downward course to the bottom of the expansion chamber. In order to overcome the tendency of the refrigerant in this side of the expansion chamber to follow a more or less narrow line in its downward course, I have provided a plurality of seam welded lines 16 and 17, joining the faces of the sheets together. The lines 16 begin at one edge of the sheets and extend to a point adjacent the opposite edge thereof, in a horizontal plane, as is particularly shown in Fig. 1. The lines 17 begin at the latter edge of the sheets and extend to a point adjacent the former edge thereof. Each of the lines is slightly inclined to the horizontal so as to cause the refrigerant to flow down them and thereby overcome a tendency for the same to be pocketed. It will be apparent that the refrigerant entering the opening 10 will be deflected along the first line 16 to the end thereof from whence it will drop to the first line 17 to be carried across the face of the expansion chamber and then drop to the second line 16 from whence the same action is continued to the bottom of the expansion chamber. Thus the refrigerant is of necessity carried across the entire face of the expansion chamber and the entire area thereof is utilized.

While the same lines may be applied to the bottom, top and other side portions of the expansion chamber I have not found it to be necessary because the liquid refrigerant

erant will by gravity flow over the faces of those sections of the expansion chamber because it is not flowing in a downward path.

It will be obvious that various changes
5 may be made in the arrangement, combination and construction in the various parts of my improved device without departing from the spirit of my invention and it is my intention to cover by my claims such changes as
10 may be reasonably included within the scope thereof.

What I claim is:

1. In a device of the class described, a pair
15 of superposed sheets of metal having their edges sealed together to form a vertically disposed chamber and having elongated intermediate portions thereof continuously
20 welded together, said welds extending in staggered relation to each other, some beginning at one edge of the sheets and extending adjacent the opposite edge, others beginning
25 at the latter edge and extending adjacent the former, and a plurality of spot welds joining the sheets intermediate the elongated portions, said elongated portions extending in
substantially horizontal planes and an inlet opening for the space between the sheets positioned above the said portions.

2. In a device of the class described, a pair
30 of superposed sheets of metal having their edges sealed together to form a vertically extending chamber between the sheets, an inlet opening adjacent the top of the chamber, said sheets being joined together intermediate their edges along a plurality of separated lines, which extend in horizontal
35 planes, some of said lines beginning at one edge of the sheets and extending to a point adjacent the other edge thereof and others of said lines beginning at the latter edge and
40 extending to a point adjacent the former edge, each of said lines being slightly tilted to permit liquid to flow down them by gravity.

3. An expansion element for refrigerating
45 mechanisms comprising a pair of generally spaced sheet metal plates sealed together at their edges to form a closed refrigerant passage between them, an inlet for refrigerant
50 at one end of said plates, and an outlet for refrigerant at the other end of said plates, said plates being bent to form a chamber closed on its top, bottom and sides and with said inlet at the top of one of said sides, and
55 said side between said sheets being provided with baffles extending alternately from each side laterally and downwardly whereby refrigerant introduced into said inlet will flow by gravity in a devious path through said
60 passageway to the lowermost point thereof.

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