

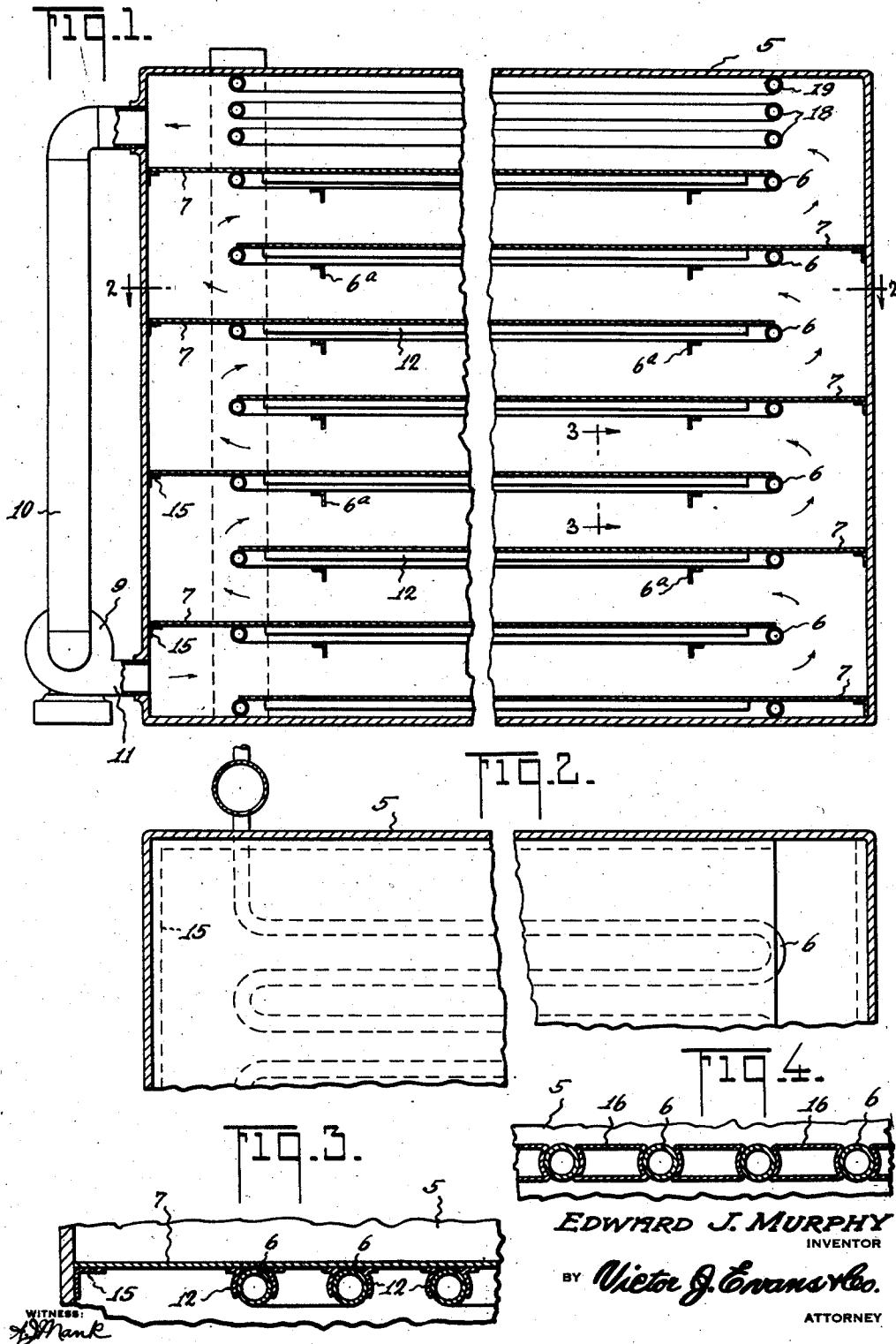
May 29, 1934.

E. J. MURPHY

1,961,070

FREEZING APPARATUS

Filed Dec. 14, 1931



UNITED STATES PATENT OFFICE

1,961,070

FREEZING APPARATUS

Edward J. Murphy, Lynbrook, N. Y.

Application December 14, 1931, Serial No. 581,006

6 Claims. (Cl. 62—102)

This invention relates to freezing apparatus and it has for one of its objects the provision of simple, economical and efficient means, preferably in the form of plates, associated with the cooling or freezing coils of the apparatus, the mentioned plates being preferably flat and in heat-conductive relation to the coils, whereby to provide for more rapid and therefore more efficient cooling, the mentioned plates also being arranged to provide a sinuous air-course through the apparatus, which air-course further adds to the efficiency of the apparatus.

Another object of the invention is the provision of means whereby the mentioned plates may be readily connected to and disconnected from the cooling coils and in a manner to provide for increased heat conduction from the objects to be cooled or frozen, to the coils.

A further object of the invention is the provision of plates of the character mentioned, said plates forming hollow bodies filling the spaces between the adjacent parts of the respective coils.

Other objects of the invention will be appreciated from a reading of the following specification.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms part of the application with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described and, therefore, such changes and modifications may be made therefrom as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

In the drawing:

Fig. 1 is a broken vertical section through the freezing apparatus embodying my invention, this view showing in side elevation a blower and pipes connected thereto and to the cabinet of the apparatus;

Fig. 2 is a fragmentary horizontal section taken approximately on the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a fragmentary section taken on line 3—3 of Fig. 1, looking in the direction of the arrows; and

Fig. 4 is a section similar to Fig. 3, but showing a modification of my invention.

Referring to the drawing for a more detailed description thereof, the numeral 5 indicates a cabinet in which are positioned a plurality of

horizontally disposed cooling or freezing coils 6, vertically spaced from each other and supported on angles 6a. In Figs. 1, 2 and 3, plates 7 are in contact with the tops of the coils 6, these plates being arranged in staggered relation so as to provide a sinuous air passageway or course through the cabinet 5. A blower 9 is connected to pipes 10 and 11 which open into the cabinet so that the blower may effect a circulation of air into the cabinet in the sinuous path mentioned, and also indicated by the arrows in Fig. 1. While the arrows indicate an upwardly traveling current, it is to be understood that a downwardly traveling current may also be employed. The mentioned plates 7, being flat, provide for a more efficient cooling of articles placed thereon, than would be the case if the plates were omitted and the articles to be cooled or frozen were placed on the coils, this fact being readily appreciated by anyone skilled in the art when it is remembered that the coils and the plates are good heat conductors, being metallic.

The plates 7 are provided with means whereby they may be readily connected to and disconnected from said coils, said means comprising pairs of cooperating resilient members 12 which may be snapped on to the coils 16 to securely hold the plates 7 to the coils. The edge portions of the plates 7 rest on angles 15, which are secured to the walls of the cabinet.

Referring now to Fig. 4, in which a modification of my invention is shown, a plurality of hollow bodies 16, preferably metallic, are provided between adjacent parts of the respective coils. Each of the hollow bodies 16 is preferably, but not necessarily, formed from a single sheet of material bent into the shape shown in Fig. 4 wherein the tops and bottoms of the hollow bodies are flat and the sides are concave, the tops being flat to effect increased efficiency of the apparatus as explained above and the sides being concave to fit the coils which are herein shown as circular in cross-section, the hollow bodies being adapted to be sprung or snapped into position between the coils. It will be noted that the tops and bottoms of the hollow bodies 16 are respectively flushed with the tops and the bottoms of the coils 6.

The coils 18 shown above the uppermost plates 7 are for the purpose explained in my copending application entitled "Freezing apparatus", filed October 5, 1931, Serial No. 567,009 which also applies to the coils 19 disposed above the coils 18.

The clips 12, which extend substantially the length of the coils provide for better conduction

of heat from the articles to be cooled or frozen to the cooling agent within the coils, it being evident that a larger heat conducting area of contact with the coils is provided by the clips than would be provided if the clips were omitted and conduction occurred only through the relatively small areas existing at the junction of the coils with the plates. The same increased conducting area is secured by the curved sides of the hollow bodies 16. In lieu of the hollow bodies 16, solid bodies may be employed.

What is claimed as new and useful is:

1. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged in staggered relation to provide a sinuous path for air, and snap clamping means for securing said plates to said coils.

2. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged in staggered relation to provide a sinuous path for air, said plates defining hollow bodies filling the spaces between adjacent parts of the respective coils.

3. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged in staggered relation to provide a sinuous path for air, said plates defining hollow bodies filling the spaces between adjacent parts of the respective

coils, and adapted to be snapped into position in contact with the respective coils.

4. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged to define horizontal passageways for air, there being openings provided for the passage of air from one of said passageways to another to provide a sinuous course for air, said plates defining hollow bodies filling the spaces between adjacent parts of the respective coils.

5. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged to define horizontal passageways for air, there being openings provided for the passage of air from one of said passageways to another to provide a sinuous course for air, said plates defining hollow bodies filling the spaces between adjacent parts of the respective coils, and adapted to be snapped into position in contact with the respective coils.

6. In freezing apparatus, a cabinet, a plurality of vertically spaced, horizontal coils in said cabinet and plates adjacent said coils and arranged in staggered relation to provide a sinuous path for air, and snap clamping means for securing said plates to said coils, said plates being at the tops and bottoms of said coils.

EDWARD J. MURPHY.

35

40

45

50

55

60

65

70

75

110

115

120

125

130

135

140

145

150