June 14, 1932. H. P. BRAEUTIGAM 1,862,816

REFRIGERATING APPARATUS

Filed May 30, 1928

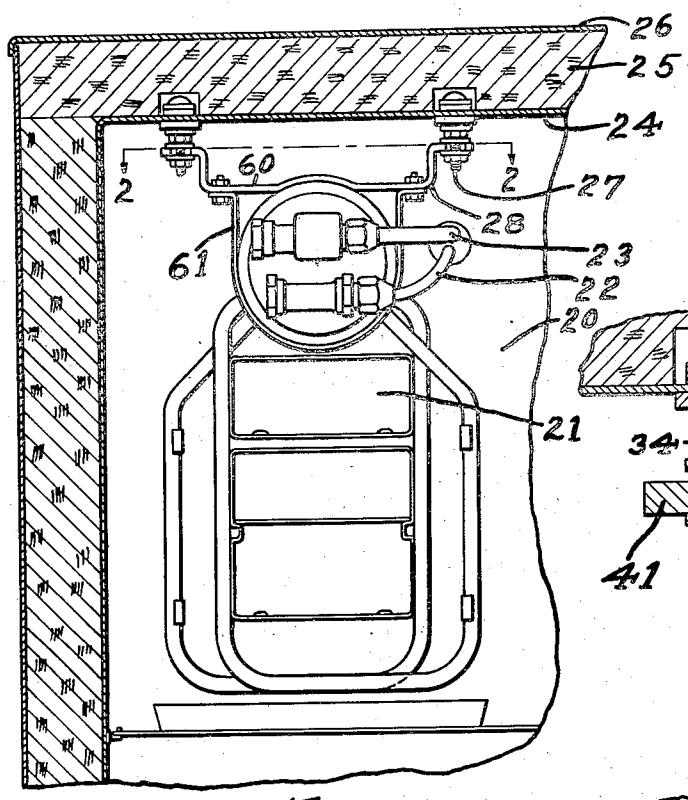


Fig. 1

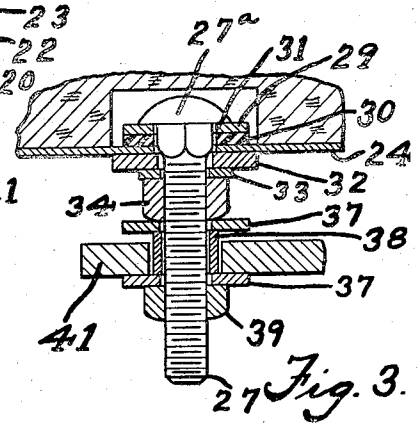


Fig. 3.

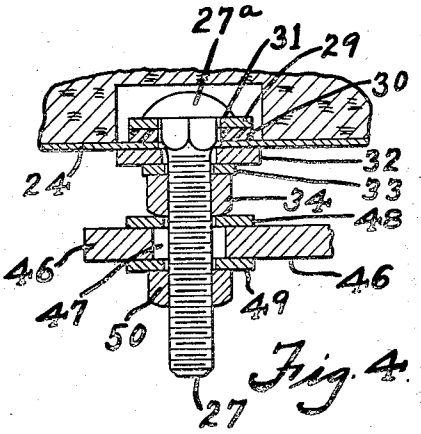


Fig. 4.

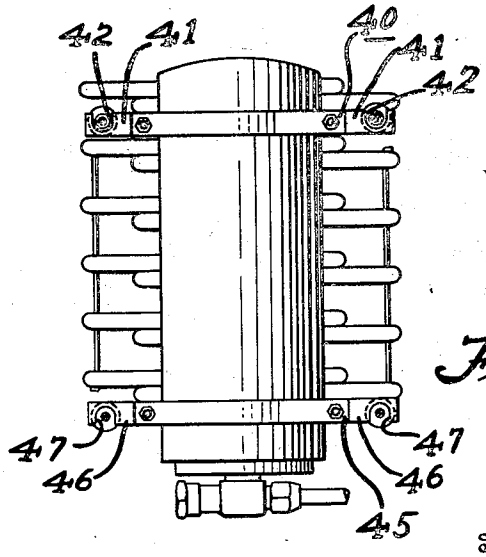


Fig. 2.

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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

Application filed May 30, 1928. Serial No. 281,604.

This invention relates to refrigerating apparatus and more particularly to a refrigerator of the mechanical household type in which a cooling unit is mounted in a compartment of a cabinet.

An object of this invention is to provide a cabinet and a cooling unit each provided with means for facilitating the installation of the cooling unit in the cabinet.

Another object of this invention is to provide means permitting the installation of a cooling unit in a refrigerator cabinet without danger of damaging the cabinet or the cooling unit.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing, wherein a preferred form of the present invention is clearly shown.

In the drawing:

Fig. 1 is a vertical cross-section of a portion of a refrigerator embodying features of my invention;

Fig. 2 is a horizontal cross-section taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged detailed view in cross-section of the means for installing the cooling unit in the cabinet provided at the rear of the cooling unit; and

Fig. 4 is a view similar to Fig. 3 showing the means used at the front of the cooling unit.

A refrigerating apparatus embodying features of my invention may comprise a cabinet generally designated as 20 in which a cooling unit generally designated as 21 is installed. Any type of refrigerant may be used in this cooling unit and as an embodiment thereof the cooling unit may receive liquid SO_2 through the pipe 22 and the evaporated SO_2 may leave the cooling unit through the pipe 23. These pipes 22 and 23 may lead to any suitable refrigerant liquefying means, such as of the compressor-condenser type, which may be installed either in the cabinet 20 or in any other convenient place.

The cabinet 20 may be provided with a lining generally designated as 24 around which any suitable installation 25 is adapted to be placed. An outer casing 26 may be provided for the cabinet. Suitable means for hanging the cooling unit in the cabinet may be provided. Such means may comprise a plurality of inwardly directed projections 27 and the cooling unit may be provided with suitable hanging means 28 adapted to cooperate with the inwardly directed projections 27 for installing the cooling unit in the cabinet.

The inwardly directed projections 27 may comprise bolts having heads 27*a* which bolts may be passed through the lining 24. Suitable metallic strips 29 may be placed on the outside of the lining 24 and may be spaced therefrom by gaskets 30 made of rubber or the like. The strips 29 may be provided with square or any other non-circular hole 31 through which the bolts 27 may be passed. The bolts may be then secured in place by the use of a washer 32 of relatively large size and a small washer 33 which may be locked in place by a nut 34. The inwardly directed projections thus far described may be identical both at the front and the rear of the cooling unit. The rear projections may be provided with two plates 37 spaced by a sleeve 38 and these plates may be secured in place by a nut 39 before installation of the cooling unit.

The cooling unit at the rear may be provided with a hanger 40 which may be provided with horizontal flat ends 41 and these flat ends may have notches 42 cut therein. These notches 42 are adapted to fit around the sleeve 38 of the rear inwardly directed projections 27. The front hanger 45 may have horizontal flat ends 46 which are provided with notches 47. These notches 47 are directed in a different direction from notches 42.

After placing the notches 42 around the sleeve 38, suitable washers 48 may be placed on the ends 46 and the front hanger 45 together with the front end of the cooling unit may be slid upwardly with the notches 47 around inwardly directed projections 27. Suitable washers 49 may then be clamped underneath the ends 46 of the hanger by nuts 50 thus providing locking means for the front hanger 45. The hangers in general may comprise an upper U-shaped member 60 and a lower U-shaped member 61 continuing into Z brackets 28. These two members may be clamped around suitable portions of the cooling unit 21.

In installing the cooling unit in the cabinet the rear hanger 40 is first tilted upwardly in the rear, and the rear hanger 40 is placed by sliding the notches 42 around the sleeves 38. The connection in the rear is thus a hooking or sliding connection. By the term "sliding connection" or "hooking connection" I mean a connection which may be made without the necessity of manipulating some locking means such as a nut or the like. The front end of the cooling unit is then lifted upwardly with the notches 47 around the front projections 27 and then the front hanger 45 is locked in place by means of the washer 49 and the nuts 50. The front connection is thus a locking connection. By the term "locking connection" I mean a connection in which a locking member, such as a nut or the like, is manipulated or disturbed after or while the cooling unit is placed in the cabinet. By this arrangement the practice heretofore prevailing of reaching around the cooling unit in the cabinet with tools, such as wrenches, in order to turn the rear clamping nuts, while trying to support the unit in place, is eliminated. This prior practice often resulted in chipping the enamel with which the lining 24 is usually provided. The rear of the cooling unit was also a very inconvenient place to manipuluate the necessary tools and by my improved means this danger and inconvenience is eliminated.

As heretofore stated, the notches 47 and 42 are directed in different directions from one another. By arranging the notches in this manner the ends of the rear hanger may be slid or hooked in retaining position with their respective projections after which the ends of the front hanger are lifted vertically into engagement with their respective projections. By arranging the notches 47 and 42 in opposite directions, the notches 47 and the front projections 27 themselves prevent movement of the rear hanging means in an opposite direction when the front hanging members are in engagement with their respective projections. Thus it is apparent that the cooling unit is prevented from moving in any horizontal direction after being assembled and secured in the cabinet.

While the form of embodiment of the invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A refrigerator comprising a cabinet and a cooling unit in said cabinet, said cabinet being provided with a plurality of inwardly directed members, front and rear hangers on said cooling unit each provided with two flat horizontal ends, notches at the ends of the rear one of said hangers having sliding engagement with two of said members, the ends of the front one of said hangers being provided with notches directed in a different direction from the first named notches, two of said inwardly directed members passing through said last named notches and means for locking said ends on said last named members.

2. A refrigerator comprising a cabinet and a cooling unit in said cabinet, said cabinet being provided with a plurality of inwardly directed externally threaded members, front and rear hangers on said cooling unit each provided with two flat horizontal ends, notches at the ends of the rear one of said hangers, spaced plates secured by internally threaded members on two of said externally threaded members and in which said notches have sliding engagement, the ends of the front one of said hangers being provided with notches directed differently from said first named notches, two of said externally threaded members passing through said last named notches and internally threaded members locking said front hanger at said last named notches.

3. A refrigerator comprising a cabinet and a cooling unit in said cabinet, said cabinet being provided with a plurality of inwardly directed members, front and rear hangers on said cooling unit each provided with two flat horizontal ends, notches at the ends of the rear one of said hangers having a sliding engagement with two of said members, means on the ends of the front one of said hangers for engaging two of said members, and means for locking said ends of the front one of said hangers on said last named members.

4. A refrigerator comprising a cabinet and a cooling unit in said cabinet, said cabinet being provided with a plurality of inwardly directed members, front and rear hangers on said cooling unit each provided with two flat horizontal ends, notches at the ends of the rear one of said hangers having a sliding engagement with two of said members, the ends of the front one of said hangers being provided with openings, two of said inwardly directed members passing through said openings and means for locking said ends on said last named members.

5. A refrigerator comprising a cabinet and

a cooling unit in said cabinet, said cabinet being provided with front and rear inwardly directed members, front and rear hangers on said cooling unit provided with flat horizontal ends, notches at the ends of the rear one of said hangers having a sliding engagement with said rear members, the ends of the front one of said hangers engaging said flat members and means for locking said ends of the front one of said hangers on said last named members.

In testimony whereof I hereto affix my signature.

HENRY P. BRAEUTIGAM.