Oct. 28, 1930. F. G. SLAGEL 1,779,564

SUPPORTER FOR COOLING UNITS OF REFRIGERATORS

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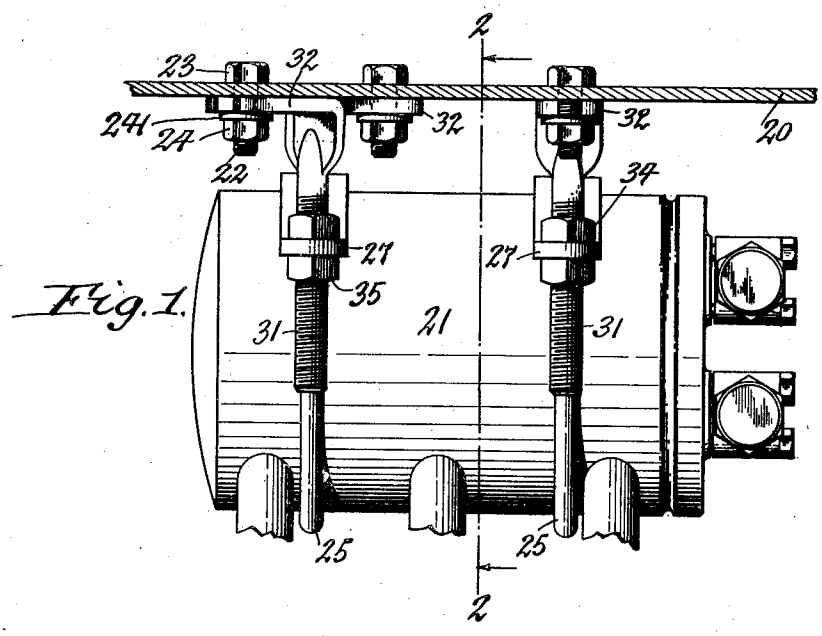


Fig. 1.

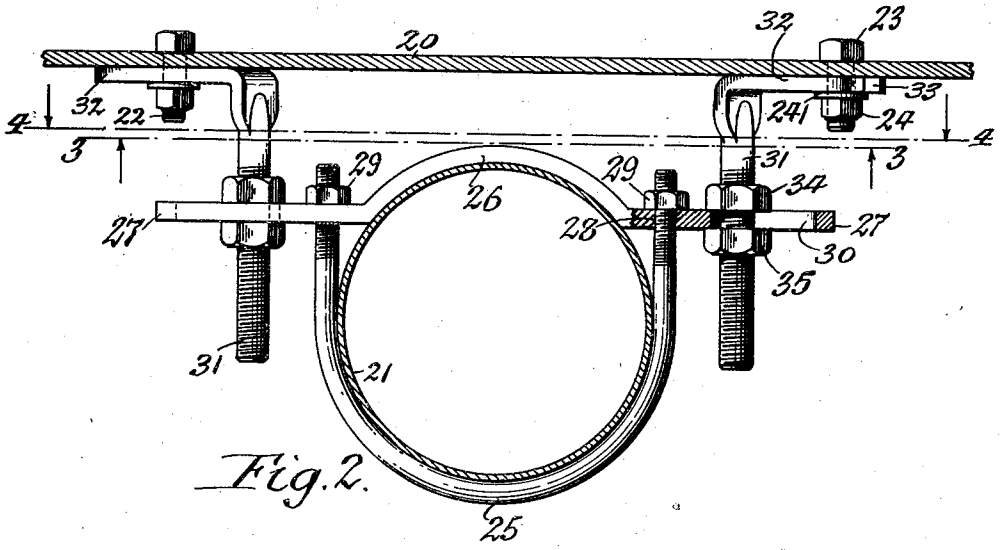


Fig. 2.

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Fig. 4.

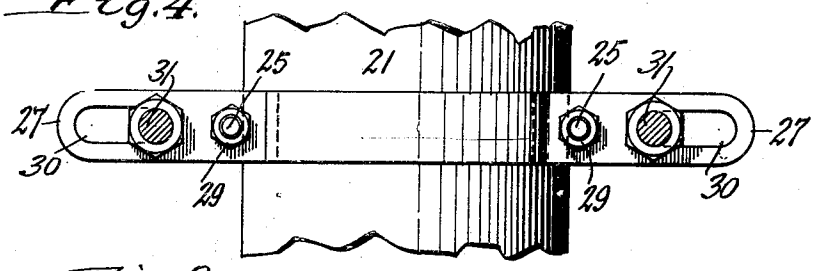
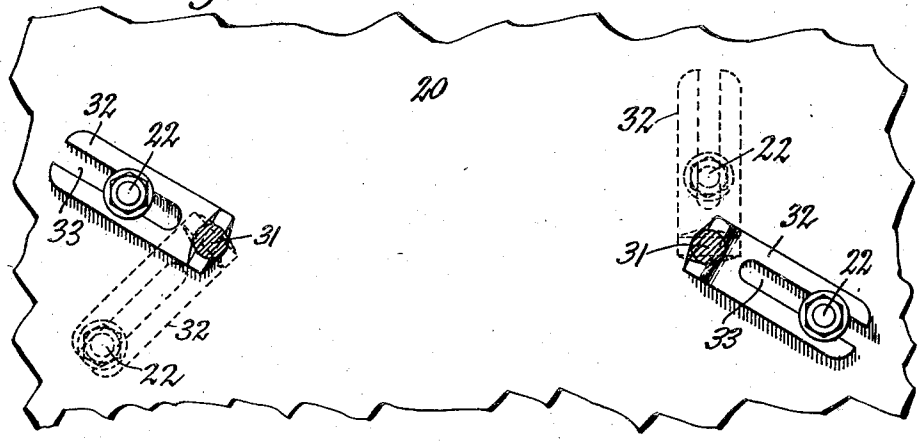


Fig. 3.



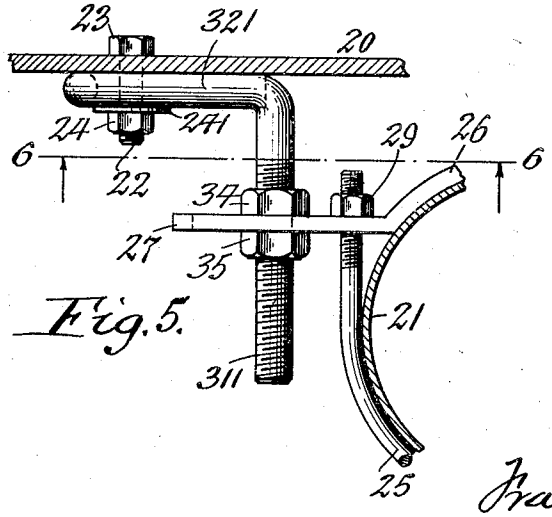


Fig. 5.

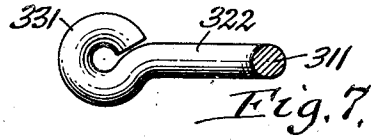


Fig. 7.

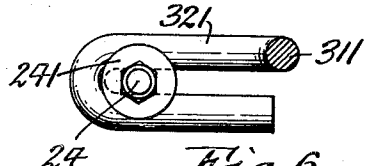


Fig. 6.

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Patented Oct. 28, 1930 1,779,564

UNITED STATES PATENT OFFICE

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SUPPORTER FOR COOLING UNITS OF REFRIGERATORS

Application filed November 9, 1928. Serial No. 318,251.

This invention relates to a mounting for connecting a chamber or similar body with a support which is arranged above the chamber, and more particularly means for suspending the vaporizing chamber or tank of a domestic refrigerator from the ceiling of the compartment in which this tank or chamber is arranged.

In such installations the ceiling or overhead support is usually provided with bolts or similar fastenings and the vaporizing chamber is provided with a clamp or bracket which is attached thereto, and it has heretofore required extra care in arranging the fastening on the ceiling and the clamp or bracket on the vaporizing tank in order to permit of properly coupling the same so that the tank is in the correct position within the cooling chamber with reference to other parts of the refrigerator.

It is the object of this invention to provide means for mounting the vaporizing tank and associated parts of a refrigerator within the cooling chamber without necessitating accurate placement of the fastenings on the ceiling of the cooling chamber and the bracket or clamp on the vaporizing chamber, and still permit of mounting the vaporizing chamber on the ceiling with ease and facility regardless of any variation in the relative position of these fastenings and the tank brackets or clamps.

In the accompanying drawings:—

Figure 1 is a side elevation partly in section, showing a satisfactory embodiment of my improvements for mounting a refrigerator vaporizing chamber or tank on the ceiling of a cooling chamber.

Figure 2 is a vertical cross section of the same taken on line 2—2 Fig. 1.

Figure 3 is a horizontal section taken on line 3, 3 Fig. 2 looking upwardly.

Figure 4 is a horizontal section taken on line 4—4 looking downwardly, in Fig. 2.

Figure 5 is a fragmentary vertical transverse section similar to Fig. 2, but showing a slightly modified form of the hanger which connects a bracket or clamp of the vaporizing tank with the fastening on the ceiling of the cooling chamber.

Figure 6 is a horizontal section taken on the correspondingly numbered line in Fig. 5.

Figure 7 is a view similar to Fig. 6, but showing a variation in the form of the arm of the hanger.

In the following description similar characters of reference indicate like parts in the several views of the drawings:—

Although this invention is capable of use in various installations the same is shown in the present case in connection with the ceiling or top 20 of a domestic refrigerator cooling chamber or loft from which a vaporizing chamber or tank 21 is adapted to be suspended, which chamber in the present form is a cylinder having its axis arranged horizontally. The particular form of this invention as shown in Figs. 1 to 4 is constructed as follows:—

Mounted upon the ceiling 20 of the cooling compartment are two pairs of fastenings preferably consisting of bolts 22, these pairs being arranged side by side lengthwise of the axis of the tank 21 and the members of each pair being arranged on laterally opposite sides of this axis, and each bolt passing with its shank through an opening in the ceiling and bearing with its head 23 against the upper side of the ceiling, while its nut 24 is arranged on the underside of the same.

Adjacent to its opposite ends the vaporizing tank or chamber is provided with brackets or clamps which are detachably connected therewith and form part of the means whereby the tank is removably connected with the fastening bolts 22. Each of these clamps, in the preferred form shown in the drawings, comprises a U-shaped clip 25 adapted to engage with the underside of the tank and embrace the same so that its legs project upwardly on opposite sides thereof, and a cross bar having an upwardly curved central part 26 and depressed straight ends projecting laterally from opposite ends of the central part 26, and provided with openings 28 adjacent to the curved part 26, which openings receive the threaded upper extremities of the legs of the clip, and the clip and cross bar being securely connected with each other by means of screw nuts 29 applied

to the threaded ends of the clip legs, and bearing against the upper side of the cross bar, as shown in Figs. 1, 2 and 4.

Each of the straight end portions 27 of the clamp cross bar is provided with a horizontal longitudinal slot 30 for a purpose which will presently appear.

Each end of the cross bar of the brackets or clamps is adjustably connected with one of the fastening bolts 22 by means of a hanger or adapter, which in the preferred construction consists of a vertical shank 31 which is arranged within the slot 30 of one of the cross bar extremities, and an upper horizontal arm 32 which is provided with a horizontal longitudinal slot 33 which receives one of the fastening bolts 22 and engages its upper side with the underside of the ceiling 20 and its under side with a washer 241 interposed between the same and the clamping nut 24.

That part of the shank 31 which is arranged within the slot 30 is externally screw threaded and the same can be moved horizontally in this slot toward and from the axis of the tank, also vertically in this slot, and also turned about its own axis, and the supporting arm 32 is also capable of turning or sliding horizontally on the fastening bolt 22 and turning about the axis of the same.

Due to this capacity of each of the hangers or adapters it is not necessary to accurately place the fastening bolts 22 on the ceiling of the cooling chamber of the refrigerator, nor is it necessary to accurately place the clamps or brackets on the tank when getting the parts ready for complete assemblage, inasmuch as the hanger or adapter can be readily shifted universally in the manner described relative to the brackets or clamps of the tank, and the fastening bolts 22 without in any way straining or displacing any of the parts.

After the hangers have been thus adjusted into the desired position relative to the brackets or clamps of the tank and the fastenings on the ceiling of the cooling chamber, these parts are held in position by tightening the screw nuts 24 of the bolts and also tightening upper and lower screw nuts 34 and 35 which are mounted on each of the screw threaded shanks of the respective hanger or adapter, and engage with the upper and lower sides of the respective cross bar terminals.

It is possible, by means of this invention, to provide the cooling chamber with fastening bolts 22 in one department of the factory and apply the brackets or clamps to the vaporizing tank in another department of the factory, without exercising extraordinary care in locating these fastenings and the clamps on their respective elements, and still permit of subsequently mounting the tank in the cooling chamber in its proper position with ease and facility.

It also permits of readily replacing one vaporizing tank for another in a cooling chamber which has been previously equipped with fastenings similar to the bolt 22 and permit of such interchange of tanks even though the brackets on the same may be located in different positions thereon.

In the absence of means for thus adapting the bracket or fastening on the tank to the bolts or fastening on the cooling chamber, considerable care would have to be exercised in exactly locating the fastening bolts 22 on the cooling chamber and also locating the fastening on the tank, so that assembling of these parts within the cooling chamber would be possible.

Inasmuch, therefore, as unusual care in the mounting of the tank within the cooling chamber is not necessary in the present case, a substantial saving in cost of manufacture is effected in addition to permitting the assemblage of these parts to be effected more conveniently and expeditiously.

In the construction shown in Figs. 1 to 4 the hanger or adapter is made so that the shank 31 is round and the adjusting arm 32 is flat, which form may be either cast or forged. If desired this hanger or adapter may be made from a piece of round iron, as shown in Figs. 5 and 6, which is bent so as to form a vertical shank 311 which is adapted to pass through the slot 30 at one end of the cross clamping bar, and a horizontal U-shaped arm 321 which is adapted to receive the fastening bolt 22 on the ceiling of the cooling chamber 20.

Instead of making the arm of U form, as shown in Fig. 6, this arm may be made in the form of a single rod, as shown at 322 in Fig. 7, and provided at its outer extremity with an eye 331 which is adapted to receive the fastening bolt 22. In this last-mentioned construction the arm of the adapter or hanger is not capable of sliding horizontally on the bolt 22 but only capable of swinging about the axis thereof, and in this construction the horizontal adjustment of the adapter or hanger relatively to the tank is obtained by moving the shank of the hanger in the horizontal slot of the respective cross bar.

As a whole, this mounting is made up of simple and inexpensive parts which can be easily manufactured and assembled without requiring any skilled help and the same can also be readily installed so as to reliably support the tank within the cooling chamber and prevent the several parts from becoming displaced relatively to each other while in use.

In each of the several forms of my invention the vaporizer tank is capable of being suspended from the ceiling of the refrigerator loft or compartment regardless of any variations in the relative arrangement of the fastening bolts which have been attached

thereto preparatory to receiving the mounting whereby the tank is to be suspended from the ceiling.

For example, as shown in full lines in Figs. 1 and 3, the fastening bolts 22 are shown in one position on the ceiling for receiving the arms of a pair of hangers, and by dotted lines these bolts and arms are represented in another position, this changed relation being possible according to my invention without requiring any alteration in construction, but merely an adjustment of the several parts of the mounting for adapting the same to any particular location of the fastening bolts, thereby facilitating the installation of this cooling unit in a refrigerator and avoiding the necessity of accuracy in the manufacture of any parts of this mounting.

I claim as my invention:—

1. A mounting for connecting a chamber with a support above said chamber, comprising a fastening arranged on said support, a clamp secured to said chamber and provided with a member having a horizontal slot, and a hanger having a vertical shank secured in said slot so as to be capable of horizontal and rotary adjustment therein, and a horizontal arm arranged on said shank and secured to said fastening.

2. A mounting for connecting a chamber with a support above the chamber, comprising spaced bolts arranged on said support, a clamp connected with the chamber and consisting of a U-shaped clip engaging with the underside of said chamber and provided at its ends with screw nuts, and a cross bar engaging with the upper side of said chamber and secured to the ends of said clip by said screw nuts, and hangers each having a vertical shank connected with one end of said bar and a horizontal arm connected with one of said bolts, said cross bar being provided at its opposite ends with longitudinal slots in each of which the shank of one of the hangers is secured so as to be capable of rotary and horizontal adjustment, and each of said arms having a longitudinal slot which receives one of said bolts and said arm being capable of horizontal adjustment thereon.

In testimony whereof I hereby affix my signature.

FRANKLIN G. SLAGEL.