April 3. 1934. L. F. FEDDERS 1,953,473

REFRIGERATION DEVICE

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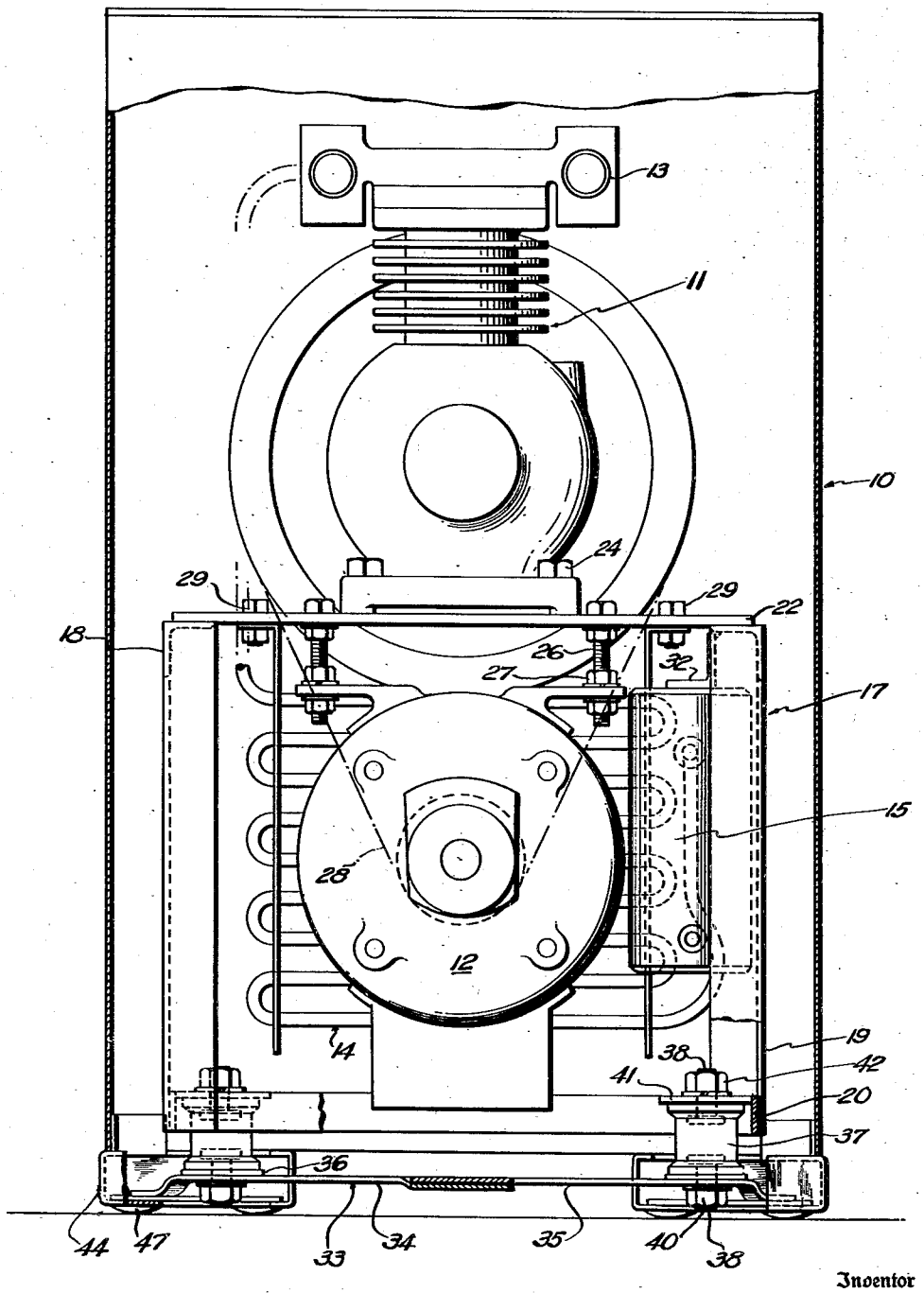

Fig. 1.

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Fig. 2.

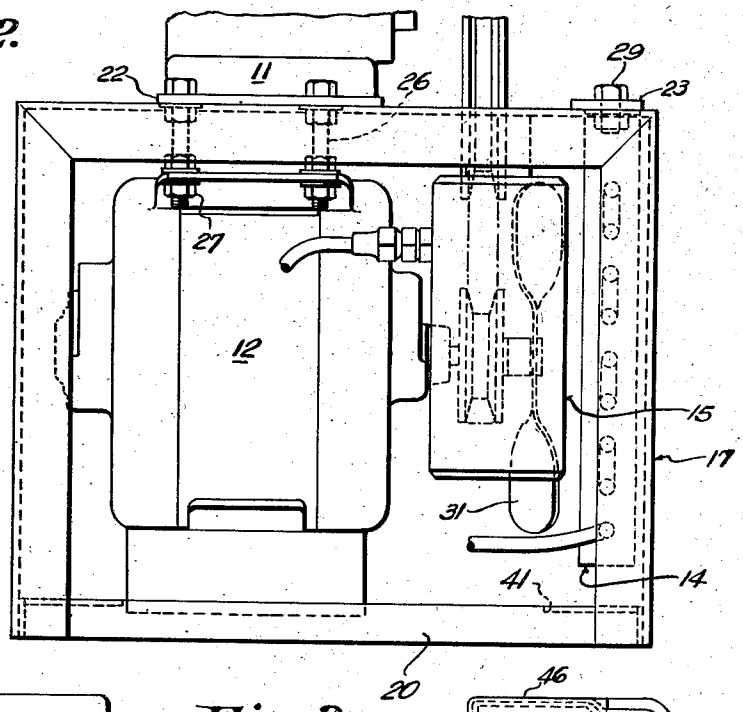
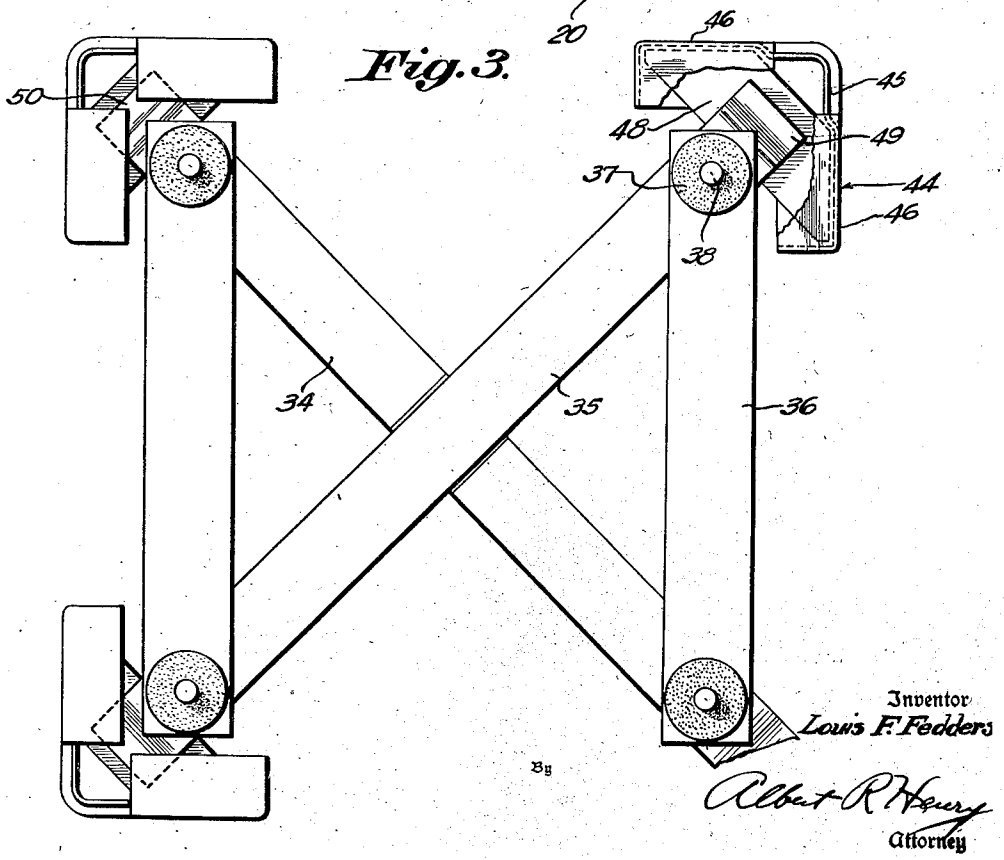


Fig. 3.



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UNITED STATES PATENT OFFICE

1,953,473

REFRIGERATION DEVICE

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5 Claims. (Cl. 248—16)

This invention relates to improvements in domestic refrigerating mechanism.

In the usual refrigeration system wherein a motor operated compressor is depended upon as a source of power, considerable difficulty has been experienced in preventing the transmittal of vibrations therefrom to the walls of the enclosing cabinet structure. Numerous devices have been utilized to overcome this objection, but since the motor-compressor unit has usually depended on the cabinet for support, it has been difficult to prevent panel vibration in the cabinet. In the present invention it is proposed to mount the cabinet and the motor-compressor unit on a common supporting structure, which is mounted directly on the floor and therefore is capable of absorbing shocks and vibrations. Further, it is proposed to mount the motor-compressor unit on resilient supports thereon and in such manner as to discourage the transmittal of vibration to the floor or to the cabinet structure through the common supporting structure.

Other features of the invention are more specifically set forth in the accompanying specification and drawings, wherein:

Fig. 1 is a vertical section through a cabinet showing the motor-compressor unit and the mounting device therefor in elevation. Portions of the lower frame of the mounting device are broken away to disclose the resilient connection to the common support.

Fig. 2 is a side elevation of the mounting, the cabinet and connections thereto being omitted.

Fig. 3 is a top view of the supporting structure.

In accordance with the present invention, a cabinet 10 is provided to house a refrigerant compressor 11 and its motor 12. The compressor 11 receives refrigerant through an input fitting 13, compresses the refrigerant, and delivers it to a condenser 14, whence it is delivered to a receiver 15 which supplies the evaporator (not shown), through suitable control apparatus. As well understood in the art, the compressor is operated intermittently in accordance with the temperature of the space which is cooled by the evaporator, and accordingly loads and reactions of varying magnitude are imposed on the motor and compressor, resulting in the setting up of vibrations of varying frequencies in the supporting structure for the motor-compressor unit.

The mounting device 17 generally comprises a rectilinear structure fabricated of a pair of opposed angle iron frames 18 and 19, connected at their bottoms by a square frame 20 and at their tops by plates 22 and 23. The compressor 11 is secured to the top face of the plate 22 by screws 24, while the motor 12 is adjustably supported within the mounting device 17 by means of bolts 26 secured to the plate 22. Nuts 27 position the motor on the bolts 26, and they may be adjusted to move the motor toward or away from the compressor so that the drive belt 28 may be properly tensioned. The condenser 14 and the receiver are also mounted on the device 17, the former being secured to the plate 23 by bolts 29 and positioned to receive the air stream from the fan 31 of the motor, and the latter being secured to an angle 32, which is in turn welded to the frame 19.

The lower end of the mounting device is supported by resilient connections on a supporting structure 33, which comprises a frame formed of connected cross members 34 and 35 and reinforcing side members 36. The resilient connecting devices 37 are preferably rubber biscuits having spaced coaxial bolts 38 cast therein, the lower bolts 38 extending through and being secured to the cross members 35 and side members 36 at their points of intersection by nuts 40. The upper bolts 38 extend through corner pieces or lugs 41 welded to the corners of the lower frame 20, and they are secured thereto by nuts 42.

The supporting structure (Fig. 3) is directly mounted on and includes the feet 44 of the cabinet, which are suitable sheet metal members formed with angular corners 45, flanged bases 46 carrying anti-friction buttons 47 for contact with the floor. Gussets 48 are secured to the opposite legs of the bases 46, and the adjacent ends of the cross members 34 and 35 are formed with bent extremities 49 and 50 which are welded thereto. Thus the entire weight of the mounting device and the members of the refrigeration device mounted thereon are directly supported on the feet 44.

The cabinet 10 is also directly supported on the feet 44 and it is secured thereto by screws, which may be removed to permit the cabinet to be lifted from the supporting structure to permit access to the motor-compressor unit for repair, or to permit the substitution of a new unit. It will be understood that the cabinet 10 may form part of the usual domestic refrigerator or beverage cooler, or it may, if desired, form a simple housing for the motor-compressor unit, as shown.

In operation it has been found that vibrations occurring in the mounting device are absorbed or

dampened to a considerable extent by the rubber biscuits 37.

Due to the resiliency of the biscuits 37, however, the mounting device is permitted a certain controlled movement, generally resulting in the transmittal of compression or tension loads through the biscuits and their supporting structure 34 to the feed 44 of the cabinet, which, being supported on the floor, receive such loads without transmitting any reaction to the cabinet structure.

It is intended that the described embodiment of the invention may be varied in numerous manners without departing from the principles set forth, in accordance with the following claims.

I claim:

1. In a refrigerator including a motor-compressor unit and a cabinet for housing the same, a mounting device to which said unit is secured, a supporting device adapted to rest on the floor, means for removably securing the cabinet to the supporting device, and resilient means connecting the mounting device to the supporting device.

2. In a refrigerator including a motor-compressor unit and a cabinet for housing the same, a mounting device comprising a rectilinear structure, means for mounting the motor within the structure, means for mounting the compressor on the top of said structure, a supporting device adapted to rest on the floor, means for securing the cabinet to the supporting device, and resilient means connecting the lower extremities of the rectilinear structure to the supporting device.

3. In a refrigerator including a motor-compressor unit and a cabinet for housing the same, a mounting device comprising a rectilinear structure, means for mounting the unit on said structure, a supporting device adapted to rest on the floor, means for securing the cabinet to the supporting device, and resilient means connecting the lower corners of the rectilinear structure to the supporting device.

4. In a refrigerator including a motor-compressor unit and a cabinet for housing the same, a mounting device comprising a rectilinear structure, means for mounting the unit on said structure, a supporting device comprising spaced foot members and a frame connecting the same, said foot members adapted to rest on the floor, means for securing the cabinet to the supporting device, and resilient means connecting the lower corners of the rectilinear structure to the frame of the supporting device.

5. In a refrigerator including a motor-compressor unit and a cabinet for housing the same, a mounting device comprising a rectilinear structure, means for mounting the motor within the structure, means for mounting the compressor on the top of said structure, lugs formed on the lower corners of the rectilinear structure, a supporting device comprising spaced foot members and a frame connecting the same, said foot members adapted to rest on the floor, means for removably securing the cabinet to the supporting device, and resilient means connecting the lugs of the rectilinear structure to the supporting device.

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