April 4, 1939. D. F. NEWMAN 2,153,387

RESILIENT MOUNTING

Filed Dec. 18, 1936

Fig. 1.

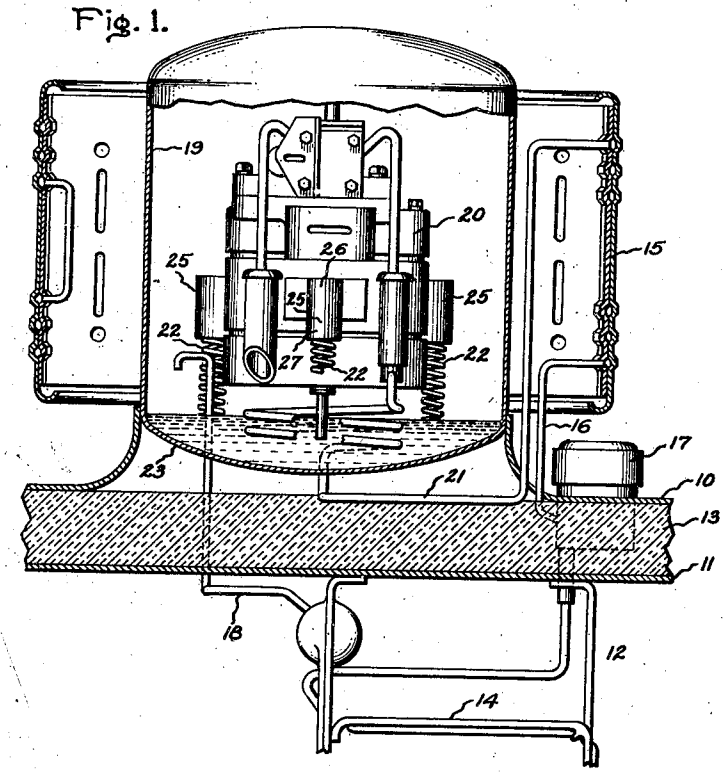


Fig. 2.

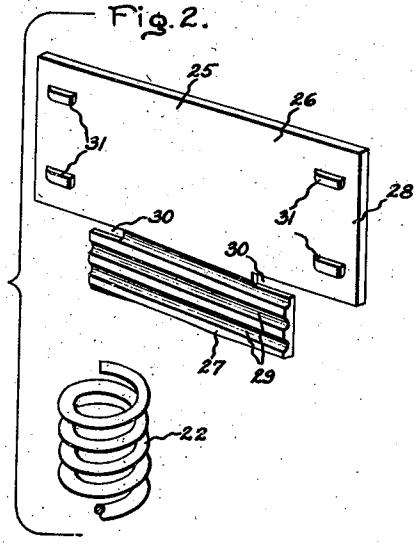


Fig. 3.

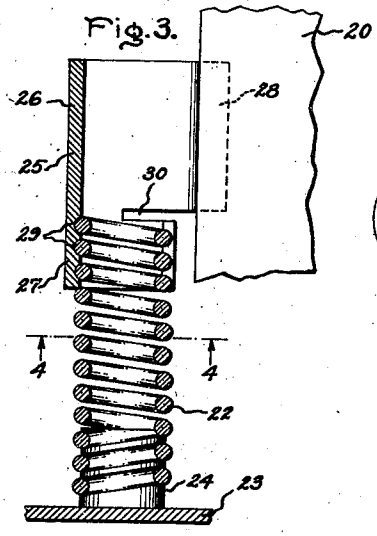
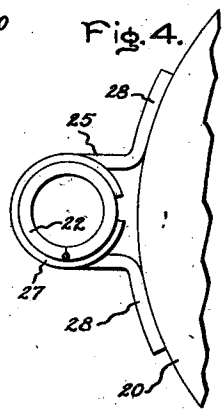


Fig. 4.



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RESILIENT MOUNTING

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Application December 18, 1936, Serial No. 116,586

1 Claim. (Cl. 248—20)

My invention relates to resilient mountings. More particularly, my invention relates to resilient mountings for motor-compressor units of refrigerating machines.

In many refrigerating machines and, particularly, in those designed for domestic use, a cabinet is provided having a food storage compartment therein. The machine also includes a motor-compressor unit for compressing gaseous refrigerant. The compressed refrigerant is liquefied by a suitable condenser and is supplied to an expansion type cooling unit located in the food storage compartment of the cabinet. In order to provide a self-contained refrigerating machine, it is desirable that the motor-compressor unit be enclosed in a casing and that this casing together with the condenser be mounted on the cabinet. The motor-compressor unit is resiliently mounted on a series of helical springs secured to the base of the enclosing casing in order to minimize the transmission of vibration from the motor-compressor unit to the cabinet.

It is an object of my invention to provide an improved resilient mounting for the motor-compressor unit of a refrigerating machine of the type described which has a minimum number of parts and which is inexpensive to manufacture.

Further objects and advantages of my invention will become apparent as the following description proceeds, and the features of novelty which characterize my invention will be pointed out with particularity in the claim annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the accompanying drawing in which Fig. 1 is a front elevation of a portion of a refrigerating machine having a motor-compressor unit supported upon a resilient mounting embodying my invention; Fig. 2 is an exploded view of the resilient mounting shown in Fig. 1, showing the same in an initial stage of construction; Fig. 3 is a vertical sectional view of the resilient mounting shown in Fig. 1; and Fig. 4 is a bottom view along the line 4—4 of the resilient mounting shown in Fig. 3.

Referring to the drawing, in Fig. 1 I have shown a portion of a refrigerating machine mounted on a removable top wall of a cabinet, which is shown having a metal outer shell 10 and a sheet metal inner liner 11 of a food storage compartment 12 in the cabinet. The outer shell 10 and the inner liner 11 are separated by a layer of heat insulating material 13. The food storage compartment 12 formed in the cabinet is cooled by an evaporator 14 suspended beneath the top wall and supplied with liquid refrigerant from an air-cooled condenser 15 through a conduit 16 and a flow controlling float valve 17. The liquid refrigerant supplied to the evaporator 14 is vaporized by the absorption of heat from articles contained in the food storage compartment 12 and the vaporized refrigerant is withdrawn therefrom through a suction conduit 18 communicating with the interior of an hermetically-sealed casing 19 so that this casing is subjected to the low pressure maintained in the evaporator. The gaseous refrigerant in the casing 19 is compressed by motor-compressor unit 20 and discharged through a conduit 21 to the air-cooled condenser 15.

The motor-compressor unit 20 is resiliently mounted on a series of spaced helical springs 22 secured to the bottom wall or base 23 of the casing 19 to allow the motor-compressor unit to move on the springs with respect to the casing 19, thus preventing the transmission of vibration from the motor-compressor unit to the cabinet. One end of each of the springs 22 is securely fastened to a threaded boss 24 welded or otherwise rigidly attached to the wall 23 while the other end of the spring is securely fastened to a bracket 25 rigidly attached to the motor-compressor unit 20, as best shown in Figs. 3 and 4. The bracket 25 comprises a unitary structure formed of sheet metal and includes a body 26 and an integral stem 27. The body 26 is substantially U-shaped, having legs 28 flared outwardly in opposite directions and rigidly attached to the motor-compressor unit 20 preferably by the fusion of metal such, for example, as spot welding or the like. The stem 27 is shaped substantially in the form of a split cylinder and is provided with a number of indentations 29 in its inner surface constituting threads clamping and securely fastening the coils of the spring 22 thereto. On each side of the bracket 25 are provided slots 30 disposed between the outwardly flared legs 28 of the body 26 and the curved ends of the stem 27 to allow the upper end of the spring 22 to be resiliently gripped and securely fastened to the threaded stem 27.

In making the resilient mounting described above, a sheet metal bracket blank 25 comprising a body portion 26 and a stem portion 27, having a number of angularly disposed indentations 29 therein adapted to register in the completed bracket to provide threads suitable to receive the coils of the spring 22, is formed as shown in Fig. 2. The body and stem portions of the blank are then bent into a substantially

U-shaped bracket, the legs 28 of the body 26 being flared outwardly in opposite directions and the ends of the stem portion 27 extending substantially parallel to each other. Also, a plurality of bosses 31 are provided the legs 28 of the body portion 26 in order to facilitate spot welding of these legs to the motor-compressor unit 20. Three brackets 25 so formed are positioned about the motor-compressor unit in equally spaced relation to correspond to the spacing of the springs 22 about the base of the casing 19 and the legs 28 thereof are welded to the motor compressor unit. The lower end of each of a plurality of springs 22 is securely fastened to one of the threaded bosses 24 spaced about the base 23 of the casing 19. The motor-compressor unit 20 having the brackets 25 attached thereto is then placed into the casing 19 in superposed relationship with respect to the ends of the upstanding springs 22. The upper end of each of the springs 22 is placed between the substantially parallel extending ends of the stem portion 27 of one of the brackets 25 with the coils of the spring in registry with the indentations 29 formed in the inner surface of the stem portion 27. The ends of each of the stem portions 27 are then bent towards each other, about the spring 22 therebetween, into substantially the shape of a split cylinder bringing the indentation 29 into registry and threaded engagement with the coils of the spring 22. This method of making the resilient mounting is described and claimed in my copending application, Serial No. 147,947, filed June 12, 1937, which is a division of the present application.

The resilient mounting described above lends itself particularly well to quantity production due to the small number of parts from which the resilient mounting is constructed and the simple manner in which these parts are constructed.

While I have shown a particular embodiment of my invention in connection with a motor-compressor unit of a refrigerating machine designed for domestic use, I do not desire my invention to be limited to the particular embodiment shown and described and I intend in the appended claim to cover all modifications within the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

A resilient mounting for a machine including a base, a helical spring secured to said base, means including a unitary sheet metal bracket for supporting said machine on said spring, said bracket including a body and a stem, said body having legs flared outwardly in opposite directions and secured to said machine, and means including indentations formed in said stem and engaging the coils of said spring for securing said stem thereto.

DELBERT F. NEWMAN.