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(54) **COMPRESSOR COMPRISING CONNECTION MEMBER**

VERDICHTER MIT EINEM VERBINDUNGSELEMENT

COMPRESSEUR COMPRENANT UN ÉLÉMENT DE RACCORDEMENT

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EP 2 912 312 B1

Description

[0001] The present invention relates to a compressor comprising a connection member.

[0002] In hermetic compressors used in cooling devices, a suction muffler made from plastic material is used for attenuating the noise originating from the circulating fluid. The refrigerant vapor at low pressure and temperature coming from the evaporator enters the suction muffler after being received into the compressor casing. In the meantime, the fluid that mixes with the high temperature gases in the casing reaches the cylinder in a heated state and causes the efficiency to decrease. In order to avoid this problem, resilient connection members are disposed between the casing inlet and the suction muffler and the refrigerant fluid is provided to be delivered to the suction muffler or the suction space in the cylinder head without mixing with the high temperature gases in the casing.

[0003] In embodiments wherein the refrigerant fluid is delivered directly to the cylinder or the suction muffler by the connection member, the vibrations of the components like the motor, crankshaft, piston rod inside the casing can be transmitted to the casing through the connection member. The connection members should be produced from leak-proof and resilient material in order to attenuate vibrational movements and to function in a high temperature environment like the inner volume of the casing for a long period of time. The resilient connection members are connected to a rigidly structured pipe in the compressor and gets loose in the course of time due to operating conditions inside the compressor, causing leak-proofing to deteriorate and decrease in compressor efficiency. In the state of the art Korean Patent No. KR100778485, a compressor comprising a connection member is described. In this embodiment, the connection member is attached to the suction muffler by means of a pipe and thus the number of parts required for the connection are decreased.

[0004] International Patent Application WO 2007/015223 A2 discloses a compressor in which an inlet pipe leading from the exterior into the casing of the compressor is connected to a muffler inlet pipe inside said casing. The connection is achieved in a leak-proof manner via a connection pipe that is formed by injection of soft, elastic material over the hard muffler inlet pipe.

[0005] The aim of the present invention is the realization of a compressor wherein the decrease in effectiveness caused by the connection member dislodging in the course of time is prevented.

[0006] The compressor realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises an opening through which the refrigerant fluid is received into the casing, a connection member that provides the fluid coming from the evaporator to be delivered into the suction muffler before mixing with the air inside the casing, and at least one fixing member that is placed to the part of the connection member mounted to the passage pipe and that prevents the connection member from detaching from the passage pipe.

[0007] The compressor of the present invention comprises at least one stopper that extends outwards from the connection member, that bears against the fixing member when the fixing member is mounted onto the connection member, that is prevented from moving by the fixing member and that prevents the connection member from moving by rotating. When mounted onto the connection member, the fixing member squeezes the stopper and limits its movement in any direction. Thus, during the operation of the compressor, the connection member is prevented from changing shape by rotating.

[0008] In an embodiment of the present invention, the stopper is side by side with the fixing member when the fixing member is mounted to the connection member. Thus, during the operation of the compressor, the connection member is prevented from changing shape by rotating.

[0009] In an embodiment of the present invention, the compressor comprises at least one channel arranged on the connection member and wherein the fixing member and the stopper are situated. The stopper and the fixing member are situated side by side in the channel and fill in the entire channel. The channel serves as a housing wherein the stopper and the fixing member are seated. The channel prevents the stopper and the fixing member from moving by rotating.

[0010] In an embodiment of the present invention, the compressor comprises the fixing member having at least two feet that extend outwards from the end point of the connection member when mounted to the connection member, and furthermore comprises the stopper that is squeezed between the two feet when the fixing member is mounted to the connection member. The fixing member is produced by shaping a flat wire. The stopper is at least partially shaped as a U. The feet extend outwards from the end point of the part of the stopper surrounding the connection member. When the fixing member is placed onto the connection member, the stopper is squeezed between the feet. Thus, the connection member is prevented from moving by rotating.

[0011] In an embodiment of the present invention, when the fixing is mounted to the connection member, the stopper completely fills in the gap remaining between the feet. The feet squeeze the stopper from both sides. Thus, no distance remains allowing the connection member situated on the stopper to move by rotating.

[0012] In an embodiment of the present invention, the compressor comprises the fixing member having a first node wrapped around the connection member when mounted to the connection member and a second node extending outwards from the first node, and furthermore comprises an extension situated around the passage pipe, preventing the second node from moving in the radial direction. The first node is almost in the same shape as the outer periphery of the passage pipe cross-section.

The second node is shaped as a hollow closed curve and can be used like a handle during assembly.

[0013] In an embodiment of the present invention, the compressor comprises at least two feet extending from one end of the first node, on the other end of which the second node is situated, and the stopper situated between the feet. The first stopper is situated at the upper side of the connection member and serves as a barrier limiting the rotational movement.

[0014] In an embodiment of the present invention, the stopper extends from the connection member when the fixing member is mounted to the connection member, and is situated in the volume between the first node and the second node. The second stopper is situated at the lower side of the connection member and serves as a barrier limiting the rotational movement. By means of the first stopper and the second stopper, the connection member bears against the fixing member both from the bottom and the top.

[0015] In an embodiment of the present invention, the compressor comprises the stopper situated in the same vertical direction as the extension. In this embodiment, the first stopper, the second stopper and the extension are positioned one below the other.

[0016] In an embodiment of the present invention, the stopper widens while moving outwards from the end point of the node when the fixing member is mounted to the connection member. The feet extend outwards on the connection member by widening. The distance between the feet increases towards the outside. The stoppers also widen in accordance with this shape of the feet and almost completely fill in between the feet.

[0017] In an embodiment of the present invention, the connection member is in bellows form.

[0018] In an embodiment of the present invention, the stopper is produced from non-resilient material.

[0019] In an embodiment of the present invention, the stopper is produced with the connection member as a single piece.

[0020] By means of the present invention, a compressor is realized, having the stopper squeezed by the fixing member and preventing the connection member from moving by rotating. Thus, leak-proofing is provided and the efficiency of the compressor is prevented from decreasing.

[0021] The compressor realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the partial view of a compressor.

Figure 2 - is the partial view of the suction muffler, the casing and the inlet pipe.

Figure 3 - is the partial view of the suction muffler, the connection member and the fixing member.

Figure 4 - is the exploded view of the suction muffler, the connection member and the fixing member.

Figure 5 - is the view of the suction muffler, the connection member and the fixing member related to an embodiment of the present invention.

Figure 6 - is the view of the suction muffler, the connection member and the fixing member related to another embodiment of the present invention.

Figure 7 - is the view of the suction muffler, the connection member and the fixing member related to another embodiment of the present invention.

[0022] The elements illustrated in the figures are numbered as follows:

1. Compressor
2. Casing
3. Inlet pipe
4. Opening
5. Suction muffler
6. Passage pipe
7. Connection member
8. Fixing member
9. Stopper
10. Channel
11. Foot
12. First node
13. Second node
14. Extension

[0023] The compressor (1) comprises a casing (2) supporting the members therein and wherein the oil lubricating the movable components is placed, an inlet pipe (3) that is disposed on the casing (2) and that provides the refrigerant coming from the evaporator to be received into the casing (2), an opening (4) arranged at the point where the inlet pipe (3) is mounted to the casing (2), providing the fluid flowing from the inlet pipe (3) to enter the casing (2), a suction muffler (5) disposed inside the casing (2), providing the noise originating from the refrigerant fluid to be attenuated, a passage pipe (6) disposed on the suction muffler (5), enabling the refrigerant fluid to be received into the suction muffler (5), a resilient connection member (7) providing the refrigerant fluid to be delivered directly into the suction muffler (5), with one end fixed to the passage pipe (6), the other end bearing against the inner surface of the casing (2) so as to surround the opening (4), and at least one fixing member (8) mounted to the part of the connection member (7) fitted over the passage pipe (6) and providing the connection member (7) to be fixed onto the passage pipe (6) (Figure 1, Figure 2).

[0024] The refrigerant fluid coming from the evaporator during the refrigeration cycle is received into the compressor (1) by passing through the inlet pipe (3) on the casing (2) and by means of the opening (4). Since one end of the connection member (7) applies pressure leak-proofingly on the inner surface of the casing (2) by surrounding the opening (4) all around, the refrigerant fluid is prevented from mixing with the air inside the casing (2) and is provided to be delivered directly into the suction muffler (5) by means of the connection member (7), the

other end of which is connected to the passage pipe (6).

[0025] The connection member (7) is squeezed over the passage pipe (6) by means of the fixing member (8). Consequently, the connection member (7) is prevented from dislodging from the passage pipe (6).

[0026] The compressor (1) of the present invention comprises at least one stopper (9) that is situated on the connection member (7), that bears against the fixing member (8) when the fixing member (8) is mounted onto the connection member (7), thereby preventing the connection member (7) from moving by rotating. The stopper (9) extends outwards from over the connection member (7). The connection member (7) is preferably produced from resilient material. When the fixing member (8) is mounted to the connection member (7), the stopper (9) bears against the fixing member (8) and prevents the connection member (7) from changing shape by rotating around the passage pipe (6). By means of the stopper (9) limiting the rotational movement of the connection member (7), the connection member (7) is prevented from moving freely. Thus, by providing the connection member (7) to stay around the passage pipe (6) in a rigid manner, the leak-proofing is maintained and the efficiency of the compressor (1) is prevented from decreasing (Figure 3, Figure 4).

[0027] In an embodiment of the present invention, the stopper (9) is side by side with the fixing member (8) on the connection member (7), when the fixing member (8) is mounted to the connection member (7). Being side by side on the connection member (7), the stopper (9) and the fixing member (8) form a ring at least partially around the connection member (7). The stopper (9) situated on the connection member (7) bears against the fixing member (8). Thus, during the operation of the compressor (1), the connection member (7) is prevented from moving by rotating and/or from changing shape (Figure 5, Figure 6, Figure 7).

[0028] In an embodiment of the present invention, the compressor (1) comprises at least one channel (10) whereon the stopper (9) is situated and that is situated on the part of the connection member (7) remaining on the passage pipe (6) when the connection member (7) is mounted to the passage pipe (6). The fixing member (8) is placed onto the channel (10). The channel (10) prevents the fixing member (8) from sliding over the connection member (7). The fixing member (8) and the stopper (9) are situated on the channel (10). The fixing member (8) squeezes the stopper (9) in the channel (10). Thus, by means of the stopper (9) the connection member (7) is prevented from sliding off its place, moving by rotating or changing shape (Figure 4).

[0029] In an embodiment of the present invention, the compressor (1) comprises the fixing member (8) having at least two feet (11) that extend outwards from the end point of the connection member (7) when mounted to the connection member (7), and furthermore comprises the stopper (9) that remains between the feet (11) when the fixing member (8) is mounted to the connection member (7). The fixing member (8) is preferably a wire. A flat wire is shaped by being bent and thus the fixing member (8) is formed. The fixing member (8) is mounted onto the connection member (7) so as to be fitted over the part of the connection member (7) that is over the passage pipe (6). The feet (11) extending outwards from the part of the fixing member (8) surrounding the connection member (7) are positioned one across from the other. When the fixing member (8) is placed onto the connection member (7), the stopper (9) is squeezed between the feet (11) (Figure 2, Figure 3, Figure 4).

[0030] In an embodiment of the present invention, when the fixing member (8) is mounted to the connection member (7), the stopper (9) almost completely fills in the gap remaining between the feet (11). Thus, no gap remains between the feet (11), that allows the stopper (9) to move. Thus, the connection member (7) is also prevented from moving by rotating.

[0031] In an embodiment of the present invention, the compressor (1) comprises the fixing member (8) having a first node (12) wrapped around the connection member (7) when mounted to the connection member (7) and a second node (13) extending outwards from the first node (12), and furthermore comprises an extension (14) situated below the passage pipe (6), through the center of which the second node (13) passes. By means of the first node (12), the connection member (7) is squeezed on the passage pipe (6) and prevented from dislodging from the passage pipe (6). The second node (13) functions as a handle during the assembly process. Shaped as a hollow curve, the second node (13) is inserted into the extension (14). The extension (14) prevents the second node (13), hence the fixing member (8) and the connection member (7) held by the fixing member (8) from making rotational movements (Figure 5, Figure 6, Figure 7).

[0032] In an embodiment of the present invention, the compressor (1) comprises the fixing member (8) having at least two feet (11) that extend outwards from the end point of the first node (12) and in reverse direction with respect to the second node (13), and furthermore comprises the stopper (9) that remains between the two feet (11) when the fixing member (8) is mounted to the connection member (7). When the fixing member (8) is mounted to the connection member (7), the stopper (9) is squeezed by the feet (11). Thus, the connection member (7) is prevented from displacing and/or changing shape (Figure 5, Figure 6).

[0033] In an embodiment of the present invention, the stopper (9) remains between the first node (12) and the second node (13), when the fixing member (8) is mounted to the connection member (7). The stopper (9) extends in the volume remaining between the first node (12) and the second node (13). The stopper (9) is situated between the surfaces of the fixing member (8) that do not contact the connection member (7). Thus, the connection member (7) is prevented from moving by means of the stoppers (9) squeezed by the fixing member (8) (Figure 5,

Figure 7).

[0034] In an embodiment of the present invention, the stopper (9) extends in the same vertical direction as the extension (14), when the connection member (7) is mounted to the passage pipe (6). After the fixing member (8) is mounted on the connection member (7), the second node (13) is fitted around the extension (14). The extension (14) extends outwards from the empty section in the center of the second node (13). During the operation of the compressor (1), the second node (13) hitting the extension (14) to stop is prevented from rotating. The connection member (7) is prevented from moving by means of the stoppers (9) and the extension (14) extending in the same vertical direction. Thus, the connection member (7) is prevented from detaching from the passage pipe (6) in the course of time and/or from changing shape by rotating around the passage pipe (6) (Figure 5, Figure 6, Figure 7).

[0035] In an embodiment of the present invention, the stopper (9) widens while moving outwards from the end point of the node (12, 13) when the fixing member (8) is mounted to the connection member (7). By means of the stopper (9), the resilient connection member (7) cannot dislodge after being seated on the passage pipe (6) (Figure 5, Figure 6).

[0036] In an embodiment of the present invention, the connection member (7) is in bellows form. The vibrations generated by the movable components like the motor, crankshaft, piston rod are attenuated thanks to the bellows-shaped structure and are prevented from being transmitted to the casing (2) (Figure 3, Figure 4).

[0037] In an embodiment of the present invention, the stopper (9) is produced from rigid material. The stopper (9) produced from a material that does not change shape is provided to stay in the channel (10) in a rigid manner.

[0038] In an embodiment of the present invention, the stopper (9) is produced integrated with the connection member (7). Thus, saving from assembly time is maintained.

[0039] By means of the present invention, a compressor (1) is realized, having the stopper (9) preventing the connection member (7) from changing shape by rotating around the passage pipe (6). By means of the stopper (9) limiting the rotational movement of the connection member (7), the connection member (7) is prevented from moving freely. Thus, leak-proofing is provided and the efficiency of the compressor (1) is prevented from decreasing.

[0040] It is to be understood that the present invention is not limited to the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A compressor (1) comprising

- a casing (2) supporting the members therein and wherein the oil lubricating the movable components is placed,
- an inlet pipe (3) that is disposed on the casing (2) and that provides the refrigerant coming from the evaporator to be received into the casing (2),
- an opening (4) arranged at the point where the inlet pipe (3) is mounted to the casing (2), providing the fluid flowing from the inlet pipe (3) to enter the casing (2),
- a suction muffler (5) disposed inside the casing (2), providing the noise originating from the refrigerant fluid to be attenuated,
- a passage pipe (6) disposed on the suction muffler (5), enabling the refrigerant fluid to be received into the suction muffler (5),
- a resilient connection member (7) providing the refrigerant fluid to be delivered directly into the suction muffler (5), with one end fixed to the passage pipe (6),
- at least one fixing member (8) providing the connection member (7) to be fixed onto the passage pipe (6),
- at least one stopper (9) that is situated on the connection member (7), that bears against the fixing member (8) when the fixing member (8) is on the connection member (7), thereby preventing the connection member (7) from moving by rotating

characterized in that

- the other end of the resilient connection member (7) bears against the inner surface of the casing (2) so as to surround the opening (4),
- the fixing member (8) is mounted to the part of the connection member (7) fitted over the passage pipe (6),
- the fixing member (8) is a component separate from the passage pipe (6).

2. The compressor (1) as in Claim 1, **characterized by** the stopper (9) that is side by side with the fixing member (8) on the connection member (7) when the fixing member (8) is mounted to the connection member (7).

3. The compressor (1) as in Claim 1 or 2, **characterized by** at least one channel (10) whereon the stopper (9) is situated and that is situated on the part of the connection member (7) remaining on the passage pipe (6) when the connection member (7) is mounted to the passage pipe (6).

4. The compressor (1) as in any one of the Claims 1 to 3, **characterized by** the fixing member (8) having at least two feet (11) that extend outwards from the end point of the connection member (7) when mounted to the connection member (7), and by the stopper (9) that remains between the two feet (11) when the fixing member (8) is mounted to the connection member (7).

5. The compressor (1) as in Claim 4, **characterized by** the stopper (9) that almost completely fills in the gap remaining between the feet (11), when the fixing member (8) is mounted to the connection member (7).

6. The compressor (1) as in any one of the above claims, **characterized by** the fixing member (8) having a first node (12) wrapped around the connection member (7) when mounted to the connection member (7) and a second node (13) extending outwards from the first node (12), and by an extension (14) situated below the passage pipe (6), through the center of which the second node (13) passes.

7. The compressor (1) as in Claim 6, **characterized by** the fixing member (8) having at least two feet (11) that extend outwards from the end point of the first node (12) and in reverse direction with respect to the second node (13), and by the stopper (9) that remains between the feet (11) when the fixing member (8) is mounted to the connection member (7).

8. The compressor (1) as in Claim 6 or 7, **characterized by** the stopper (9) that remains between the first node (12) and the second node (13), when the fixing member (8) is mounted to the connection member (7).

9. The compressor (1) as in any one of the Claims 6 to 8, **characterized by** the stopper (9) that extends in the same vertical direction as the extension (14), when the connection member (7) is mounted to the passage pipe (6).

10. The compressor (1) as in any one of the Claims 6 to 9, **characterized by** the stopper (9) that widens while moving outwards from the end point of the node (12, 13) when the fixing member (8) is mounted to the connection member (7).

11. The compressor (1) as in any one of the above claims, **characterized by** the connection member (7) that is in bellows form.

12. The compressor (1) as in any one of the above Claims, **characterized by** the stopper (9) that is produced from rigid material.

13. The compressor (1) as in any one of the above claims, **characterized by** the stopper (9) that is produced as a single piece with the connection member (7).

Patentansprüche

1. Ein Kompressor (1) umfasst:

- ein Gehäuse (2), worin die Elemente unterstützt sind und die Ölschmier für die beweglichen Bauteile angeordnet ist,
- ein an dem Gehäuse (2) angeordnet Einlassrohr (3), das das aus dem Verdampfer kommende Kältemittel in das Gehäuse (2) aufnimmt,
- eine Öffnung (4), die an der montierten Stelle des Einlassrohres (3) an dem Gehäuse (2) angeordnet ist, wodurch das aus dem Einlassrohr (3) strömende Fluid in das Gehäuse (2) gelangt,
- einen innerhalb der Gehäuse (2) angeordnete Saugschalldämpfer (5) und das Geräusch bereitstellt, das von dem Kühlmittel herrührt, welches gedämpft werden soll,
- ein Durchlassrohr (6), das an dem Saugschalldämpfer (5) angeordnet ist und die Aufnahme des Kühlfluids in den Saugschalldämpfer (5) ermöglicht,
- ein elastisches Verbindungselement (7), welches das Kältemittelfluid bereitstellt, um direkt in den Saugschalldämpfer (5) gefördert zu werden, wobei dessen eine Ende an dem Durchlassrohr (6) befestigt ist,
- mindestens ein Befestigungselement (8), dass das Verbindungselement (7) bereitstellt, damit es an dem Durchgangsrohr (6) befestigt werden kann,
- mindestens einen Stopper (9), welches an dem Verbindungselement (7) angebracht ist, der an dem Befestigungselement (9) montiert ist, wenn sich das Befestigungselement (8) an dem Verbindungselement (7) befindet, wodurch das Verbindungselement (7) vor Bewegung verhindert wird, dass durch das Drehen entsteht,

gekennzeichnet ist es durch

- das andere Ende des elastischen Verbindungselements (7), das an der Innenfläche des Gehäuses (2) liegt und die Öffnung (4) umgibt,
- das Befestigungselement (8), welches an dem Teil des Verbindungselements (7) montiert ist, welches über dem Durchgangsrohr (6) angeordnet ist,
- das Befestigungselement (8), dass eine Komponente ist, die von dem Durchgangsrohr (6) getrennt ist.

2. Der Kompressor (1), wie in Anspruch 1 aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9) neben dem Befestigungselement und an dem Verbindungselement (7) angeordnet ist, wenn das Befestigungselement (8) an dem Verbindungselement (8) montiert ist.

3. Der Kompressor (1), wie in Anspruch 1 oder 2 aufgeführt, **ist dadurch gekennzeichnet, dass** mindestens ein Kanal (10), worauf sich der Stopper (9) befindet, sich auf dem Teil des Verbindungselements (7) befindet, der an dem Durchgangsrohr (6) angebracht ist, wenn das Verbindungselement (7) an dem Durchgangsrohr (6) montiert ist,

4. Der Kompressor (1), nach einem der Ansprüche 1 bis 3 aufgeführt, **ist dadurch gekennzeichnet, dass** das Befestigungselement (8) mindestens zwei Füße (11) besitzt, welches ich von dem Endpunkt des Verbindungselements (7) nach außen hin erstrecken, wenn es an dem Verbindungselement (7) befestigt ist und durch den Stopper (9), der zwischen den zwei Füssen (11) verbleibt, wenn das Befestigungselement (8) an dem Verbindungselement (7) montiert ist.

5. Der Kompressor (1), wie in Anspruch 4 aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9) den zwischen den Füssen (11) entstehenden Spalt fast vollständig befüllt, wenn das Befestigungselement (8) an dem Verbindungselement (7) montiert ist.

6. Der Kompressor (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** das Befestigungselement (9) einen ersten Knoten (12) aufweist, der um das Verbindungselement (7) gewickelt ist, wenn er an dem Verbindungselement (7) montiert ist und zuzüglich einen zweiten Knoten (13), die sich vom ersten Knoten (12) hinaus erstreckt und durch eine Verlängerung (14), die sich unterhalb des Durchgangsrohrs (6) befinden und durch deren Zentrum der zweite Knoten (13) verläuft.

7. Der Kompressor (1), wie in Anspruch 6 aufgeführt, **ist dadurch gekennzeichnet, dass** das Befestigungselement (8) mindestens zwei Füße (11) umfasst welches ich vom Endpunkt des ersten Knotens (12) nach außen und auch in umgekehrter Richtung in Bezug auf den zweiten Knoten (13) erstrecken; und durch den Stopper (9), der zwischen den Füssen (11) verbleibt, wenn das Befestigungselement (8) an dem Verbindungselement (7) montiert ist.

8. Der Kompressor (1), wie in Anspruch 6 oder 7 aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9) zwischen dem ersten (12) und dem zweiten Knoten (13) verbleibt, wenn das Befestigungselement (8) an dem Verbindungselement (7) montiert ist.

9. Der Kompressor (1), nach einem der Ansprüche 6 bis 8 aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9), welches sich in der gleichen vertikalen Richtung wie die Richtung der Verlängerung (14) erstreckt, wenn das Verbindungselement (7) an dem Durchgangsrohr (6) montiert ist.

10. Der Kompressor (1), nach einem der Ansprüche 6 bis 9 aufgeführt, **ist dadurch gekennzeichnet, dass** sich der Stopper (9) ausdehnt, während der Stopper sich von dem Endpunkt des Knotens (12, 13) nach außen bewegt, wenn das Befestigungselement (8) an dem Verbindungselement (7) montiert ist

11. Der Kompressor (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** das Verbindungselement (7) in Form eines Balges ist.

12. Der Kompressor (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9) aus einem starren Material hergestellt ist.

13. Der Kompressor (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** der Stopper (9) einstückig mit dem Verbindungselement (7) hergestellt ist.

Revendications

1. Un compresseur (1) comprenant

- un carter (2) supportant les éléments qui s'y trouvent et dans lequel l'huile lubrifiante des composants mobiles est placée,
- un tuyau d'entrée (3) qui est disposé sur le carter (2) et qui fournit le réfrigérant provenant de l'évaporateur à recevoir dans le carter (2),
- une ouverture (4) agencée à l'endroit où le tuyau d'entrée (3) est monté sur le carter (2), fournissant le fluide qui s'écoule du tuyau d'entrée (3) pour entrer dans le carter (2),
- un silencieux d'aspiration (5) disposé à l'intérieur du boîtier (2), assurant l'atténuation du bruit provenant du fluide réfrigérant,
- un tuyau de passage (6) disposé sur le silencieux d'aspiration (5), permettant de recevoir le fluide réfrigérant dans le silencieux d'aspiration (5),
- un élément de raccordement élastique (7) fournissant le fluide réfrigérant à délivrer directement dans le silencieux d'aspiration (5), une ex-

trémité étant fixée sur le tuyau de passage (6),
- au moins un élément de fixation (8) constituant l'élément de raccordement (7) à fixer sur le tube de passage (6),
- au moins une butée (9) située sur l'élément de liaison (7), qui s'appuie contre l'élément de fixation (8) lorsque l'élément de fixation (8) est sur l'élément de liaison (7), empêchant ainsi l'élément de liaison (7) de bouger par rotation

est caractérisé en ce que

- l'autre extrémité de l'élément de connexion élastique (7) est appliquée contre la surface intérieure du carter (2) de manière à entourer l'ouverture (4),
- l'élément de fixation (8) est monté sur la partie de l'élément de raccordement (7) montée sur le tuyau de passage (6),
- l'élément de fixation (8) est un composant séparé du tuyau de passage (6).

2. Le compresseur (1) comme dans la déclaration 1, **est caractérisé en ce que** le bouchon (9) est côte à côte avec l'élément de fixation (8) sur l'élément de raccordement (7) lorsque l'élément de fixation (8) est monté sur l'élément de raccordement (7).

3. Le compresseur (1) selon la déclaration 1 ou 2, **est caractérisé en ce que** au moins un canal (10) sur lequel se trouve le bouchon (9) est situé sur la partie de l'élément de raccordement (7) restant sur le tube de passage (6) lorsque l'élément de raccordement (7) est monté sur le tube de passage (6).

4. Le compresseur (1) comme dans l'une quelconque des déclarations 1 à 3, **est caractérisé en ce que** l'élément de fixation (8) comporte au moins deux pieds (11) qui s'étendent vers l'extérieur à partir de l'extrémité de l'élément de connexion (7) lorsqu'il est monté sur l'élément de connexion (7), et par le bouchon (9) qui reste entre les deux pieds (11) lorsque l'élément de fixation (8) est installé sur l'élément de connexion (7).

5. Le compresseur (1) selon la déclaration 4, **est caractérisé en ce que** le bouchon (9) remplit presque complètement l'espace restant entre les pieds (11) lorsque l'élément de fixation (8) est monté sur l'élément de liaison (7).

6. Le compresseur (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé en ce que** l'élément de fixation (8) comporte un premier noeud (12) enroulé autour de l'élément de connexion (7) lorsqu'il est monté sur l'élément de connexion (7) et un second noeud (13) s'étendant vers l'extérieur à partir du premier noeud (12) et par une extension (14) située sous le tube de passage (6), au centre duquel le second noeud (13) traverse.

7. Le compresseur (1) selon la déclaration 6, **est caractérisé en ce que** l'élément de fixation (8) comporte au moins deux pieds (11) qui s'étendent vers l'extérieur à partir du point d'extrémité du premier noeud (12) et dans le sens inverse par rapport au second noeud (13), et par le bouchon (9) qui reste entre les pieds (11) lorsque l'élément de fixation (8) est monté sur l'élément de liaison (7).

8. Le compresseur (1) selon la déclaration 6 ou 7, **est caractérisé en ce qu'**il comporte le bouchon (9) qui reste entre le premier noeud (12) et le second noeud (13), lorsque l'élément de fixation (8) est monté sur l'élément de liaison (7).

9. Le compresseur (1) comme dans l'une quelconque des déclarations 6 à 8, **est caractérisé en ce qu'**il comporte le bouchon (9) qui s'étend dans la même direction verticale que l'extension (14), lorsque l'élément de raccordement (7) est monté sur le tube de passage (6).

10. Le compresseur (1) comme dans l'une quelconque des déclarations 6 à 9, **est caractérisé en ce qu'**il comporte le bouchon (9) qui s'élargit en se déplaçant vers l'extérieur depuis l'extrémité du noeud (12, 13) lorsque l'élément de fixation (8) est monté sur l'élément de liaison (7).

11. Le compresseur (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé en ce qu'il** comporte l'élément de raccordement (7) qui est en forme de soufflet.

12. Le compresseur (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé par** le bouchon (9) qui est fabriqué en matériau rigide.

13. Le compresseur (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé par** le bouchon (9) qui est réalisé d'une seule pièce avec l'élément de raccordement (7).

Figure 1

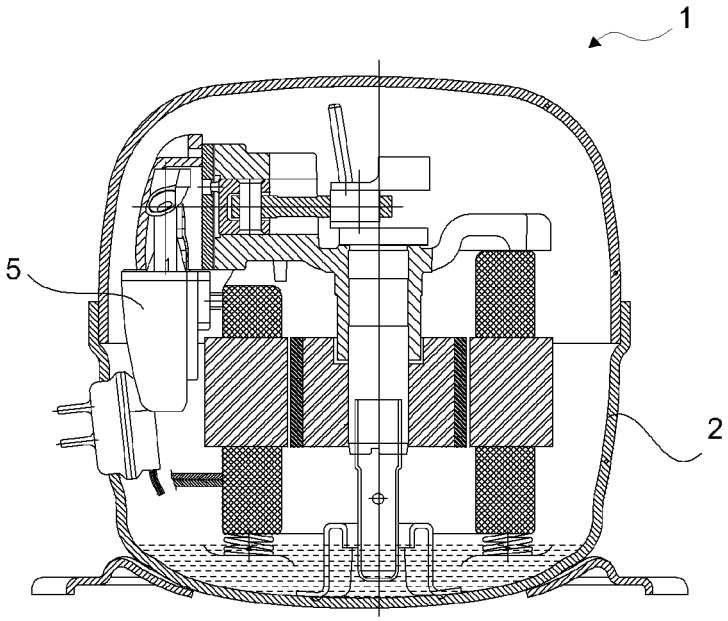


Figure 2

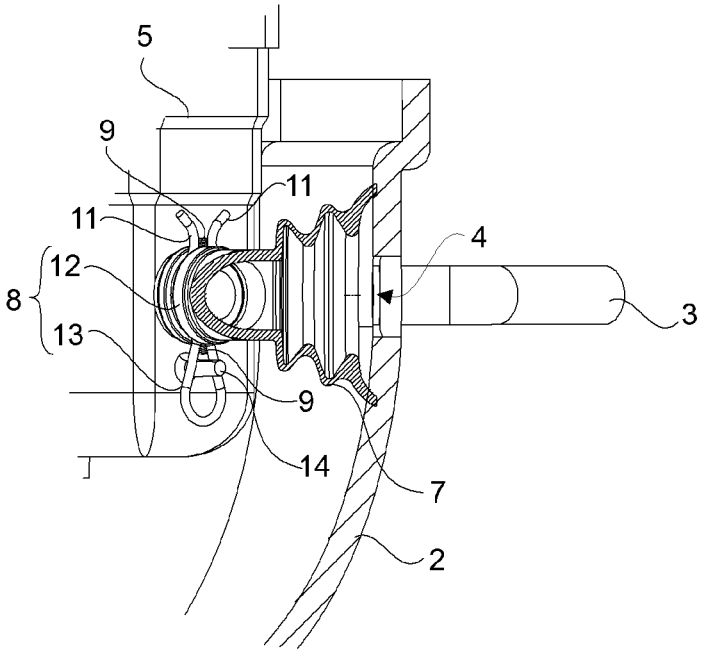


Figure 3

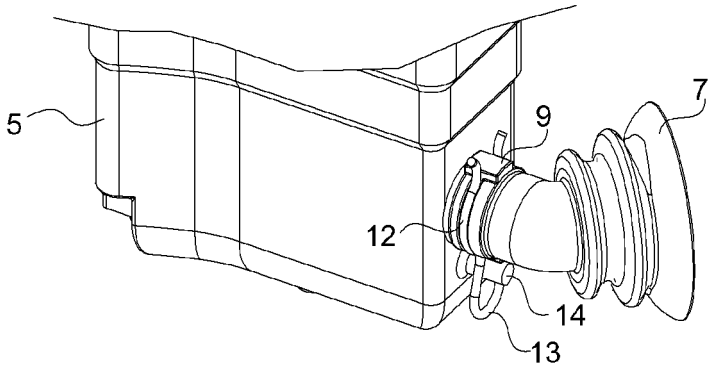


Figure 4

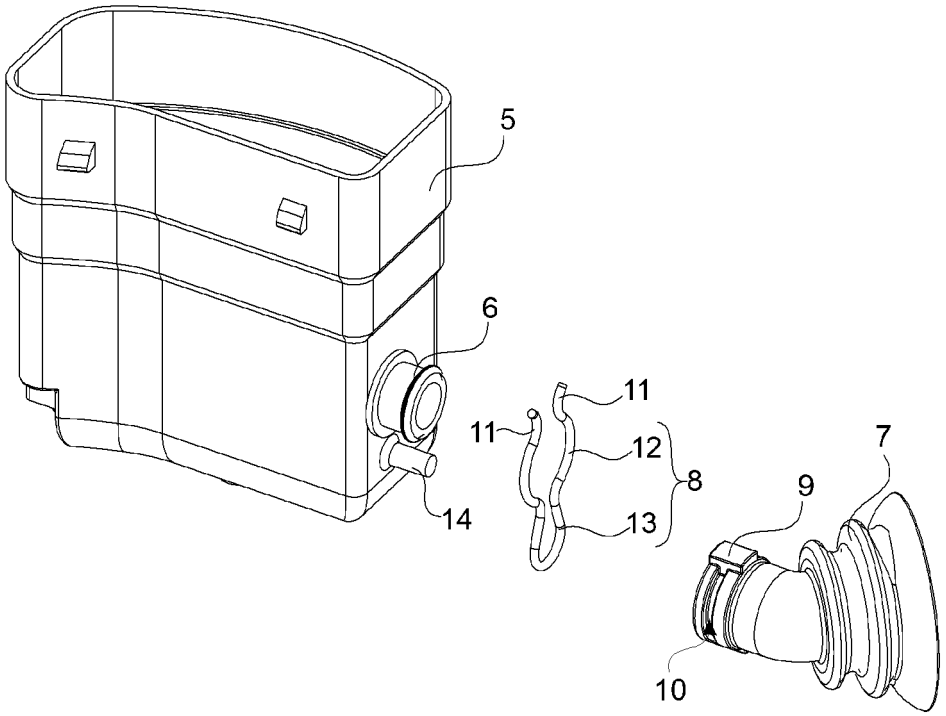


Figure 5

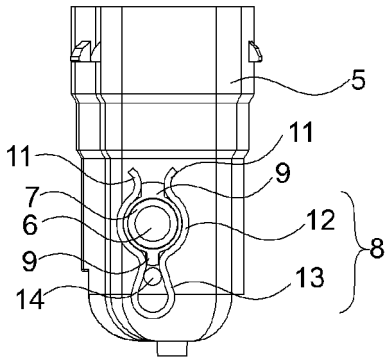


Figure 6

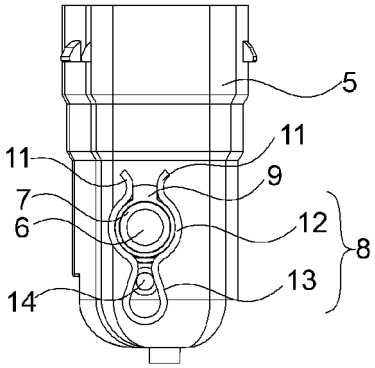
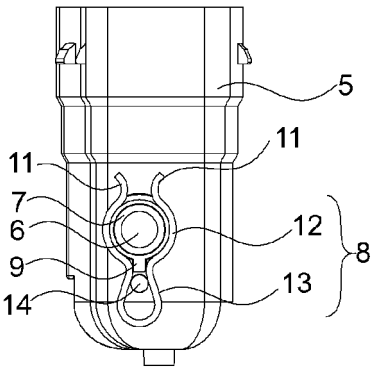


Figure 7



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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