

Description

The present invention generally relates to a refrigerant compressor, and more particularly, to a valved discharge mechanism of the refrigerant compressor used in an automotive air conditioning system.

A piston-type refrigerant compressor, such as a wobble plate type refrigerant compressor suitable used for an automobile air conditioning system is disclosed in US-A- 4,722,671.

Referring to Figure 1, the wobble plate type refrigerant compressor 10 comprises cylindrical housing 11. Cylindrical housing 11 including cylinder block 111, front end plate 112 and cylinder head 113. The interior of housing 11 defines crank chamber 114 between cylinder block 111 and front end plate 112 which is mounted on the left end portion of cylinder block 111 by a plurality of bolts 12. Cylinder head 113 together with valve plate assembly 13 are mounted on the right end portion of cylinder block 111 by a plurality of bolts 14. Opening 112a is centrally formed in front end plate 112 and drive shaft 15 is rotatably supported by a bearing, such as radial needle bearing 16 disposed in opening 112a. Front end plate 112 includes annular sleeve portion 112b projecting from the front surface thereof. Annular sleeve portion 112b surrounds drive shaft 15 to define a shaft seal cavity in which a shaft seal element (not shown) is disposed.

Drive shaft 15 is attached to cam rotor 17 at its inner end by any suitable means so that cam rotor 17 is rotated along with drive shaft 15. Cam rotor 17 is supported on an inner surface of front end plate 112 by means of a bearing, such as thrust needle bearing 18 disposed at the inner surface of front end plate 112. Wobble plate 19 is disposed on inclined surface 17a of cam rotor 17 through thrust needle bearing 20.

Supporting member 21 including shank portion 211 having axial hole 211a formed therein is axially slidable but non-rotatably supported within cylinder block 111 by the insertion of shank portion 211 into axial hole 111a formed in cylinder block 111. The rotation of supporting member 21 is prevented by means of a key and key groove (not shown). Supporting member 21 further includes bevel gear portion 212 at the end of shank portion 211. Bevel gear portion 212 includes a seat for steel ball 22 at the center thereof. Bevel gear portion 212 of supporting member 21 engages with bevel gear 23 mounted on wobble plate 19. Steel ball 22 is also seated in a seat formed at the central portion of bevel gear 23 so that wobble plate 19 may be nutatably but non-rotatably supported on steel ball 22. Coil spring 24 is disposed in axial hole 211a of supporting member 21 and the outer end of spring 24 is in contact with screw member 25 so that supporting member 21 is urged toward wobble plate 19.

Cylinder block 111 is provided with a plurality of axial cylinders 26 formed therein, within which pis-

tons 27 are slidably and closely fitted. Each piston 27 is connected to wobble plate 19 through piston rod 28. The ends of piston rods 28 are connected to wobble plate 19 by a plurality of ball joint mechanisms. Similarly, pistons 27 and the other ends of piston rods 28 are also connected by a plurality of ball joint mechanisms.

Cylinder head 113 is provided with suction chamber 29 and discharge chamber 30 separated by partition wall 113a. Valve plate assembly 13 includes valve plate 131 having suction ports 29a connecting suction chamber 29 and cylinder 26 and discharge ports 30a connecting discharge chamber 30 and cylinders 26.

Referring to Figure 2 additionally, valve plate assembly 13 further includes suction reed valve 132, discharge reed valve 133, circular gasket 134 and annular gasket 135. Suction and discharge reed valves 132, 133 are made of elastic material. Circular gasket 134 includes a plurality of circular cut-out portions correspondingly locating the respective cylinders 26. A peripheral portion of circular gasket 134 is sandwiched by the peripheral portion of cylinder block 111 and the inner surface of a peripheral portion of valve plate 131. A central portion of circular gasket 134 is sandwiched by the central portion of cylinder block 111 and the inner surface of a central portion of valve plate 131 through suction reed valve 132. Annular gasket 135 includes a plurality of cut-out portions correspondingly locating suction chamber 29. Annular gasket 135 is sandwiched by the peripheral portion of cylinder head 113 and the outer surface of a peripheral portion of valve plate 131. Gaskets 134 and 135 seal the mating surfaces of cylinder block 111, valve plate 131 and cylinder head 113. Stopper plate 31 suppresses excessive deformation of discharge reed valve 133. Bolt and nut device 32 secures gasket 134, suction reed valve 132, discharge reed valve 133 and stopper plate 31 to valve plate 131. Discharge reed valve 133, stopper plate 31, and bolt and nut device 32 constitute valved discharge mechanism 400.

In operation of the compressor, drive shaft 15 is driven by any suitable driving source, such as an automobile engine. Cam rotor 17 rotates with drive shaft 15, so that wobble plate 19 may nutate about steel ball 22 according to the rotation of inclined surface 17a of cam rotor 17. The nutation of wobble plate 19 causes the reciprocation of each respective piston 27. Therefore, the successive strokes of sucking, compressing and discharging the refrigerant gas is repeatedly performed in each cylinder 26. The refrigerant gas circulates through a cooling circuit which is connected between inlet port 33 and outlet port 34, which are provided with suction chamber 29 and discharge chamber 30, respectively.

In due consideration of durability and efficiency of the compressor, elastic modulus of discharge reed valve 133 is designed to have a certain value which

lets discharge reed valve 133 keep blocking discharge port 30a until pressure in cylinder 26 reaches a certain value in the stroke of compressing the refrigerant gas. Hence, when the pressure in cylinder 26 exceeds the certain value in the stroke of compressing the refrigerant gas, discharge reed valve 133 begins to be bent toward the right hand side. Thereby, the compressed refrigerant gas in cylinder 26 begins to be discharged to discharge chamber 30 past discharge port 30a. That is, the stroke of discharging the refrigerant gas begins. However, when the rate of flow of the refrigerant gas from cylinder 26 to discharge chamber 30 is remarkably increased due to the operation of the compressor with high rotational speed or when a liquid compression is occurred in cylinder 26 due to the abnormal operation of the cooling circuit, discharge reed valve 133 is excessively bent toward the right hand side. Thereby, discharge reed valve 133 may be damaged.

To resolve the above-mentioned defect, one prior art compressor is provided with stopper plate 31, as shown in Figures 1 and 2, which is made of high rigidity material and is permanently bent toward the right hand side with having the fulcrum which is located at approximate three-fourth of the length thereof. By means of the provision of stopper plate 31, the excessive bend of discharge reed valve 133 toward the right hand side is effectively prevented by contacting with a curved inner surface of stopper plate 31.

However, stopper plate 31 is designed to be wide bent so as to avoid reducing the pressure loss at discharge port 30a, thereby, preventing a decrease of the compressor efficiency. Therefore, when the rate of flow of the refrigerant gas from cylinder 26 to discharge chamber 30 is small due to the operation of the compressor with low or medium rotational speeds, discharge reed valve 133 does not sufficiently contact with the curved inner surface of stopper plate 31. Thereby, discharge reed valve 133 remarkably vibrates because the certain value of elastic modulus of discharge reed valve 133 does not reach the value which can effectively suppress generation of the vibration of discharge reed valve 133 in the stroke of discharging the refrigerant gas. This remarkable vibration of discharge reed valve 133 propagates to the passenger compartment of the vehicle as an offensive noise.

Figure 3 illustrates an enlarged partially sectional view of a valved discharge mechanism of a rotary-type hermetic compressor, such as a vane-type hermetic compressor disclosed in JP-A- 60-8577. Referring to Figure 3, the vane-type hermetic compressor includes annular block 200 rotatably supporting drive shaft 300. Annular supporting block 200 includes flange 201 radially projecting from an outer peripheral surface thereof, depression 202 formed at a top end surface of flange 201 and axial hole 203 formed in flange 201 as a discharge port. An upper end of axial

hole 203 is open to a right side portion of a bottom surface of depression 202. A lower end of axial hole 203 is open to a refrigerant gas working chamber (not shown) defined within a cylinder block (not shown) of the compressor. Supporting block 200 further includes shallow indent 202a formed at a central portion of the bottom surface of depression 202.

Discharge reed valve 204 made of elastic material is disposed at the bottom surface of depression 202 so as to cover the upper end opening of axial hole 203 at its right end. Auxiliary stopper plate 205 made of elastic material and stopper plate 206 made of high rigidity material are disposed in depression 202 so as to be placed upon discharge reed valve 204 in order. A left end portion of each of auxiliary stopper plate 205 and stopper plate 206 are secured to supporting block 200 together with a left end portion of discharge reed valve 204 by means of bolt 207.

Stopper plate 206 is permanently bent toward the upper side with having the fulcrum which is located at approximate one-half of the length thereof. Stopper plate 206 is also designed to be wide bent so as to avoid reducing the pressure loss at the discharge port. Auxiliary stopper plate 205 is permanently bent toward the upper side. A curvature of an upper surface of auxiliary stopper plate 205 is designed to be greater than a curvature of a lower surface of stopper plate 206, and an upper right end of auxiliary stopper plate 205 is in contact with a lower right end of stopper plate 206. Thereby, thin crescent-shaped air gap 208 is created between the fulcrum of stopper plate 206 and the right end of auxiliary stopper plate 205. Discharge reed valve 204, auxiliary stopper plate 205, stopper plate 206 and bolt 207 constitute valved discharge mechanism 401.

In the above-mentioned construction, a noise caused by collision between the discharge reed valve 204 with the stopper plate 206 can be sufficiently prevented, and discharge reed valve 204 can quickly close the discharge port when the stroke of discharging the refrigerant gas is changed to the stroke of sucking the refrigerant gas by means of provision of the auxiliary stopper plate 205. However, the defect occurred in the invention of US-A- 4,722,671 can not be resolved by this construction. That is, when the compressor operates with low or medium rotational speeds, discharge reed valve 204 does not sufficiently contact with the lower surface of auxiliary stopper plate 205 in the stroke of discharging the refrigerant gas. Thereby, discharge reed valve 204 remarkably vibrates because the certain value of elastic modulus of discharge reed valve 204 does not reach the value which can effectively suppress generation of the vibration of discharge reed valve 204 in the stroke of discharging the refrigerant gas. This remarkable vibration of discharge reed valve 204 propagates to the passenger compartment of the vehicle as an offensive noise.

Accordingly, it is an object of the present invention to provide a refrigerant compressor used in an automotive air conditioning system having a valved discharge mechanism which can effectively reduce the vibration of a discharge reed valve propagating to a passenger compartment of a vehicle as an offensive noise without decreasing of durability and efficiency of the compressor.

GB-A-2156046 discloses a refrigerant compressor including a compressor housing defining at least one chamber in which successive strokes of sucking, compressing and discharging a refrigerant gas are repeatedly performed, means for linking the chamber to an outside chamber, and means for regulating a flow of the refrigerant gas from the chamber to the outside chamber, the linking means including a conduit communicating the chamber with the outside chamber, the regulating means including a first plate member of elastic material which is provided at one end opening of the conduit opening to the outside chamber and is attached at one end to a wall of the outside chamber, and means for limiting the bending movement of the first plate member toward the direction of leaving from the one end opening of the conduit, the free end of the first plate member blocking and opening the one end opening of the conduit by means of the bending movement thereof, the first plate member having a certain value of elastic modulus which lets the first plate member keep blocking the one end opening of the conduit until the pressure in the chamber reaches a certain value, the regulating means including a second plate member of elastic material which is attached at one end via the attached end of the first plate member to the wall of the outside chamber, whereby, when the first plate member moves away from its blocking position, the first plate member and second plate member act as a single plate member with an elastic modulus of sufficient magnitude to resist vibration; and, according to the invention, such a compressor is characterised in that the second plate member always abuts the first plate member along a major part of their lengths, and has a curved free end which diverges from the first plate member when the first plate member is in its blocking position; whereafter, when the plate member moves away from its blocking position, it abuts the second plate member along their entire lengths.

Thereby, noise can be further reduced.

In the accompanying drawings:-

Figure 1 illustrates a vertical longitudinal sectional view of one prior art wobble plate type refrigerant compressor.

Figure 2 illustrates an enlarged partially sectional view of a valve mechanism of the compressor shown in Figure 1. In the drawing, the valve mechanism is shown during a suction stroke.

Figure 3 illustrates an enlarged partially sectional view of a valved discharge mechanism of a vane-type

refrigerant compressor in accordance with another prior art construction.

Figure 4 illustrates an enlarged partially sectional view of a valve mechanism of a wobble plate type refrigerant compressor in accordance with a first embodiment of the present invention. In the drawing, the mechanism is shown during a suction stroke.

Figure 5 illustrates a similar view to Figure 4. In the drawing, the mechanism is shown during a discharge stroke with low rotational speed of the compressor.

Figure 6 illustrates a similar view to Figure 5, but with medium rotational speed of the compressor.

Figure 7 illustrates a similar view to Figure 5, but with high rotational speed of the compressor.

Figure 8 illustrates an enlarged partially sectional view of a valve mechanism of a wobble plate type refrigerant compressor in accordance with a second embodiment of the present invention. In the drawing, the mechanism is shown during a suction stroke.

In Figures 4-7, the same numerals are used to denote the corresponding elements shown in Figures 1 and 2 so that an explanation thereof is omitted.

Referring to Figure 4, the wobble plate type refrigerant compressor includes valved discharge mechanism 500 having discharge reed valve 133 of elastic material contacting with valve plate 131 so as to block discharge port 30a, auxiliary discharge reed valve 36 of elastic material disposed upon discharge reed valve 133, stopper member 35 axially projecting from an inner surface of cylinder head 113, and bolt and nut device 32. A value of elastic modulus of discharge reed valve 133 is designed to let discharge reed valve 133 block discharge port 30a until the pressure in cylinder 26 reaches a certain value in the stroke of compressing the refrigerant gas. Auxiliary discharge reed valve 36 is slightly and permanently bent toward the right hand side. A lower end portion of auxiliary discharge reed valve 36 is secured to valve plate 131 by bolt-nut device 32 together with discharge reed valve 133. Stopper member 35 includes end surface 35a slanting toward an upper side with a certain slant angle.

Referring to Figure 5, when valved discharged mechanism 500 operates in the stroke of discharging the refrigerant gas with low rotational speed of the compressor, an outer surface (to the right in Figure 5) of a terminal end portion of discharge reed valve 133 immediately contacts with an curved inner surface (to the left in Figure 5) of auxiliary discharge reed valve 36 as soon as discharge reed valve 133 begins to be bent toward the right hand side by the pressure of the discharged refrigerant gas. And then, discharge reed valve 133 is further bent toward the right hand side together with auxiliary discharge reed valve 36. Therefore, discharge reed valve 133 and auxiliary discharge reed valve 36 form substantial one elastic element of which value of elastic modulus is the sum of

a value of elastic modulus of discharge reed valve 133 and a value of elastic modulus of auxiliary discharge reed valve 36.

This manner of forming the substantial one elastic element is continuously maintained in the stroke of discharging the refrigerant gas with medium and high rotational speeds of the compressor as shown in respective Figures 6 and 7. As shown in Figure 7, the excessive bend of the substantial one elastic element can be effectively prevented by contacting with slanted end surface 35a of stopper member 35. Thereby, damage of discharge reed valve 133 and auxiliary discharge reed valve 36 can be effectively prevented.

In due consideration of durability and efficiency of the compressor, elastic modulus of discharge reed valve 133 of the present invention is also designed to have the certain value which lets discharge reed valve 133 keep blocking discharge port 30a until pressure in cylinder 26 reaches a certain value in the stroke of compressing the refrigerant gas. However, by designing elastic modulus of auxiliary discharge reed valve 36 to have a certain value, elastic modulus of the substantial one elastic element is able to exceed the value which can effectively suppress generation of the remarkable vibration of the substantial one elastic element. Therefore, the remarkable vibration of the substantial one elastic element propagating to the passenger compartment of the vehicle as the offensive noise is effectively reduced. That is, the remarkable vibration of discharge reed valve 133 propagating to the passenger compartment of the vehicle as the offensive noise is effectively prevented.

Figure 8 illustrates an enlarged partially sectional view of a valved discharge mechanism of a wobble plate type refrigerant compressor in accordance with a second embodiment of the present invention. In this embodiment, valved discharge mechanism 501 includes stopper plate 31, which is shown in prior art Figures 1 and 2, being used in place of stopper member 35 of the foregoing first embodiment of the present invention. An effect of the second embodiment is substantially similar to the effect of the first embodiment so that an explanation thereof is omitted.

This invention is not restricted to a wobble plate refrigerant compressor, but is applicable to other types of the refrigerant compressor, such as, scroll type refrigerant compressor.

Claims

1. A refrigerant compressor including a compressor housing defining at least one chamber (26) in which successive strokes of sucking, compressing and discharging a refrigerant gas are repeatedly performed, means (30a) for linking the chamber (26) to an outside chamber (30), and means (500) for regulating a flow of the refriger-

ant gas from the chamber (26) to the outside chamber (30), the linking means including a conduit (30a) communicating the chamber (26) with the outside chamber (30), the regulating means (500) including a first plate member (133) of elastic material which is provided at one end opening of the conduit (30a) opening to the outside chamber (30) and is attached at one end to a wall (13) of the outside chamber, and means (35, 31) for limiting the bending movement of the first plate member (133) toward the direction of leaving from the one end opening of the conduit (30a), the free end of the first plate member (133) blocking and opening the one end opening of the conduit (30a) by means of the bending movement thereof, the first plate member (133) having a certain value of elastic modulus which lets the first plate member (133) keep blocking the one end opening of the conduit (30a) until the pressure in the chamber (26) reaches a certain value, the regulating means (500) including a second plate member (36) of elastic material which is attached at one end via the attached end of the first plate member (133) to the wall (13) of the outside chamber, whereby, when the first plate member (133) moves away from its blocking position, the first plate member (133) and second plate member (36) act as a single plate member with an elastic modulus of sufficient magnitude to resist vibration; characterised in that the second plate member (36) always abuts the first plate member (133) along a major part of their lengths, and has a curved free end which diverges from the first plate member (133) when the first plate member (133) is in its blocking position; whereafter, when the plate member (133) moves away from its blocking position, it abuts the second plate member (36) along their entire lengths.

2. A compressor according to claim 1, wherein the second plate member (36) is a reed valve.
3. A compressor according to claim 1 or claim 2, further including a cylinder head (113) provided at the outside chamber, the cylinder head (113) defining a discharge chamber (30) which receives the refrigerant gas flowing from the chamber (26) past the conduit (30a), the limiting means including a projection axially projecting from an inner surface of an axial end of the discharge chamber (30).
4. A compressor according to claim 3, wherein the projection (35) includes a projecting end having a slanted surface (35a).

a value of elastic modulus of discharge reed valve 133 and a value of elastic modulus of auxiliary discharge reed valve 36.

This manner of forming the substantial one elastic element is continuously maintained in the stroke of discharging the refrigerant gas with medium and high rotational speeds of the compressor as shown in respective Figures 6 and 7. As shown in Figure 7, the excessive bend of the substantial one elastic element can be effectively prevented by contacting with slanted end surface 35a of stopper member 35. Thereby, damage of discharge reed valve 133 and auxiliary discharge reed valve 36 can be effectively prevented.

In due consideration of durability and efficiency of the compressor, elastic modulus of discharge reed valve 133 of the present invention is also designed to have the certain value which lets discharge reed valve 133 keep blocking discharge port 30a until pressure in cylinder 26 reaches a certain value in the stroke of compressing the refrigerant gas. However, by designing elastic modulus of auxiliary discharge reed valve 36 to have a certain value, elastic modulus of the substantial one elastic element is able to exceed the value which can effectively suppress generation of the remarkable vibration of the substantial one elastic element. Therefore, the remarkable vibration of the substantial one elastic element propagating to the passenger compartment of the vehicle as the offensive noise is effectively reduced. That is, the remarkable vibration of discharge reed valve 133 propagating to the passenger compartment of the vehicle as the offensive noise is effectively prevented.

Figure 8 illustrates an enlarged partially sectional view of a valved discharge mechanism of a wobble plate type refrigerant compressor in accordance with a second embodiment of the present invention. In this embodiment, valved discharge mechanism 501 includes stopper plate 31, which is shown in prior art Figures 1 and 2, being used in place of stopper member 35 of the foregoing first embodiment of the present invention. An effect of the second embodiment is substantially similar to the effect of the first embodiment so that an explanation thereof is omitted.

This invention is not restricted to a wobble plate refrigerant compressor, but is applicable to other types of the refrigerant compressor, such as, scroll type refrigerant compressor.

Claims

1. A refrigerant compressor including a compressor housing defining at least one chamber (26) in which successive strokes of sucking, compressing and discharging a refrigerant gas are repeatedly performed, means (30a) for linking the chamber (26) to an outside chamber (30), and means (500) for regulating a flow of the refriger-

ant gas from the chamber (26) to the outside chamber (30), the linking means including a conduit (30a) communicating the chamber (26) with the outside chamber (30), the regulating means (500) including a first plate member (133) of elastic material which is provided at one end opening of the conduit (30a) opening to the outside chamber (30) and is attached at one end to a wall (13) of the outside chamber, and means (35, 31) for limiting the bending movement of the first plate member (133) toward the direction of leaving from the one end opening of the conduit (30a), the free end of the first plate member (133) blocking and opening the one end opening of the conduit (30a) by means of the bending movement thereof, the first plate member (133) having a certain value of elastic modulus which lets the first plate member (133) keep blocking the one end opening of the conduit (30a) until the pressure in the chamber (26) reaches a certain value, the regulating means (500) including a second plate member (36) of elastic material which is attached at one end via the attached end of the first plate member (133) to the wall (13) of the outside chamber, whereby, when the first plate member (133) moves away from its blocking position, the first plate member (133) and second plate member (36) act as a single plate member with an elastic modulus of sufficient magnitude to resist vibration; characterised in that the second plate member (36) always abuts the first plate member (133) along a major part of their lengths, and has a curved free end which diverges from the first plate member (133) when the first plate member (133) is in its blocking position; whereafter, when the plate member (133) moves away from its blocking position, it abuts the second plate member (36) along their entire lengths.

2. A compressor according to claim 1, wherein the second plate member (36) is a reed valve.
3. A compressor according to claim 1 or claim 2, further including a cylinder head (113) provided at the outside chamber, the cylinder head (113) defining a discharge chamber (30) which receives the refrigerant gas flowing from the chamber (26) past the conduit (30a), the limiting means including a projection axially projecting from an inner surface of an axial end of the discharge chamber (30).
4. A compressor according to claim 3, wherein the projection (35) includes a projecting end having a slanted surface (35a).



* C L M S *



Patentansprüche

1. Kühlikompressor mit einem Kompressorgehäuse, das mindestens eine Kammer (26) definiert, in der aufeinanderfolgende Hübe des Ansaugens, Komprimierens und Auslassens eines Kühlgases wiederholt durchgeführt werden, einem Mittel (30a) zum Verbinden der Kammer (26) mit einer äußeren Kammer (30) und einem Mittel (500) zum Regulieren eines Flusses von dem Kühlgas von der Kammer (26) zu der äußeren Kammer (30), wobei das Verbindungsmittel eine die Kammer (26) mit der äußeren Kammer (30) verbindende Leitung (30a) aufweist, das Reguliermittel (500) ein erstes Plattenteil (133) aus elastischem Material, das an einer Endöffnung der Leitung (30a), die sich zu der äußeren Kammer (30) öffnet, vorgesehen ist und mit einem Ende an einer Wand (13) der äußeren Kammer angebracht ist, und Mittel (35, 31) zum Begrenzen der Biegebewegung des ersten Plattenteiles (133) zu der Richtung des Verlassens der einen Endöffnung der Leitung (30a) aufweist, das freie Ende des ersten Plattenteiles (133) die eine Endöffnung der Leitung (30a) mittels ihrer Biegebewegung blockiert und öffnet, das erste Plattenteil (133) einen gewissen Wert eines Elastizitätsmoduls aufweist, der das erste Plattenteil (133) die eine Endöffnung der Leitung (30a) blockieren läßt, bis der Druck in der Kammer (26) einen gewissen Wert erreicht, das Reguliermittel (500) ein zweites Plattenteil (36) aus elastischem Material aufweist, das an einem Ende über das an der Wand (13) der äußeren Kammer angebrachte Ende des ersten Plattenteiles (133) angebracht ist, wodurch, wenn sich das erste Plattenteil (133) von seiner blockierenden Position wegbewegt, das erste Plattenteil (133) und das zweite Plattenteil (36) als ein einzelnes Plattenteil mit einem Elastizitätsmodul von ausreichender Größe zum Widerstehen von Vibration wirken; dadurch gekennzeichnet, daß das zweite Plattenteil (36) immer an dem ersten Plattenteil (133) entlang eines größeren Teiles ihrer Längen anliegt und ein gekrümmtes freies Ende aufweist, das von dem ersten Plattenteil (133) divergiert, wenn das erste Plattenteil (133) in seiner blockierenden Position ist; wonach, wenn sich das Plattenteil (133) von seiner blockierenden Position wegbewegt, es an dem zweiten Plattenteil entlang ihrer gesamten Längen anliegt.
2. Kompressor nach Anspruch 1, bei dem das zweite Plattenteil (36) ein Blattventil ist.
3. Kompressor nach Anspruch 1 oder 2, weiter mit einem an der äußeren Kammer vorgesehenen Zylinderkopf (113), wobei der Zylinderkopf (113)

eine Auslaßkammer (30) definiert, die das aus der Kammer (26) durch die Leitung (30a) fließende Kühlgas aufnimmt und das Begrenzungsmittel einen axial von einer inneren Oberfläche eines axialen Endes der Auslaßkammer (30) vorstehender Vorsprung aufweist.

4. Kompressor nach Anspruch 3, bei dem der Vorsprung (35) ein vorspringendes Ende mit einer geneigten Oberfläche (35a) aufweist.

Revendications

1. Compresseur de réfrigération comprenant un carter de compresseur définissant au moins une chambre (26) dans laquelle on effectue de manière répétitive des courses successives d'aspiration, de compression et de décharge d'un gaz réfrigérant, des moyens (30a) destinés à relier la chambre (26) à une chambre extérieure (30), et des moyens (500) destinés à régler le débit du gaz réfrigérant entre la chambre (26) et la chambre extérieure (30), les moyens de liaison comprenant un conduit (30a) faisant communiquer la chambre (26) avec la chambre extérieure (30), les moyens de réglage (500) comprenant un premier élément de plaque (133) en matériau élastique placé à l'endroit d'une première ouverture d'extrémité du conduit (30a) débouchant dans la chambre extérieure (30) et se fixant par une extrémité à une paroi (13) de la chambre extérieure, et des moyens (35, 31) destinés à limiter le mouvement de courbure du premier élément de plaque (133) dans la direction l'écartant de la première ouverture d'extrémité du conduit (30a), l'extrémité libre du premier élément de plaque (133) fermant et ouvrant la première ouverture d'extrémité du conduit (30a) par son mouvement de courbure, le premier élément de plaque (133) présentant une certaine valeur de module d'élasticité amenant ce premier élément de plaque (133) à maintenir la fermeture de la première ouverture d'extrémité du conduit (30a) jusqu'à ce que la pression régnant dans la chambre (26) atteigne une certaine valeur, les moyens de réglage (500) comprenant un second élément de plaque (36) en matériau élastique fixé à une extrémité au moyen de l'extrémité du premier élément de plaque (133) fixé à la paroi (13) de la chambre extérieure, ce qui permet ainsi, lorsque le premier élément de plaque (133) s'écarte de sa position de fermeture, au premier élément de plaque (133) et au second élément de plaque (36) de se comporter comme un élément de plaque unique présentant un module d'élasticité de valeur suffisante pour résister à tout mouvement de vibration ; compresseur de liquide réfrigérant caracté-



- risé en ce que le second élément de plaque (36) est toujours en butée contre le premier élément de plaque (133) le long de la majeure partie de la longueur de ces éléments, et comporte une extrémité libre courbe s'écartant du premier élément de plaque (133) lorsque ce premier élément de plaque (133) se trouve dans sa position de fermeture, et en ce que l'élément de plaque (133) vient ensuite buter contre le second élément de plaque (36) sur toute la longueur de ces éléments lorsque cet élément de plaque (133) s'écarte de sa position de fermeture.
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2. Compresseur selon la revendication 1, caractérisé en ce que le second élément de plaque (36) est une soupape à anche.
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3. Compresseur selon une quelconque des revendications 1 et 2, caractérisé en ce qu'il comprend en outre une culasse (113) montée à l'endroit de la chambre extérieure, cette culasse (113) définissant une chambre de décharge (30) destinée à recevoir le gaz réfrigérant arrivant de la chambre (26) par le conduit (30a), les moyens de limitation comprenant un prolongement faisant saillie axialement sur la surface intérieure d'une extrémité axiale de la chambre de décharge (30).
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4. Compresseur selon la revendication 3, caractérisé en ce que le prolongement (35) comprend une extrémité en saillie présentant une surface inclinée (35a).
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