CLAIMS

1.- A suction valve for a refrigeration compressor of the type which comprises:

a compressor block (30);

a valve plate (40) attached to the compressor block (30) and provided with at least one suction orifice (41); and

a suction valve (V) formed, with the same nominal thickness, by a spacer body (10), provided with a median opening (11) having a continuous inner edge (12) and to be seated on the valve plate (40), and by a flexible vane (20), having a peripheral edge (24) with a contour corresponding to the inner edge of the median opening (11) and said flexible vane (20) being formed, along a longitudinal axis (X), by a fixing end portion (21), to be seated and secured to the valve plate (40), in the interior of the median opening (11), a bending median portion (22) and a sealing end portion (23), operatively associated with the suction orifice (41), the suction valve (V) being characterized in that

wherein one of the fixing end portion (21) is provided with comprises peripheral edge portions and the median opening comprises (24a,24b,24c,24d) to be seated against respective inner edge portions (12a,12b,12c,12d) of the median opening (11), and

wherein the peripheral edge portions are seated against the inner edge portions without gap between the peripheral edge portions and the inner edge portions and in order to restrict coplanar displacement of the fixing end portion (21) in relation to the spacer body (10), and limiting linear and angular displacements, in any direction and sense, of the flexible vane (20) in relation to the spacer body (10) and in the plane of the latter, upon by seating the flexible vane being seated (20) against the valve plate (40), in the interior of said median opening (11).

2- The suction valve, as set forth in claim 1, characterized in that the peripheral edge portions (24a,24b,24c,24d) of the fixing end portion (21) of the flexible vane (20) define, with the confronting inner edge portions (12a,12b,12c,12d) of the median opening (11), of the spacer body (10), a gap which is smaller than a respective gap defined, in the same direction and sense of restriction of the coplanar displacement of the flexible vane (20) in relation to the spacer body (10), between the portions of the peripheral edge (24) of the bending median portion (22) and of the sealing end portion (23) of the flexible vane (20) and the confronting portions of the continuous inner edge (12) of the median opening (11).

23- The compressor of ~~suction valve, as set forth in~~ claim 12, ~~characterized in that~~wherein the fixing end portion ~~(21)~~ presents a contour asymmetrical in relation to the longitudinal axis (X).

34- The ~~suction valve, as set forth~~ compressor of ~~in~~ claim 32, ~~characterized in that~~ wherein one of the parts of fixing end portion ~~(21)~~ and of median opening ~~(11)~~ of the spacer body ~~(10)~~ includes an end cutout ~~(25)~~ provided in a peripheral edge portion ~~(24a)~~, of the respective part, which intercepts the longitudinal axis (X), said end cutout ~~(25)~~ being provided in an eccentric position in relation to the longitudinal axis (X), so as to provide, to the respective part, a contour asymmetrical in relation to the longitudinal axis (X).

45- The ~~suction valve, as set forth in~~ compressor of claim 12, wherein ~~characterized in that~~ the end cutout ~~(25)~~ presents, internally, peripheral edge portions ~~(24a, 24b, 24c, 24d)~~ of the respective part, seated against confronting inner edge portions ~~(12a, 12b, 12c, 12d)~~ defined in a projecting portion ~~(16)~~ of the confronting contour of the other of said parts, so as to limit displacements of the flexible vane ~~(20)~~ in its seating plane on the valve plate ~~(40)~~.

56- The compressor ~~suction valve, as set forth in any~~ of claims 34 or 45, ~~characterized in that~~ wherein one of the parts of the fixing end portion ~~(21)~~ and of median opening ~~(11)~~ of the spacer body ~~(10)~~ includes a pair of lateral cutouts ~~(26)~~, each presenting, internally, peripheral edge portions~~(24a, 24b, 24c, 24d)~~ seated against confronting inner edge portions ~~(12a, 12b, 12c, 12d)~~ defined in a projecting portion ~~(16)~~ of the confronting contour of the other of said parts, so as to impede the flexible vane ~~(20)~~ from displacing in its seating plane on the valve plate ~~(40)~~.

76- The ~~suction valve, as set forth in~~ compressor of claim 56, ~~characterized in that~~ wherein each of the lateral cutouts ~~(26)~~ presents the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion ~~(24a)~~ of said parts, which intercepts the longitudinal axis (X), and by the contour of said cutout ~~(26)~~, equal to the respective parameter related to the other of said lateral cutouts ~~(26)~~.

78- The ~~suction valve, as set forth in~~ compressor of claim ~~6~~5, ~~characterized in that~~ wherein each of the lateral cutouts ~~(26)~~ presents at least one of the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion ~~(24a)~~ of said parts, which intercepts the

longitudinal axis (X), and by the contour of said lateral cutout ~~(26)~~, different from the respective parameter related to the other of said lateral cutouts ~~(26)~~.

~~9- The suction valve, as set forth in claim 2, characterized in that one of the parts of fixing end portion (21) and of median opening (11) of the spacer body (10) includes an end cutout (25) provided in a peripheral edge portion (24a), of the respective part, which intercepts the longitudinal axis (X), said end cutout (25) being provided in a position concentric in relation to the longitudinal axis (X), so as to provide, to the respective part, a contour symmetrical in relation to the longitudinal axis (X).~~

~~10- The suction valve, as set forth in claim 9, characterized in that the end cutout (25) presents, internally, peripheral edge portions (24a, 24b, 24c, 24d) of the respective part, seated against confronting edge portions (12a, 12b 12c, 12d) defined in a projecting portion (16) of the confronting contour of the other of said parts, so as to restrict displacements of the flexible vane in its seating plane on the valve plate (40).~~

~~11- The suction valve, as set forth in any of claims 9 or 10, characterized in that one of the parts of fixing end portion (21) and median opening (11) of the spacer body (10) includes a pair of lateral cutouts (26), each presenting, internally, peripheral edge portions (24a, 24b, 24c, 24d) seated against confronting edge portions (12a, 12b, 12c, 12d) defined in a projecting portion (16) of the confronting contour of the other of said parts, so as to restrict displacements of the flexible vane (20) in its seating plane on the valve plate (40).~~

~~12- The suction valve, as set forth in claim 11, characterized in that each of the lateral cutouts (26) presents the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion (24a) of said parts, which intercepts the longitudinal axis (X), and by the contour of said cutout (26), equal to the respective parameter other of said lateral cutouts (26).~~

~~13- The suction valve, as set forth in claim 11, characterized in that each of the lateral cutouts (26) presents at least one of the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion (24a) of said parts, which intercepts the longitudinal axis (X), and by the~~

~~contour of said cutout (26), different from the respective parameter relative to the other of said lateral cutouts (26).~~

~~14- The suction valve, as set forth in claim 2, characterized in that one of the parts of fixing end portion (21) and of median opening (11) of the spacer body (10) includes a pair of lateral cutouts (26), each presenting, internally, peripheral edge portions (24a, 24b, 24c, 24d) seated against confronting edge portions (12a, 12b, 12c, 12d) defined in a projecting portion (16) of the confronting contour of the other of said parts, so as to restrict displacements of the flexible vane (20) in its seating plane on the valve plate (40).~~

~~15- The suction valve, as set forth in claim 14, characterized in that each of the lateral cutouts (26) presents the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion (24a) of said parts, which intercepts the longitudinal axis (X), and by the contour of said lateral cutout (26), equal to the respective parameter relative to the other of said lateral cutouts (26).~~

~~16- The suction valve, as set forth in claim 14, characterized in that each of the lateral cutouts (26) presents at least one of the parameters defined by the axial distance of its median axis, in relation to the peripheral edge portion (24a) of said parts, which intercepts the longitudinal axis (X), and by the contour of said lateral cutout (26), different from the respective parameter related to the other of said lateral cutouts (26).~~

~~17~~8- The ~~suction valve, as set forth in~~ compressor of any one of claims 1~~2~~ to ~~16~~7, ~~characterized in that~~ wherein the peripheral edge portions ~~(24a,24b,24c,24d)~~ be seated against the respective inner edge portions ~~(12a,12b,12c,12d)~~ of the median opening ~~(11)~~, according to directions respectively orthogonal and parallel to the longitudinal axis (X), upon seating the flexible vane ~~(20)~~ against the valve plate (40), in the interior of the median opening ~~(11)~~.

~~18~~9- A process for mounting a suction valve in a refrigeration compressor of the type which comprises: a compressor block ~~(30)~~; a valve plate ~~(40)~~ attached to the compressor block ~~(30)~~ and provided with at least one suction orifice ~~(41)~~; and a suction valve (V) formed, with the same nominal thickness, by a spacer body ~~(10)~~, provided with a median opening ~~(11)~~ having a continuous inner edge ~~(12)~~ and to be seated on the valve plate ~~(40)~~, and by a flexible vane ~~(20)~~, having a peripheral edge ~~(24)~~ with a contour

corresponding to the inner edge of the median opening ~~(11)~~, said flexible vane ~~(20)~~ being formed, along a longitudinal axis (X), by a fixing end portion ~~(21)~~, to be seated and secured to the valve plate ~~(40)~~, in the interior of the median opening ~~(11)~~, a bending median portion ~~(22)~~ and a sealing end portion ~~(23)~~, operatively associated with the suction orifice ~~(41)~~, the process comprising ~~being characterized in that it comprises~~ the steps of:

~~- shaping the spacer body (10), with its median opening (11);~~

- stamping the flexible vane ~~(20)~~ having the portions of the edge ~~(24)~~ of its fixing end portion ~~(21)~~ comprising peripheral edge portions

- shaping the spacer body, with its median opening to comprise inner edge portions;

- wherein the peripheral edge portions are configured to be seated against confronting portions of the inner edge portions ~~(20)~~ of the median opening ~~(11)~~ of the spacer body ~~(10)~~, wherein the peripheral edge portions are seated against the inner edge portions without gap between the peripheral edge portions and the inner edge portions, so as to restrict coplanar displacements of the fixing end portion ~~(21)~~ in relation to the spacer body ~~(10)~~, limiting linear and angular displacements, in any directions and sense, of the flexible vane ~~(20)~~ in relation to the spacer body ~~(10)~~ and in the plane of the latter;

– seating and maintaining the spacer body ~~(10)~~ seated against a confronting face of the valve plate ~~(40)~~ in a predetermined position;

– seating and maintaining seated the flexible vane ~~(20)~~ against the confronting face of the valve plate ~~(40)~~, in the interior of the median opening ~~(11)~~, in the spacer body (10); and

– affixing the valve plate ~~(40)~~, already carrying the suction valve (V), against the compressor block ~~(30)~~.

~~19- The process, as set forth in claim 18, characterized in that the stamping of the flexible vane (20) and the shaping of the spacer body (10) produce, in the fixing and portion (21) of the flexible vane (20), a peripheral edge portions (24a,24b,24c,24d) and, in the median opening (11) of the spacer body (10), inner edge portions (12a,12b,12c,12d), the peripheral edge portions (24a,24b,24c,24d) being configured for defining, with the confronting inner edge portions (12a,12b,12c,12d), a gap which is smaller than a respective gap defined, in the same direction and sense of restriction of~~

~~the coplanar displacement of the flexible vane (20), in relation to the spacer body (10), between the portions of the peripheral edge (24) of the bending median portion (22) and of the sealing end portion (23) of the flexible vane (20) and the confronting portion of the continuous inner edge (12) of the median opening (11).~~

~~2~~10- The process of ~~, as set forth in~~ claim ~~1~~9, wherein ~~characterized in that~~ the flexible vane ~~(20)~~ is maintained seated against the valve plate ~~(40)~~, before attaching the latter to the compressor block ~~(30)~~, by previously applying an amount of viscous liquid on at least one of the confronting faces of the valve plate ~~(40)~~ and of the flexible vane ~~(20)~~.

1~~2~~1- The process of ~~, as set forth in~~ any of claims ~~1~~9 or 1~~2~~0, wherein ~~characterized in that~~ the flexible vane ~~(20)~~ is maintained seated against the valve plate ~~(40)~~, before attaching the latter to the compressor block ~~(30)~~, by seating the peripheral edge ~~(24)~~ of the fixing end portion ~~(21)~~ against the confronting inner edge ~~(12)~~ of the median opening ~~(11)~~ of the spacer body ~~(10)~~.

1~~2~~2- The process of~~, as set forth in~~ any of claims ~~1~~9 to ~~2~~11, wherein ~~characterized in that~~ the spacer body ~~(10)~~ is maintained seated, in said predetermined position, against the valve plate ~~(40)~~, before attaching the latter to the compressor block ~~(30)~~, by previously applying an amount of viscous liquid on at least one of the confronting faces of the valve plate ~~(40)~~ and of the spacer body ~~(10)~~.

1~~2~~3- The process of ~~, as set forth in~~ any of claims ~~1~~9 to ~~2~~11, the valve plate ~~(40)~~ being attached to the compressor block ~~(30)~~ by fixation screws ~~(35)~~ disposed through respective holes ~~(45, 15)~~ provided in said valve plate ~~(40)~~ and in the spacer body ~~(10)~~, wherein ~~characterized~~ in that the spacer body ~~(10)~~ is maintained seated, in said predetermined position, against the valve plate ~~(40)~~, before attaching the latter to the compressor block ~~(30)~~,by fitting the holes ~~(15)~~ of the spacer body ~~(10)~~ in the fixation screws ~~(35)~~ already mounted through the holes ~~(45)~~ of the valve plate ~~(40)~~.

~~2~~14- The process of~~, as set forth in~~ any of claims ~~1~~9 to ~~2~~13, wherein ~~characterized in that~~ the contour of the fixing end portion ~~(21)~~ of the flexible vane ~~(20)~~ is asymmetrical in relation to the longitudinal axis (X).