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(54) A seal with joint protection

(57) 1. A SEAL WITH JOINT PROTECTION, of preferable application to the valves of the containers of pressurized gas, specially for oil liquefied gas containers, constituted by an inner body which is formed by a base from which starts up perimetrically a plurality of nerves which by their upper edge are weakly linked to an intermediate ring characterized in that one of the mentioned nerves (9) of the inner body comprises a section which is approximately twice the corresponding one to any of the remaining nerves (4), being this main nerve (9) linked in a joint way to the mentioned intermediate ring (8), whereas such intermediate ring (8) is weakly linked by its external edge to an outer body (11) through a series of linking points (10) uniformly distributed along the perimeter of such edge except in a wide arch confronted to an area (12) of joint link between both intermediate ring (8) and the outer body (11), being the mentioned area (12) located in a position diametrically opposed to the linking of the intermediate ring (8) with the main nerve (9).

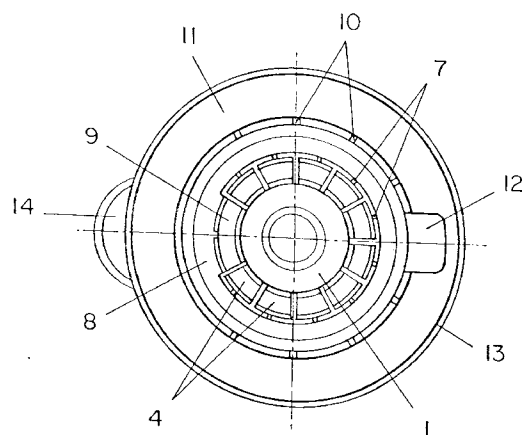
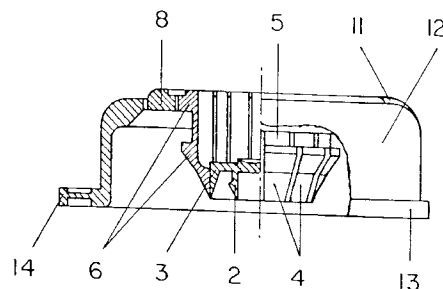


FIG. 1

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Description

OBJECT OF THE INVENTION

The object of the present Utility Model is constituted by A SEAL WITH JOINT PROTECTION.

This seal is of preferential application to the valves of the container of pressurized gas, specially for oil liquefied gas containers, and produces essential novelty characteristics, as well as remarkable advantages, with regard to the similar means collected from the present state of the art.

BACKGROUND OF THE INVENTION

At present there are seals for this type of containers, intended to the protection of the gas outlet valve contained in the inside of the container. With the positioning of these seals it is intended to protect the gas outlet and at the same time to guarantee the user that the content of the container remains untouched, since in order to have access to the gas outlet valve it would be necessary to pull up the seal. Nevertheless, the already known seals for this application have the defect of being susceptible of manipulation, by which evidently they lose a great part of their efficiency.

The Industrial Model number 126.646 of the same applicant already supposed an important improvement in reference to the known art, when providing a seal which perfectly protected the gas outlet valve, and also it was very difficult to manipulate, since in order to separate the seal it was necessary to detach the upper ring from the body introduced in the inner housing of the valve, by the linking weakened points between both elements, which evidently makes clear the manipulation which has been submitted to.

On the other hand, it is also known that this type of containers have externally to the valve, around the neck thereof, a ring of elastic material which serves as sealing joint with the regulator, with the purpose of avoiding unwanted gas leaks to the outside.

At present, this joint, as consequence of the manipulation of the containers during the transportation or by any other circumstance, can be damaged, in such a way that cannot guarantee the degree of sealing required between the mentioned outlet valve and the regulator, with the resulting gas leak to the outside, which may produce disastrous consequences for the user.

DESCRIPTION OF THE INVENTION

The existing inconveniences in the present seal models, have been favourably solved by the protection seal of the joint which is the object of this description, supposing a very important improvement even in reference to the one described in the industrial model number 126.646 previously mentioned.

Thus, an object of the present invention is to provide

a seal which perfectly protects the outlet valve of the gas contained in the corresponding container, which does not allow any manipulation.

The second object of the invention consists in that this seal also provides an efficient protection for the elastic joint, in such a way that could guarantee the user the perfect sealing between the regulator and the valve, avoiding with this the possibility of unwanted gas leaks.

The objects stated above have been completely achieved by the joint protection seal that is the object of this description, which is formed by an inner body with a circular base, by which lower face it has been equipped with two cylindrical, concentric extensions, with a limited height, tangentially starting up from the most outer one and in an upward direction, a plurality of flat inner nerves, uniformly distributed along the perimeter of such base, and in its opposite face each one of these nerves has a veed out which defines two teeth, one of which remains located approximately at half its height while the other one reaches the upper edge of the corresponding nerve, existing between the respective upper teeth and an intermediate superior ring, linking means formed by a succession of weakened points, one for each nerve, radially placed with the preferential equidistant manner.

One of the mentioned nerves comprises a section which passage is approximately twice any of the remaining nerves, in such a way that this important nerve is jointly linked to the mentioned intermediate upper ring with the solution of continuity.

The intermediate upper ring, which with preference will have a circular crown shape equipped with a circumferential stepping which affects approximately half of its upper surface, is linked, by its most external edge through weakened points distributed along its perimeter, to an external body which surrounds all the assembly. In a diametrically opposed position to the linking between the intermediate upper ring with the main nerve of the inner body, there is an area or joint link with the solution of continuity, between such intermediate upper ring and the mentioned outer body. This linkage area comprises a section which, is approximately equal to the same existing section between each two consecutive points of the weakened linkage.

The outer body has a cylindrical general shape, descending to surround the whole described assembly, and it is provided near its lower edge, with an external perimetric nerve, of reduced thickness, to reinforce such lower edge, and from which starts up perpendicularly to the wall of the outer body and in diametrically opposed position to the area of joint linkage between such external outer body and the intermediate upper ring, a traction lug for lifting the seal.

As it is clear from the above statements, the described seal with joint protection perfectly complies with the double object proposed to protect the elastic joint of the gas outlet valve neck to avoid the access to such valve unless the mentioned seal is pull up. Thus, when

the seal is in the proper position, its inner body, held by the valve internal stubs, covers such gas outlet valve without any possibility that this may be manipulated and, at the same time, its external body surrounds the mentioned elastic joint as a whole, protecting it against accidental breakage.

When the user needs to use the gas container, he should previously withdraw the seal and for this, he will exercise an upward traction on the lateral lug, by which the existing weakened linking points between the outer body and the intermediate upper ring will break, in such a way that this traction will be transmitted to such intermediate upper ring through the continuous linking area existing between both outer body and the intermediate ring.

Similarly, the effect of the traction will be transmitted from the intermediate ring to the intermediate body. Since the inner body is held in the valve housing, the traction effect will provoke at the same time the breaking of the existing weakened linking points between the intermediate upper ring and such inner body, in such a way that the complete extraction of the seal will be possible thanks to the joint area determined by the linkage with solution of continuity existing between the main nerve and the intermediate upper ring.

The advantages which are obtained from the use of the present seal are evident and have been already explained: On one hand, it gives a really effective protection to the valve and to the elastic joint and, on the other hand, the extraction of the seal by the user results extremely simple and comfortable.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings represent a preferred embodiment of the seal with joint protection which the invention describes. In such drawings:

Figure 1 represents an elevation view partially in section and an upper plan view of the object of the invention.

Figure 2 shows a partially sectioned view of the seal, as well as the representation of the type of valve that is used in the above mentioned pressured gas containers, which facilitates the understanding of the way in which the elements are coupled.

DESCRIPCION OF A PREFERRED EMBODIMENT

Just as it appears represented in the drawings, the joint protection seal suggested by the invention is comprised of an inner body formed from a circular base (1) which lower face has two concentric extensions (2) and (3), tangentially starting up and in an upward direction from the most external extension (3), a plurality of flat nerves (4), uniformly distributed along the perimeter of such base (1), which have a veed out in their outer face

(5) which define both teeth (6) from which the upper ones are weakly linked by the points (7) to the internal edge of the intermediate upper ring (8). One of these nerves, the one shown by reference (9), comprises a section which is approximately twice the one corresponding to any of the remaining nerves (4), and is jointly linked to the upper ring (8), with solution of continuity.

Likewise, this intermediate ring (8) is linked by its external edge, through weakened linking points (10) to an outer body that adopting a cylindrical general shape, opened in the lower position, surrounds the inner body. Between the intermediate upper ring (8) and the outer body (11) there is an area (12), in diametrically opposed position to the main nerves (9), which constitutes the joint linking between both mentioned elements. The arch of the ring (8) confronted to the joint linking area (12) is lacking of weakened linking points (10).

The external wall (13) of the mentioned outer body (11) is provided with a perimetric rib (14), which gives reinforcement to the lower edge of this wall (13), and from which a lateral lug (15) starts up, perpendicularly to such wall (13) and even with the mentioned lower edge, which is used as traction or pushing means for pulling up the seal by the user.

In Figure 2 of the drawings it has been represented a conventional valve (16) of the type used normally in the oil liquefied gas containers, as well as the joint protection seal object of the invention, cut in one quarter according to A-B. In this Figure it is shown that the valve (16) has a housing (17) in which inner part the gas outlet (18) appears protected by a raised cylindrical nozzle and stubs (19) oriented towards the inner side of the housing (17). Likewise, the elastic joint (20) or means of sealing between the regulator and the valve (16) is shown.

The use of the seal is clearly shown by this Figure 2. Thus, when the seal is placed on the valve and a pressure is applied on it in a downward position, the inner body remains housed in the space (17), in such a way that the nerves (4, 9) which are confronted to the stubs (19), elastically give way until such stubs (19) are housed in the inside of the veed out (5) made in the mentioned nerves (4, 9). In that moment, the wall (13) of the outer body (11) will perfectly cover the elastic joints (20) protecting it against the blows or against any other agent that could provoke some damage, while the gas outlet cylindrical nozzle (18) will remain housed in the space existing between the lower extensions (2) and (3) of the circular base (1).

When it is desired to pull up the seal, it will be enough to exercise some traction, in an upward position, on the lateral lug (15). With this traction, and since the inner body is held by the stubs (19) of the valve (16) which are housed in the veed out (5) of the nerves (4, 9) the rupture of the linking points (10) will be provoked between such outer body and the intermediate upper ring (8). When keeping the traction, the outer body (11) through the linking area (12), will pull the intermediate

ring (8) which will break its linking points (7) with the nerves (4), and through the linking area (9) the joint link with the main nerve, will transfer this traction effort to the base (1), by which the outlet of this inner body which is being housed in the space (17) of the valve will be provoked, as it has been broken the linking points (7) of the nerves (4) to the ring (8), the nerves (4) which are held by the stubs (19) of the valve (16) will elastically give way, being released from this retention.

On the other hand, it is important to indicate that the lower extensions (2) and (3) of the base (1), together with the gas outlet cylindrical nozzle (18), comply with a sealing task against any gas leak after the seal has been correctly placed.

Once the seal has been pulled up, if there is any gas leakage, the inner body of the seal would be reused to house it in the space (18) of the valve (16) and seal again the outlet (18), avoiding that the gas leakage continues.

By the present invention a seal has been developed which is really efficient in its double task of avoiding manipulation of the valve of the pressure gas containers, as well as to protect the valve elastic joint, since in order to have access to any of these elements it will be necessary to pull up such seal, provoking its breaking with this action.

The invention has described a preferred embodiment of the object thereof, without absolutely being understood as limitative, therefore admitting some changes in its form and being able to be manufactured in any type of materials, size or colour, without supposing any alteration of the essential characteristic of the invention.

Claims

1. A SEAL WITH JOINT PROTECTION, of preferable application to the valves of the containers of pressurized gas, specially for oil liquefied gas containers, constituted by an inner body which is formed by a base from which starts up perimetrically a plurality of nerves which by their upper edge are weakly linked to an intermediate ring characterized in that one of the mentioned nerves (9) of the inner body comprises a section which is approximately twice the corresponding one to any of the remaining nerves (4), being this main nerve (9) linked in a joint way to the mentioned intermediate ring (8), whereas such intermediate ring (8) is weakly linked by its external edge to an outer body (11) through a series of linking points (10) uniformly distributed along the perimeter of such edge except in a wide arch confronted to an area (12) of joint link between both intermediate ring (8) and the outer body (11), being the mentioned area (12) located in a position diametrically opposed to the linking of the intermediate ring (8) with the main nerve (9).

2. A seal with joint protection, according to claim 1, which is characterized in that the mentioned outer body (11) has a cylindrical lateral wall (12) which surrounds the whole assembly, being provided such wall (12) in its lower edge of a reinforcing outer rib (13) from which starts up perpendicularly to the mentioned wall (12), and in confronted position to the joint link area between the main nerve (9) and the intermediate ring (8), a traction lateral lug (14).

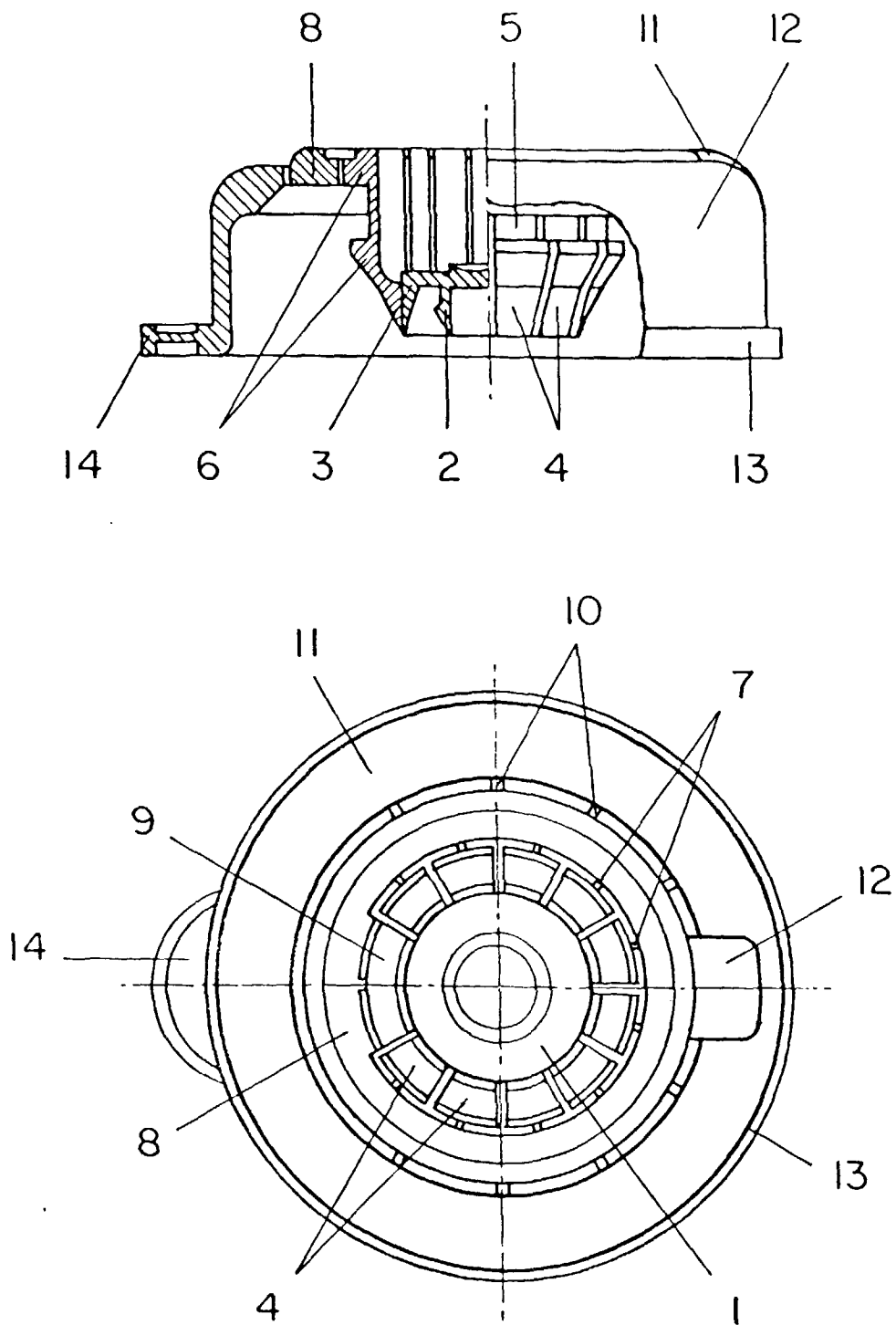


FIG. 1

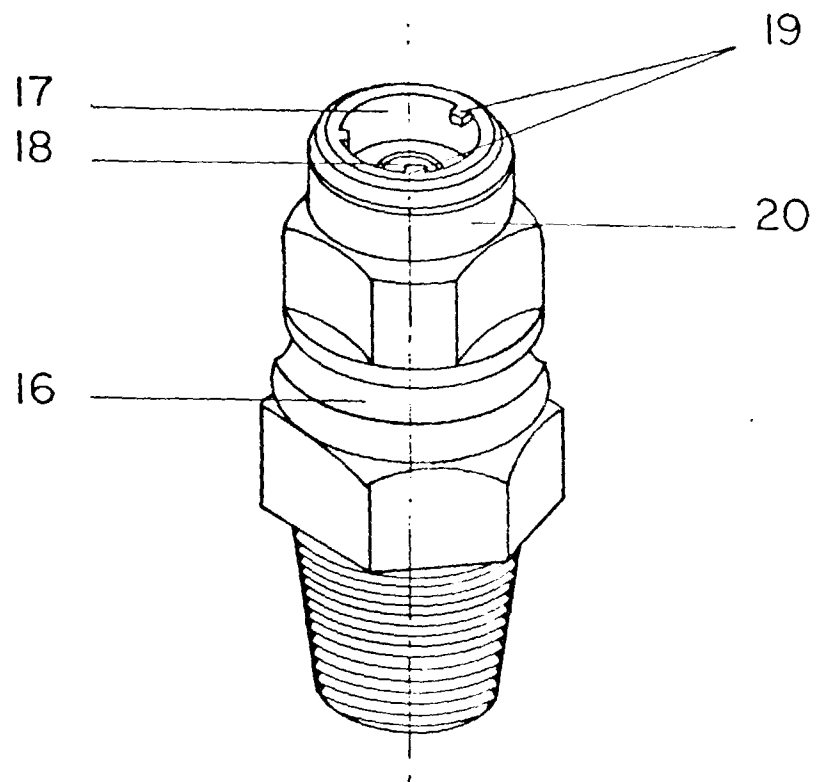
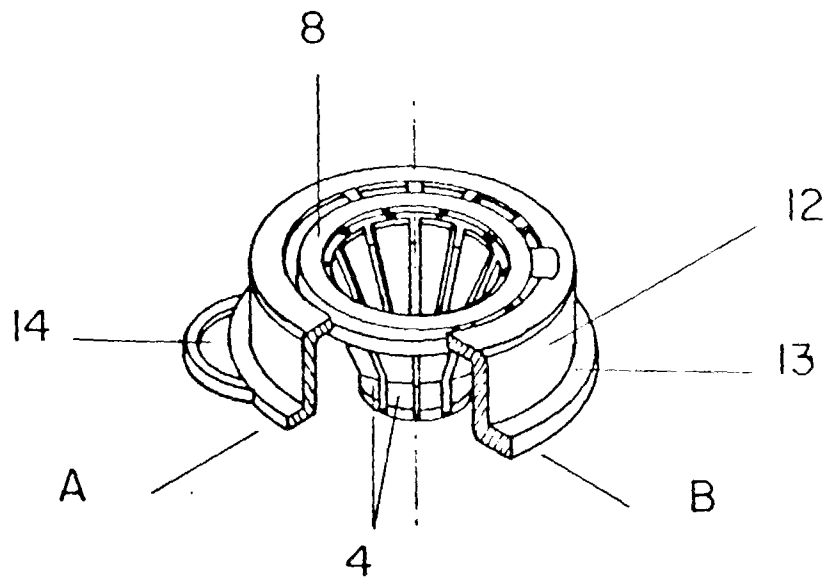


FIG. 2