

IMPROVED FLUID COUPLING

This invention relates to fluid couplings.

A wide variety of fluid couplings is available for
5 use with both high and low temperatures and in both
high pressure and vacuum environments. One such
coupling which has found significant commercial
acceptance is described in United States Patent No.
3,521,910. In this coupling, a pair of coupling
10 components is provided which have fluid passageways
extending longitudinally therethrough. A generally
annular rib or sealing bead extends axially outward
from the end face of each coupling component in a
surrounding relationship with the associated fluid
15 passageway. The components themselves are adapted to
be placed in an end-to-end relationship so that the
sealing beads are disposed in opposed relation to each
other. A generally annular sealing gasket is
interposed between the sealing beads, and means are
20 advantageously provided for drawing the components
axially towards each other in order that the sealing
beads will sealingly engage the opposed faces of the
gasket. During assembly or makeup of the coupling,
the sealing beads produce slight indentations in the
25 gasket faces.

While the foregoing coupling construction has indeed met with substantial commercial success and has provided improved coupling capabilities over a wide range of system and operating parameters, one difficulty which has been encountered resides in precisely positioning the annular gasket between the annular sealing beads at initial coupling makeup and at subsequent reassembly after disassembly. Because of the basic construction involved, it has been found that the gasket is not always substantially coaxially disposed with the annular sealing beads. This result may, to some extent, adversely affect the overall sealing results. Moreover, and while the sealing beads produce only slight indentations in the gasket at coupling makeup, it is necessary to precisely reposition the gasket when the coupling is disassembled and then reassembled.

Because of problems encountered in achieving the necessary precise repositioning, it has heretofore been the practice to simply insert a new gasket each time the coupling was disassembled and then reassembled. While no particularly great expense is involved by replacing the gaskets, it necessarily requires that maintenance personnel, installers, and the like maintain a ready supply of gaskets in various sizes when working in the field. Such requirement is

considered undesirable for many installations and uses of the coupling.

Accordingly, it has been considered desirable to develop an arrangement which would facilitate positive
5 mounting of the gasket relative to the coupling components and sealings beads in order that precise gasket positioning would be assured. Moreover, such an arrangement would advantageously facilitate precise
10 repositioning of the gasket at subsequent disassembly and reassembly of the coupling to eliminate the need for gasket replacement as per the prior accepted practice.

The present invention contemplates an improved arrangement which overcomes the foregoing needs and
15 others and provides an improved coupling construction which accommodates precise location of a sealing gasket between a pair of opposed annular sealing beads in a fluid coupling construction.

An object of the invention is to provide a gasket
20 retainer which facilitates retention of an annular sealing gasket on one of a pair of coupling components for precisely locating the gasket between a pair of opposed annular sealing beads in a substantially coaxial relationship therewith.

More particularly, the invention provides a fluid coupling having first and second generally cylindrical coupling components each including fluid passageways extending longitudinally thereof, said components having opposed radial end faces including generally annular sealing beads extending axially therefrom towards each other with an annular sealing gasket interposed therebetween, said coupling further including means for moving said components into a close-spaced substantially coaxial relationship such that said sealing beads sealingly engage opposite face areas of said gasket, and a retainer device for maintaining said gasket in a predetermined located position relative to the end face of one of said components in a substantially coaxial relationship therewith, said retainer^{device} including an annular end wall and a plurality of retaining legs extending outwardly of said end wall in a direction generally normal thereto in a retaining relationship with said one component at a portion thereof spaced axially rearward from the associated radial end face such that said gasket is captured between the annular end wall of said retainer and the sealing bead at said one component end face, said annular end wall having an inside diameter greater than the outside diameter of the annular sealing bead on the end face of the other

of said components, whereby said gasket is positively located in a generally coaxial relationship with said components when they are moved towards said closely-spaced relationship by said moving means, said
5 sealing beads each engaging substantially the same portion of the associated gasket face area during subsequent disassembly and reassembly of the coupling.

The retainer may include a cylindrical side wall portion extending from the end wall in the same
10 direction as the retaining legs. The side and end walls thus define a receiving cavity which captures the gasket and prevents radial movement thereof relative to the one coupling component.

The axial dimension of the retainer side wall is
15 preferably at least only slightly greater than the thickness of the gasket.

The axial dimension of the sealing bead associated with the other component is advantageously greater
than the thickness of the retainer end wall.

20 The internal diameter of the retainer cavity is also advantageously at least slightly greater than the diameter of the one component radial end face thereof.

The retainer legs can effectively define a coupling component engaging band dimensioned so that
25 the retainer legs are biased radially outwardly as the retainer is installed on the one component.

The invention includes a fluid coupling having first and second coupling components which include fluid passageways longitudinally thereof, opposed radial end faces having opposed annular sealing beads coaxial with said passageways and extending axially from said end faces towards each other with an annular sealing gasket interposed therebetween, one of said components including a radially outwardly extending shoulder axially spaced along a cylindrical portion of said one component from the end face thereof; a first coupling member adapted for threaded engagement with the other component or with a second coupling member and having a radial shoulder for driving engagement with said outwardly extending shoulder, whereby advancement of the threadedly engaged relationship between said first coupling member and said other component or said second coupling member, as the case may be, causes said components to be coaxially drawn together for urging the sealing beads on said radial end faces to be moved into sealing engagement with opposite face areas of said gasket; and a retainer for maintaining said gasket in a predetermined located position relative to the end face of said one component, said retainer including an annular end wall having an inside diameter greater than the outside diameter across said annular sealing beads, a

generally cylindrical side wall normal to said end wall and defining a gasket-receiving cavity therewith, said side wall having an inside diameter at least slightly greater than that of said one component cylindrical portion with said side wall having a length from said end wall which at most is only slightly greater than the thickness of said gasket, said retainer further including a plurality of retaining legs extending outwardly from the free edge of said side wall at circumferentially spaced intervals therearound in a direction generally normal to said end wall, said legs including means for engaging said one component cylindrical portion for maintaining said retainer in a mounted relationship on said one component with said gasket captured in said cavity in a substantially coaxial relationship with the sealing bead on said one component radial end face.

Such arrangement facilitates reuse of the gasket upon subsequent disassembly and reassembly of the coupling.

The gasket retainer does not in any way interfere with or impair the sealing achieved between opposed sealing components.

The invention also includes a spring type gasket retainer adapted to maintain a generally annular gasket having opposed face areas in a substantially

coaxial relationship with an annular sealing bead
extending axially outwardly from the radial end face
of a generally cylindrical fluid coupling component in
a surrounding relationship with a fluid passageway
5 extending through said component, said retainer
comprising:

an annular end wall, a generally cylindrical side
wall normal to said end wall defining a gasket-
receiving cavity with said end wall, said retainer
10 further including a plurality of retaining legs
extending outwardly from the free edge of said side
wall at circumferentially spaced intervals therearound
in a direction generally normal to said end wall, each
of said engaging legs comprising an engaging section
15 adjacent the outer free end of the respective leg and
adapted to frictionally engage an associated fluid
fitting component, at a portion thereof spaced axially
rearwardly of the component radial end face, said
engaging sections having a first normal position
20 cumulatively defining an engaging band and being urged
radially outwardly to a biasing position when said
retainer is installed onto the component for
maintaining said retainer in a mounted relationship on
the component with a gasket captured in said cavity in
25 a substantially coaxial relationship with the
component sealing bead.

The invention will be further described, by way of example, with reference to the accompanying drawings, wherein;

5 Figure 1 is an exploded side elevational view of a fluid coupling in accordance with the present invention;

Figure 2 is an enlarged, exploded cross-sectional view of a portion of the structural arrangement shown in Figure 1;

Figure 3 is an end view of a gasket retainer of the fluid coupling; and

Figure 4 is a partial, further enlarged cross-sectional view of the coupling of Figure 1 in the assembled condition.

Referring now to the drawings wherein the showings are for purposes of illustrating a preferred embodiment of the invention only and not for purposes of limiting same, Figure 1 shows a fluid connector or coupling A which is suitable for use in both pressure and vacuum applications. The basic construction of the coupling is known in the art as shown in United States Patent No. 3,521,910.

More particularly, and with reference to both Figures 1 and 2, connector or coupling A comprises a first coupling component 10, a second coupling component 12, a coupling nut 14, a gasket 16, and a gasket retainer 18.

First coupling component 10 includes a suitable fluid passageway 30 extending longitudinally therethrough between a radial inner or end face 32 and an outer or terminal end 34. While terminal end 34 may include any convenient means for affixing coupling

component 10 to a fluid line, a male or female tube-receiving area (not shown) is contemplated in the embodiment here described. However, any other conventional arrangement, such as screw-threaded
5 connecting means, ferrule-type tube couplings, and other arrangements may also be suitably employed.

An annular, radiused sealing bead or rib 36 extends axially outward from radial end face 32 in a coaxial relationship with passageway 30 to effect a
10 sealing relationship with gasket 16 in a manner to be described. A circumferential locating or mounting flange 38 is spaced axially along first coupling component 10 some predetermined distance from end face 32. A portion 40 having a diameter less than that of
15 flange 38 and greater than the outside diameter of sealing bead 36 is disposed axially between end face 32 and the flange. The reasons and purposes for this configuration will become apparent hereinafter.

Second coupling component 12 includes a fluid
20 passageway 50 extending longitudinally thereof between a radial inner or end face 52 and an outer or terminal end 54. An annular, radiused sealing bead 56, which is substantially identical to bead 36, extends axially outward of radial end face 52 in a coaxial
25 relationship with the passageway 50. As shown in Figure 1, second coupling component 12 includes a

5 screw-threaded region 58 rearwardly adjacent end face
52 for threaded co-operation with nut 14, an inter-
mediate, slightly enlarged hexagonal tool-receiving
region 60, and a screw-threaded region 62 adjacent
outer or terminal end 54. In the embodiment shown,
threaded region 62 comprises pipe threads for
conveniently securing the connector to associated or
adjacent structure.

10 It will be readily appreciated, however, that
other configurations for second coupling component 12
may also be advantageously employed. Moreover,
alternative arrangements may be suitably employed in
place of threaded region 58 for purposes of drawing
sealing beads 36, 56 towards each other into sealing
15 engagement with gasket 16 and in place of threaded
region 62 for mounting the coupling to associated
structure or to a fluid line. One alternative
comprises a pair of opposed glands wherein each gland
is configured similarly to the one shown as first
20 coupling component 10 in the Figures. In this case, a
separate male nut is associated with one gland and a
separate female nut is associated with the other
gland. These nuts, in turn, threadably mate with each
other to draw the glands into sealing engagement with
25 the gasket. Still other alternative arrangements
include tees, crosses, elbows, unions, and the like.

Coupling nut 14 comprises an open-ended structure having a forward end 70 and a rear end 72 with the interior of the nut being screw-threaded as at 74 from the forward end towards the rear end. Threads 74 mate with threads 58 on second coupling component 12 for drawing components 10,12 towards each other in a manner to be described. A radially inwardly extending shoulder 76 is disposed at nut rear end 72 and has a smaller inside diameter than the outside diameter of circumferential flange 38 on coupling component 10. Thus, shoulder 76 may act against flange 38 as an engaging and retaining means for the first coupling component as will be described. A pair of generally opposed leak test ports 78 radially penetrate the side wall of the nut for reasons well known in the art.

With particular reference to Figure 2, gasket 16 comprises an annular member having generally opposed face areas 86,88. Its inside diameter 90 is approximately the same as the diameter of the component passages 30,50 (Figure 1) and its outside diameter 92 is preferably slightly larger than the diameter of portion 40 on first component 10.

With particular reference to Figures 2 and 3, the retainer device 18 is provided for mounting the gasket 16 on the first component 10 in a precise location intermediate sealing beads 36,56 when the coupling is assembled. As shown, retainer 18 comprises an annular

end wall 100 having a generally cylindrical side wall 102 extending generally normal thereto for defining a gasket-receiving cavity.

Extending outwardly from the outer or free edge of side wall 102 are a plurality of substantially identical retaining legs 104. As shown in Figures 2 and 3, the preferred embodiment of the invention contemplates use of three equidistantly spaced-apart legs, although a different number or different relative spacing could also be satisfactorily employed. Each of retaining legs 104 is formed to include an engaging means or section 106 adjacent the outer terminal end thereof. As shown, these engaging means are somewhat U-shaped and configured so that the base area of each is disposed radially inward of the associated leg 104. Each of the sections 106 has an arcuate configuration thereacross between the opposite side edges of the associated leg 104 so that at least some line contact is made circumferentially of the portion 40 on the first component 10 when the retainer is installed. It will be appreciated that other forms of engaging means may also be satisfactorily employed. For example, generally V-shaped, arcuate shaped, or still other configurations may be used in place of the generally U-shape as necessary and/or desired. Such modifications do not in any way depart from the overall scope of the present invention.

Retainer 18 may conveniently comprise a stamping or the like formed of a suitable metal. Typically, however, the retainer will be stamped from stainless steel because this metal is particularly suited for use in a wide variety of fluid system environments.

The retainer is constructed to include particular dimensional characteristics. In this regard, and with continued reference to Figures 2 and 3, the depth of the gasket-receiving cavity defined by end wall 100 and side wall 102 is such that, at most, it is only slightly greater than the thickness of gasket 16. This assures that the gasket will be fully received in the cavity for obtaining accurate and consistent locating results relative to component 10 without physically interfering with the component. The outside diameter 110 of side wall 102 is, at most, only slightly greater than the diameter of first component flange 38. The inside diameter 112 of the side wall is such that the gasket 16 will be fairly closely received in the cavity and thus prevented from radial movement relative to end face 32. Inside diameter 114 of retainer end wall 100 is at least slightly greater than the outside diameter of sealing bead 56 so that there is no inference between the retainer end wall and sealing bead. Also, the thickness of end wall 100 is less than the axial extension of sealing bead 56 from its associated radial end face 52.

U-shaped engaging means 106 define, in combination with each other, an engaging band or zone. The diameter 116 of this zone is slightly less than the diameter of the first component portion 40. Still further, the length of legs 104 is such that, when gasket 16 is received in the receiving cavity of retainer 18 and the retainer is thereafter installed on component 10, the outermost or terminal ends of the legs will be disposed in a non-contacting relationship with flange 38.

Figure 4 shows the coupling of Figure 1 in an assembled condition with the retainer and gasket co-operatively installed therein. At the time of assembly, gasket 16 is placed in the retainer-receiving cavity for close confinement thereby. The retainer may then be installed onto component 10 by radially positioning it generally coaxial with the component and then axially inserting the retainer thereonto with the engaging means 106 frictionally engaging the portion 40. Because diameter 116 (Figure 3) is less than the diameter of the first component portion 40, legs 104 will be urged radially outwardly so that a biasing type of retaining force will continuously be exerted on the portion 40. Because of the close dimensional relationships between the gasket and retainer, the gasket is thus substantially

coaxially mounted on component 10 in a captured relationship between retainer end wall 100 and sealing bead 36.

In addition to securing retainer 18 to component 10, the U-shaped or arcuate configuration of the engaging means 106 is desirable for other reasons. First, the radially outward extending nature of the engaging means adjacent the ends of the legs renders it somewhat easier to install the retainer onto the coupling component 10. Second, the arcuate configuration reduces the likelihood of inadvertently contacting the sealing bead 36 during retainer installation. Such contact may scratch or mar the sealing bead and adversely affect the sealing relationship with gasket 16.

Coupling nut 14 may then be advanced onto component 12 by means of threaded engagement between threaded regions 74,58. Advancement of the nut onto component 12 thus effectively draws the components 10,12 coaxially towards each other until the sealing beads 36,56 sealingly engage the opposed faces of gasket 16. Retainer 18 advantageously maintains a coaxial location for the gasket with the sealing beads during this fitting makeup process.

In the particular fitting construction here under discussion, the coupling components 10,12 and the

coupling nut 14 are typically manufactured from stainless steel. The sealing gasket 16, in turn, is constructed from nickel or the like. In addition, other materials may also be suitably employed for the coupling components and the gasket to achieve desired results in a wide variety of different environments. At the time of fitting makeup in the manner shown by Figure 4, the sealing beads 36,56 will produce slight annular indentations in the opposite faces of the gasket.

Even with such slight indentations, and upon disassembly of the fitting for maintenance or like purposes, it is necessary to coaxially realign the gasket with the sealing beads 36,56 when the coupling is reassembled. If substantial realignment is not obtained, undesired leakage of the fitting could occur. Heretofor, a new gasket was inserted into the coupling each time the coupling was disassembled and then reassembled. The necessity for this action has been considered undesirable, particularly when working in the field.

However, by using the retainer 18 in the manner described above, the gasket 16 is always maintained in the preselected position substantially coaxial with the sealing beads 36,56. Even when the coupling is disassembled and later reassembled, the retainer

assures that the gasket is automatically coaxially
realigned with the annular sealing beads thereby to
prevent the potential for coupling leaks due to gasket
misalignment. As a result, the necessity or
5 desirability for installing a new gasket is
successfully overcome.

The particular spatial relationships described
above with reference to Figure 3 assure that the
retainer will in no way interfere with the
10 co-operative sealing relationships between the
coupling components themselves. For example, the
external diameter of the retainer is such that it will
not interfere with the inside wall of the coupling nut
14. The inside diameter of the retainer annular end
15 wall 100 and the thickness of end wall 100 are such
that they will not interfere with the sealing bead 56
and radial end face 52 at coupling makeup. The inside
diameter of the retainer side wall 102 fairly closely
embraces the outside periphery of the gasket and the
20 legs 104 have an axial extent which will not interfere
with flange 38. Finally, the U-shaped engaging means
106 engage the portion 40 of the first component 10
with line contact over short accurate spans and
cumulatively define an engaging band or zone which
25 assures good frictional engagement with the portion 40.



The invention has been described with reference to a preferred embodiment. Obviously, modifications and alterations will occur to others upon the reading and understanding of this specification. All such
5 modifications and alterations are included insofar as they come within the scope of the claims.

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CLAIMS

1. A fluid coupling having first and second generally cylindrical coupling components each including fluid passageways extending longitudinally thereof, said components having opposed radial end faces including generally annular sealing beads extending axially therefrom towards each other with an annular sealing gasket interposed therebetween, said coupling further including means for moving said components into a close-spaced substantially coaxial relationship such that said sealing beads sealingly engage opposite face areas of said gasket, and a retainer device for maintaining said gasket in a predetermined located position relative to the end face of one of said components in a substantially coaxial relationship therewith, said retainer device including an annular end wall and a plurality of retaining legs extending outwardly of said end wall in a direction generally normal thereto in a retaining relationship with said one component at a portion thereof spaced axially rearward from the associated radial end face such that said gasket is captured between the annular end wall of said retainer and the sealing bead at said one component end face, said annular end wall having an inside diameter greater than the outside diameter of the annular sealing bead



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on the end face of the other of said components,
whereby said gasket is positively located in a
generally coaxial relationship with said components
when they are moved towards said closely-spaced
5 relationship by said moving means, said sealing beads
each engaging substantially the same portion of the
associated gasket face area during subsequent
disassembly and reassembly of the coupling.

2. A fluid coupling as claimed in claim 1,
10 wherein said retainer further includes a cylindrical
side wall portion extending from said end wall in the
same direction as said retaining legs, said side wall
and end wall defining a cavity in which said gasket is
captured for preventing radial movement thereof
15 relative to said one component end face.

3. A fluid coupling as claimed in claim 2,
wherein the axial dimension of said side wall is at
least only slightly greater than the thickness of said
gasket.

20 4. A fluid coupling as claimed in claim 1, 2 or
3, wherein the axial dimension of the sealing bead
associated with said other component radial end face
is greater than the thickness of said retainer end
wall.

25 5. A fluid coupling as claimed in any of claims 1
to 4, wherein the diameter of said cavity is at least



slightly greater than the diameter of said one component radial end face.

6. A fluid coupling as claimed in any of claims 1 to 5, wherein said moving means comprises an open-ended first coupling member screw-threaded from one end thereof towards the other for screw-threaded engagement with said other component or with a second coupling member, and wherein said first coupling member includes a radial shoulder which drivingly engages a radially outward flange on said one component axially spaced from the radial end face thereof, said portion of said one component being located between said flange and said radial end face for receiving said retainer legs axially thereonto for securing said retainer on said one component with said gasket disposed in a desired position.

7. A fluid coupling as claimed in claim 6, wherein the outer diameter of said retainer end wall is greater than the diameter of said one component reduced diameter portion and at most only slightly greater than the diameter of said one component flange.

8. A fluid coupling as claimed in claim 6 or 7, wherein said gasket has a diameter which is at least slightly greater than the diameter of said one component reduced diameter portion and less than the diameter of said one component flange.



9. A fluid coupling as claimed in any of claims 1 to 8, wherein said retainer legs each include gripping means spaced therealong for frictionally engaging said one component portion.

5 10. A fluid coupling as claimed in claim 9, wherein each of said gripping means comprises a generally U-shaped section adjacent the free end of the respective leg with the bases of said U-shaped sections disposed radially inwardly from said legs for
10 defining a gripping band having a diameter at least slightly less than the diameter of said one component portion.

11. A fluid coupling as claimed in claim 10, wherein said bases have an arcuate configuration
15 laterally between the opposed side edge of said legs.

12. A fluid coupling having first and second coupling components which include fluid passageways longitudinally thereof, opposed radial end faces having opposed annular sealing beads coaxial with said
20 passageways and extending axially from said end faces towards each other with an annular sealing gasket interposed therebetween, one of said components including a radially outwardly extending shoulder axially spaced along a cylindrical portion of said one
25 component from the end face thereof; a first coupling member adapted for threaded engagement with the other



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component or with a second coupling member and having
a radial shoulder for driving engagement with said
outwardly extending shoulder, whereby advancement of
the threadedly engaged relationship between said first
5 coupling member and said other component or said
second coupling member, as the case may be, causes
said components to be coaxially drawn together for
urging the sealing beads on said radial end faces to
be moved into sealing engagement with opposite face
10 areas of said gasket; and a retainer for maintaining
said gasket in a predetermined located position
relative to the end face of said one component, said
retainer including an annular end wall having an
inside diameter greater than the outside diameter
15 across said annular sealing beads, a generally
cylindrical side wall normal to said end wall and
defining a gasket-receiving cavity therewith, said
side wall having an inside diameter at least slightly
greater than that of said one component cylindrical
20 portion with said side wall having a length from said
end wall which at most is only slightly greater than
the thickness of said gasket, said retainer further
including a plurality of retaining legs extending
outwardly from the free edge of said side wall at
25 circumferentially spaced intervals therearound in a
direction generally normal to said end wall, said legs



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including means for engaging said one component cylindrical portion for maintaining said retainer in a mounted relationship on said one component with said gasket captured in said cavity in a substantially coaxial relationship with the sealing bead on said one component radial end face.

13. A fluid coupling as claimed in claim 12, wherein the annular sealing bead on the radial end face of said other component extends axially outwardly of the associated radial end face by some predetermined distance, the thickness of said retainer end wall being less than said predetermined distance.

14. A fluid coupling as claimed in claim 12 or 13, wherein each of said engaging means comprises an engaging section adjacent the outer free end of the respective leg for frictionally engaging said one component cylindrical portion, said engaging section having a first normal position cumulatively defining an engaging band having a diameter less than that of said cylindrical portion and being biased radially outwardly to a retaining position when said retainer is installed onto said one component cylindrical portion.

15. A fluid coupling as claimed in claim 12, 13 or 14, wherein said radially outwardly extending shoulder comprises an annular flange and said one



component cylindrical portion has a diameter which is less than the outside diameter of said flange; and wherein said retainer is dimensioned such that the outside diameter of said side wall is at most slightly greater than the outside diameter of said flange.

16. A fluid coupling as claimed in any of claims 12 to 15, wherein the length of said legs is such that the outer free ends thereof are axially spaced from said one component flange towards said one component radial end face when said retainer is mounted to said one component cylindrical portion with said gasket in a captured relationship in said cavity.

17. A gasket retainer adapted to maintain a generally annular gasket having opposed face areas in a substantially coaxial relationship with an annular sealing bead extending axially outwardly from the radial end face of a generally cylindrical fluid coupling component in a surrounding relationship with a fluid passageway extending through said component, said retainer comprising:

an annular end wall, a generally cylindrical side wall normal to said end wall defining a gasket-receiving cavity with said end wall, said retainer further including a plurality of retaining legs extending outwardly from the free edge of said side wall at circumferentially spaced intervals



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therearound in a direction generally normal to said end wall, each of said engaging legs comprising an engaging section adjacent the outer free end of the respective leg and adapted to frictionally engage an associated fluid fitting component at a portion thereof spaced axially rearwardly of the component radial end face, said engaging sections having a first normal position cumulatively defining an engaging band and being urged radially outwardly to a biasing position when said retainer is installed onto the component for maintaining said retainer in a mounted relationship on the component with a gasket captured in said cavity in a substantially coaxial relationship with the component sealing bead.

15 18. A retainer as claimed in claim 17, wherein said engaging means comprises generally U-shaped sections along said legs adjacent the outer free ends thereof with the base portions of such sections disposed radially inward of said legs.

20 19. A retainer as claimed in claim 18, wherein said base portions have arcuate configurations laterally across said legs.

25 20. A fluid coupling constructed substantially as herein described with reference to and as illustrated in the accompanying drawings.



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21. A retainer for a gasket of a fluid coupling,
substantially as herein described with reference to
and as illustrated in the accompanying drawings.

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