

PATENT SPECIFICATION

847210



DRAWING ATTACHED

Date of Application and filing Complete Specification:
Nov. 13, 1958. No. 36593.

Application made in Belgium on Sept. 11, 1958.

Complete Specification Published: Sept. 7, 1960.

Index at Acceptance:- Classes 99(1), G(21A:23G); and 122(3), N1B.

International Classification:- F06J, 1.

COMPLETE SPECIFICATION

Improvements in or relating to Couplings for Pipes

We, SOCIETE ANONYME ETERNIT, a Belgian Company, of Kapelle-op-den-Bos, Belgium, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to couplings for pipes.

According to the present invention there is provided a coupling for connecting the ends of pipes, the coupling comprising a sleeve having in the internal surface thereof an annular groove adjacent each end of the sleeve, there being a sealing ring in each groove, wherein each ring comprises a toroidal portion lodged in the groove and an annular web initially extending inwardly from said toroidal portion, the arrangement being such that as a pipe is entered into said sleeve, said web is displaced axially inwardly of the sleeve to become gripped between the wall of the pipe and the wall of the sleeve in such manner that the pressure of a fluid subsequently passed through the coupling compresses said web.

For a better understanding of the invention and to show how the same may be carried into effect reference will now be made to the accompanying drawing in which the single figure is an axial sectional view of a partly completed coupling.

A sleeve 1 has two grooves 2 and 3, the side wall 4 of each groove 2, 3 being perpendicular to the axis of the sleeve 1 and the side wall 5 being inclined to said axis such that the mouth of the groove is wider than the bottom. Rings made of resilient material, for example rubber, are lodged one in each of the grooves 2 and 3. The rings each

have a toroidal portion 6 and an inwardly directed annular web 7, both the portion 6 and the web 7 being provided with annular ribs 8 which initially extend normal to the surface from which they project.

When pipes 9 are entered one into each end of the sleeve 1, each web 7 is bent axially inwardly of the sleeve out of its initial position to lie approximately parallel with the axis of the sleeve 1 and is gripped between the sleeve 1 and the adjacent pipe 9. The pipes 9 may be of fibre-cement. The pressure of a fluid passing through the coupling tends to compress the web 7 and press it against the adjacent walls of the sleeve 1 and the pipe 9. At the same time, the toroidal portion 6 is pressed into the bottom of the groove in which it is lodged. The entry of each pipe 9 into the sleeve 1 also causes the ribs 8 on the web of the adjacent ring to be deformed as shown on the lower part of the figure and in such deformed condition the ribs 8 are directed towards that end of the associated pipe 9 which is within the sleeve 1 and act as a plurality of sealing elements, bearing against the adjacent walls of the pipe 9 and the sleeve 1 by virtue of the resilience of the material of the ring and by virtue of the pressure of the fluid in the pipes 9.

The entry of the pipes 9 into the sleeve, can be facilitated by using a lubricant such as a soap or an oil which lubricant of course has to be chosen so that it does not affect the material of which the rings are made.

WHAT WE CLAIM IS:-

1. A coupling for connecting the ends of pipes, the coupling comprising a sleeve having in the internal surface thereof an annular groove adjacent each

[Price 3s.6d.]



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For a better understanding of the invention and to show how the same may be carried into effect reference will now be made to the accompanying drawing in which the single figure is an axial sectional view of a partly completed coupling.

A sleeve 1 has two grooves 2 and 3, the side wall 4 of each groove 2, 3 being perpendicular to the axis of the sleeve 1 and the side wall 5 being inclined to said axis such that the mouth of the groove is wider than the bottom. Rings made of resilient material, for example rubber, are lodged one in each of the grooves 2 and 3. The rings each

have a toroidal portion 6 and an inwardly directed annular web 7, both the portion 6 and the web 7 being provided with annular ribs 8 which initially extend normal to the surface from which they project.

When pipes 9 are entered one into each end of the sleeve 1, each web 7 is bent axially inwardly of the sleeve out of its initial position to lie approximately parallel with the axis of the sleeve 1 and is gripped between the sleeve 1 and the adjacent pipe 9. The pipes 9 may be of fibre-cement. The pressure of a fluid passing through the coupling tends to compress the web 7 and press it against the adjacent walls of the sleeve 1 and the pipe 9. At the same time, the toroidal portion 6 is pressed into the bottom of the groove in which it is lodged. The entry of each pipe 9 into the sleeve 1 also causes the ribs 8 on the web of the adjacent ring to be deformed as shown on the lower part of the figure and in such deformed condition the ribs 8 are directed towards that end of the associated pipe 9 which is within the sleeve 1 and act as a plurality of sealing elements, bearing against the adjacent walls of the pipe 9 and the sleeve 1 by virtue of the resilience of the material of the ring and by virtue of the pressure of the fluid in the pipes 9.

The entry of the pipes 9 into the sleeve, can be facilitated by using a lubricant such as a soap or an oil which lubricant of course has to be chosen so that it does not affect the material of which the rings are made.

WHAT WE CLAIM IS:-

1. A coupling for connecting the ends of pipes, the coupling comprising a sleeve having in the internal surface thereof an annular groove adjacent each

[Price 3s.6d.]

end of the sleeve, there being a sealing ring in each groove, wherein each ring comprises a toroidal portion lodged in the groove and an annular web
5 initially extending inwardly from said toroidal portion, the arrangement being such that as a pipe is entered into said sleeve, said web is displaced axially inwardly of the sleeve to become
10 gripped between the wall of the pipe and the wall of the sleeve in such manner that the pressure of a fluid subsequently passed through the coupling compresses said web.

15 2. A coupling as claimed in claim 1, wherein said toroidal portion and said web of each ring are provided with annular ribs, said ribs upon entry of the pipe into the sleeve giving rise to a
20 plurality of sealing points.

3. A coupling as claimed in claim 2, wherein the ribs provided on the web are so shaped that when deformed by entry of a pipe into said sleeve, these
25 ribs are directed towards that end of

this pipe which is situated in the sleeve, the arrangement being such that the pressure of a fluid passing through the coupling causes the ribs on the web to be forced against the adjacent walls of
30 said sleeve and pipe.

4. A coupling as claimed in any preceding claim, wherein each groove wall nearest the adjacent end of the sleeve
35 is perpendicular to the axis of said sleeve, and wherein the opposite wall of each groove is inclined to said axis such that the mouth of each groove is wider than the bottom thereof.

5. A coupling for connecting pipes,
40 substantially as hereinbefore described with reference to the accompanying drawing.

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Printed in England by Her Majesty's Stationery Office - 1960.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2.
from which copies may be obtained.



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