

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) IMPROVEMENTS IN PIPE JOINTS

(71) We, JOHN LESLIE O'BRIEN, an Australian citizen, BRYAN FINNIMORE, a British subject, and DALLAS JOHN ARTHUR HOGG, an Australian citizen, all c/o John L. O'Brien and Associates, 70 Derby Street, Auburn, New South Wales 2144, Commonwealth of Australia, 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 spigot and socket pipe joints.

According to the invention there is provided a spigot and socket pipe joint providing a space in the socket surrounding the spigot, and incorporating a resilient sealing ring in the axially inner end of the space and engaging closely the outside of the spigot and the inside of the socket, a gland ring in the space outwards of and engaging the sealing ring, circumferentially spaced radially inwardly projecting flange portions on the socket near its outer end, each flange portion having on its axially inward face at least one ramp, and a plurality of separate wedges, each wedge having a ramp face engaging a flange ramp and a second face engaging the outer face of the gland ring and being displaceable between the flange and the gland ring so as to displace or allow displacement of the gland ring axially.

One embodiment of the invention is shown by way of example in the accompanying drawings in which:

Figure 1 is an exploded view of the socket, sealing ring, gland ring and wedges, and

Figure 2 shows the assembled joint partly in axial section.

Referring to the drawings, the joint is formed between two pipes 26, 27, pipe 26 having a collar or socket 28 into which the end of pipe 27 fits as a spigot.

The pipe socket is formed with a continuous flange 30 and a bevel surface 29. Between the bevel surface and 30 a continuous recess 39 is formed. The upper edge 40 of the socket is provided with a

discontinuous flange 43. The spigot has placed around it a gland ring 32 with a discontinuous flange 33. The wall of the gland ring remote from the flange is provided with a bevel surface 35. A sealing ring 31 having a continuous recess around one end also surrounds the pipe with portion of the gland ring located in the recess of 31. The combined pipe, gland ring and sealing ring is then inserted into the socket so that a corresponding surface on the sealing ring 31 engages the bevel surface 29 in the socket. The flanges 33 are retained in position under the flange 43 and they are tightened in position by placing the wedges 36, 37 between ramp surfaces 38 of the flange 43 and the upper surface of the flange 33. The gland ring engaging in the sealing ring forces portions of the sealing ring into the channel 39 formed just inwards of the flange 30. The inner end of the pipe 27 rests on a shoulder 42. The wedges 36, 37 may be made either right or left handed to facilitate insertion between the socket flange 43 and the gland ring flange 33.

WHAT WE CLAIM IS:—

1. A spigot and socket pipe joint providing a space in the socket surrounding the spigot, and incorporating a resilient sealing ring in the axially inner end of the space and engaging closely the outside of the spigot and the inside of the socket, a gland ring in the space outwards of and engaging the sealing ring, circumferentially spaced radially inwardly projecting flange portions on the socket near its outer end, each flange portion having on its axially inward face at least one ramp, and a plurality of separate wedges, each wedge having a ramp face engaging a flange ramp and a second face engaging the outer face of the gland ring and being displaceable between the flange and the gland ring so as to displace or allow displacement of the gland ring axially.

2. A pipe joint as in claim 1 wherein the sealing ring has a circumferential recess around its axially outward surface and the gland ring has a formation around its

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WHAT WE CLAIM IS:—

1. A spigot and socket pipe joint providing a space in the socket surrounding the spigot, and incorporating a resilient sealing ring in the axially inner end of the space and engaging closely the outside of the spigot and the inside of the socket, a gland ring in the space outwards of and engaging the sealing ring, circumferentially spaced radially inwardly projecting flange portions on the socket near its outer end, each flange portion having on its axially inward face at least one ramp, and a plurality of separate wedges, each wedge having a ramp face engaging a flange ramp and a second face engaging the outer face of the gland ring and being displaceable between the flange and the gland ring so as to displace or allow displacement of the gland ring axially.

2. A pipe joint as in claim 1 wherein the sealing ring has a circumferential recess around its axially outward surface and the gland ring has a formation around its



axially inward surface which enters the sealing ring recess.

3. A pipe joint as in claim 1 or claim 2 wherein each of said flange portions has two ramps sloping axially outwards in opposite circumferential directions.

4. A pipe joint as in any one of claims 1 to 3, wherein a radially inwardly-facing circumferential recess formed on the inside of the socket receives a radially outward extending flange on the sealing ring.

5. A spigot and socket pipe joint substantially as hereinbefore described with reference to Figures 1 and 2 of the accompanying drawings.

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