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(54) **Flexible Pipe Joint**

(57) A compensator is disclosed for use with pipe ducts above 500 millimetres in diameter. It comprises an annulus of elastic material (3), for example rubber, reinforced by at least

one inlay of fabric and/or steel cord and which has an axial section substantially in the shape of a U with the legs directed radially outwardly. It is mounted between the pipe ducts by means of annular plates (4) and threaded bolts (6). (Fig. 1).

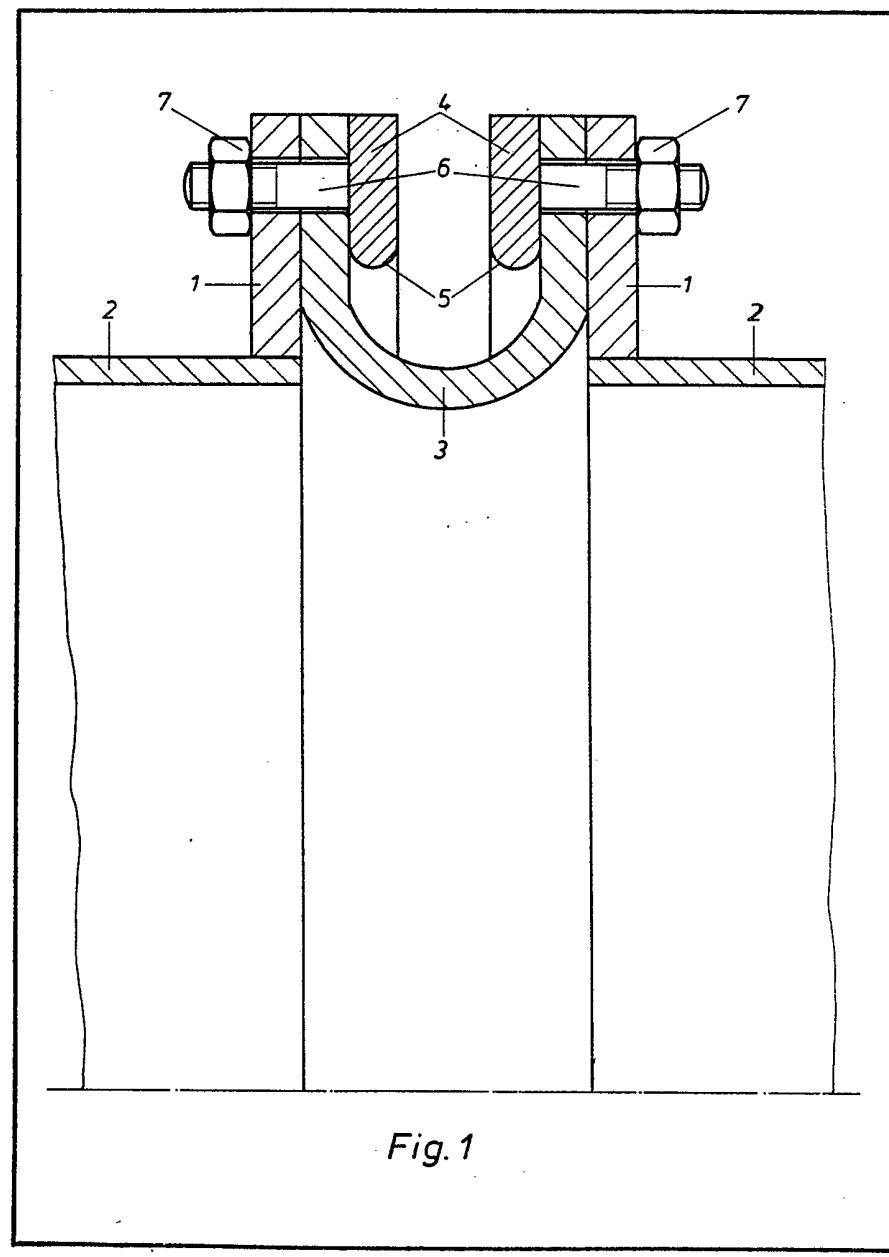


Fig. 1

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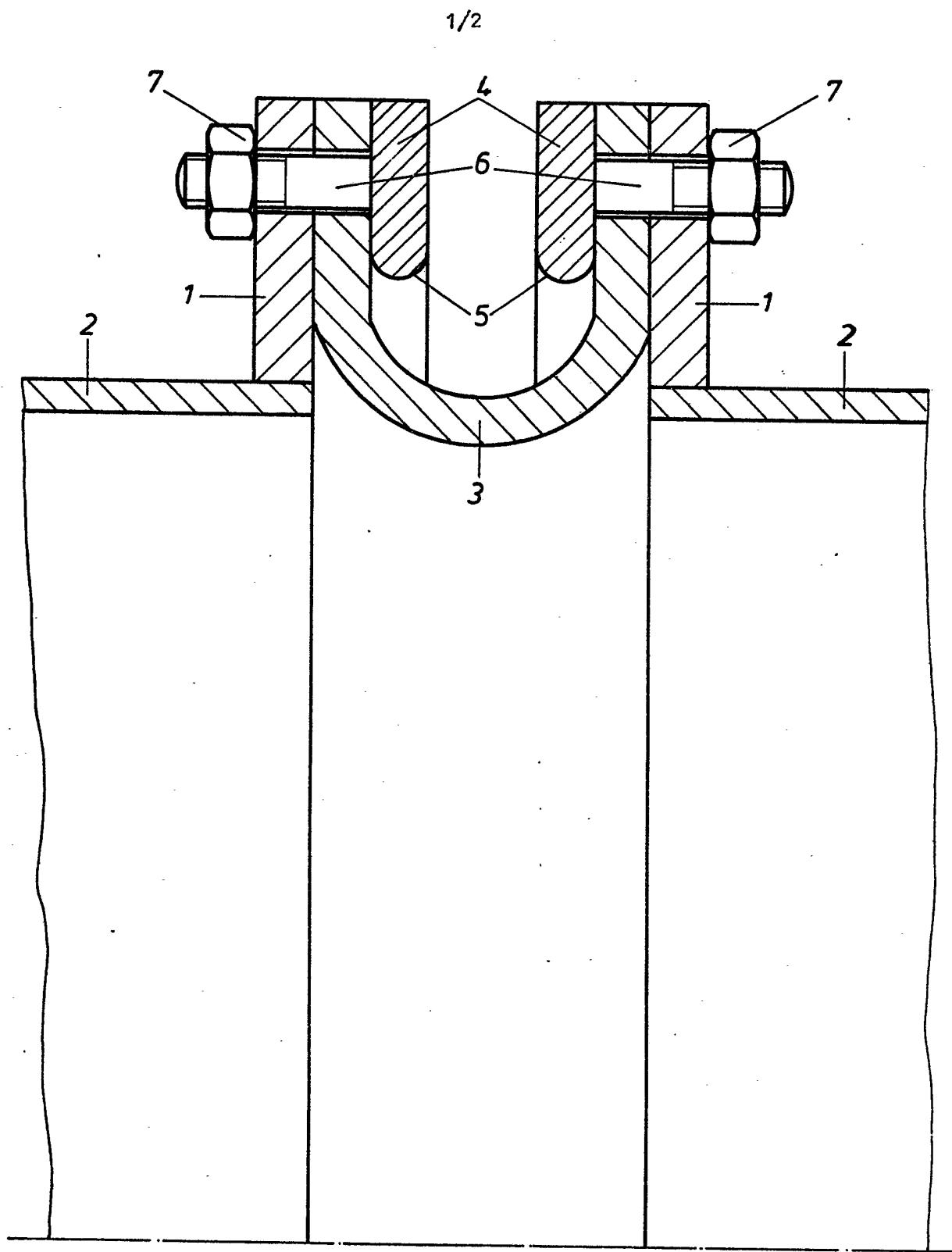


Fig. 1

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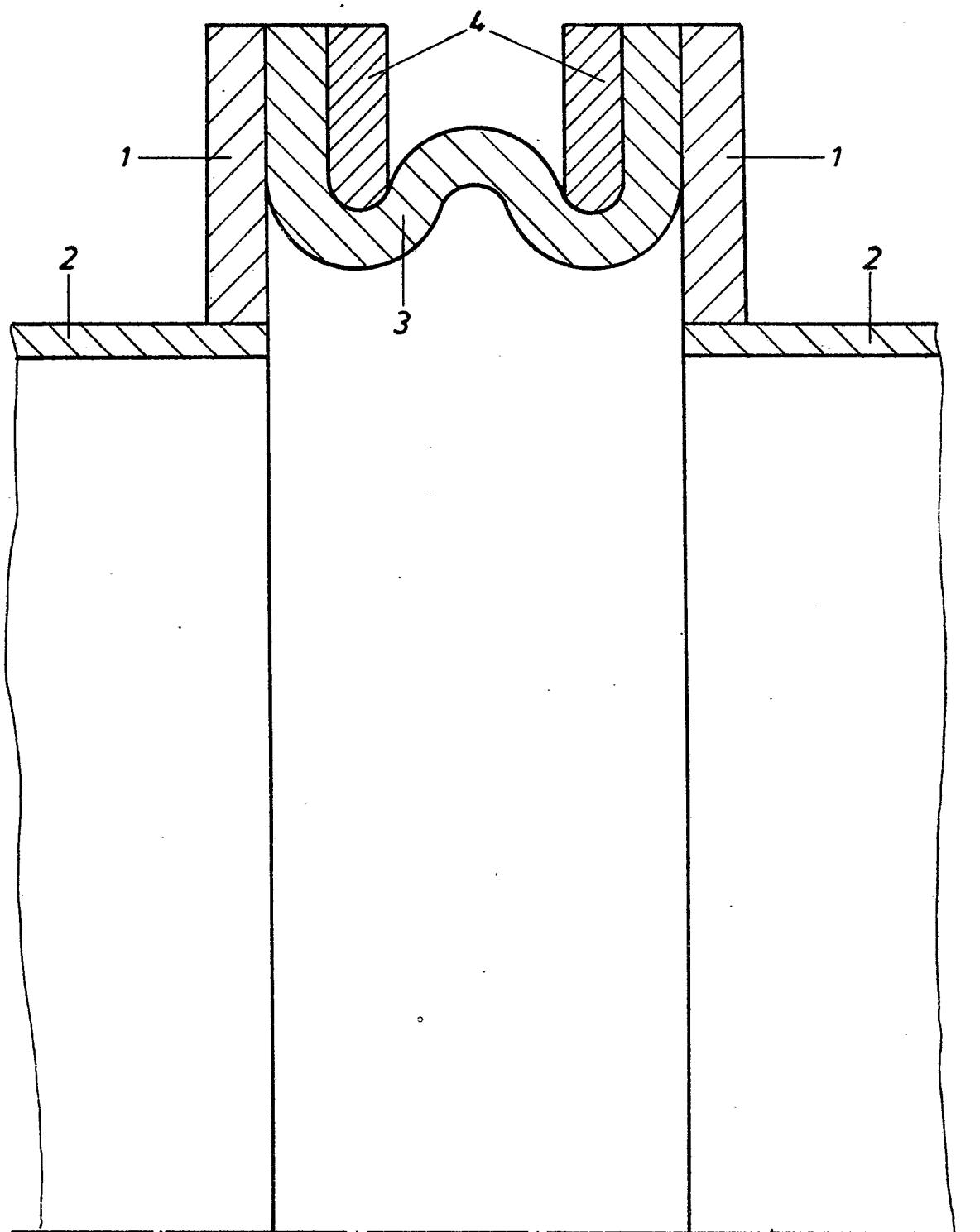


Fig. 2

SPECIFICATION
Compensator for Pipe Ducts

The present invention relates to a compensator for pipe ducts above 500 millimetres in diameter and which is of an elastic material, for example rubber, reinforced by at least one inlay of fabric and/or steel cord.

Compensators serve to absorb or to compensate changes in length, vibrations, angular deflections and the like arising in a pipe duct. Known compensators generally consist of a pipe body of rubber, which is reinforced by inlays and which at its ends displays one or more corrugations (DE-OS 17 50 924). A great disadvantage of these compensators however consists in the very expensive and laborious manufacture. Beyond that, large compensators, which are also stressed by underpressure, must be supported by means of underpressure rings or metal guide sheets in order to prevent either a substantial reduction of the pipe cross-section through the drawing-in of the compensator or a damaging of the compensator. According to the present invention there is provided a compensator for mounting between two lengths of pipe, the compensator comprising an annulus of elastic material reinforced by at least one inlay and having a cross section in the shape of a U with the legs directed outwardly, and two annular plate means each to mount a respective one of the legs to a respective one of the two lengths of pipe.

The compensator can be manufactured in different sizes simply and without complicated devices, is particularly cheap through appreciable material savings and will meet generally required loadings.

Beside the use in underpressure ducts or ducts with alternating pressure, the above described compensator is particularly suitable for incorporation in ducts conducting solid substances and in installations in areas endangered by frost. Deposits and cakings or ice formation otherwise to be feared in the expansion fold are avoided here. On the shutting-down of the installation, the compensator automatically springs out of the inflated shape, in which these dangers would be present, back into the rest position given into it by vulcanisation, so that a self-cleaning occurs.

An embodiment of the present invention will now be more particularly described by way of example with reference to the accompanying drawings, in which:

Fig. 1 is a longitudinal section showing the compensator in normal position or with underpressure in the pipe shut duct, and

Fig. 2 is a longitudinal section showing the compensator with excess pressure in the pipe duct.

60 Referring now to the drawings, a resilient compensator in the form of an annular expansion fold 3 is located between pipe duct flanges 1, which are fixedly connected with pipes 2 forming the pipe duct. The annular expansion fold has a cross section in the shape of a U with the legs directed radially outwardly. The fastening of the annular expansion fold 3 takes place by means of annular plates 4, the inwardly facing rims 5 of which are rounded off semicircularly and which are provided with threaded bolts 6. The threaded bolts 6 are adapted to pass through bores in the expansion fold 3 and the pipe flanges 1. Nuts 7 are threaded onto the free ends of the threaded bolts 6. The expansion fold 3 preferably comprises rubber and is reinforced by at least one inlay of fabric and/or steel cord.

Claims

1. A compensator for mounting between two lengths of pipe, the compensator comprising an annulus of elastic material reinforced by at least one inlay and having a cross section in the shape of a U with the legs directed radially outwardly, and two annular plate means each to mount a respective one of the legs to a respective one of the two lengths of pipe.

2. A compensator as claimed in claim 1, wherein the radially inwardly facing rim of each of the annular plate means is semi-circularly rounded in cross section.

3. A compensator as claimed in either claim 1 or claim 2, wherein the annular plate means are each connected to a respective plurality of threaded bolts and bores are provided in the annulus, each threaded bolt so passing through a respective one of the bores that a nut may be threaded on the free end thereof in use to mount one of the legs to a respective one of the two lengths of pipe.

4. A compensator as claimed in any one of the preceding claims, wherein the at least one inlay comprises fabric.

5. A compensator as claimed in any one of claims 1 to 3, wherein the at least one inlay comprises steel cord.

6. A compensator as claimed in any one of the preceding claims, wherein the elastic material comprises rubber.

7. A compensator for mounting between two lengths of pipe and substantially as hereinbefore described with reference to the accompanying drawings.