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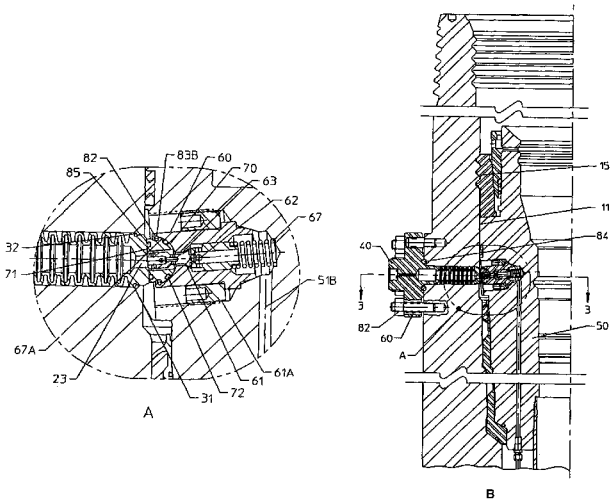
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(54) Title: SUBSEA WELLHEAD EQUIPMENT



(57) Abstract: A wellhead apparatus which includes a spool (10) for use in a horizontal tree and having a vertical bore (11) there through, and a tubing hanger (12) adapted to be lowered into and landed within the bore of the spool to suspend a tubing string (52) on the lower end of the tubing hanger within the wellbore. The spool has a radial opening (20) there through to receive a bellows (21) which forms a fluid passageway removably mounted within the opening by means of a flange on the outer end of the bellows releasably connected to the outer side of the spool. The tubing hanger has an opening (50) there through which includes a lateral portion (51A) connecting with its outer diameter and a vertical portion (51B) leading to a pressure responsive operator for a tubing safety valve. The passageways have seal surfaces on their opposing ends, and the end of the stem (61) is engaged by the seal surface of the bellows to open the poppet (62) as the hanger is lowered. An insert (60) with in the lateral portion of the hanger opening has a bore which forms a fluid passageway adapted to be opened and closed by a poppet valve mounted on a stem.

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