BIMETALLIC DIAPHRAGM FOR TRAPPED FLUID EXPANSION

ABSTRACT

A subsea well tubular member (17) has an axial passage (19) with upper and lower retrievable plugs (23, 25) releasably mounted in the passage, the plugs having ends facing each other, defining a trapped fluid cavity (43) between them. A cavity (41) is formed on one of the ends of one of the plugs. A movable barrier (45) is mounted sealingly over the cavity, defining a sealed void (46). The barrier is movable repeatedly between inner and outer positions in response to temperature changes. The inner position reduces a volume of the cavity and increases a volume of the trapped fluid space between the ends of the plugs. The outer position increases the volume of the cavity and decreases the volume of the trapped fluid space. The barrier has two metallic layers (47, 49) with different coefficients of expansion.

[Figure. 1]