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(71) Applicant: SURF LAKES HOLDINGS LTD [AU/AU];
9 Bayberry Crescent, Warner, Queensland 4500 (AU).

(72) Inventors: SIDWELL, Christopher Roy; 12 Forest Drive,
Elanora, Queensland 4221 (AU). TREVIS, Aaron James;
9 Bayberry Crescent, Warner, Queensland 4500 (AU).

(74) Agent: FISHER ADAMS KELLY CALLINANS; Level
6, 175 Eagle Street, Brisbane, Queensland 4000 (AU).

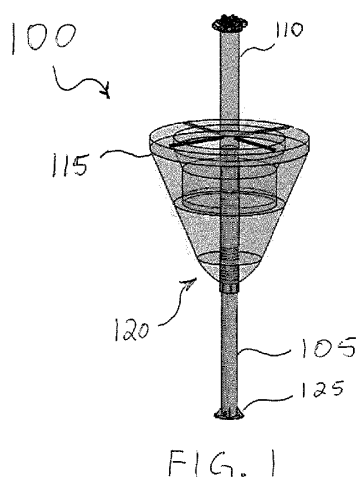
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(54) Title: NON-CONTACT LIQUID SEALING ACTUATOR SYSTEM



(57) Abstract: A liquid sealing actuator system enables use in a non-contact or low-friction manner. The system includes: an inner shaft having a first end; a hollow outer shaft having a first end that receives the first end of the inner shaft; at least one sealing ring positioned adjacent an internal surface of the hollow outer shaft, wherein the at least one sealing ring has an outer diameter that is less than an inner diameter of the outer shaft, thereby defining an annular seal gap; a mass attached to a distal end of either the inner shaft or the outer shaft; and a pressure source that injects a pressurised fluid into the hollow outer shaft, thereby applying a pressure against both the first end of the inner shaft and the at least one sealing ring that assists in lifting the mass; wherein the system is at least partially immersed in an external liquid such that the at least one sealing ring is submerged in the external liquid and a head of the external liquid above the at least one sealing ring defines a backpressure in the annular seal gap that opposes the pressure applied by the pressure source.

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