Title: A LEAK-PROOF SEAL ASSEMBLY FOR OPENING OF A CONTAINER

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Overview:

The present disclosure relates to a seal assembly designed for containers to prevent exposure of degradable materials to ambient conditions. The assembly comprises two upper discs and two lower discs arranged coaxially along a central vertical axis. The upper discs, being larger than the container opening, are restrained from entering, while the lower discs are sized to fit inside. A rubber ring positioned between the lower discs compresses upon applying axial force, causing radial expansion to fill the annular space between the assembly and the inner surface of the container, forming a secure and leak-proof seal.

The assembly also features structural rods and annular protrusions that ensure rigid coupling between components while permitting free motion where required. Fabricated using stainless steel coated with PTFE, the seal assembly offers durability and efficiency. This innovation ensures a reliable sealing mechanism, reducing material degradation and enabling secure container coverage while maintaining ease of use and enhanced functionality.

Claims:

The invention claims the unique design of a seal assembly comprising coaxial placement of upper and lower discs with defined dimensions for effective sealing. The inflatable ring design facilitates radial expansion upon compression, ensuring a secure fit against the container's inner surface. The use of rigid rods and structural elements enhances the assembly's functionality by maintaining alignment and allowing motion between components as required. All components are fabricated using PTFE-coated stainless steel for improved durability and functionality.
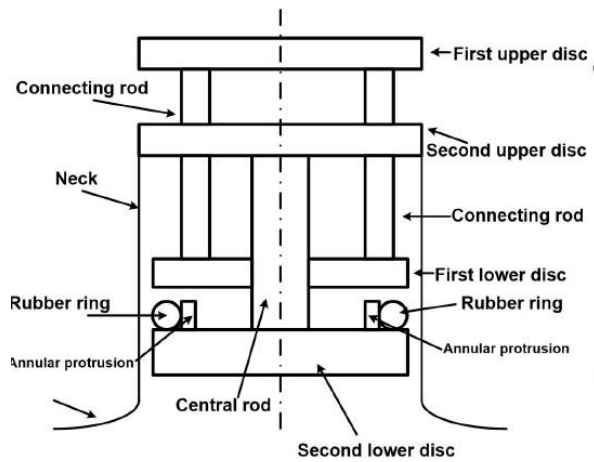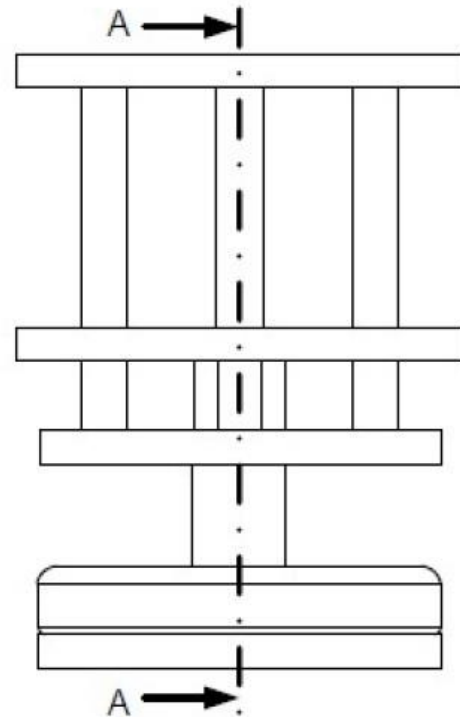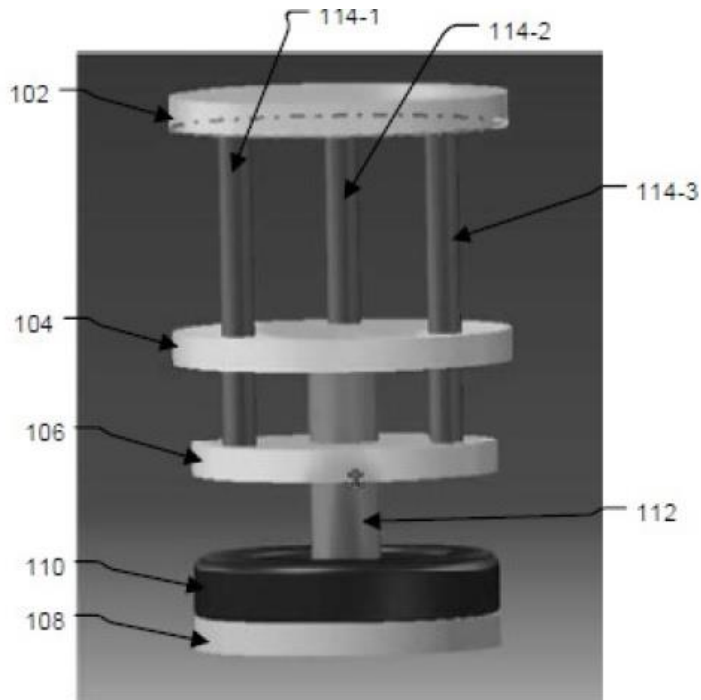
Fig.5. Half Section View of the claimed design in Rest Position
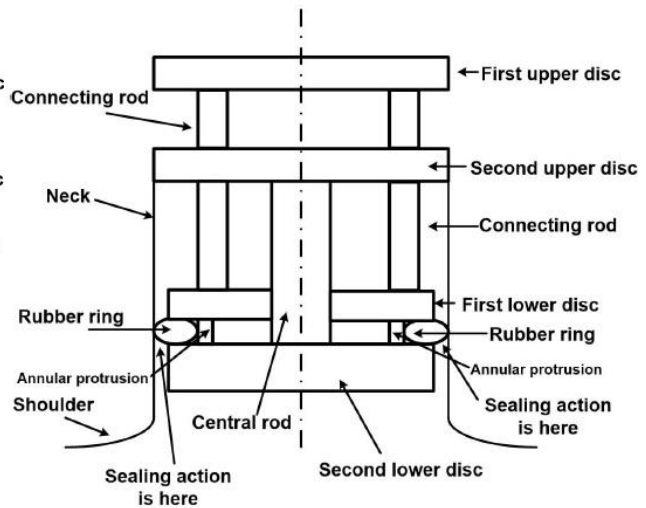
Fig.6. Half section view of the claimed design in Engaged Position

Fig. Some snapshots of the graphical draft of the product/process/design/prototype