ABSTRACT

VALVE RELEASE MECHANISM

A valve release mechanism has an actuator, a ring, a plurality of ball bearings, and a retainer. The retainer is positioned adjacent an inner diameter of the ring and has a plurality of circumferentially spaced holes therein. Each circumferentially spaced hole receives one of the plurality of ball bearings, which are movable therein. The ring has channels and lands along its inner diameter that allow the ball bearings to move varying distances relative to the retainer. The lands contact the ball bearings when the ring is in a first position and the channels receive the ball bearings when the ring is in a second position. The poppet has a groove that is vertically aligned with circumferentially spaced holes in the retainer when the poppet is in a first closed position. The ball bearings are pressed into the groove in the poppet by the lands of the ring. The resulting interference of the ball bearings with poppet locks the poppet in the first closed position. The ring can be moved from the first closed position to a second position by the actuator.

Fig. 1