



ABSTRACT OF THE DISCLOSURE

A standardized mechanical interface (SMIF) pod for use in conjunction with SMIF systems is disclosed. The pod is utilized for transporting article, such as semiconductor wafers or the like, between locations such as SMIF processing stations. The pod includes a box having an open end and a box door which sealably engages and closes the open end. The box contains a removable carrier which seats on the box door and which has an open side for insertion and removal of the articles. The pod features a latching mechanism in the box door utilizing a star wheel with tips that rotate and extend out of slots in the box door into slots in the interior sidewalls of the box. The tips then move vertically downward to sealingly engage the box door to the box. The star wheel embraces a concentric cammed hub having angled cam surfaces engaged by cam follower pins extending radially inward from the star wheel. The star wheel is configured and positioned in the box door such that partial rotation rotates the tips from the interior of the box to extend outwardly of the slots. At the point of extension a stop further limits the rotation of the star wheel causing the cam followers to follow the cam surface as the cammed hub is further rotated moving the star wheel downwardly, thus causing engagement of the tips with the slots in the box and moving the box door downwardly to sealingly engage the box door with the box. A pair of one-way valves provide for purging of the interior of the pod. An alignment arm swingably pivots from the top inside of the box. The alignment arm has an engagement finger that engages the top of the carrier and a retaining portion that extends in front of the open side of the carrier. As the wafer carrier with the box door is raised into the box the finger engages the top of the carrier to swing the retaining portion in front of the open side of the carrier to hold the wafers in place. The alignment arm swings by way of a flexible portion eliminating scraping or rubbing of parts.

Figure 1