

## METHOD AND ASSEMBLY FOR SORTING DINNERWARE AND DINNERWARE TRAY

### ABSTRACT OF DISCLOSURE

An assembly (100) for sorting dinnerware from a dinnerware tray, said assembly (100) comprising:

- 5 (a) a conveyor belt (10) on a platform (11) having a tray entrance (12) and a tray exit (64) , for transporting the dinnerware tray with dinnerware thereon, wherein the dinnerware tray is embedded with a RFID chip containing information, such as the status of the tray;
- (b) a control cabinet (18) mounted on the top of the platform (11) having a touchscreen computer (30) and a plurality of slots (20', 20'', 20''') for coin or cash refund, an antenna (40)  
10 and a warning light (50) to control the sorting of the dinnerware, and a heat ventilation fan (90), and an emergency stop button (94) to cut off the operation of the assembly (100);
- (c) a tray turnover means including a pair of turnover fork (55), a turnover axle (57), a turnover motor (46), and a turnover reducer (47) for flipping the dinnerware tray from a horizontal position to an inclined position to drop the dinnerware from the dinnerware tray, wherein the  
15 flipping is done when the tray is transported to a position at the turnover fork (55) located along the lateral side of the conveyor belt (10) in between the control cabinet (18) and the tray exit point (64) at the other end of the conveyor belt (10), wherein the flipping turnover fork (55) flips the tray to dispose off the dinnerware from the tray;
- (d) a tray rack (60) removably mounted at the tray exit (64) of the platform (11) allowing the  
20 tray to be inserted orderly for cleaning and re-use; and
- (e) a dinnerware basket cart (70) for collecting dinnerware that dispose off when the dinnerware tray is flipped by the flipping turnover fork (55) of the tray turnover mean, thereby when the dinnerware tray with a plurality of dinnerware are being placed onto the conveyor belt (10), and the conveyor belt (10) is triggered to move and transported until the tray is  
25 aligned with the turnover fork (55), the tray is flipped and the dinnerware is collected in the dinnerware basket cart (70), and the tray is shelved in the tray rack (60) to be pushed away.

(FIG. 1)