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SLIM ODD

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Slim ODD

Abstract: The invention is a type of cosmetic door designed for use on desktop towers or other products with built-in spring-eject ODD tray. The door has an automatic opening functionality that is dependent on momentum of a spring-loaded (non-motorized) ODD tray. The invention allows for improved product aesthetics by hiding unsightly components such as the ODD, I/Os. etc., and does not obstruct a spring loaded ODD tray from ejecting properly.

In addition, the door is designed to flex so users can activate the ODD eject button by pressing the door without having to open it and access the ODD eject button, thus reducing complexity for the end user. Upon flexing, a contact point on the back of the ODD door will depress the ODD tray eject button

Problems Solved: The problem solved for this new design is for handicapped individuals who wish to install or remove drive bays in desktops with one arm.

Prior Solutions: In an effort to reduce costs and save space, it has opted to use slim ODDs on conventional desktop towers as opposed to the conventional desktop tray drive which is thicker and more complex. With conventional tray drive ODDs, we have used a golden gate "GG" door to create an aesthetically pleasing front fascia on desktop towers. The GG door is held shut by a torsion spring, with internal ribbing to create a sort of internal cam or "ramp" shaped feature so that the ODD faceplate will push open the GG door when the disk drive is ejected. Also, the cam/ramp shape plus force of the torsion spring allows the door to close automatically as the disk drive retracts. The functionality of a GG door relies on the mechanically actuated ODD tray of a traditional desktop ODD in which a motor automatically drives the tray outwards to the full extent of its travel when ejected; this provides the force required to push open the GG door.

The slim ODD is using on PC towers is not driven outward by a motor when ejected. Instead, an internal latch is released and the drive is propelled outward only about 12mm by a spring. As a result, the slim ODD lacks the force required to overcome the resistance of a GG door. Desktop tower aesthetics will suffer without a GG door or other moving fascia to cover the ODD area.

Mechanism: It could be devised involving a cosmetic door that works in combination with any spring loaded ODD tray to automatically open when the drive is ejected without preventing the drive from ejecting. In general, the cosmetic door will have a pivot point, and use gravity or a spring/magnet/other mechanism to both hold the door open at it's maximum rotation angle, and hold the door closed. The system could be mounted horizontally, vertically, or any angle in between.

Disclosed by Chern Shi Lam, HP Inc.