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TONER-BOTTLE LOCK AND FIX SYSTEM BY USING LATCH-LEVER WITH DUAL TENSION

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Title: TONER-BOTTLE LOCK AND FIX SYSTEM BY USING LATCH-LEVER WITH DUAL TENSION.

Abstract

This is to prevent the system error by stably fixing the toner bottle in vibration and shock through the cover front operation and double lever.

Description:

This disclosure relates to the field of printers.

Laser printer needs toner to print paper.

Toner container is required to continuously supply toner.

This patent is intended to lock and fix the toner container to stably supply the toner to the printer. Dual lever system was applied to construct the structure.

In a typical printer, a device for fixing a toner bottle has a bulky dummy cover, or is structured to support in a parallel direction with weak force.

In high-speed printers, vibration occurs due to rotation of the driving motor and fuser etc. Normally, the toner bottle is recognized by a sensor, but the sensor recognition is interrupted by vibrations while the printer is running.

If the sensor is not recognized due to vibration, an unknown error occurs and damages the printer. In addition, it may have a bad effect on the durability of the printer.

Most of the existing structures support only the direction in which the cover or hook is parallel in the front direction.

In this case, it is okay to slightly support the light toner bottle, but the toner bottle with a heavy capacity or a high rotational speed is not well fixed.

And recently, a structure that locks the toner bottle has been applied to high-speed printers.

Most of them change the driving method from a gear method to a clutch method.

When changing to the clutch method, the instantaneous impact amount is increased compared to the gear method.

When the impact amount is increased, the force applied to the toner bottle is strong, which means that the toner bottle is not fixed.

In the case of a color laser printer, there are four toner bottles, but even if only one of them is not fixed, the probability of causing a problem increases.

By using this patent, the lever is applied in a direction perpendicular to the direction in which the toner is attached and detached, so that the toner bottle can be surely held, and by using a small lever, the material cost can also be lowered.

Disclosed by HANJUN LEE, SEOUNGHOON NOH, YOUNGHOON KIM, HP Inc.

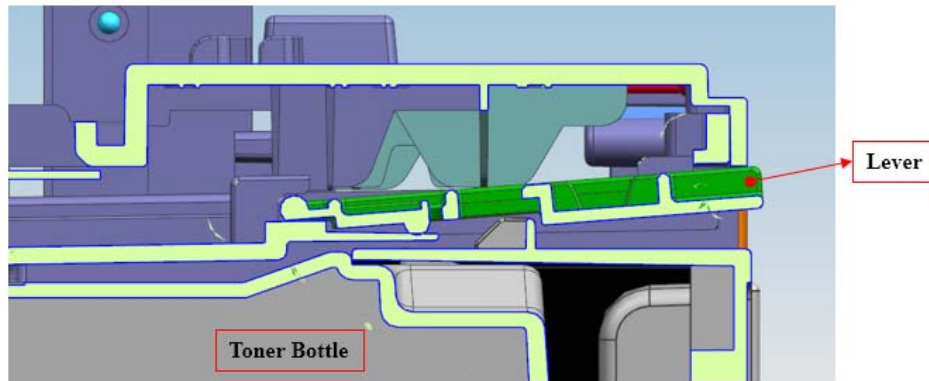


Fig. 1 Cover-Front open status

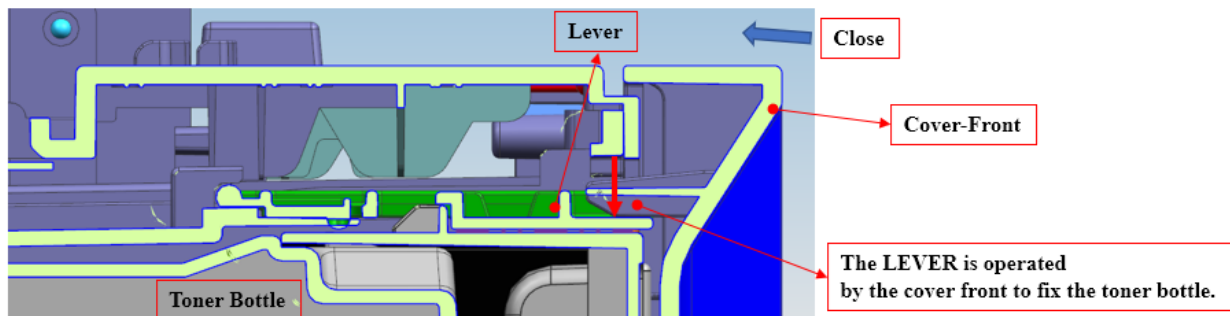


Fig. 2 Cover-Front closed status

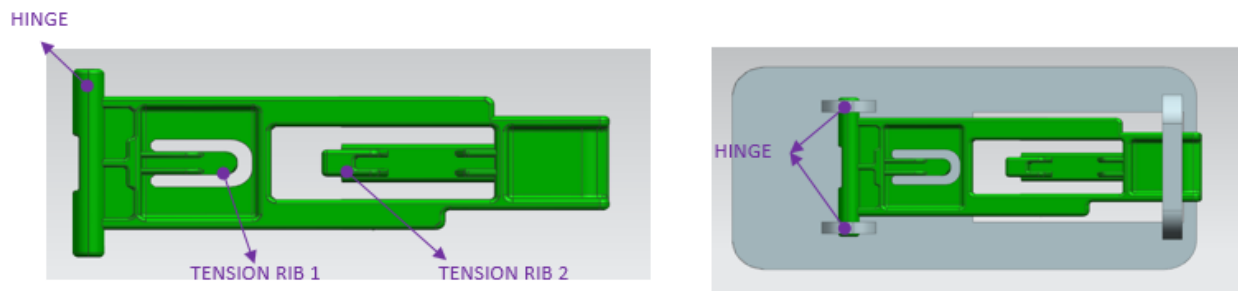


Fig. 3 Structure of two Tension Ribs