TRASH BAG COMPONENT OF INTELLIGENT TRASH BIN, TRASH BAG LAYING APPARATUS, AND INTELLIGENT TRASH BIN

The present invention relates to the field of accessories for smart trash receptacles and, in particular, to a trash bag assembly, a trash bags fitting device and a smart trash receptacle.

BACKGROUND

With the advancement of technology and the improvement of people's living standards, smart homes are increasingly becoming an indispensable part of our lives. At present, smart trash receptacles have been a focus of people's attention thanks to their characteristics of cleanliness, sanitariness and convenience of use.

While such trash receptacles prevalent on the contemporary market are typically capable of automatic opening, they cannot automatically fit a new trash bag in place by themselves. After a full trash bag is removed, manual intervention is still required for fetching a new trash bag and fitting it into the receptacle. Although some trash receptacles are equipped with trash bag storage means at the bottom or outside, which can save the trouble of fetching a trash bag, this could not really address the need for manual bag fitting. There are also some trash receptacles operating in a semi-automatic mechanical manner, in which an adhesive substance is applied on an outer side of a linking bar for opening a new trash bag to a certain extent at an open top of the trash receptacle. Despite some degree of semi-automation in the bag opening operation, this approach still relies on human intervention for further pulling out the new trash bag as well as for a series of additional actions for fully opening the bag to line it over the interior surface of the trash receptacle. As the bag opening operation accomplished by human intervention is inconsistent, and also since the approach itself is susceptible to degraded adhesiveness of the adhesive substance, high bag fitting quality could not be obtained.

At present, trash bags commonly available in the marketplace include flat-top bags, vest-style carrier bags and drawstring bags. Most of them are packaged in the form of rolls, while there are also some vest-style carrier bags folded into flat pieces as well as a minority of trash bags of the draw-out type. In spite of some common advantages such as package compactness and low manufacturing cost, these existing trash bags are disadvantageous in that their extraction and placement cannot be accomplished with simple mechanical means due to the very flexible nature of plastic materials from which they are fabricated, thus necessitating human intervention for replenishing a new bag into the trash receptacle. Moreover, although a trash bag has a nominal maximum storage capacity, in order to enable bagging, it usually has to be closed