A vacuum storage bag comprising a plastic bag film, an exhaust valve and a pressure-sealing zipper is provided. The exhaust valve includes a valve plate, a valve seat and a valve cover, the exhaust valve configured between an upper film and a lower film of the plastic bag. One side of the valve seat is bonded to an inner surface of one of the films. Numerous grooves are spread over the other surface of the valve seat, and are wrapped tightly by the valve cover. A cone head is raised in the center of the valve plate between valve seat and the film, and tightly mates with a conical boring of the valve seat. A narrow air duct is formed by the grooves of valve seat and cover, and could filter air in the bag to prevent dust from entering sealing surface between the valve plate and the valve seat.
VACUUM STORAGE BAG WITH EXHAUST VALVE AND PRESSURE-SEALING ZIPPER

FIELD OF TECHNOLOGY

[0001] The present invention relates to storage apparatus for food and jewelry of family, and pertains to the household field, in particular relates to a re-useable vacuum storage bag with exhaust valve and pressure-sealing zipper.

BACKGROUND

[0002] Vacuum food storage bag has been accepted and used widely by consumers due to the demand on the quality of people’s life and food sanitation. But the average family cannot afford to buy such vacuum bag because it is expensive and consumable.

[0003] Some re-useable vacuum pressure-sealing plastic bags with exhaust valves and zippers have been appeared on the market, but their pressure-sealing effect is unreliable and temporary due to its inexperienced technique and structure, and customers don’t intend to buy such product continuously and many responses from them are negative. For such existing product, in which especially the exhaust valve is complicated, the product’s structure is that basically the upper and lower plastic films clamp the plastic bag, and a soft valve plate is placed in the center hole thereof so as to attain the exhaust and seal function, such plastic bag is mainly handmade currently with high cost.

[0004] In addition, the pressure-sealing effect would be weakened or disappeared due to the dust entering sealing surface in actual use, since the sealing for the above mentioned plastic bag is in the manner of a plane sealing and lacks of air filtration device. Therefore, there is a strong demand for a vacuum storage bag that could be re-useable and low cost wrapped tightly by the valve cover, whereby a narrow and winding air duct is formed by the grooves and convex ribs together with inner surface of the valve cover.

[0010] The pressure-sealing zipper is provided at an opening of the plastic bag with exhaust valve, and these bags could be re-useable without damaging bags.

[0011] The present invention has the following advantageous effects as compared with to the prior art:

[0012] 1. The sealing efficiency of the plastic bag of the invention is reliable and durable, the cone head of the valve plate is fitted tightly with the valve seat, and could resist the actions, such as the pushing or pulling or squeezing or shocking force applied to the plastic bag by external force, to prevent air leakage;

[0013] 2. Goods containing dust and impurities could be packed by the plastic bag of the present invention with excellent sealing efficiency, because the air can be filtered by the exhaust valve, the dust can be prevented from entering sealing surface of valve plate;

[0014] 3. The exhaust valve of the plastic bag of the invention is bonded firmly to inner surface of the plastic bag film, and such one-sided combination structure is suitable for a mechanized mass production in order to save cost.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 depicts a schematic view of a bag according to the present invention;

[0016] FIG. 2 depicts a schematic view of an exhaust valve according to the present invention;

[0017] FIG. 3 depicts a schematic view showing air duct of the exhaust valve according to the present invention;

[0018] FIG. 4 depicts an exploded view of the exhaust valve according to the present invention.

LIST OF REFERENCE CHARACTERS

[0019] 10 plastic bag film;

[0020] 20 exhaust valve;

[0021] 21 valve plate;

[0022] 211 cone head;

[0023] 22 valve seat;

[0024] 221 groove;

[0025] 222 Convex rib;

[0026] 23 valve cover;

[0027] 30 air duct;

[0028] 40 pressure-sealing zipper.

DETAILED DESCRIPTION

[0029] The invention is explained in detail in the following with reference to the drawing:

[0030] As shown in FIG. 1, a vacuum pressure-sealing storage bag with exhaust valve and pressure-sealing zipper comprises a plastic bag film 10, exhaust valve 20 and pressure-sealing zipper 40. As shown in FIGS. 2 and 3, the exhaust valve 20 disposed at the opening of the bag comprises a valve plate 21, a valve seat 22 and a valve cover 23. The exhaust valve 20 is provided between the upper film and lower film of the plastic bag.

[0031] One surface of the valve seat 22 is bonded firmly to inner surface of the plastic bag film 10. Numerous grooves 221 and convex ribs 222 are spread over the other surface of the valve seat 22, and are wrapped tightly by a valve cover 23, so that such structure can produce a narrow and winding air
duct 30, which will filter the air passed therein, and will prevent the duct from entering sealing surface of the valve plate to improve the sealing reliability of the plastic bag.

[0032] The valve plate 21 is made of soft polymer, wherein a raised cone head is provided in its center position, and is configured to mate with a conical boring of the valve seat to form a reliable sealing surface. The valve plate 21 is configured between the valve seat 22 and the plastic bag film 10 being bonded to the valve seat 22. During air exhaust, the cone head 211 of the valve plate will be raised slightly under the exhaust pressure, and the air inside can be exhausted through the duct 30. When air exhaust is done, the cone head 211 of the valve plate will be attached tightly to the conical boring of the valve seat again under the negative air pressure.

[0033] A pressure-sealing zipper 40 is provided at the opening of the bag with the exhaust valve 20, whereby goods could be picked out or put in the bag, such structure could be re-useable without damaging the plastic bag.

[0034] The vacuum storage bag of the present invention could be re-useable and avoid waste. The narrow air duct formed by the grooves of valve seat and the valve cover could filter the air inside the bag, to prevent the dust from entering sealing surface between the valve plate and the valve seat; The cone head of the valve plate ensures its sealing reliability further. The present invention is adapted for household, restaurant and outdoor activities, food and jewelry could be vacuum packed with vacuum-pumping equipment.

[0035] The description mentioned above is the preferred embodiment of the invention, not for purposes of limitation. Therefore, any simple modifications and equal variations to the above embodiment according to the technical substance of the invention, falls within the scope of the appended claims.

1. A vacuum pressure-sealing storage bag comprising:
   - a plastic bag film;
   - an exhaust valve; and
   - a pressure-sealing zipper;

   wherein the exhaust valve comprises a valve plate, a valve seat and a valve cover, the valve plate is configured between the valve seat and the plastic bag film being bonded to the valve seat.

2. The vacuum pressure-sealing storage bag according to claim 1, wherein an air duct is configured between the valve seat and an inner surface of the valve cover.

3. The vacuum pressure-sealing storage bag according to claim 1, wherein the valve plate is made of soft polymer, and is provided between the plastic bag film and the valve seat, and a raised cone head is provided in a center of the valve plate, and tightly mates with a conical boring of the valve seat.

4. The vacuum pressure-sealing storage bag according to claim 1, wherein the pressure-sealing zipper is configured at an opening of the vacuum pressure-sealing storage bag.

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