

June 3, 1969

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3,447,260

TRANSPORT AND STORAGE PACKAGE

Filed April 12, 1967

Sheet 1 of 2

FIG. 1

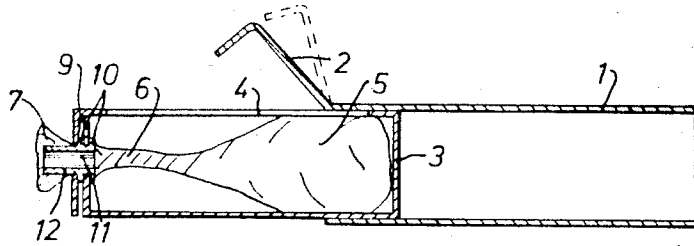


FIG. 3

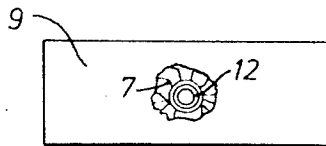


FIG. 4

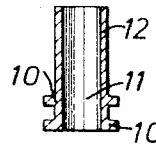
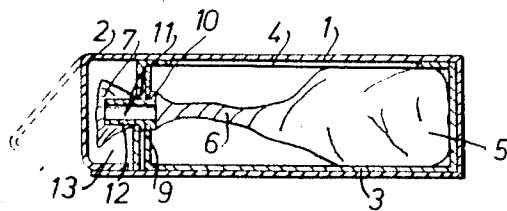


FIG. 2



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FIG. 5

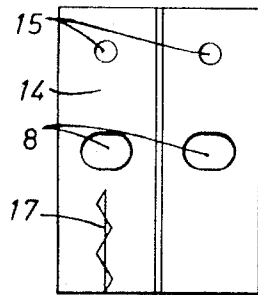
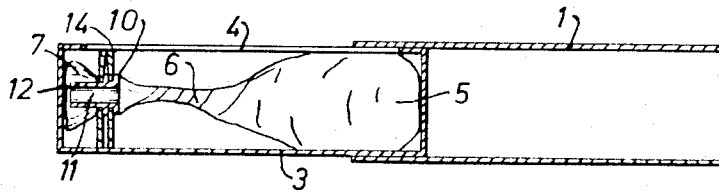


FIG. 6

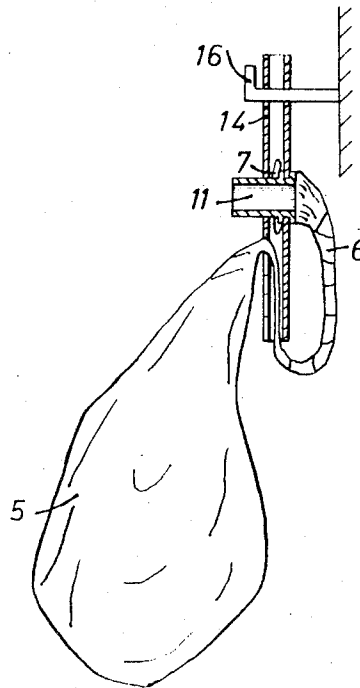


FIG. 7

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TRANSPORT AND STORAGE PACKAGE

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10 Claims

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ABSTRACT OF THE DISCLOSURE

A package for the transport and temporary storage of moist granular compositions comprises a sleeve element, a flat box movable into and out of the sleeve element to give access to a bag of tight thin-walled material which contains the moist composition and is placed in the box, an apertured closure plate non-rotatably mounted in the box or formed by one of the box side walls, with which closure plate the twisted-together neck portion of the bag is engaged. A tubular body extends into the bag neck portion and is rotatably mounted and guided in the aperture of the closure plate, thereby pressing the bag material against the edges of the aperture in a manner to allow communication between the bag content and the atmosphere through the bag neck portion and the tubular body.

A package of the type outlined in the foregoing is intended for the transport and temporary storage of moist generally granular compositions such as soil or nutritive substances, in which living worms are kept for use as fish bait, or infusoria and/or parts of live plants such as roots are collected for future microscopical examination. The invention provides an inexpensive package which is sufficiently tight and pressure resistant to permit being sent with its content by ordinary mail. The package is so arranged as to allow in its closed state aeration of the nutritive composition so that there do not arise by chemical reaction any unfavourable changes therein, such as superpressure or oxygen deficiency. In spite of the aeration no parts of the package content nor individual worms, e.g. by their own movement, can escape from the package or otherwise be lost in transport. To this comes that the package is readily opened and permits being closed again and unlimited number of times, whereby for example individual angling-worms can be taken out of it. The unconsumed package content, e.g. earthworms, can easily be kept stored for a relatively long time in the package under darkness conditions.

The bag of tight clear material should be only half-filled. The box in which the bag is placed has an open long side or is equipped with a window so that after the box has been moved to open position the package content is visible through the clear bag material and after opening of the bag a worm can be selected as fish bait or a plant portion for microscopical examination. In said opening and closing of the box and the bag the closure mechanism formed by the tubular body is of the utmost importance.

The above and further features of the invention will become apparent from the following description made with reference to the accompanying drawings which illustrate two embodiments of the package according to the invention.

In the drawings:

FIG. 1 is a longitudinal section of the package in one embodiment thereof with the box partly withdrawn from the sleeve element;

FIG. 2 is a longitudinal section of the package with the box totally inserted in said sleeve element;

FIG. 3 is an end view of said package;

FIG. 4 is a view of the tubular closure body which is a constituent detail of said package;

FIG. 5 is a longitudinal section of the package in the other embodiment thereof with the box partly withdrawn from the sleeve element;

FIG. 6 is a developed plan view of a loose insert being a constituent detail of said package;

FIG. 7 is a view of the loose insert in a double-folded state and having a bag attached thereto, the insert being suspended from a hook.

In the embodiment of the package shown in FIGS. 1-4 the sleeve element 1 of carton or cardboard and of rectangular cross section is open only at one end, and at said one end the sleeve is provided with an insertable closure flap 2. The box 3 accommodated in the sleeve element 1 is shorter than said element. At one of the long sides of the box 3 has an aperture 4 to provide a window through which the content of the bag is visible after the box 3 has been withdrawn from the sleeve element 1. The bag in the box 3 is a clear foil of some suitable material, such as synthetic plastic.

The bag 5 has a relatively long neck portion 6 which is slightly twisted together. The end 7 of the bag is passed through two registering holes 8 in one of short sides 9 of the box 3, said one short side being constituted by two flaps. The short side 9 in question can also be formed by an extended and double-folded box side. Inserted in the bag end 7 is a short tubular closure member 11 which has two annular beads 10 on the outer side. Alternatively, the closure body 11 may have an annular groove in the outer side. The closure body 11 is guided with the bead edges by the edges of the registering holes 8. The flaps constituting the short side 9 of the box 3 tend to stand slightly apart owing to their inherent resilience, whereby the bag neck portion will be fixedly retained by friction at the hole edges, and the right-angular cross section of box will prevent the flattened bag from being unintentionally rotated in the box. However, due to the flexibility of the thin plastic foil there is no tension in the bag neck portion and air can pass between the twisted-together bag walls at the neck portion. Therefore the interior of the bag will be in throttled communication with the atmosphere. Nevertheless, a fully satisfactory closure is obtained. The tubular closure body 11 is readily grasped and rotated since the stem 12 thereof projects some distance from the short side 9 of the box 3. There is no risk that the neck will be subjected to unintentional rotation in the reverse direction.

When the package is to be closed the short box 3 is pushed altogether into the sleeve element 1. As a result, there is formed a space 13 which accommodates the closure proper and the end of the bag neck portion. The said space 13 is closed by inserting the flap 2 in the manner shown in FIG. 2.

For mailing of the package the flap 2 is secured against unintentional opening by means of a narrow piece of tape. One of the long sides of the sleeve 1 is provided with a space suitable to receive the address to which the package is to be sent.

In the embodiment shown in FIG. 5 the sleeve element 1 and the box 3 are of equal length. The sleeve element 1 is open at both ends. The bag in a but partly filled state is introduced into the box 3 through a relatively large window 4 in one of the long sides of the box. The closure means comprises a loose double-folded piece of cardboard 14 shown in FIG. 6 and conformed to the cross section of the box 3, and a round tubular closure body 11 inserted in a hole 8 in said piece of cardboard. With the neck portion 6 engaged in the loose piece of

cardboard 14, the bag 5 is placed in the box 3 in such a way that the bag 5 with the closure elements 11, 14 can be detached from the box.

To facilitate double-folding of the piece of cardboard 14 and fixation of the tubular closure body 11 the two holes 8 in the piece of cardboard 14 are slightly oval. Additional holes 15 are provided to permit hanging the piece of cardboard 14 on to a hook 16, in which case the piece of cardboard 14 may be both folded and unfolded.

As will appear from FIG. 6, the piece of cardboard 14 has a slit 17 extending inwardly of the piece from one edge thereof. The slit 17 is either straight or serrated. It shall be possible to clamp the neck portion of the bag temporarily in said slit, as is illustrated in FIG. 7.

While the invention has been described above and shown in the drawing in two embodiments chosen by way of example, it is readily understood by those skilled in the art that various modifications can be resorted to within the scope of the appended claims.

What I claim is:

1. A package suitable for the transportation and storage of living worms and plants in a moist composition such as soil or nutritive substances, said package comprising, in combination, an inner container of non-circular cross-sections slidably mounted for movement into and out of a sleeve element having an open end, an apertured closure plate carried by said inner container and retained against rotation relative thereto, a bag of thin-walled flexible, moisture-proof material disposed in said inner container and adapted, with the package contents therein, to have its twisted-together neck portion extend through at least one aperture in said closure plate, and a tubular body extending into the neck portion of said bag and rotatably mounted in said at least one aperture of said closure plate, the edge portion of said at least one aperture supporting said tubular body and retaining the bag material in contact therewith to provide limited communication of the package contents with the atmosphere through said twisted-together neck portion of said tubular body.

2. The package as defined in claim 1 further comprising means for closing said open end of said sleeve element.

3. A package as claimed in claim 1 wherein said closure plate is made from a sheet of paper board material having a pair of spaced apertures formed therein, said sheet being folded to position said pair of apertures in substantially aligned superimposed relation and with the two folded portions thereof being kept slightly apart by the inherent resilience of the material, said tubular body portion and said bag neck portion is clamped fast and said

tubular body is retained against unintentional rotation.

4. A package as claimed in claim 1 wherein said tubular body includes peripheral annular guide means cooperating with said at least one aperture to support said tubular body for limited rotation within said closure plate and for axially retaining said tubular body within said at least one aperture.

5. A package as claimed in claim 1 wherein said apertured closure plate comprises an extended and angularly bent side wall of said inner container.

6. A package as claimed in claim 2 wherein said inner container is shorter than said sleeve element to permit said inner container, said bag, said closure plate, and said tubular body to be received within said sleeve, and said means for closing said one end of said sleeve element comprises a closure flap integrally formed on said sleeve element.

7. A package as claimed in claim 3 wherein said inner container is formed from a folded paperboard blank, and wherein said apertured closure plate comprises an extended folded side wall of said inner container.

8. A package as claimed in claim 1 wherein the sides of said apertured closure plate substantially conforms to the cross-sectional area of said inner container and is detachably inserted in the inner container, said inner container having an opening in one side thereof to permit viewing the contents of said bag when said sleeve is removed therefrom.

9. A package as claimed in claim 8 further comprising a slit in said closure plate extending inwardly from one edge thereof, said bag neck portion being adapted to be clamped within said slit without said neck being removed from said at least one aperture.

10. A package as claimed in claim 1 wherein said closure plate is provided with a suspension eye adapted to be impaled on a support whereby said bag and the contents thereof may be suspended from said closure plate.

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U.S. Cl. X.R.

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