The present invention relates to an arrangement for portioning or dispensing viscous material (1) from a pack (2), whereby the pack (2) is positionable in an outer container and a portioning or dispensing means (4) includes a nonreturn valve (30) which prevents the material (1) from flowing back to said pack (2) during portioning or dispensing. For being able to quickly place the pack (2) in the outer container and quickly and safely lock a retaining portion of the portioning means (4) relative to the outer container as well as ensure that valve members of the nonreturn valve (30) are not damaged during handling and operation of the portioning means (4), the outer container is divided in a special way into two container members, whereby retaining members of the retaining device are integrated in said container members and whereby the valve seat (40) of the nonreturn valve (30) is surrounded by the retaining members of the retaining device.
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Arrangement for portioning viscous materials from a pack.

The present invention relates to an arrangement for portioning viscous material, preferably foodstuff, e.g. ketchup or mustard, from a pack, preferably a plastic bag of flexible material, whereby a portioning means is connectable with the pack so that viscous material can be dispensed therefrom by means of said portioning means, preferably by gripping and compressing an elastic part thereof, whereby said portioning means includes a non-return valve having a valve seat and a valve means cooperating therewith and being adapted to prevent material from flowing back from the portioning means to the pack when said portioning means is compressed for dispensing material therefrom, and whereby the pack is positionable in an outer container so that the portioning means is directed downwards therefrom.

Prior art outer containers of said type are expensive to manufacture and they do not permit quick exchange of empty packs for new such packs. Furthermore, simple retaining devices are lacking, which can be brought to quickly and easily retain the upper end of the portioning means relative to the outer container without the risk for loosening or damaging said portioning means when it is handled manually for dispensing material from the pack.

The object of the present invention has been at first hand to eliminate these problems and this is arrived at by providing the device defined above substantially with the characterizing features of claim 1.

By means of these characterizing features it is attained that the outer container as well as the retaining device consists of a few easily manufactured members. Furthermore, the measure to place a new pack in the outer container and locking the portioning means in relation thereto, is facilitated. The portioning means can namely be brought to automatically take an exact posi-
tion relative to the retaining device when the pack is placed in the outer container such that said portioning means can be retained by means of the retaining device by simply closing the outer container. Additionally, the retaining device can protect vital members of the nonreturn valve forming part of the portioning means when said retaining device retains said portioning means such that said members are not damaged during manual handling of the portioning means for dispensing material from the pack.

The invention will be further described below with reference to the accompanying drawings, wherein

fig. 1 schematically illustrates all major components forming part of the arrangement according to the invention located beside each other before assembly thereof;

fig. 2 with a plan view illustrates an outer container forming part of the arrangement according to the invention and which is open and wherein a pack with a portioning means is located;

fig. 3 is a section along the line III-III through the arrangement of fig. 2;

fig. 4 with a plan view illustrates the arrangement according to the invention, whereby the outer container is closed;

fig. 5 is a vertical section through a portioning means forming part of the arrangement of the invention;

fig. 6 is the same section through the portioning means as in fig. 5, but during suction of material; and

fig. 7 is the same section through the portioning means as in figs. 5 and 6, but during dispensing of material.

The portioning or dispensing device illustrated in the drawings is adapted for portioning or dispensing viscous materials 1, preferably foodstuff such as ketchup or mustard, from a pack 2, preferably a thinwalled plastic bag of flexible material. The pack 2 is positionable,
e.g. suspendable at the top, in an outer container 3, which is suspendable or positionable at a location at which dispensing of the viscous material 1 occurs, e.g. in a kiosk, in a snack bar or in a restaurant.

The portioning device has a portioning or dispensing means 4, preferably including a compressible hose 5 of elastic material. This portioning means 4 can be connected with the pack 2 so that viscous material 1 can be dispensed therefrom by means of the portioning means 4.

The outer container 3 has down below a retaining device 6 for retaining the portioning means 4 at said container so that said portioning means is directed downwards from said outer container 3.

The outer container 3 is divided into two container members 7, 8 along a plane P (see fig. 4) extending between its lower and upper portions 9 and 10. The container members 7, 8 are movable relative to each other, preferably articulately connected with each other, in such a way that the outer container 3 can be opened and closed by changing their mutual positions. Furthermore, the retaining device 6 includes a retaining member 11 which is provided on one of the container members 7 and another retaining member 12 which is provided so that both retaining members 11, 12 together can be brought to retain the portioning means 4 at the outer container 3. Said other retaining member 12 is preferably mounted on the other container member 8, but can also be mounted on said first container member 7, e.g. as a movable clamp member, or being a separate member which can be positioned in another suitable way for retaining the portioning means 4 at the outer container 3.

At least one of the container members 7 and/or 8 is preferably designed such that the pack 2 can be placed therein when the outer container 3 is open (see figs. 2 and 3, wherein the pack 2 is located in the container member 7).

Hereby, a retaining portion 13 of the portioning
means 4 is preferably positionable in the retaining member (here retaining member 11) of the same container member (here container member 7). As is apparent from the figures, one of the retaining members 11 can be mounted on one of the container members 7 and the other retaining member 12 mounted on the other container member 8 such that said retaining members 11, 12 are brought into retaining positions (see fig. 4) to retain the portioning means 4 by bringing said container members 7, 8 into positions at which they define a closed outer container 3 and locking them in these positions relative to each other.

For locking the container members 7, 8 relative to each other when said members define a closed outer container 3 and for locking also the retaining members 11, 12 relative to each other when these latter members retain the portioning means 4, a locking means 14, preferably a lock ring, can be provided, preferably threaded (see arrow A in fig. 4) onto the retaining device 6 when the outer container 3 is closed.

On the insert member 18 and preferably the mounting member 19 there may be provided a coupling device 15 which can be connected with the pack 2 for discharge of viscous material therefrom to the portioning means 4 before said pack 2 is encased in the outer container 3 and preferably before said pack 2 has been placed (see arrows C, D in fig. 1) in any of the container members 7 or 8.

The compressible hose 5 has in one end a portioning or dispensing member 26 with a dispensing opening 16 and in another end an insert opening 17 through which an insert member 18 belonging to the portioning means 4 is insertable into the compressible hose 5 (see arrow B in fig. 1).

The coupling device 15 can be connected with the insert member 18 in such a way that one can connect said device with the pack 2 when the insert member 18 is provided in the portioning means 4 (see fig. 1).

Furthermore, the coupling device 15 is preferably a pipe piece provided on the mounting member 19 and of such
5.

length that is projects out from the insert opening 17 of the compressible hose 5 when the insert member 18 is provided in said compressible hose. Such a coupling device 15 can also be used for punching or making holes in the pack 2 when said device is connected.

The mounting member 19 is preferably locatable in the portioning means 4 adjacent to the insert opening 17 thereof. This mounting member 19 may consist of a circular plate which is insertable into a circular mounting groove 20 preferably provided in the compressible hose 5, and which preferably is retained in said groove while those portions of the elastic material of the hose which are brought to deflect resiliently when the circular plate is inserted into the circular mounting groove 20, spring back or return to their original shape.

A rod 21 may extend from central portions of the mounting member 19 and an end portion 22 of said rod defines a valve seat 23 for a portioning or dispensing valve 24 within the dispensing opening 16. The valve body 25 of the dispensing valve 24 may be formed by those parts of the dispensing member 26 which surround the end portion 22 of the rod 21. A material intake opening 27 can be provided in the mounting member 19 for permitting intake of viscous material from the pack 2 to the interior of the compressible hose 5. This material intake opening 27 can be located laterally offset relative to those central portions of the mounting member 19 from which the rod 21 extends.

On the rod 21 adjacent to the mounting member 19 there may also be provided an valve means 28 of elastic material for a nonreturn valve 30. The mounting member 19 may define the valve seat 40 for the nonreturn valve 30 while the valve means 28 is provided to cooperate with the mounting member 19 around its material intake opening 27.

The portioning means 4, and preferably its compressible hose 5, may at a retaining end 31 be provided with an annular mounting flange 32 and at least one of the re-
taining members 11 and/or 12 can be provided with a retaining groove 33 and/or 34 for retention of the annular mounting flange 32. Additionally, the mounting groove 20 can be provided in the annular mounting flange 32. The mounting member 19 preferably extends out to the outer portions of the mounting groove 20 and preferably is of such rigid material that it can form an inner support for the portioning means 4 within the retaining device 6 and at the same time prevent said portioning means 4 from being pulled downwards therefrom.

At the container members 7, 8 of the outer container 3, a container member edge 35 which extends from a lower portion 9 to an upper portion 10 of one of the container members 7 and a container member edge 36 which extends from a lower portion 9 to an upper portion 10 of the other container member 8 may be connected with each other through a link device 37 which permits swinging together of said container members 7, 8 to define or form a closed or substantially closed outer container 3 (see fig. 4) or apart to form an open outer container 3 (see fig. 2).

This link device 37 may include at least two rings 38, 39 of which each ring is threaded through a hole in one of the container members 7 and a hole in the other of said container members 8. One of the rings 38 preferably is provided at the lower portion 9 of the container members 7, 8 and the other ring 39 at the top or upper portion 10 of said members.

Each container member 7, 8 and a retaining member 11, 12 provided thereon may be manufactured in one single piece and of the same material, e.g. plastic material. One container member 7 and the retaining member 11 provided thereon are identical or almost identical with the other container member 8 and the retaining member 12 provided thereon.

As is apparent from the figures, each container member 7, 8 defines half or substantially half the outer container 3 and each retaining member 11, 12 defines half or
substantially half the retaining device 6. Furthermore, each container member 7, 8 can be designed as an oblong and shape permanent shell, from the lower portion 9 of which a retaining member 11 and 12 respectively, projects as a half pipe piece or similar.

5 It should also be mentioned that the pack 2 preferably has an inner coupling member 41 at which the coupling device 15 is insertable and which is adapted to retain said device.

For dispensing material, material is initially fed into the portioning means 4 until said means is filled. Filling of the portioning means 4 occurs by gripping said means and "pumping" it by compressing or squeezing it and then release the grip. Since the portioning means 4 because of its elastic properties returns to its original shape (see arrows E in fig. 6) when one releases the grip, a negative pressure is generated in said portioning means 4, whereby the nonreturn valve 30 is opened and material 1 is sucked from the pack 2 into the portioning means. This is repeated until the portioning means 4 is filled (see fig. 6), whereby said portioning means is ready for portioning or dispense.

By compressing the portioning means 4 (see arrows F in fig. 7) filled as stated above, the nonreturn valve 30 will close and prevent material 1 from flowing back from said portioning means to the pack 2. Instead, the dispensing valve 24 is opened (by bringing the dispensing member 26 of the hose 5 to "gape" and thereby leave the valve seat 23 of the dispensing valve 24) and material 1 dispensed from the portioning means 4 (see fig. 7).

The arrangement illustrated in the drawings is handled so that when an empty pack 2 has been removed, the portioning means 4 is connected with a full pack 2 (see arrow C in fig. 1). Thereafter, the pack 2 and the portioning means 4 connected therewith is placed in e.g. the container member 7 with the retaining portion 13 in its retaining position relative to the retaining member 11
(see fig. 2). Then, the outer container 3 is closed, whereby the retaining portion 13 of the portioning means 4 will be located within the retaining device 6 and thus, at least also the valve seat 40 of the nonreturn valve 30. Hereby, the retaining device 6 will retain the retaining portion 13 relative to the outer container 3 and also protect the valve seat 40 of the nonreturn valve 30, i.e. in the embodiment shown, the mounting member 19 defining said valve seat 40.

Since in the embodiment shown, the valve means 28 of the nonreturn valve 30 is also located within the retaining portion 13 and thereby will be surrounded by the retaining device 6, the valve means 28 is here also protected by said retaining device, which means that the entire nonreturn valve 30 can be protected by the retaining device 6 at least when said valve is closed.

When the outer container 3 is closed and thus, the portioning means 4 is retained by the retaining device 6, the locking means 14 can be threaded onto said retaining device 6 through said portioning means 4, whereby the container members 7, 8 as well as the retaining members 11, 12 are locked in their closed positions. The outer container 3 is thus ready to be suspended or set up at its place of use with the portioning means 4 directed downwards.

The material guiding members or portions of the portioning means 4 are easily cleaned after daily use by removing the insert member 18 from the hose 5, whereafter each such member or portion is washed separately. The washing of the insert member 18 can be facilitated if there is a gap (see fig. 5) between the valve means 28 and the mounting member 19 for easy access between said members. When the cleaning is finished, it is easy to reassemble the members for further use in cleaned condition.

The invention is not limited to the embodiment described above and illustrated in the drawings, but may vary within the scope of the following claims. As examp-
9.

les of alternative embodiments it can be mentioned that the container members 7, 8 can have another design than shown and they can eventually be entirely dismountable from each other instead of being articulately connected with each other, the retaining members 11, 12 of the retaining device 6 can be designed in other ways, e.g. can both members be located on the same container member, whereby one of the retaining members is movable so that it can be moved aside for positioning the portioning means 4 in the other and then moved back for locking said means to said other retaining member. One of the retaining members can also be completely removable from and securable to the other retaining member.

Furthermore, the locking means 14 can be designed in other ways than shown for locking the retaining members 11, 12 in their retaining positions and there may alternatively be at least one locking means for locking the container members 7, 8 when the outer container 3 is closed, whereby said latter locking means indirectly also can lock the retaining members 11, 12. There may also be provided one or more locking means for locking the container members 7, 8 and one or more other locking means for locking also the retaining members 11, 12. The coupling device 15 can have other shapes and be mounted in other ways than shown - it may e.g. be a flexible hose which is connected with the mounting member 19 or with the portioning means 4 in other ways. This hose may at an outer end be provided with a connecting and/or lancing or punching pipe which can be connected with the pack 2. The portioning means 4 can also be of another design than described above and this is applicable also to the pack 2.
Claims:

1. Arrangement for portioning or dispensing viscous material (1), preferably foodstuff, e.g. ketchup or mustard, from a pack (2), preferably a plastic bag of flexible material,

whereby a portioning or dispensing means (4) is connectable with the pack (2) so that viscous material (1) can be dispensed therefrom by means of said portioning means (4), preferably by gripping and compressing an elastic portion or member thereof,

whereby the portioning means (4) includes a nonreturn valve (30) having a valve seat and a valve means cooperating therewith and being adapted to prevent material (1) from flowing back from the portioning means (4) to the pack (2) when said portioning means (4) is compressed for dispensing material (1) therefrom, and

whereby the pack (2) is positionable in an outer container (3) so that the portioning means (4) is directed downwards therefrom,

characterized in

that the outer container (3) is divided into two container members (7 and 8) along a plane (P) extending between lower and upper portions (9 and 10) thereof,

that the outer container (3) down below is provided with a retaining device (6) wherein a retaining portion (13) of the portioning means (4) can be situated,

that the retaining portion (13) includes two retaining members (11, 12) of which one retaining member (11) is provided down below on one container member (7), whereby the other retaining member (12) is provided so, preferably down below on the other container member (8),

that said retaining members together can be brought into retaining positions for retaining the retaining portion (13) of the portioning means (4), and

that the valve seat (40) of the nonreturn valve (30) is provided within the retaining portion (13) of the por-
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tioning means (4) so that said seat will be located within the retaining device (6) when said device retains the retaining portion (13).

2. Arrangement according to claim 1, characterized in that the retaining portion (13) of the portioning means (4) has an annular mounting flange (32) and that at least one of the retaining members (11 or 12) of the retaining device (6), preferably both retaining members (11, 12), is provided with a retaining groove (33 and/or 34) which is engaged by the annular mounting flange (32) of the retaining portion (32) when the retaining members (11, 12) retains the portioning means (4).

3. Arrangement according to claim 2, characterized in that the valve seat (40) of the non-return valve (30) is defined by a mounting member (19) which is positionable in the portioning means (4), preferably by being located in a mounting groove (20) in the annular mounting flange (32).

4. Arrangement according to claim 3, characterized in that the mounting member (19) forms part of an insert member (18) which is insertable into the portioning means (4) and which includes a valve means (28) which forms part of the nonreturn valve (30) and cooperates with the valve seat (40).

5. Arrangement according to claim 4, characterized in that the valve seat (40) is defined by the mounting member (19) around a material intake opening (27) which is provided in said member to permit intake of material (1) from the pack (2) to the portioning means (4).

6. Arrangement according to any preceding claim, characterized in that a mounting member (19) defining the valve seat (40) consists of a circular plate which is insertable into a circular mounting groove (20) in a compressible hose (5) forming part of the portioning means (4), and which is retained in said mounting
groove (20) while those portions of the elastic material of the hose (5) which are brought to deflect resiliently when the circular plate is inserted into the circular mounting groove (20), spring back or return to their original shape.

7. Arrangement according to any preceding claim, characterized in that a rod (21) extends from central portions of a mounting member (19) defining the valve seat (40), whereby an end portion (22) of said rod (21) defines a valve seat (23) for a dispensing valve (24) within a dispensing opening (16) which is defined by a compressible hose (5) of elastic material forming part of the portioning means (4), whereby a valve body (25) for the dispensing valve (24) is formed by those portions of the hose (5) which surround the end portion (22) of the rod (21), that in the mounting member (19) there is provided a material intake opening (27) for permitting intake of viscous material (1) from the pack (2) to the interior of the compressible hose (5), that the material intake opening (27) is located laterally offset relative to those central portions of the mounting member (19) from which the rod (21) extends, and that the valve means (28) of the nonreturn valve (30) is provided on the rod (21) adjacent to the mounting member (19).

8. Arrangement according to any preceding claim, characterized in that the valve seat (40) of the nonreturn valve (30) is defined by a mounting member (19) which is positionable in the portioning means (4), whereby said mounting member (19) includes a coupling device (15) which can be connected with the pack (2) for discharge of material (1) therefrom to the portioning means (4).

9. Arrangement according to any preceding claim, characterized in that the valve seat (40) of the nonreturn valve (30) is defined by a mounting member (19) which is positionable in the portioning means (4), whereby said mounting member (19) can be located at
13. an insert opening (17) which is provided in one end of
the portioning means (4).

10. Arrangement according to any preceding claim,
characterized in that at least one of
the container members (7 and/or 8) is formed such that
the pack (2) can be placed therein when the outer con-
tainer (3) is open, whereby a retaining portion (13) of the
portioning means (4) can be located in the retaining mem-
ber (11 or 12) of the same container member (7 or 8).

11. Arrangement according to any preceding claim,
characterized in that one retaining mem-
ber (11) is mounted on one container member (7) and the
other retaining member (12) on the other container mem-
ber (8) so that said retaining members (11, 12) can be
brought into retaining positions for retaining the por-
tioning means (4) by bringing the container members (7,
8) into positions wherein they define a closed or sub-
stantially closed outer container (3) and locking said
container members in said positions relative to each other.

12. Arrangement according to any preceding claim,
characterized in that a locking means
(14), preferably a lock ring, can be provided, preferably
threaded, on the retaining device (6) when the outer con-
tainer (3) is closed for locking the retaining members
(11, 12) of said retaining device (6) in retaining posi-
tions wherein said retaining members retain the portion-
ing means (4).

13. Arrangement according to any preceding claim,
characterized in that the valve seat (40)
of the nonreturn valve (30) is defined by a mounting mem-
ber (19) having a coupling device (15) which on one hand
is mounted so that one can punch or make holes therewith
in the pack (2) and which on the other hand is mounted
so that said coupling device can be connected with the
pack (2) for discharge of viscous material (1) therefrom
to the portioning means (4) before the pack (2) has been
encased or enclosed in the outer container (3).
14. Arrangement according to claim 13, characterized in that the portioning means (4) in one end has an inserting opening (17) through which an insert member (18), including a mounting member (19) defining the valve seat (40), is insertable, and that the coupling device (15) is connected with the insert member (18) in such a way that one with said coupling device can punch or make holes in the pack (2) and connect it therewith when the insert member (18) is placed in the portioning means (4).

15. Arrangement according to claim 13, characterized in that the coupling device (15) is a pipe piece provided on the mounting member (19) and having such a length that it protrudes out of the inserting opening (17) of the portioning means (4) when the insert member (18) is located in the compressible hose (5).

16. Arrangement according to any preceding claim, characterized in that the portioning means (4) comprises a compressible hose (5) having a retaining end (31) with an annular mounting flange (32) and that at least one of the retaining members (11 and/or 12) is provided with a retaining groove (33 and/or 34) for the annular mounting flange (32) of the compressible hose (5).

17. Arrangement according to any preceding claim, characterized in that a container member edge (35) which extends from a lower portion (9) to an upper portion (10) of one container member (7) and a container member edge (36) which extends from a lower portion (9) to an upper portion (10) of the other container member (8) are connected with each other through a link device (37) which permits swinging together of said container members (7, 8) to define a closed or substantially closed outer container (3) or apart to form an open outer container (3).

18. Arrangement according to claim 17, characterized in that the link device (37) includes at least two rings (38, 39) of which each ring is threaded
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through a hole in one container member (7) and a hole in the other container member (8) and that one ring (38) preferably is provided at the lower portions (9) of the container members (7, 8) and the other ring (39) at the upper portions (10) of said members.

19. Arrangement according to any preceding claim, characterized in that each container member (7, 8) and a retaining member (11, 12) provided thereon are manufactured in one piece and of the same material, and that one container member (7) and the retaining member (11) provided thereon are identical or almost identical with the other container member (8) and the retaining member (12) provided thereon.

20. Arrangement according to claim 19, characterized in that each container member (7, 8) defines half the outer container (3) or substantially half the outer container (3) and that each retaining member (11, 12) defines half or substantially half the retaining device (6).

21. Arrangement according to any preceding claim, characterized in that each container member (7, 8) is designed as an oblong shell from the lower portion (9) of which a retaining member (11, 12) protrudes as a half pipe piece.

22. Arrangement according to any preceding claim, characterized in that the portioning means (4) comprises a compressible hose (5) which in one end has a dispensing member (26) with a dispensing opening (27) and in the opposite end the retaining portion (13).
# INTERNATIONAL SEARCH REPORT

## A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

**Minimum documentation searched (classification system followed by classification symbols)**

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**Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched**

SE, DK, FI, NO classes as above

**Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)**

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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[X] Further documents are listed in the continuation of Box C.  
[X] See patent family annex.

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**Date of the actual completion of the international search**  
18 January 1995

**Date of mailing of the international search report**  
30-01-1995

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Telephone No. +46 8 782 25 00
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