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(72) Inventors:
• **Malaspina, Alberto**
15076 Ovada (AL) (IT)
• **Schirotti, Dino**
43030 Parola (PR) (IT)

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(74) Representative: **Spandonari, Carlo**
Spandonari & Modiano S.r.l.
Corso Duca degli Abruzzi 16
10129 Torino (IT)

(71) Applicant: **Nuova Poliver di Oddone Colomba &
C. S.n.c.**
15070 Tagliolo Monferrato (AL) (IT)

(54) **Air extractor for food preservation bags, for home use**

(57) The accessory is an elongated block (30) having a series of laminas (34) that protrude in a comb-like fashion from one side of the block with connecting passages such as through holes or slits, that pass through the block from the gaps between the laminas to the op-

posite side of the block. It is used with an air extractor having a vacuum chamber formed by an elongated tray (10) that is closed hermetically by a lid (14). The accessory is received in the vacuum chamber with the laminas protruding between the tray and the lid, and inserted between the flaps of the mouth of the bag.

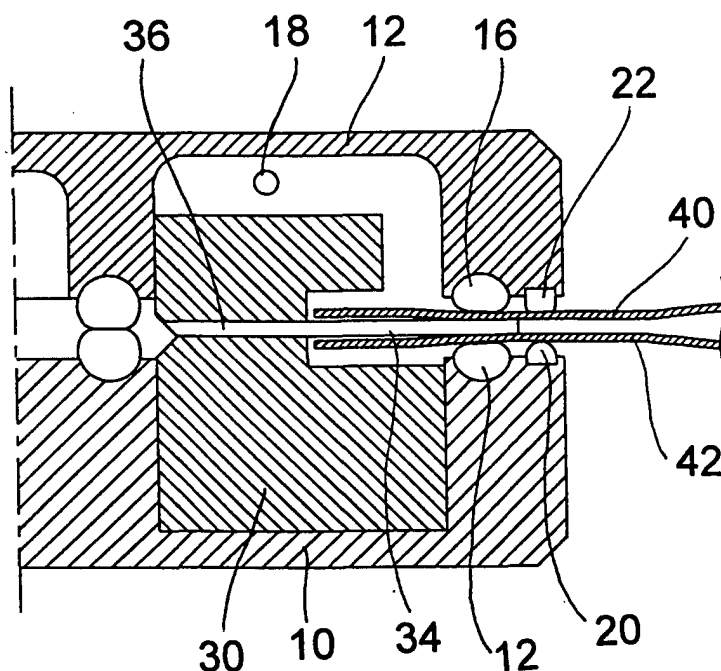


Fig.4

Description

[0001] The present invention relates to an accessory for air extractors for packaging foods in vacuum bags, for home use.

[0002] The home freezing of foods such as meat, fish and fruit uses bags with multilayer walls forming a barrier that is impermeable to gases; these bags are emptied of their air, in order to protect the foods from the oxidizing action of the oxygen in the air, and are heat-sealed. To facilitate the complete emptying of the bags, avoiding the forming of air pockets, said bags also have an internal embossing that is suitable to form passages that allow the air to flow without blockages toward the mouth.

[0003] Small air extractors are commercially available for evacuating the bags; said extractors are generally provided with a vacuum chamber that is formed by an elongated tray that is connected to a vacuum pump, which is closed hermetically with gaskets by means of a lid. The flattened mouth of the bag is inserted between the elongated tray and the lid (see Figure 1), and the internal ribs or embossing of said bag form air exit passages despite the compression of the flaps of the mouth between the gaskets of the tray and of the lid.

[0004] Extractors of the above described type are unable to extract air from ordinary bags made of thin, smooth and highly flexible polyethylene film, as used in home kitchens, because the compression of the flaps of the mouth between the gaskets of the vacuum chamber prevents the forming of the internal channels for the outflow of the air. It would instead be useful for the user to be able to extract the air also from said smooth bags, even if they are not impermeable to gases, because extraction of the air, even if imperfect, would allow better preservation of the foods, albeit for the short term, both in the refrigerator and at room temperature.

[0005] The aim of the present invention is therefore to provide an accessory that can be used in combination with an air extractor of the above described type and allows to extract the air from the inside of bags of thin smooth polyethylene film bags.

[0006] This aim and other objects and advantages that will become better apparent from the description that follows are achieved by the invention with an accessory for air extractors for food preservation bags, having the characteristics specified in claim 1.

[0007] A preferred embodiment of the present invention is now described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a transverse sectional view of a detail of an air extractor during aspiration from an embossed bag for vacuum packaging, according to the prior art;

Figure 2 is an oblique front perspective view of an accessory for an air extractor according to a pre-

ferred embodiment of the invention;

Figure 3 is an oblique rear perspective view of the accessory shown in Figure 2; and

Figure 4 is a view, similar to Figure 1, of aspiration from a conventional smooth bag, using the accessory of Figure 2, which is shown in cross-section.

[0008] Figure 1 is a view of a detail of an air extractor for bags for the vacuum packaging of foods, according to the known art. The extractor has an elongated tray 10, which is provided with a sealing gasket 12 along the edge and on which it is possible to apply and clamp a lid 14 that is provided with a gasket 16 that is similar to gasket 12. An air intake 18 is provided in the lid 14 and is connected to a suction assembly, not shown, for aspirating air from the vacuum chamber formed by tray 10 and lid 14. As an alternative, the air intake in other conventional air extractors is located in a wall of tray 10.

[0009] Along a longitudinal edge of the tray there is a heat-sealing bar 20, which is adjacent and parallel to the corresponding portion of gasket 12 and abuts against a complementary bar 22 mounted on lid 14.

[0010] To perform vacuum packaging, an embossed multilayer bag for vacuum packaging, which already contains the foods to be packaged, is arranged so that the two flaps 24 and 26 of the mouth are adjacent and arranged so as to protrude into the vacuum chamber 10 and 14, being thus compressed between gaskets 12 and 16, as shown in Figure 1, and aspiration begins through intake 18 in order to extract air from the suction chamber 10 and 14. The presence of internal crests or embossing 28, as well as the relative rigidity of the flaps, ensure that despite the compression there remain channels for the passage of the air from the inside of the bag toward the vacuum chamber. Accordingly, the air is extracted from the inside of the bag and at the end the heat-sealing bar is activated in order to seal the mouth of the bag. During aspiration, any traces of liquids extracted from the bag during aspiration are collected in the tray.

[0011] As mentioned, if the user attempts to use the air extractor to empty a conventional polyethylene bag with smooth walls of thin film, said air passage channels cannot form and the inlet of the bag is completely sealed between the gaskets: accordingly, the bag is not evacuated.

[0012] With reference to Figures 2 and 3, the accessory according to the invention for allowing the evacuation of smooth bags comprises an elongated prism-like block 30 that is preferably molded from rigid plastic material, is essentially shaped like a parallelepiped and is suitable to rest on the bottom of tray 10. Block 30 is provided at the front with a horizontal slot 32, and a series of parallel laminae such as 34 protrudes from the bottom of said slot in a comb-like arrangement, horizontally and transversely to the block; said laminae are for example

approximately 5-10 mm wide and are spaced from each other by 1 or 2 mm. Respective through holes 36 are formed in the gaps between the laminas 34 on the bottom of slot 32, pass through block 30 and end on the opposite side at a groove 38.

[0013] For use, the above described accessory is inserted in tray 10, as shown in Figure 3, and the two flaps 40 and 42 of a smooth bag are applied above and below laminas 34, abutting them against the bottom of the slot 32. Then lid 14 is closed so that the soft sealing gaskets 12 and 16 seal the vacuum chamber. Then vacuum is produced in the chamber by aspiration through the air intake.

[0014] It is evident that the presence of the laminas 34 ensures a mutual spacing of the two flaps 40 and 42 that allows air to flow from the inside of the bag through the gaps between the laminas 34 and then into the holes 36 to the rear of the block 30 and therefore with a flow connection to the vacuum chamber. The groove 38 further facilitates this connection.

[0015] At the end of the evacuation, the bag can be heat-sealed normally by operating the heat-sealing bars 20 and 22.

[0016] The above described preferred embodiment of the invention can of course undergo variations within the scope of the teachings given. In particular, the block can be molded monolithically or can be constituted by two or more parts joined together with screws or by thermal bonding. The slot and the groove might be omitted. The through holes might also be provided as slits that are open upward. The laminas might also be partially joined by ribs, for example assuming the shape of a plate provided with slots. The materials also may vary with respect to those cited by way of example.

or recess into which said through holes open.

4. The accessory according to claim 1, **characterized in that** said connecting passages are open slits.
5. The accessory according to one of claims 1 to 4, **characterized in that** said laminas are completely separate from each other.
6. The accessory according to one of claims 1 to 4, **characterized in that** said laminas are partially connected by ridges.
7. The accessory according to one of claims 1 to 6, **characterized in that** the block has a longitudinal slot and said laminas protrude from the bottom of said slot.

Claims

1. An accessory for air extractors for food preservation bags, for home use, wherein the extractor comprises a vacuum chamber that is connected to a vacuum pump and is formed by an elongated tray that can be closed hermetically by a lid, **characterized in that** it comprises an elongated block that can be inserted in the tray of the vacuum chamber and has a series of laminas that protrude in a comb-like fashion from one side of the block in order to protrude from the chamber between the tray and the lid, with connecting passages that pass through the block from the gaps between the laminas to the opposite side of the block.
2. The accessory according to claim 1, **characterized in that** said connecting passages are through holes.
3. The accessory according to claim 2, **characterized in that** said opposite side of the block has a groove

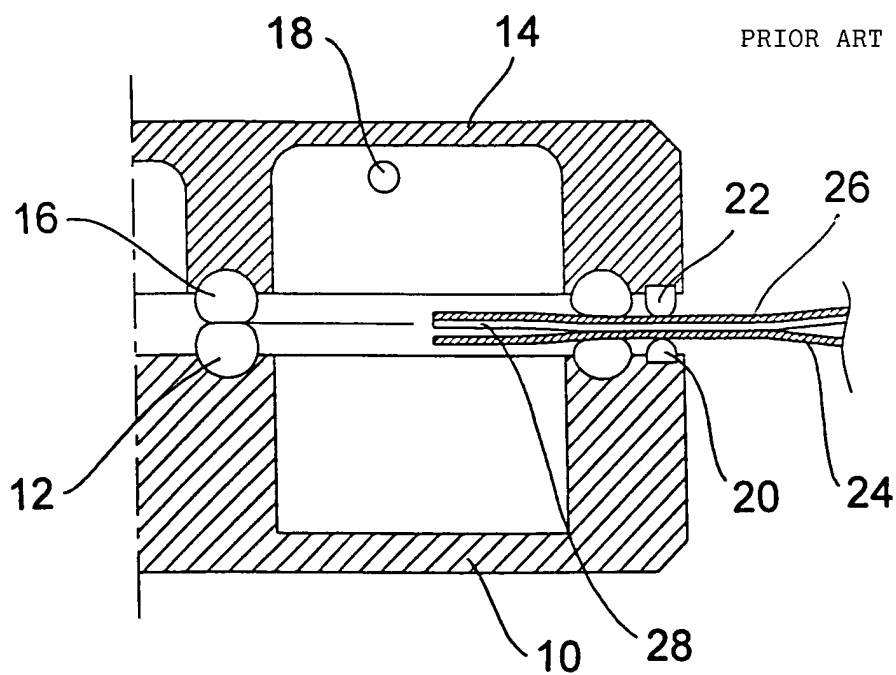


Fig.1

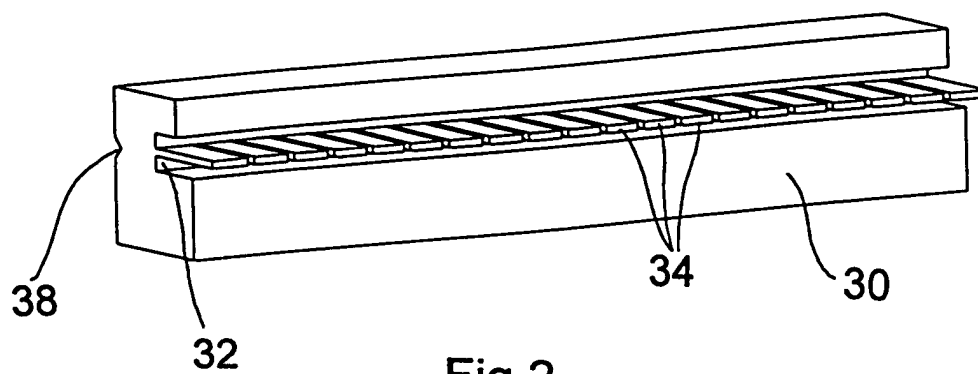


Fig.2

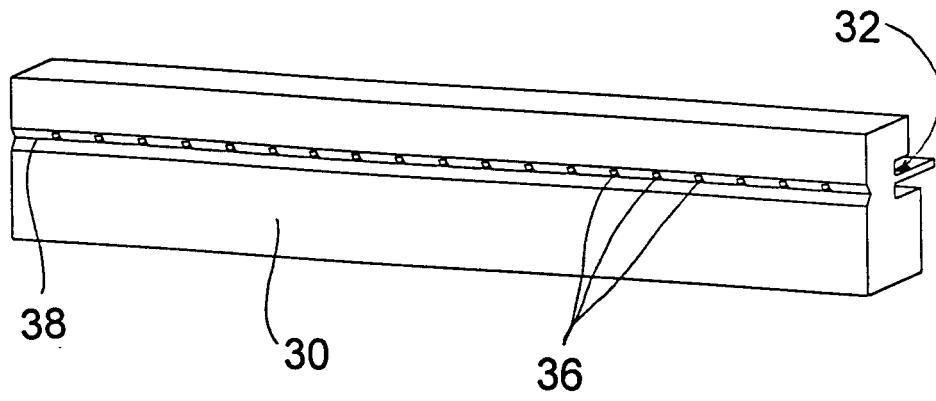


Fig.3

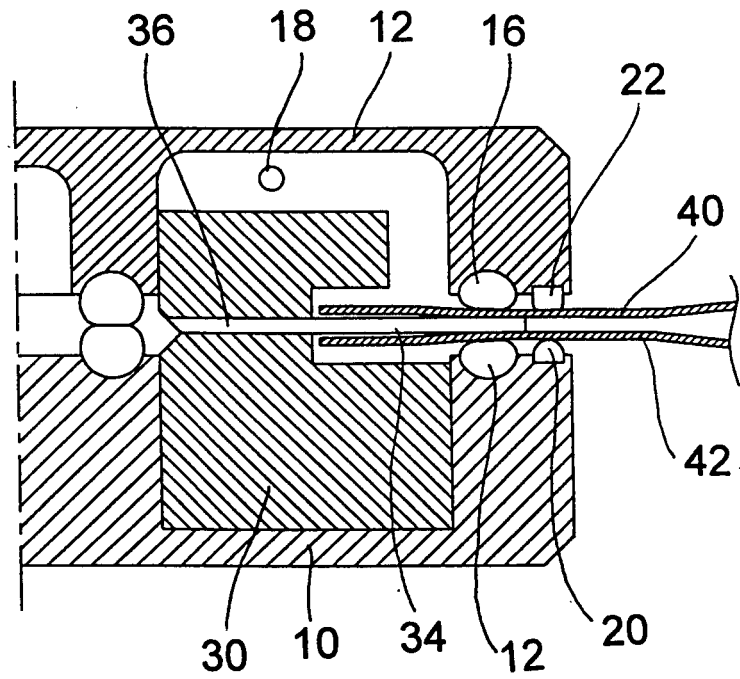


Fig.4



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EUROPEAN SEARCH REPORT

Application Number
EP 02 02 0041

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	DE 10 47 703 B (WILTS UNITED DAIRIES LTD) 24 December 1958 (1958-12-24) * the whole document *	1	B65B31/06
A	JP 56 013362 A (ISOTANI KEIICHI) 9 February 1981 (1981-02-09) * figures 1-4 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65B
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 14 January 2003	Examiner Farizon, P
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 02 0041

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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14-01-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 1047703	B	24-12-1958	NONE	

JP 56013362	A	09-02-1981	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82