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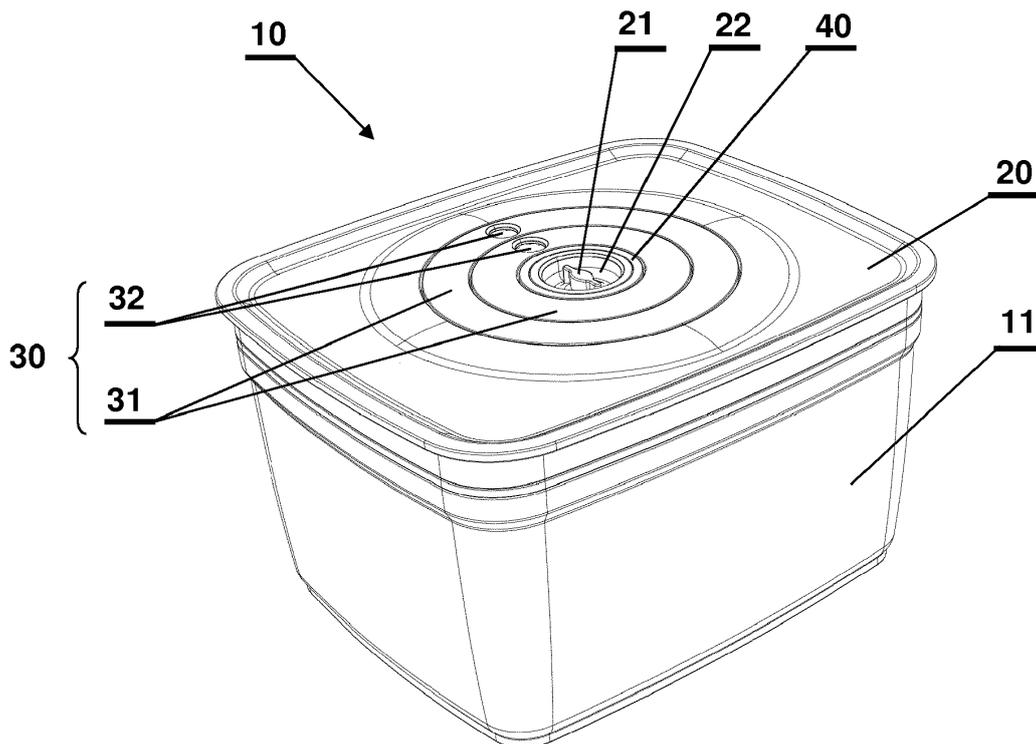
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(54) **VACUUM CONTAINER**

(57) A vacuum container (10) for vacuum food storage comprising: a vessel (11), a lid (20) equipped with a valve (21) for sucking air out of the vessel (11) and a date display system (30) whereas the date display system (30) is at least partially circular and the date display system (30) and the valve (21) are arranged concentrically.

The present invention provides a vacuum container with easy and efficient date display system which enables to indicate specific date manually in easy and intuitive way by the consumer. Additionally, a date selection can be performed at any time, before, during or after the vacuum generating process.

Fig. 1



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## Description

### Background of the invention

**[0001]** The present invention relates to a vacuum container for a vacuum food storage comprising a vessel, a lid equipped with a valve for sucking air out of the vessel and a date display system.

### State of the art

**[0002]** Food storage allows food be preserved from spoiling for some time. Food preservation is important in context of its wasting. Preservation prevents food from contamination and extends the lifespan of the product. There are many ways of domestic and industrial food storage and preservation. To ensure freshness of foodstuff in domestic environment consumers use a fridge or refrigerator. It is also possible to pickle items in jars. Typically the pickling procedure affects the foods texture and flavour. Pickling allows the food to be stored for months. For storage everyday food a vacuum storage boxes are known. The vacuum storage box technology is based on the vacuum production process inside the container performed by sucking air out of the container to create a vacuum inside the container. The process led to a significant reduction the number of harmful bacteria and microorganisms and allow for even five times longer food storage and preservation of its nutritional value. Additionally, this kind of food preservation do not change the texture and the taste of the preserved food what is a great advantage. Typically, vacuum containers have a valve placed on the container cover thanks to which the air can be sucked out of the container. For this purpose a simple handheld air pump is provided. Vacuum containers are also adapted to be stored in a refrigerator or freezer at low temperature. It is also possible to heat the container with a previously prepared meal by microwave oven. Other advantage is that thanks to creating a vacuum inside the container a previously opened jar with e.g. jam can be re-secured against spoiling. There are many advantages of using such technology: it preserves freshness and natural taste, aroma and colour of food, ensures the absence of unpleasant odours in the refrigerator. Extending the time for consuming food helps also to save money and time. Vacuum containers can be provided also with data indicating systems for setting the date of starting a food storage process or the expiration date of the stored food.

**[0003]** The patent application WO 2014 16 06 08 A1 discloses a a vacuum container, its cap and a vacuum container assembly. The vacuum container assembly comprises a vacuum container and an air extraction device. The vacuum container comprises a vessel and a cap, which jointly define a containment space. The vessel has an upper edge, and the cap comprises a first portion, a second portion, a third portion, and an air valve. The first portion accommodates the upper edge of the vessel.

The second portion can be deformed under an external force and be restored to its original shape upon removal of the external force. The third portion and the first portion jointly surround the second portion, and the third portion is equipped with an air valve. The air extraction device comprises an opening, which is fitted with the third portion of the cap. The ratio between the thickness of the third portion adjacent to the second portion T2 and the thickness of the second portion of the cap adjacent to the third portion T1(T2/T1) is at least equal to or greater than 1.1. Air inside the containment space is evacuated through the third portion by exerting an external force on the second portion and/or by driving the air valve with the air extraction device.

**[0004]** The document CN 205 652 647 U discloses a novel vacuum storage preservation box, which includes lid, box body, pneumatic valve device, date display device, the lid is equipped with silicon sealing ring, forms confined space with the box body buckle, be equipped with the through-hole in the middle of the lid, through-hole department is equipped with the pneumatic valve device, be equipped with date display device in the peripheral recess of pneumatic valve device, be equipped with the convex step with the box body top of lid silicon sealing ring contact surface, be equipped with the strong point with the box body inner wall of lid silicon sealing ring contact surface, be equipped with the convex step on the lid with the sealed fastening contact surface of pneumatic valve. The utility model discloses can effective fastening sealed, ensure air tightly after the evacuation, ensure that preservation box is in highly sealed vacuum state for a long time, the order is eaten the material and is in clean, pollution-free, dry special environment for a long time, greatly the extension eat the shelf life of material to the value of improve eating the material, and easy operation, convenient to use, light in weight, portable, accurate overlapping design can effectively utilize the more foods of littler space storage.

**[0005]** The document WO 2014 12 97 67 A1 shows a vacuum container for a cream type cosmetic, and the vacuum cosmetic container for a cream type cosmetic according to the present invention includes a content absorption member attached to the upper part of a button for absorbing the discharged content that makes it possible to use the content absorbed in the absorption member as needed by the hand or a cosmetic tool, thus preventing unnecessary consumption of the content.

**[0006]** Presented solutions does not provide efficient and reliable solution of date display system of vacuum container.

### Object of the invention

**[0007]** Thus, the object of the present invention is to provide a reliable and easy to use solution of a date display system in a device, especially for storing food.

### Summary of the invention

**[0008]** This object is solved by a vacuum container whereby the date display system is at least partially circular and the date display system and the valve are arranged concentrically.

**[0009]** A vacuum container is a device for storage of food or other perishable articles. The container comprises a vessel covered with a lid equipped with a valve for sucking air out of the vessel.

**[0010]** The vessel of the vacuum container is made out of plastic, glass or other material which can be used in a great temperature range so it can be used not only in fridge or refrigerator but also in microwave oven. Vessels can have different sizes and shapes. The aim of the lid is to cover the vessel airtight so the extract of the air outside the vessel is possible. The lid is equipped with a valve thanks to which the air from the vessel can be sucked out and desirable vacuum inside the container can be generated. The process of vacuum generating is provided by an outer device equipped with the valve adapter like hand pump or vacuum blender.

**[0011]** The vacuum container is provided with a date display system for indicate the date of storage beginning or the expiration date what depends on a customer will. The date is chosen manually by the customer. The date can be set or change at any time.

**[0012]** The date display system comprises two dialing rings which can be rotated independently and two date indication openings. Each of the dialing ring has one date indication opening for choosing the specific date. The date display system is placed in the center of the lid. The date display system and the valve are arranged concentrically what means that axes of dialing rings coincides with the axis of the valve.

### Preferred embodiment of the invention

**[0013]** In the preferred embodiment of the invention the date display system comprises of at least one dialing ring where at least one dialing ring has at least one date indication opening. The date display system comprises two dialing rings. The dialing ring is a thin disc with an opening in the central portion of the disc and a date indication opening placed on the circumference of the dialing ring. Each of the dialing ring is provided with the date indication opening for setting the specific number. One of the dialing ring is provided for indicating the day and the other dialing ring shows the month. Numbers for setting the date are placed on the lid below dialing rings. Numbers are applied on the lid permanently and by manually rotation of each dialing ring the customer can set appropriate date. The positive effect is that the date is set manually by the user which decides if the date is the date of the start of storage or the date of the end of storage or expiration date.

**[0014]** In another embodiment of the invention at least one dialing ring is arranged around the valve placed in

the central part of the lid. The valve is placed in the center of the lid and dialing rings encircle the valve. The positive effect is that such positioning of the valve and the dialing rings are very convenient to use and the desired date can be set out at any time even during the vacuum generating process.

**[0015]** Advantageously at least one dialing ring is detachably connected to the lid. At least one dialing ring is attached to the lid by a guiding rail and sealed by a sealing ring.

**[0016]** Dialing rings are connected with the guiding rail simple by snapping. Thanks to that the demounting process is also very simple. Dialing rings can be removed and cleaned by the consumer and after maintenance activities put back in on the lid.

The advantage is that the construction of dialing rings and the guiding rail is very simple so the production process is easy.

In the preferred embodiment of the invention the vacuum container is equipped with a cavity for receiving a valve adapter of a vacuuming device. The cavity is arranged around and above the valve. The valve adapter can be connected with the valve and via e.g. elastic pipe connected with the outer vacuuming device e.g. vacuum blender or other device which is able to extract the air from the vacuum container. After creating the vacuum inside the vacuum container the valve adapter can be removed from the valve. The valve itself is responsible for preventing the surrounding air from getting inside the vacuum container.

**[0017]** The present invention provides a vacuum container with easy and efficient date display system which enables to indicate specific date manually in easy and intuitive way by the consumer. Additionally, a date selection can be performed at any time, before, during or after the vacuum generating process.

### Brief description of the figures

**[0018]** The features of the invention believed to be novel are set forth with particularity in the appended claims. The invention itself, however, may be best understood by reference to the following detailed description of the invention, which describes an exemplary embodiment of the invention, taken in conjunction with the accompanying drawings, in which:

Fig. 1 shows a vacuum container in isometric view,

Fig. 2 shows a cross section of the vacuum container,

Fig. 3 shows an upper view of a lid of the vacuum container.

### Detail description of the invention

**[0019]** In cooperation with attached drawings, the technical contents and detailed description of the present in-

vention are described hereinafter according to a preferable embodiment, being not used to limit its executing scope. Any equivalent variation and modification made according to appended claims is all covered by the claims claimed by the present invention.

**[0020]** In the following description of the preferred embodiments of the present invention, similar identical reference numbers designate identical or comparable components.

**[0021]** The vacuum container is a device for food storage comprising a vessel, a lid and a date display system for setting out appropriate date. The lid is closing the vessel airtight and the valve positioned in the center of the lid makes possible sucking out the air from the vessel so that the food material can be kept in a clean, pollution-free and dry special environment for a long time, greatly prolonging the life of the foodstuff. The vacuum container is light weight and easy to carry.

**[0022]** Fig. 1 which shows a vacuum container 10 in isometric view. The vacuum container 10 comprises a lid 20, a vessel 11, a date display system 30 and a valve 21. The date display system 30 comprises from two dialing rings 31 and two date indication openings 32. Dialing ring 31 is a thin disc with opening in the axis and with the date indication opening 32. One of the dialing ring 31 has different size than the other dialing ring 31. Both dialing rings 31 are positioned concentrically with each other and also concentrically with the valve 21. The date display system and the valve 21 are placed in the center of the lid 20. The valve 21 is placed in the center of the lid 20 in the cavity 22 for receiving a valve adapter of a vacuuming device (both not shown on the figure). After placing the foodstuff inside the vessel 11 and covering the vessel 11 by the lid 20 the valve adapter (not shown on the figure) can be placed in the cavity 22 to perform the vacuum generating process inside the vessel 11. The vacuum inside the vessel 11 is generated by an outer device e.g. vacuum blender (not shown on the figure). After the vacuuming process a specific date can be set out manually by touching and rotating each of the dialing ring 31 separately by the consumer. The date setting can be performed at any time: before or during the vacuum generating process. The date setting works by directing each of the date indication opening 32 into desirable position showing appropriate number referring to the right day number and month number. The day and month numbers (not shown on the figure) are placed on the lid 20 under dialing rings 31 and are visible only through date indication openings 32.

**[0023]** Fig. 2 shows a cross section of the vacuum container 10. The guiding rail 33 for receiving the dialing ring 31 is provided. The date dialing ring 31 is mounted into the guiding rail 33 simple by snapping and the other way round, the date display ring can be demounted in easy way. Position of the date dialing rings 31 is secured by a sealing ring 40. The sealing ring 40 is made out of elastic material like rubber, silicone or the like.

**[0024]** Fig. 3 shows an upper view of a lid 20 of the

vacuum container 10. The lid 20 of the vacuum container 10 is rectangular and the date display system 30 is circular and is placed in the center portion of the lid 20. The valve 21 is positioned also in the central portion of the lid 20. The valve 21 and the date display system 30 are arranged concentrically and the date display system 30 surrounds the valve 21.

**[0025]** The present invention provides a vacuum container with easy and efficient date display system which enables to indicate specific date manually in easy and intuitive way by the consumer. Additionally, a date selection can be performed at any time, before, during or after the vacuum generating process.

#### 15 *List of reference signs*

#### **[0026]**

10	vacuum container
20	11 vessel
	20 lid
	21 valve
	22 cavity
25	30 date display system
	31 dialing ring
	32 date indication opening
	33 guiding rail
30	40 sealing ring

#### **Claims**

- 35 1. A vacuum container (10) for a vacuum food storage comprising:
- 40 a vessel (11),  
a lid (20) equipped with a valve (21) for sucking air out of the vessel (11)  
and a date display system (30)

45 **characterized in that** the date display system (30) is at least partially circular and the date display system (30) and the valve (21) are arranged concentrically.

- 50 2. The vacuum container (10) according to claim 1, **characterized in that** the date display system (30) comprises of at least one dialing ring (31).
- 55 3. The vacuum container (10) according to claim 2, **characterized in that** at least one dialing ring (31) has at least one date indication opening (32).
4. The vacuum container (10) according to any of preceding claims, **characterized in that** at least one

dialling ring (31) is arranged around the valve (21) placed in the central part of the lid (20).

5. The vacuum container (10) according to any of preceding claims, **characterized in that** at least one dialling ring (31) is detachably connected to the lid (20). 5
6. The vacuum container (10) according to any of preceding claims, **characterized in that** at least one dialling ring (31) is attached to the lid (20) by a guiding rail (33) and sealed by a sealing ring (40). 10
7. The vacuum container (10) according to any of preceding claim, **characterized in that** the vacuum container (10) is equipped with a cavity (22) for receiving a valve adapter of a vacuuming device. 15

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Fig. 1

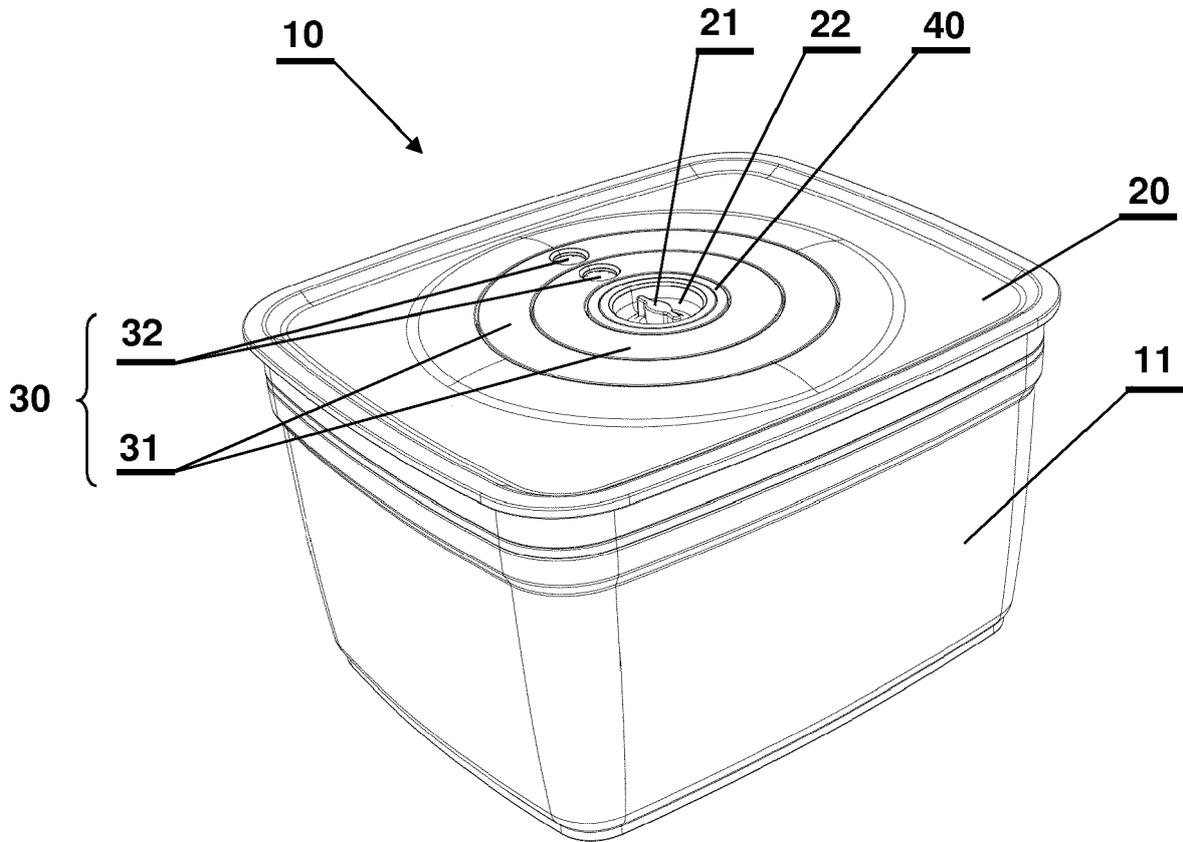


Fig. 2

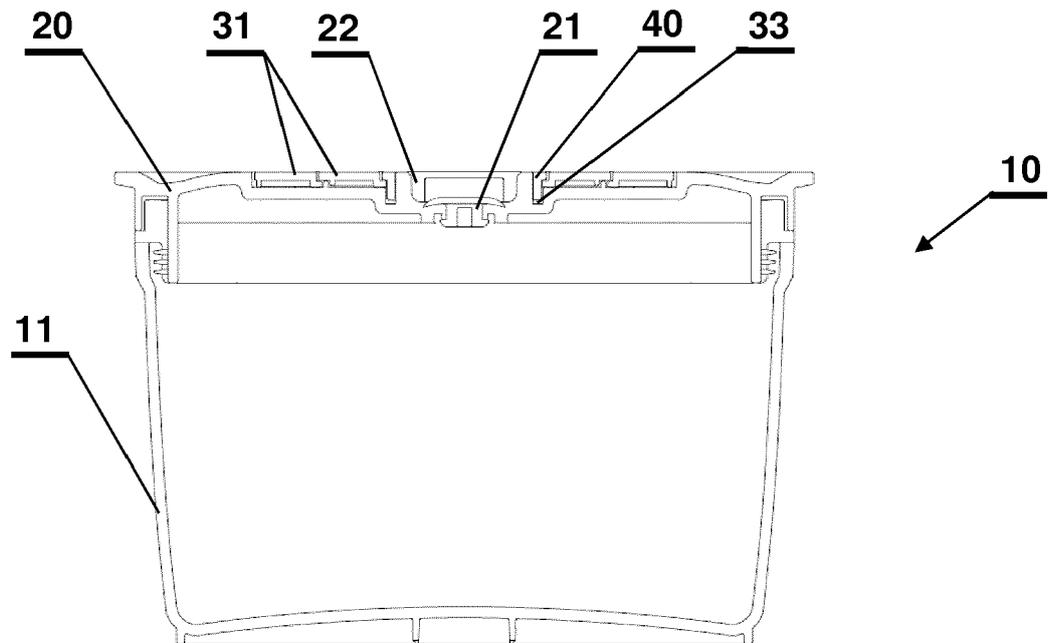
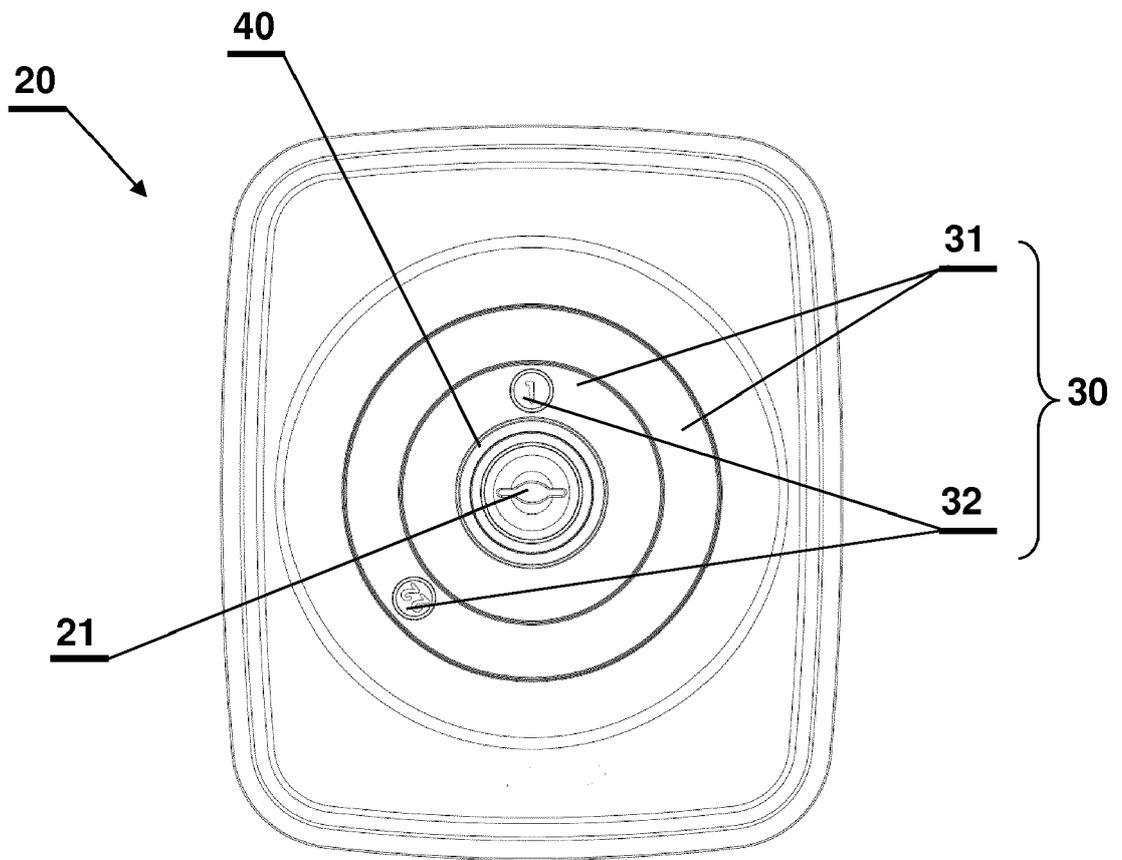


Fig.3





EUROPEAN SEARCH REPORT

Application Number  
EP 18 17 2678

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Place of search		Date of completion of the search	Examiner
Munich		27 September 2018	Jervelund, Niels
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