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(54) A COOLING APPLIANCE WITH A GRAIN DISPENSING UNIT

KÜHLVORRICHTUNG MIT EINER KORNAUSGABEEINHEIT

APPAREIL DE REFROIDISSEMENT DOTÉ D'UNE UNITÉ DE DISTRIBUTION DE GRAIN

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(73) Proprietor: **Arçelik Anonim Sirketi**
34445 Istanbul (TR)

(72) Inventors:
- **ERDAL, Gizem**
  34445 Istanbul (TR)
- **KAYMAK, Mehmet Ercan**
  34445 Istanbul (TR)
- **YAVUZ, Resul**
  34445 Istanbul (TR)
- **AKYUZ, Ercan**
  34445 Istanbul (TR)
- **EVREN, Ibrahim Yilmaz**
  34445 Istanbul (TR)

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Description

[0001] The present invention relates to a cooling appliance, in particular to a cooling appliance having a grain dispenser.

[0002] High relative humidity is a factor that needs to be considered when storing grain and legumes as it adversely affects their shelf life. Humidity increases the possibility of fungal or other bacterial growth on the grain and legumes causing possible health concerns. Apart from micro microbiological infections, it is observed that the average nutritional value loss is directly proportional to the high relative humidity. In regions having high relative humidity, the users are storing their grain and legumes inside cooling appliances to prolong the shelf life. Since the cooling appliances lack necessary storage containers, the users are storing their grain and legumes inside the cooling appliances via jars, and other containers that are mostly hermetically sealed from the inner volume of the cooling appliance. The said storage containers comprise outlets allowing the grain stored inside to pour outside. A problem faced by the user during stopping the flow of the grain is that the grains, due to their rigid structure, got stuck in moving parts of the storage containers such as outlets or spouts. This causes a gap to be formed in between the moving parts causing unwanted flow of the grain.

[0003] A prior art publication in the technical field of the present invention may be referred to as JP5118698B2 among others, the document disclosing a cooling appliance having a container specialized for storing granular foodstuff such as grain and legumes.

[0004] A prior art publication in the technical field of the present invention may be referred to as KR101336894B1 among others, the document disclosing a cooling appliance having a container specialized for storing granular foodstuff such as grain and legumes. Other grain dispensers have been disclosed in CN205860645U , CN106500445 and CH428133.

[0005] An objective of the present invention is to provide a specialized grain dispensing unit inside the cooling appliance via which the grain, legumes and granular foodstuff are easily accessed meanwhile preventing jamming of said foodstuff to the outlet of the grain dispensing unit.

[0006] The method realized to achieve the aim of the present invention and disclosed in the first claim and the dependent claims comprises a cooling appliance having a body and a door pivotable attached onto the body. The door and the body have an inner liner facing the interior volume of the cooling appliance in the closed position of the door. A grain dispensing unit is detachably mounted onto the inner liner. The grain dispensing unit comprises a container wherein the grain, legume or similar granular foodstuff are stored. A dispenser is pivotable attached on to a lower portion of the container between a closed position and an open position. The dispenser is pressed by means of force exerted by a user and pivots from the closed position to the open position. A chute is provided on the dispenser and is configured to allow the grain to flow under the influence of gravity in the open position of the dispenser via an opening. A bracket is placed on a lower portion of the container. In an embodiment, the bracket is in close vicinity of the opening. In another embodiment, the bracket at least partly covers the opening. As the user exerts force onto the dispenser, the dispenser, along with the chute, pivots towards the open position, allowing the grain to flow under the influence of the gravity. After the force exerted by user is withdrawn, the dispenser and the chute return to initial conditions. Meaning that the chute closes the outlet. As the chute pivots towards the outlet, the chute abuts against the bracket, catching the last pieces of the grain flowing in between itself and the bracket, therefore preventing unwanted flow of the grains to the outer environment.

[0007] In an embodiment of the invention, the bracket is produced from an elastomeric material including but not limited to natural or synthetic rubbers, silicone, polyurethane. The bracket is elastic and is configured to cave in partially if a grain particle is caught in-between the chute and the bracket as the chute and the dispenser moves from open position to the closed position. By means of the bracket being elastic, the flow of grain particles is interrupted in a smooth manner.

[0008] In an embodiment of the invention, the container comprises a recess and the bracket comprises a protrusion. The bracket is placed in close vicinity of the outlet by insertion of the said protrusions into the said recesses. By this means, a robust assembly is achieved.

[0009] In an embodiment of the invention, the dispenser comprises a biasing means placed in between the dispenser and the container. The biasing means biases the dispenser towards the closed position. In a preferred embodiment, the biasing means is a spring.

[0010] An advantageous effect provided with the cooling appliance of the present invention is that the grain or legumes are prevented from getting stuck in between the moving parts of the grain dispensing unit which in turn will cause malfunction in said moving parts.

[0011] Another advantageous effect provided with the cooling appliance of the present invention is that the jamming of grain or legumes in between the chute and the bracket is prevented which in turn eliminates the possibility of continuation of the flow of the grain.

[0012] Another advantageous effect provided by means of this invention is that the jamming of grain or legumes in between the chute is prevented which may cause the jammed grains to fall inside the cooling appliance.

[0013] The drawings are not meant to delimit the scope of protection as identified in the claims nor should they be referred to alone in an effort to interpret the scope identified in the claims without recourse to the technical disclosure in the description of the present invention.

Figure 1 - is a front view of the cooling appliance

Figure 2 - is an isolated view of the door
Figure 3 - is an exploded view of the grain dispenser
Figure 4 - is an exploded view of the grain dispenser

[0014] The following numerals are assigned to different parts demonstrated in the drawings and referred to in the present detailed description of the invention:

1. Cooling appliance
2. Body
3. Door
4. Inner liner
5. Grain dispensing unit
6. Container
7. Dispenser
8. Chute
9. Bracket
10. Recess
11. Protrusion
12. Biasing means

[0015] The present invention relates to a cooling appliance (1) comprising; a body (2), a door (3) pivotable attached to the body (2) between an open position and a closed position, wherein the body (2) and the door (3) have an inner liner (4),a grain dispensing unit (5) adapted to be detachably mounted onto the inner liner (4) comprising; a container (6) for storing the grain,

[0016] The cooling appliance (1) can comprise; a dispenser (7) pivotably attached on a lower portion of the container (6), wherein the dispenser (7) is pressed by means of force applied by a user to pivot between an open position allowing the grain to flow under the influence of gravity and a closed position inhibiting flow of the grain. The cooling appliance further comprises a chute (8) provided in the dispenser (7) in communication with the container (6) to transmit the grain in the open position via an outlet on a lower portion of the container (6) and a bracket (9) partly closing the outlet onto which the chute (8) abuts in closed position. The container (6) is used as a volume to store granular foodstuff such as grain and legumes. The dispenser (7) is pivotably attached on a lower portion of the container (6). The dispenser (7) pivots between the closed position and the open position and as the name suggests, during the open position, the grain and legumes are free to flow from the container (6) towards the chute (8) provided on the dispenser (7). Likewise, during the closed position, the grain and legumes are prevented to flow through the dispenser (7) via the chute (8). The lower surface of the container (6) is in conical shape to facilitate the flow of the grain and legumes. The lower most portion of the said conical structure is covered by the chute (8) in the closed position. As the dispenser (7) is pressed by means of force applied by a user, the chute (8) moves away from the lower most portion of the said conical structure thus forming the outlet for the grain to flow. The structure of the container (6) and the chute (8) is formed such that the weight of the grain stored inside the container (6) is not sufficient enough to force the dispenser (7) to the open position. The grain dispensing unit (5) is removably attached onto the inner liner (4). The user may easily remove the grain dispensing unit (5) from the inner liner (4). The outlet is provided on a lower portion of the container (6). The chute (8) closes the outlet in the closed position of the dispenser (7). The bracket (9) is placed onto the outlet from below or from inside the container (6) so as to partly close the outlet or is placed in close vicinity of the outlet. The chute (8) abuts against the bracket (9) in the closed position. As the dispenser (7) and therefore the chute (8) moves towards the closed position, the flow rate of grain decreases. By means of the bracket (9), spillage of the grains caused by the jammed grains in-between the outlet or container (6) and the chute (8) is prevented. As a result, quality perception of the product is improved, meanwhile preventing unwanted flow of the grains to the outer environment.

[0017] The cooling applicance (1) can comprise; a bracket (9) wherein the bracket (9) is elastic. The bracket (9) is produced from an elastomeric material. The elastomeric materials include but not limited to natural or synthetic rubbers, silicone, polyurethane. By means of the elastic properties the bracket (9) possesses, the flow of grain is disrupted in a smooth manner and the last grain particles are caught in between the bracket (9) and the chute (8). The grain particles temporarily deform the bracket (9) if they are caught in between the bracket (9) and the chute (8).

[0018] The cooling appliance (1) can comprise; a container (6), wherein the container (6) comprises a recess (10) onto which the bracket (9) is seated via a protrusion (11) in the closed position. The container (6) comprises a pair recesses (10) on both sides and adjacent to the outlet. The bracket (9) is attached to the lower part of the container (6) via the protrusions (11). By this means, a robust assembly is achieved.

[0019] The cooling appliance (1) can comprise; a biasing means (12) placed in between the dispenser (7) and the container (6) biasing the dispenser (7) towards the closed position. The biasing means (12) biases the dispenser (7) towards the closed position. The dispenser (7) is pressed by means of force applied by the user towards the open position. As the force applied by the user is removed, the biasing means (12) automatically restores the dispenser (7) towards the closed position. Therefore, ease of use is provided for the user.

[0020] In the cooling appliance (1) of the present invention, the users are provided with a grain dispensing unit (5) having a bracket (9) preventing the spillage of the grains caused by the squeezing of the grain particles in between the container (6) and the chute (8).

Claims

1. A cooling appliance (1) comprising;

a body (2), a door (3) pivotable attached to the body (2) between an open position and a closed position, wherein the body (2) and the door (3) have an inner liner (4),
a grain dispensing unit (5) adapted to be detachably mounted onto the inner liner (4) comprising;
a container (6) for storing the grain,
a dispenser (7) pivotably attached on a lower portion of the container (6), wherein the dispenser (7) is pressed by means of force applied by a user to pivot between an open position allowing the grain to flow under the influence of gravity and a closed position inhibiting flow of the grain, **characterized by** a chute (8)
provided in the dispenser (7) in communication with the container (6) to transmit the grain in the open position via an outlet on a lower portion of the container (6) and by a bracket (9) partly closing the outlet onto which the chute (8) abuts in closed position.

2. A cooling appliance (1) according to claim 1, **characterized in that** the bracket (9) is elastic.

3. A cooling appliance (1) according to any of the preceeding claims, **characterized in that** the container (6) comprises a recess (10) onto which the bracket (9) is seated via a protrusion (11) in the closed position.

4. A cooling appliance (1) according to any of the preceeding claims, **characterized by** a biasing means (12) placed in between the dispenser (7) and the container (6) biasing the dispenser (7) towards the closed position.

Patentansprüche

1. Ein Kühlgerät (1) umfasst:

einen Körper (2), eine Tür (3), die zwischen einer offenen Position und einer geschlossenen Position schwenkbar an dem Körper (2) befestigt ist, wobei der Körper (2) und die Tür (3) eine Innenverkleidung (4) aufweisen, eine Getreideausgabeeinheit (5), die so ausgelegt ist, dass sie lösbar an der Innenverkleidung (4) montiert werden kann, wobei es folgendes umfasst;
einen Behälter (6) zum Lagern des Getreides,
einen Spender (7), der schwenkbar an einem unteren Abschnitt des Behälters (6) angebracht ist, wobei der Spender (7) mittels einer von einem Benutzer ausgeübten Kraft gedrückt wird, um zwischen einer offenen Position, die es dem Getreide ermöglicht, unter dem Einfluss der Schwerkraft zu fließen, und einer geschlossenen Position, die den Schwenkfluss des Getreides verhindert, gekennzeichnet ist er **durch** eine Rutsche (8), die in dem Spender (7) in Verbindung mit dem Behälter (6) vorgesehen ist, um das Getreide in der offenen Position über einen Auslass an einem unteren Abschnitt des Behälters (6) zu transportieren **und durch** einen Arm (9), der teilweise den Auslass verschließt, an dem die Rutsche (8) in geschlossener Position anliegt.

2. Ein Kühlgerät (1), wie in Anspruch 1 aufgeführt, **ist dadurch gekennzeichnet, dass** der Arm (9) elastisch ist.

3. Ein Kühlgerät (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** der Behälter (6) eine Aussparung (10) aufweist, auf der der Arm (9) über einen Vorsprung (11) in der geschlossenen Position aufsitzt.

4. Ein Kühlgerät (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** ein zwischen dem Spender (7) und dem Behälter (6) angeordnetes Vorspannmittel (12) den Spender (7) in Richtung auf die geschlossene Position vorspannt.

Revendications

1. Un appareil de refroidissement (1) comprenant :
un corps (2), une porte (3) fixée de manière pivotante au corps (2) entre une position ouverte et une position fermée, dans lequel le corps (2) et la porte (3) ont une doublure intérieure (4), une unité de distribution de grains (5) adaptée pour être montée de manière amovible sur la doublure intérieure (4) comprenant :

un conteneur (6) pour stocker le grain,
un distributeur (7) fixé de manière pivotante sur une partie inférieure du conteneur (6),
dans lequel le distributeur (7) est pressé au moyen d'une force appliquée par un utilisateur pour pivoter entre une position ouverte permettant au grain de s'écouler sous l'influence de la gravité et une position fermée empêchant l'écoulement du grain,
est **caractérisé en ce qu'une** goulotte (8) est prévue dans le distributeur (7) en communication avec le récipient (6) pour transmettre le grain dans la position ouverte via une sortie sur une partie inférieure du récipient (6) et **en ce qu'un** support (9) ferme partiellement la sortie sur laquelle la goulotte (8) bute dans la position fermée.

2. Un appareil de refroidissement (1) selon la déclara-

tion 1, **est caractérisé en ce que** le support (9) est élastique.

3. Un appareil de refroidissement (1) selon l'une quelconque des déclarations précédentes, **est caractérisé en ce que** le récipient (6) comprend un évidement (10) sur lequel le support (9) est logé par l'intermédiaire d'une saillie (11) dans la position fermée.

4. Un appareil de refroidissement (1) selon l'une quelconque des déclarations précédentes, **est caractérisé en ce qu'il** comporte un moyen de poussée (12) placé entre le distributeur (7) et le récipient (6), poussant le distributeur (7) vers la position fermée.

Figure 1

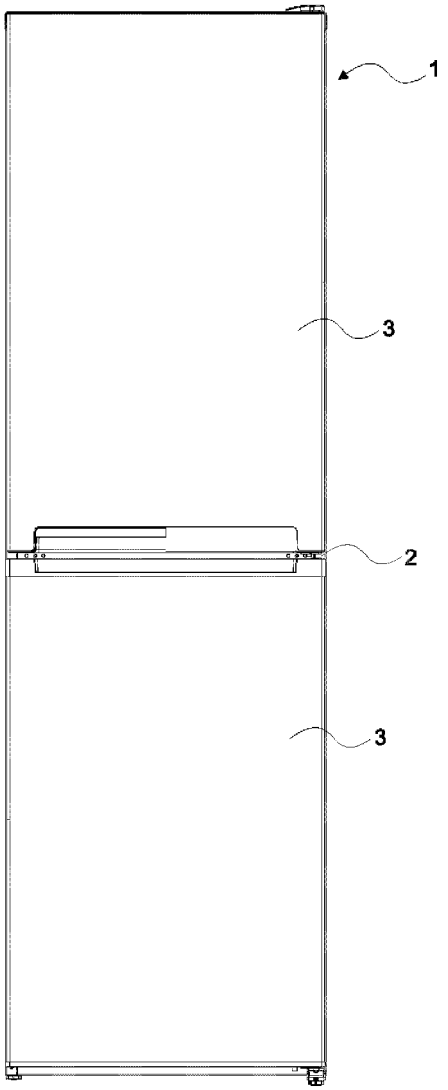


Figure 2

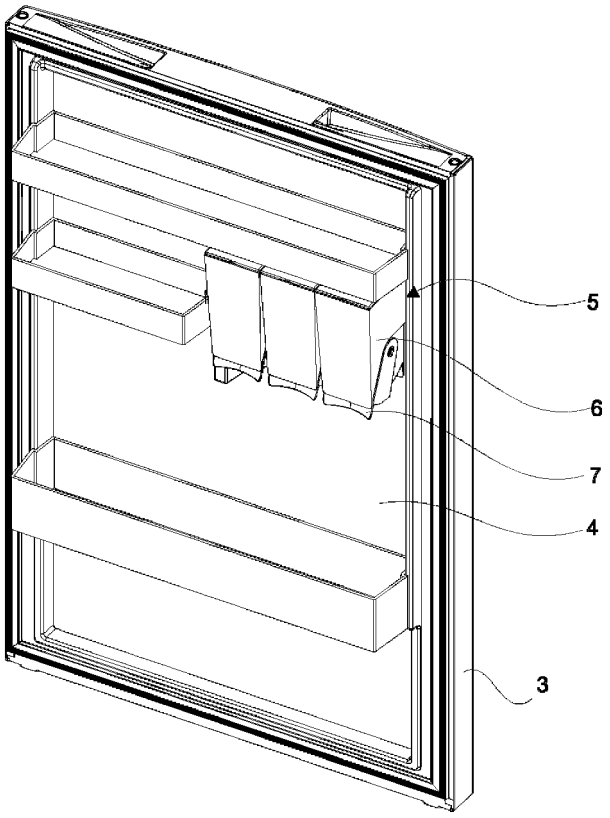


Figure 3

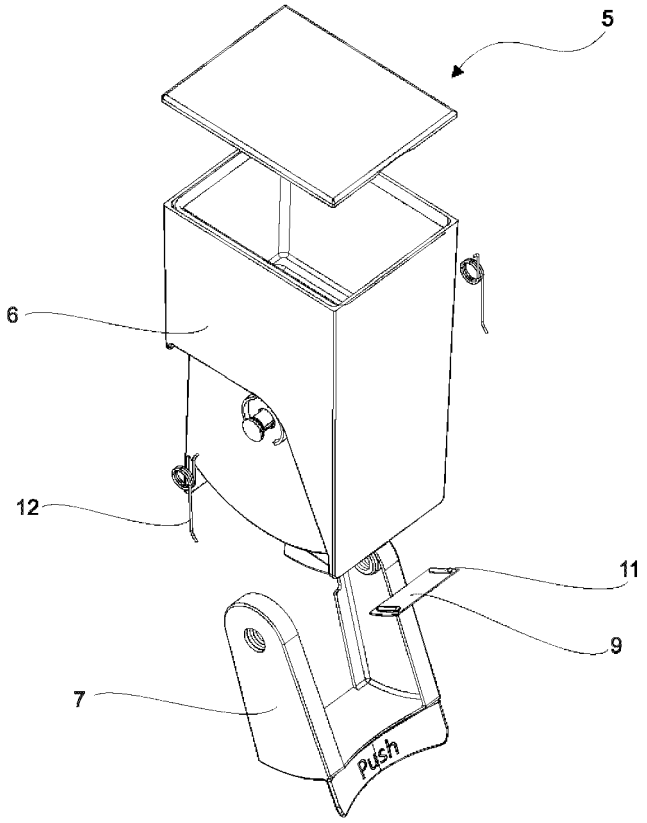
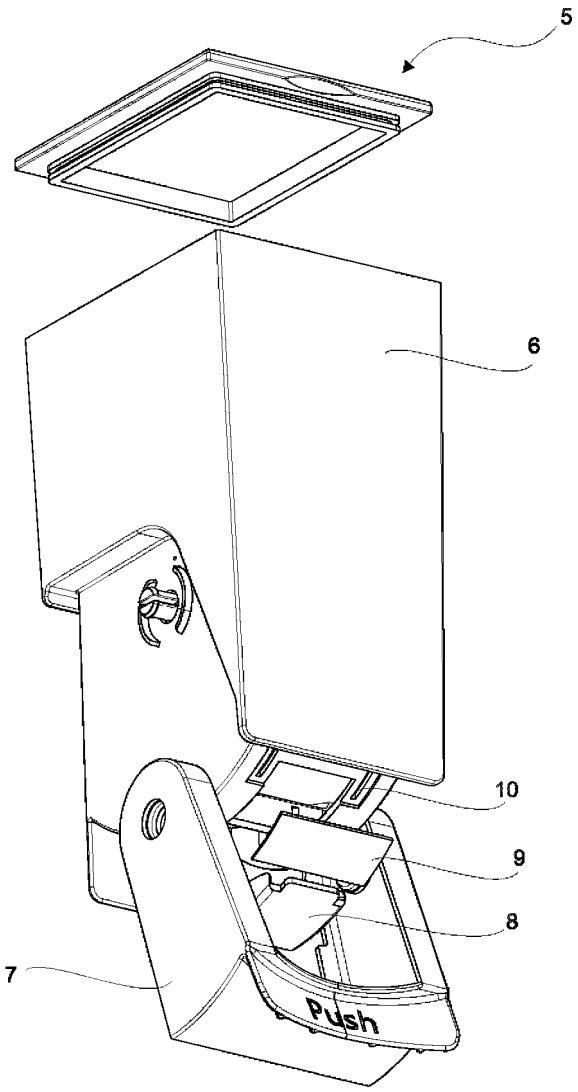


Figure 4



REFERENCES CITED IN THE DESCRIPTION

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