

①²

EUROPEAN PATENT APPLICATION

②¹ Application number: 81850246.0

⑤¹ Int. Cl.³: **B 30 B 9/30**

②² Date of filing: 15.12.81

③⁰ Priority: 22.12.80 SE 8009076

⑦¹ Applicant: **Lundberg, Lars, U:son, Svedenborgsgatan 7, S-116 48 Stockholm (SE)**

④³ Date of publication of application: 30.06.82
Bulletin 82/26

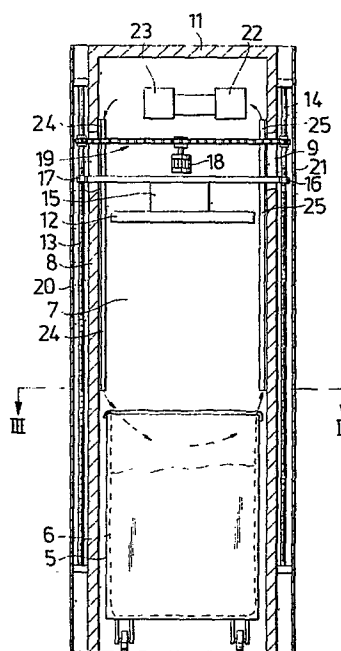
⑦² Inventor: **Lundberg, Lars, U:son, Svedenborgsgatan 7, S-116 48 Stockholm (SE)**

⑧⁴ Designated Contracting States: **AT BE CH DE FR GB IT LI LU NL SE**

⑦⁴ Representative: **Svanfeldt, Hans-Ake et al, Erik Lindquist Patentbyrå AB P.O. Box 5386, S-102 46 Stockholm (SE)**

⑤⁴ **A device for dry storage of garbage.**

⑤⁷ A device for dry storage of garbage under refrigerator temperature conditions in a cabinet (1, 8, 9, 10, 11) which includes a compacting device (12-19) for compacting the garbage, a storage-space (7) for receiving a garbage container (5) and a throwing-in door (3) for the introduction of the garbage in the garbage container. The characteristic feature of the invention is a refrigerating appliance (22, 29) for cooling the air in the storage-space (7) down to the refrigerator temperature.



EP 0 055 236 A2

A device for dry storage of garbage

Greater and greater hygienic demands are made on today's large-scale kitchens. Certain countries have a legislation which provides that, among other things, the kitchen garbage has to be stored in a refrigerating space. At present
5 this demand is fulfilled by storing packeted garbage in separately constructed cold rooms which keep refrigerator temperature.

The disadvantages of such storage are many. Among other
10 things, special new or additional cold rooms have to be constructed in connection with the kitchen. Another disadvantage is that before being introduced into the cold room the garbage is stored in containers, usually a plastic bag, at room temperature. Not until the container is filled is
15 the garbage packeted or the plastic bag sealed, respectively, and carried to the cold room. The garbage stored at room temperature in this way sends out a disagreeable smell and/or infection.

20 In large-scale kitchens it is usual to use compacting devices by means of which the garbage is compacted in the garbage container before the latter is transported to the cold room. It is also known from the German published patent application No. 200 8973 to pour water upon the garbage in connection with the compacting thereof and there-
25 upon to freeze the wet garbage to form frozen blocks. However, this prior device takes much energy both for the freezing and for the storage of the frozen garbage blocks. The frozen garbage blocks are heavy and ungainly to handle.
30 When the garbage blocks thaw the garbage still lies unpacked and sends out a disagreeable smell and/or infection.

The present invention aims at providing a device which permits storing garbage at refrigerator temperature during the

filling of the garbage container. In addition, the device permits compacting of the garbage under conditions at refrigerator temperatur. The filled garbage container is thereupon transported away from the large-scale kitchen, possibly after a preferred intermediate storing in a conventional refrigerator.

The device according to the invention is sparing of energy and does not take more energy than an ordinary refrigerator as used in large-scale kitchens.

The invention will be explained in more detail below in connection with the attached drawings, in which Fig. 1 shows a front view of a compacting device provided with a device according to the present invention. Fig. 2 shows a longitudinal section of the device shown in Fig. 1, Fig. 3 shows a transverse section along the line III-III in Fig. 2, Fig. 4 shows an embodiment of air channels included in the device according to the invention, and Fig. 5 is a longitudinal section similar to Fig. 2 of another embodiment of the device according to the invention.

Fig. 1 shows a compacting device which is provided with the device according to the present invention. The compacting device is in the shape of a cabinet, and in the front wall 1 of the cabinet there is a door 2 having a smaller door 3 tiltable outwards for throwing in garbage. At the side of the door 2 there is an operating panel 4 with operating means for controlling the operation of the device. With the door 2 open a garbage container 5, for example in the form of a conventional wheeled garbage car with tall lateral walls, can be moved into or taken out from, respectively, the cabinet. A conventional bag 6 shown in dashed lines is threaded over the brim of the garbage container 5. After moving the garbage container into position within the cabinet the door 2 is closed and garbage is put into the bag 6 through the throwing-in door 3.

Thus, within the cabinet there is a storage-space 7 which is defined by lateral walls 8, 9, a back wall 10, the front wall 1 and a top wall 11. All the walls are heat-insulated. If desired, a heat-insulated bottom wall not shown may also define the storage-space 7 at the bottom.

A compacting device for compacting the garbage in the bag of the garbage container includes a press plate 12 for pressing the garbage against the bottom of the garbage container. The press plate has an outer contour which substantially corresponds to the inner contour of the garbage container 5. Two feed screws 13, 14 are fixedly connected with the press plate 12 by a yoke 15 which is driven by the feed screws via nuts 16, 17 mounted in the yoke. The feed screws 13, 14 are rotated by a common motor 18 by means of a chain and chain wheel system 19. The feed screws 13 and 14 are mounted on the outside of the lateral walls 8, 9 and are each surrounded by a protecting wall 20 and 21, respectively. In Fig. 2 certain parts of the lateral walls have been broken away in the area around the upper portion of the yoke 15 to show the transmission of motion between the feed screws and the press plate 12.

Instead of the arrangement as shown including feed screws, a chain and chain wheel system and a motor for the up and down motion of the press plate 12 in the vertical direction, hydraulic and/or pneumatic systems may, for example, be used for the same purpose.

By operating a knob on the operating panel 4 the press plate 12 moves downwards and compresses the garbage against the bottom of the garbage container 5 and moves automatically up to its starting position. Additional garbage may then be filled into the garbage container 5 if the latter still is not quite filled.

The structure as described up to now is conventional.

According to the invention a refrigerating appliance is arranged at the top of the storage-space. The refrigerating appliance includes a conventional compressor which pumps a refrigerant in a closed circuit including a conventional refrigerating plate 22. The air which is adjacent to the refrigerating plate is cooled down and is caused to circulate in the storage-space 7 by means of a fan 23 as well as air channels 24, 25. The air channel 24 consists of a shaped metal sheet 26 running along the lateral wall 8 and extending from the top portion of the storage-space down to the area of the garbage container 5. The air channel 25 is constructed in a similar way and is arranged in the opposite lateral wall 9 of the storage-space. The fan 23 drives cold air down through the channel 24 and sucks up air through the channel 25. In this way the cold air will sweep the garbage as indicated by the arrows shown in the lower part of Fig. 2. Instead of arranging the air channels 24, 25 along opposite lateral walls the channels may be located adjacent each other in the way shown in Fig. 4. The channel supplying refrigerated air preferably extends further down into the storage-space 7 than the channel which sucks up air from the garbage container. By such an arrangement no appreciable supply of heat takes place down towards the garbage in the garbage container when the throwing-in door 3 is opened.

Instead of using one channel for supplying and another for removing air to and from, respectively, the area above the garbage, several channels may supply air to said area and several channels remove air therefrom. In Fig. 3 two additional channels 27, 28 have been drawn in dashed lines. Fig. 5 shows another embodiment of the invention where instead of, or as a complement to, the units 22 to 26 a refrigerating unit 29 is used which pumps a refrigerant in a cooling coil 30 which surrounds the garbage container 5. A supply pipe 31 leads down to the cooling coil 30 and a pipe

32 leads regrigerant away from the cooling coil 30 and returns it to the refrigerating unit 29.

5 In the embodiments described the refrigerating units are of such capacity that the storage-space 7 in connection with the garbage container 5 will have the character of a refrigerator, the temperature of which is about +5°C.

10 The embodiments of the invention as described above may be modified and varied in many different ways within the scope of the basic idea of the invention.

Claims:

1. A device for dry storage of garbage under refrigerator temperature conditions in a cabinet (1, 8, 9, 10, 11) which
5 includes a compacting device (12-19) for compacting the garbage, a storage-space (7) for receiving a garbage container (5) and a throwing-in door (3) for the introduction of the garbage in the garbage container, characterized by a refrigerating appliance (22; 29) for cooling the air in
10 the storage-space (7) to the refrigerator temperature.
2. A device according to claim 1, characterized by the fact that the refrigerating appliance includes a conventional compressor which pumps refrigerant through a cooling plate
15 (22) and/or a cooling coil (30-32).
3. A device according to claim 2, characterized by means (23-28) for circulating refrigerated air in the storage-space (7).
20
4. A device according to claim 3, characterized by the fact that said means for circulating refrigerated air include a fan (23) and air channels (24, 25, 27, 28) extending along at least one lateral wall of the storage-space
25 (7) from the refrigerating appliance (22) to the area of the garbage container (5) for sweeping the garbage with refrigerated air.
5. A device according to claim 4, where certain of the
30 channels carry refrigerated air down towards the garbage container while the remaining channels draw air from the garbage container, characterized by the fact that the channels for supplying refrigerated air extend further down into the storage-space than the channels for removing air from
35 the garbage container.

6. A device according to claim 1 or 2, characterized by a cooling coil (30-32) connected to the refrigerating appliance and provided in the lower part of the storage-space (7) in the area of the garbage container for cooling the
5 air in this area.

1/2

Fig. 1

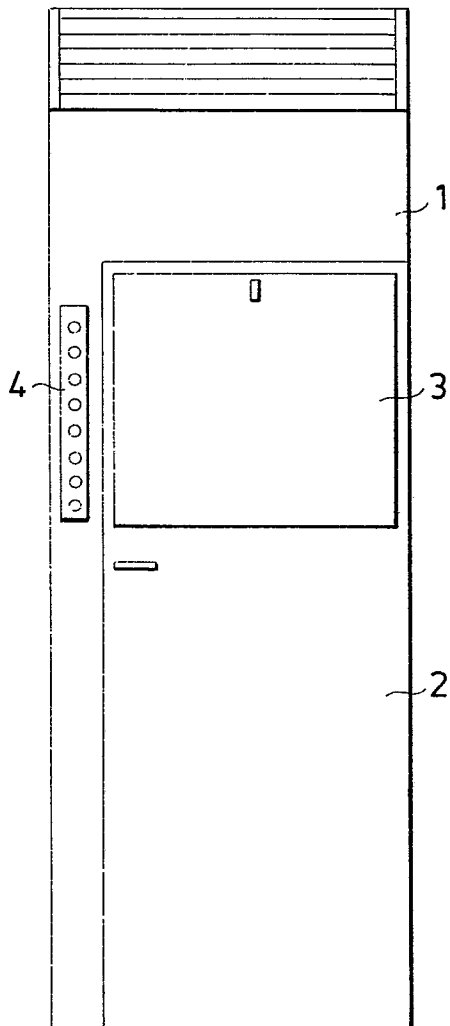


Fig. 2

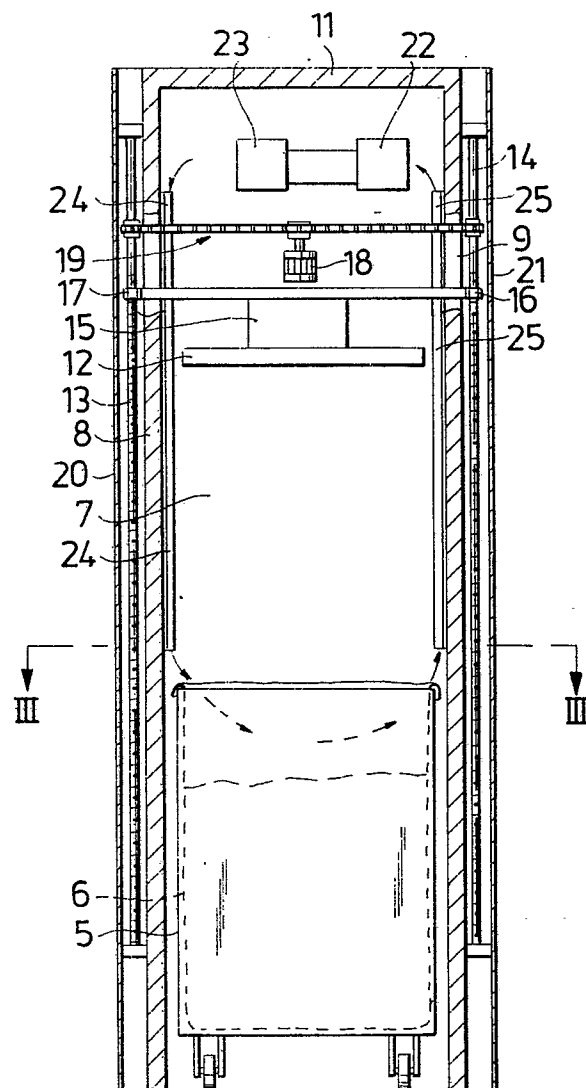


Fig. 3

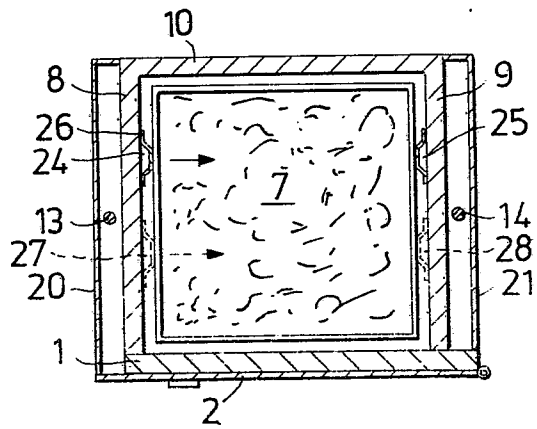


Fig. 4

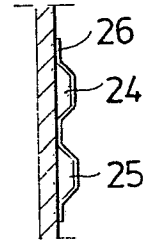


Fig. 5

