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54 **Crate, particularly a bottle crate, of plastics material.**

57 A bottle crate of plastics material comprising a lattice (14) disposed in the crate and a handle (18) in the centre region of the crate. The handle (18) is disposed on a hollow column (16) extending upwards from the bottom of the crate and having side walls (17) closed all around which are joined to the lattice (14). The handle (18) is substantially T-shaped, with its upstanding leg (19) being disposed centrally on the substantially closed top face column (16). The crossbar (20) of the T-shaped handle (18) has a U-shaped cross-section with the open side facing upwards.

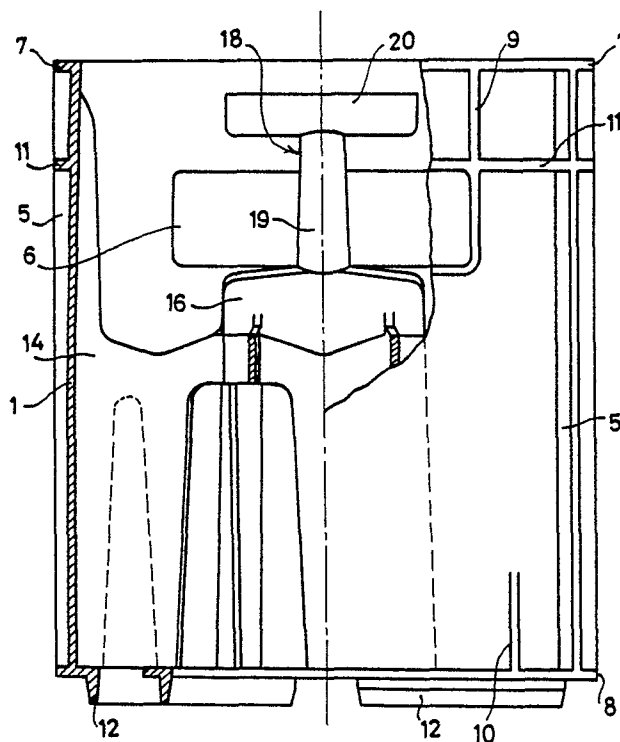


FIG. 3.

EP 0 201 961 A1

Crate, particularly a bottle crate, of plastics material.

The invention relates to a crate, particularly a bottle crate, of plastics material, comprising a lattice which is disposed in the crate and a handle which is disposed in the centre region of the crate.

A crate of this type is known.

The known bottle crate has a lattice the height of which corresponds approximately to the height of the wide portion of the bottles which are to be placed in the crate and which divides the interior of the crate into compartments. There are compartments to receive bottles and also a centre compartment above which a bow-shaped handle is disposed. The legs of this bow-shaped handle are joined to the walls of the centre compartment.

The known crate has the drawback that the stability of the handle leaves much to be desired. In addition, the size of the handle is limited by the dimensions of the centre compartment.

The object of the invention is now to provide a crate of the abovedescribed type which is exempt from these drawbacks.

This object is achieved with a crate which is characterized in that the handle is disposed on a hollow column extending upwards from the bottom of the crate having side walls closed all round.

In this way it is ensured that the handle is joined to the crate by means of a very stable structure.

The column preferably has a substantially rectangular cross-section, so that the greatest possible rigidity at right angles to the longitudinal axis of the column is achieved.

In order to improve the stability of the whole structure in the lateral direction, the side walls of the column are joined to the lattice disposed in the crate.

According to the present invention the handle is substantially T-shaped, the upstanding leg of the handle being disposed centrally on the substantially closed top face of the column. A handle of this type can be made sufficiently large to enable even persons having large hands to carry the crate easily by the handle.

The leg of the handle is advantageously in the form of a hollow tube, whereby the handle is strongly joined to the column, and the crossbar of the T-shaped handle advantageously has a U-shaped cross-section with the open side directed upwards, so that the handle will lie comfortably in the hand.

The invention will now be explained with the aid of an example of embodiment and of the drawing.

5 Figure 1 is a partial top plan view of a crate according to the invention, with a section along the line I-I in Figure 2.

10 Figure 2 is a partial side view of the longer side of the crate shown in Figure 1, with a section along the line II-II in Figure 1.

15 Figure 3 is a partial view of the shorter side of the crate shown in Figure 1, with a section along the line III-III in Figure 1.

20 The crate shown in the drawing has a substantially rectangular horizontal section and has substantially closed side walls 1, 2, 3 and 4 stiffened by vertical reinforcing ribs 5. In the top portion of the shorter side walls are provided handle openings 6. At top and bottom the crate is provided on its outer periphery with stacking rims 7 and 8 extending horizontally outwards; when the crates are stacked the bottom stacking rim 8 thus comes to lie on the top stacking rim 7 of the lower crate. The stacking rims 7 and 8 are supported on the shorter side of the crate by support ribs 9 and 10 respectively.

25 At a distance from the top edge the crate is in addition provided with a horizontal peripheral rim 11 adjoining the vertical ribs 5 and the support ribs 9.

30 On its bottom face the crate is provided with stacking rings 12, which ensure that crates stacked on one another will not be able to move relative to one another. The bottom of the crate consists of a grid 13.

35 Inside the crate is disposed a lattice 14 dividing the interior of the crate into compartments 15, in which bottles can be placed. In the crate shown in the drawing twelve of these compartments 15 are formed, namely three rows each of four compartments. The compartments of two rows lying next to one another are staggered relative to each other.

40 In the centre region of the crate a handle 18 is disposed on a hollow column 16 which extends upwards from the bottom of the crate and has side walls 17 closed all round. The column 16 has an elongate, substantially rectangular cross-section, the longitudinal direction of this section extending in the crosswise direction of the crate (the direction of the shorter sides). The side walls 17 of the column 16 extend from the bottom of the crate

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upwards and obliquely towards one another, so that the mould core for the cavity of the column 16 can easily be removed after the moulding of the crate. The side walls 17 of the column 16 are joined to the lattice 14.

This column construction is very stable and ensures that the handle 18 is joined in a very stable manner to the crate.

The handle 18 is substantially T-shaped (see Figure 2). The upright leg 19 of the handle 18 is in the form of a hollow tube and is disposed centrally on the substantially closed top face of the column. This is also in itself a very stable construction. The crossbar 20 of the T-shaped handle 18 has a U-shaped cross-section with its open side facing upwards. The handle thus lies comfortably in the hand. The longitudinal axis of the crossbar 20 extends in the same direction as the longitudinal axis of the cross-section of the column 16.

The hollow tube forming the upright leg 19 of the handle 18 is open at top and bottom. During the washing of the crate, when the crate is usually upside down, washing water arriving in the column 16 can thus run out. In addition, when the crate is standing upright, rainwater falling into the U-shaped crossbar 20 of the handle 18, this crossbar being open at the top, can easily run off downwards through the hollow tube.

The abovedescribed construction of the handle and column is very stable, while the handle itself lies comfortably in the hand and is suitable for both small and large hands.

It will be clear that a column and handle of this type can also be disposed in the longitudinal direction of the crate, given different partitioning. The construction can also be applied to crates of a different shape.

Claims

1. Crate, particularly a bottle crate, of plastics material, comprising a lattice (14) which is disposed in the crate and a handle (18) which is disposed in the centre region of the crate, characterized in that the handle (18) is disposed on a hollow column - (16) extending upwards from the bottom of the crate and having side walls (17) closed all round.
2. Crate according to Claim 1, characterized in that the column (16) has an elongate, substantially rectangular cross-section.
3. Crate according to Claim 1 or 2, characterized in that the side walls (17) of the column are joined to the lattice disposed in the crate.
4. Crate according to one of Claims 1 to 3, characterized in that the handle (18) is substantially T-shaped, the upstanding leg (19) of the handle (18) being disposed centrally on the substantially closed top face of the column (16).
5. Crate according to Claim 4, characterized in that the leg (19) of the handle (18) is in the form of a hollow tube.
6. Crate according to Claim 5, characterized in that the leg (19) is open at top and bottom.
7. Crate according to one of Claims 4 to 6, characterized in that the crossbar (20) of the T-shaped handle (18) has a U-shaped cross-section with the open side facing upwards.
8. Crate according to Claim 7, characterized in that the longitudinal axis of the crossbar (20) of the handle extends in the same direction as the longitudinal axis of the cross-section of the column - (16).

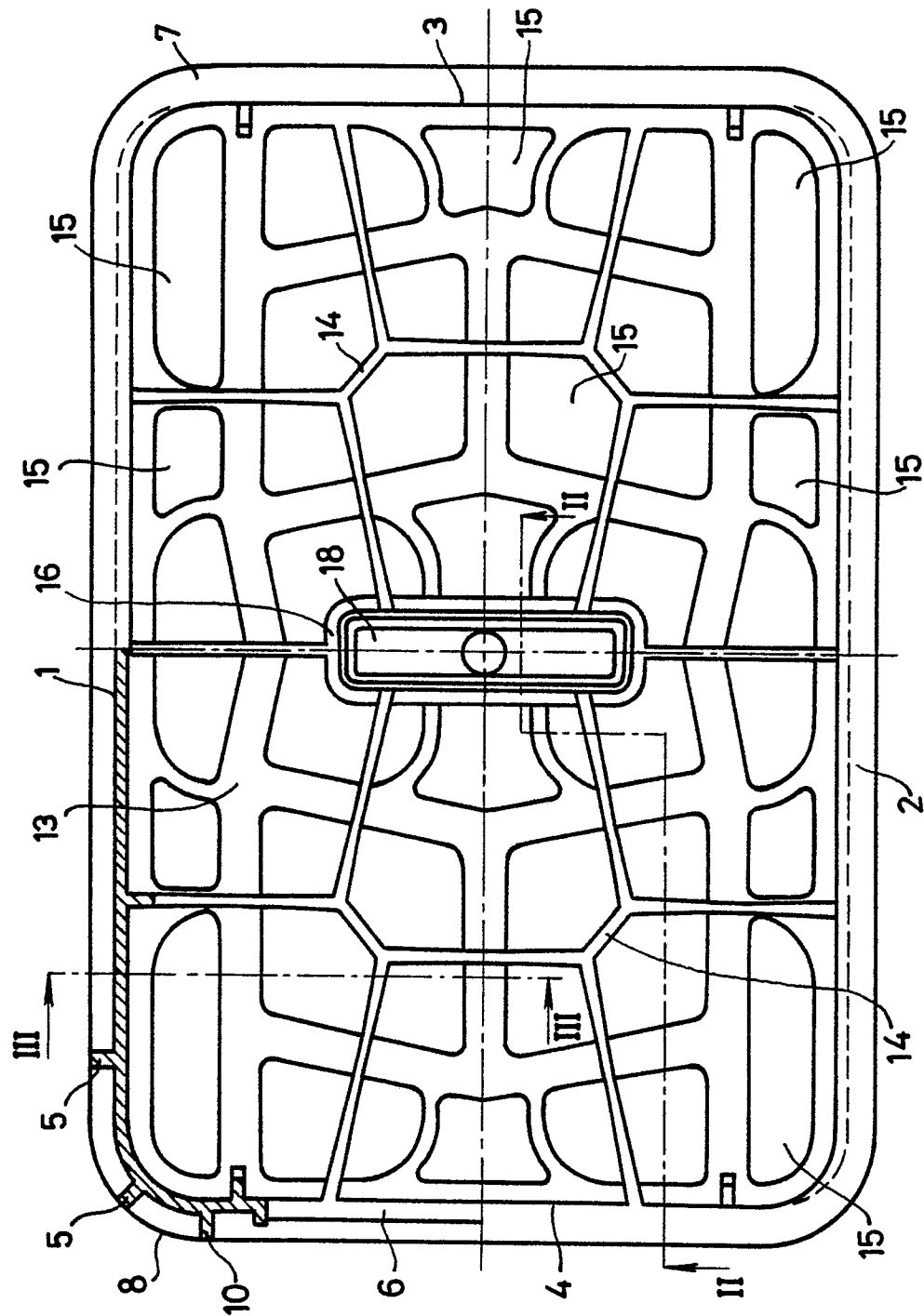


Fig. 2.

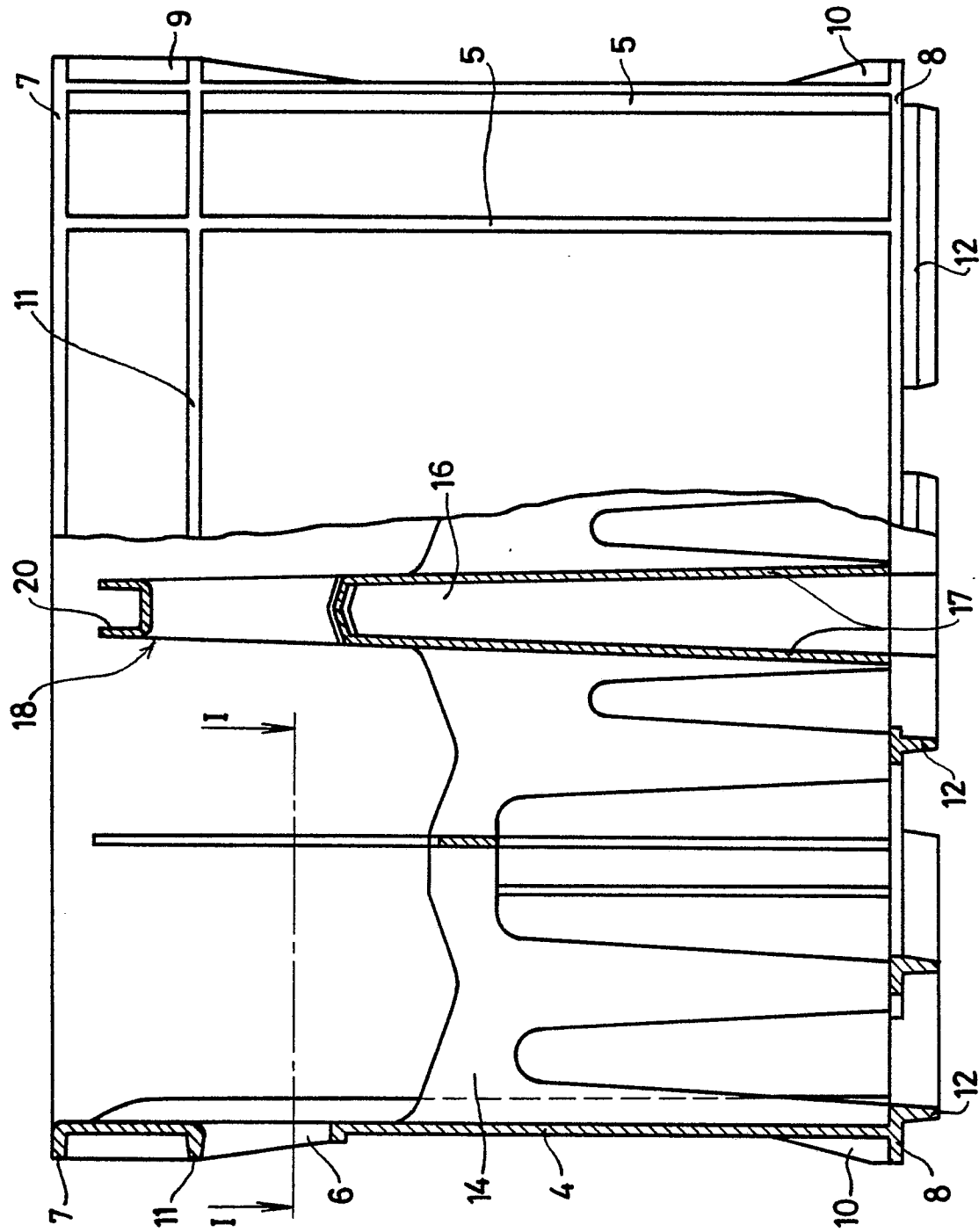


FIG. 2.

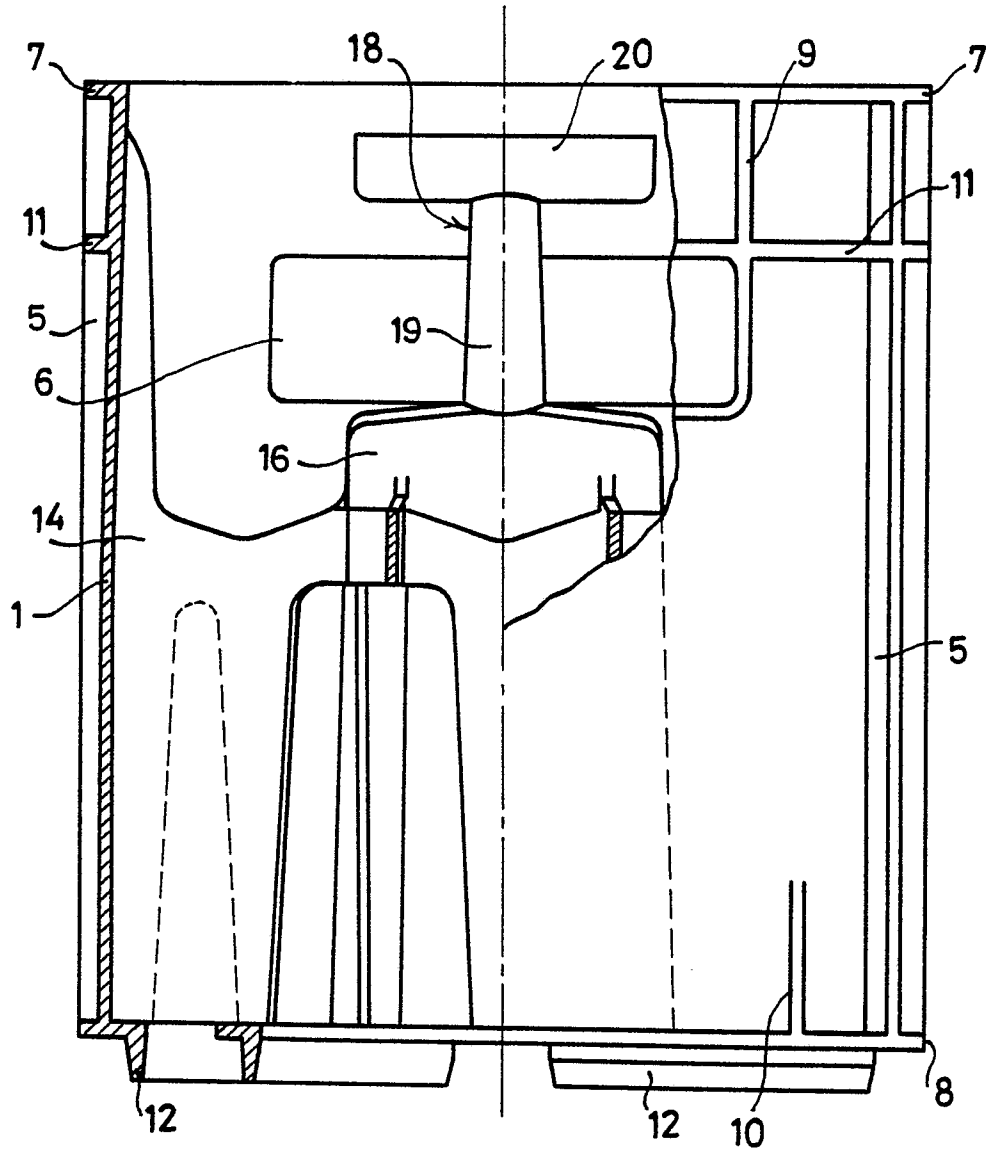


FIG. 3.



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.4)
X	DE-A-2 945 112 (PRODEL) * Page 6, line 16 - page 7, line 6; figures 1-4 *	1,3	B 65 D 1/38
A		7	
X	FR-A-2 387 849 (SCHOELLER) * Page 12, line 39 - page 13, line 24; figures 1-6 *	1,3	
X	DE-A-2 828 395 (SCHOELLER) * Page 15, lines 1-14; figures 1-3 *	1-3	
A		7	TECHNICAL FIELDS SEARCHED (Int. Cl.4) B 65 D
X	NL-A-7 210 456 (HEINEKEN) * Page 3, lines 21-28; figures 1-3 *	1,3	
X	NL-A-7 315 267 (MAUSER) * Page 3, lines 20-25; page 4, lines 12-15; figures 1-3 *	1,3	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23-07-1986	Examiner VANTOMME M.A.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	