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(54) METHOD FOR MANUFACTURING A DEVICE IN WHICH DISH-SHAPED CONTAINERS CAN BE PLACED, AND A DEVICE IN WHICH DISH-SHAPED CONTAINERS CAN BE PLACED

HERSTELLUNGSVERFAHREN FÜR EIN GERÄT, IN WELCHES GESCHIRRARTIGE BEHÄLTER AUFGENOMMEN WERDEN UND GERÄT, IN WELCHES GESCHIRRARTIGE BEHÄLTER AUFGENOMMEN WERDEN KÖNNEN

PROCEDE DE FABRICATION D’UN DISPOSITIF APTE A CONTENIR DES RECIPIENTS A PROFIL EN ASSIETTE ET DISPOSITIF AINSI FABRIQUE

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(72) Inventor: Nales, Arnoldus Theodorus Bernardus Maria 7322 PR Apeldoorn (NL)

(74) Representative: Morel, Christiaan F., Ir.Dr. et al Laan van Westenken 501 7334 DT Apeldoorn (NL)

(73) Proprietor: Nales, Arnoldus Theodorus Bernardus Maria 7322 PR Apeldoorn (NL)


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Description

The invention relates to a method for manufacturing a device in which dish-shaped containers, such as plates, dishes or serving trays can be placed at a desired mutual distance above one another, which device consists of a column which has supporting elements disposed at the desired distance above one another for the accommodation of the containers in a horizontal position, in which device each supporting element consists of a number of pin-shaped projections, the column to which elements are fixed being manufactured first, and said elements being provided with pin-shaped projections projecting in the same direction.

The invention also relates to a device in which dish-shaped containers, such as plates, dishes or serving trays can be placed at a desired mutual distance above one another, which device consists of a column which has supporting elements disposed at the desired distance above one another for the accommodation of the containers in a horizontal position, in which device each supporting element consists of a number of pin-shaped projections which are fixed to the column by means of elements.

Such a device is known from, for example, European Patent EP-A-432 813. The device described therein consists of a vertical column with a base. The column has a triangular or rectangular cross-section, while pin-shaped projections are disposed on each side. Two projections always lie in line with each other in the horizontal direction, and a third pin-shaped projection which is longer than the other two projections lies in the centre below the other two projections at a certain distance below the line connecting the other two projections to each other. Fitted at the ends of the pin-shaped projections are moulded pieces corresponding to the shape of the edges and the underside respectively of the plates or dishes stored in the device.

Such devices are difficult to manufacture, on account of the large number of projections projecting in different directions. The shape is non-releasing, so that moulding methods such as injection moulding have to be carried out with very complex and expensive moulds. The device therefore has to be assembled from a large number of individual parts. Due to the large number of different parts and the amount of assembly work required to assemble the device, the manufacture of such a device has been very expensive until now.

The object of the invention is a method for manufacturing a device in which dish-shaped containers can be stored, by which method the device can be assembled as simply as possible and at the lowest possible cost. Another object of the invention is a device which can be manufactured simply, quickly and cheaply.

This object is achieved by the invention through the fact that the elements are manufactured as strips which are integral with the projections, and through the fact that non-releasing blind slits are disposed in the side walls of the column, which slits have essentially the same cross-section as the strips, and through the fact that the strips with the projections are pushed into the slits. This means that a large number of projections can be manufactured in one go and disposed on the column, while the column itself can be a shape which is simple to manufacture, where the main shape with the slits can be extruded, for example, in one operation. Due to the fact that the projections project in one direction on each strip, the strips are a releasing shape, so that the strips are easy to make, for example by injection moulding. Both the column and the strips can be moulded by means of simple and readily controllable processes using simple moulds, and can be assembled easily and cheaply.

In a preferred embodiment the column is provided with several side faces which are at an angle with each other, a part of the non-releasing slits is disposed on the corners between the side faces, and strips are produced, while a groove is disposed in the lengthwise direction of the strips, and the strips are provided with projections projecting in the same direction at both sides of the groove, following which the strips are bent around the groove through an angle which corresponds to the angle between the side faces of the column, and the strips are then pushed into the slits on the corners. This makes it possible to manufacture a device in which the projections are disposed close to the corners, so that the column can be made narrow. Although the projections on the strip, when assembled, project in different directions, the strips can still be manufactured in a releasing form. Only after bending about the V-shaped groove do the projections project in different directions, and only then can the strip be pushed into the corresponding recess in the column.

In a preferred embodiment several short strips are pushed into each slit, while the distance between the first end of the strip and the closest projection together with the distance between the other end and the closest projection to it is the same as the distance between two adjacent projections on a strip. This means that in the case of different embodiments of the device to be manufactured in different heights a standard measurement can be taken for the strips, so that said strips can be manufactured in fairly large quantities, and thus more cheaply. The distance between two adjacent projections of two successive strips is in this case equal to the distance between two adjacent projections on the same strip.

The object of the invention is also achieved with a device in which dish-shaped containers, such as plates, dishes or serving trays, can be placed at a desired mutual distance above one another, which device consists of a column which has supporting elements disposed at the desired distance above another, for the accommodation of the containers in the horizontal position, in which each supporting element consists of a number of pin-shaped projections which are fixed to the
column by means of elements, the elements being strips which are integral with the projections, and non-releasing blind slits being disposed in the side walls of the column, into which slits the strips are pushed. Such a device can be assembled quickly and simply from basic parts which are simple to manufacture.

In a preferred embodiment the column has several side faces situated at an angle to each other, while a part of the non-releasing slits is disposed on the corners between the side faces, and an equally large part of the strips is bent through an angle around a groove running in the lengthwise direction near the centre of the strip, which angle corresponds to the angle between the side faces of the column. Due to the fact that the strips with the projections are disposed on the corner in this case, the projections are situated near the edges of the column, and the column can be of slim design.

In a further preferred embodiment a non-releasing projection is disposed in the non-releasing slits on the corners of the column, and the groove in the strips is disposed in a recess of such width that, after bending of the strips, the recess has the same cross-section as the non-releasing projection. This means that the strip is fixed better to the column, and the strip is more difficult to remove from the column.

The invention will now be explained in greater detail with reference to the drawing, in which:

Figure 1 shows in front view a device according to the invention;

Figure 2 shows in detail a supporting element of a device according to Figure 1 with a dish;

Figure 3 shows in perspective the top side of a device according to Figure 1;

Figure 4 shows a top view of an unbent strip for a device according to Figure 1;

Figure 5 shows a top view of a bent strip according to Figure 4.

Figure 1 shows a device 1 for storing dish-shaped containers, such as dishes, plates or serving trays. The device 1 consists of a column 2 with a base 3. The column 2 is provided with supporting elements 4, in which the plates or dishes can be placed. The supporting elements 4 consist of two short projections 5 lying on a horizontal line and a longer projection 6 lying at a distance below the centre of the line connecting the two short projections to each other. Moulded pieces 7 are disposed on the ends of the projections 6, which moulded pieces match the shape of the plate or dish to be supported. Moulded pieces 8 are placed over the projections 5, covering the projections 5 completely and being a conical shape, with the same angle as the angle of the edges of the plates or dishes to be supported.

Figure 2 shows in detail how a plate 9 can be placed in the device 1. The underside of the plate 9 rests on a moulded piece 7 at the end of a long projection 6. The plate 9 is held further in the horizontal position by two adjacent short projections 5. Said short projections 5 are provided with an essentially conical moulded piece 8 with an angle matching the angle of the edge 10 of the plate 9.

Figure 3 shows in perspective the top side of the device 1 from the previous figures. The column 2 has a square cross-section and consists of an extruded basic section 11 in which non-releasing, T-shaped blind slits 12 are disposed. Non-releasing V-shaped slits 13 are disposed on the corners, both legs of the V-shape running on into the side walls of the column 2 adjoining the corner. A non-releasing projection or ridge 14 is disposed in the slit 13 on the corner. Elements or strips 15 are pushed into the slits 12. The long projections 6, which are provided with the moulded pieces 7 at their ends, are disposed on the strips 15. Strips 16 are pushed into the V-shaped slits 13 on the corners of the column 2, on which strips two rows of short pin-shaped projections 5 are disposed, staggered relative to each other. The projections 5 in one row on a strip 16 project in a different direction from the projections in the other row. The projections 5 are provided with moulded pieces 8.

Figure 4 shows the top view of a strip 16, as manufactured. The projections 5, distributed over two rows, all project in the same direction. For the remainder of the shape also, the strip 16 is fully releasing in shape. In the centre the strip 16 is provided with a V-shaped or U-shaped groove or film hinge 17. Said groove is disposed in a recess 18 which is broader than the groove. On either side the strip 16 has narrowed ends 19, which can be pushed into the slits 13 on the corners of the column 2. The strip 16 can be bent over along the groove 17 to the position shown in Figure 5. When bent over, the strip 16 can be pushed into the recesses 13 on the corners of the column 2. The projections 5 of one row in this case lie at an angle with the projections 5 of the other row. When the strip 16 is bent over, the recess 18 is the same shape as the non-releasing projection 14 in the recess 13.

Claims

1. Method for manufacturing a device (1) in which dish-shaped containers, such as plates, dishes or serving trays can be placed at a desired mutual distance above one another, which device (1) consists of a column (2) which has supporting elements (4) disposed at the desired distance above one another for the accommodation of the containers in a horizontal position, in which device each supporting element (4) consists of a number of pin-shaped projections (5, 6), the column to which elements (15) are fixed being manufactured first, and said
elements being provided with pin-shaped projections (5, 6) projecting in the same direction, characterized in that the elements are manufactured as strips (15) which are integral with the projections (5, 6), and in that non-releasing blind slits (12) are disposed in the side walls of the column, which slits have essentially the same cross-section as the strips (15), and in that the strips with the projections are pushed into the slits (12).

2. Method according to Claim 1, characterized in that the column (2) is provided with several side faces which are at an angle with each other, a part of the non-releasing slits is disposed on the corners between the side faces, and in that strips are produced, while a groove (17) is disposed in the lengthwise direction of the strips (16), and the strips are provided with projections projecting in the same direction at both sides of the groove, following which the strips are bent around the groove (17) through an angle which corresponds to the angle between the side faces of the column (2), and in that the strips are then pushed into the slits (13) on the corners.

3. Method according to one of the preceding claims, characterized in that several short strips (15, 16) are pushed into each slit (12, 13), while the distance between the first end of the strip and the closest projection together with the distance between the other end and the closest projection to it is the same as the distance between two adjacent projections on a strip.

4. Device in which dish-shaped containers, such as plates, dishes or serving trays can be placed at a desired mutual distance above one another, which device (1) consists of a column (2) which has supporting elements (4) disposed at the desired distance above one another for the accommodation of the containers in a horizontal position, in which device (1) each supporting element (4) consists of a number of pin-shaped projections (5, 6) which are fixed to the column by means of elements, characterized in that the elements consist of strips (15, 16) which are made integral with the projections (5, 6), and in that non-releasing blind slits (12, 13) are disposed in the side walls of the column, into which slits the strips are pushed.

5. Device according to Claim 4, characterized in that the column (2) comprises several side faces situated at an angle with each other, a part of the non-releasing slits (13) is disposed on the corners between the side faces, and in that an equally large part of the strips is bent through an angle around a groove (17) which runs in the lengthwise direction near the centre of the strip (16), which angle corresponds to the angle between the side faces of the column.

6. Device according to Claim 5, characterized in that a non-releasing projection (14) is disposed in the non-releasing slits (13) on the corners of the column, and in that the groove (17) is disposed in the strips in a recess (18) of such width that, after the strips are bent over, the recess (18) has the same cross-section as the non-releasing projection.

Patentansprüche

1. Verfahren zur Herstellung einer Vorrichtung (1), bei der schüsselförmige Behälter wie etwa Teller, Geschirr oder Serviertablette in einem gewünschten gegenseitigen Abstand übereinander abgestellt werden können, wobei die Vorrichtung (1) eine Säule (2) umfaßt, die Trägerbauteile (4) aufweist, die in dem gewünschten Abstand übereinander zur Aufnahme der Behälter in einer waagrechten Stellung angeordnet sind, wobei bei der Vorrichtung jeder Trägerbauteil (4) eine Anzahl an stiftförmigen Fortsätzen (5, 6) umfaßt, wobei die Säule, an die die Bauteile (15) angebracht sind, zuerst hergestellt wird, und wobei die Bauteile mit stiftförmigen Fortsätzen (5, 6), die in dieselbe Richtung ragen, versehen sind, dadurch gekennzeichnet, daß die Bauteile als Streifen (15) hergestellt werden, die mit den Fortsätzen (5, 6) ein Ganzes bilden, und daß nicht formtrennende verborgene Schlitzte (12) in den Seitenwänden der Säule angeordnet sind, wobei die Schlitzte im wesentlichen denselben Querschnitt wie die Streifen (15) aufweisen, und daß die Streifen mit den Fortsätzen in die Schlitzte (12) geschoben werden.

2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß die Säule (2) mit mehreren Seitenflächen ausgestattet ist, die zueinander einen Winkel aufweisen, wobei ein Teil der nicht formtrennenden Schlitzte an den Ecken zwischen den Seitenflächen angeordnet ist, und daß Streifen erzeugt werden, während ein Falz (17) in Längsrichtung von den Streifen (16) angeordnet ist, und die Streifen mit Fortsätzen versehen sind, die zu beiden Seiten von dem Falz in dieselbe Richtung ragen, entlang welcher die Streifen um den Falz (17) um einen Winkel umgebogen werden, der den Winkel zwischen den Seitenflächen von der Säule (2) entspricht, und daß die Streifen sodann in die Schlitzte (13) an den Ecken geschoben werden.

3. Verfahren nach einem der vorangegangenen Ansprüche, dadurch gekennzeichnet, daß mehrere kurze Streifen (15, 16) in jeden Schlitz (12, 13) geschoben werden, während der Abstand zwischen dem ersten Ende von dem Streifen und dem

4. Vorrichtung, bei der schüssel förmige Behälter wie etwa Teller, Geschirr oder Serviettenpappe in einem gewünschten gegenseitigen Abstand übereinander abgestellt werden können, wobei die Vorrichtung (1) eine Säule (2) umfaßt, die Trägerbauteile (4) aufweist, die in dem gewünschten Abstand übereinander zur Aufnahme der Behälter in einer waagerechten Stellung angeordnet sind, wobei bei der Vorrichtung (1) jeder Trägerbauteil (4) eine Anzahl von stützender Fortsätze (5, 6) umfaßt, die an der Säule durch Bauteile angebracht sind, dadurch gekennzeichnet, daß die Bauteile Streifen (15, 16) umfassen, die mit den Fortsätzen (5, 6) ein Ganzes bilden, und daß nicht formtreffende verborgene Schlitze (12, 13) in den Seitenwänden der Säule angeordnet sind, wobei die Streifen in die Schlitze eingeschoben werden.


6. Vorrichtung nach Anspruch 5, dadurch gekennzeichnet, daß ein nicht formtreffender Fortsatz (14) in den nicht formtreffenden Schlitzen (13) an den Ecken der Säule angeordnet ist, und daß der Falz (17) in den Streifen in einer Vertiefung (18) angeordnet ist, die so breit ist, daß, nachdem die Streifen umgebogen sind, die Vertiefung (18) denselben Querschnitt wie der nicht formtreffende Fortsatz aufweist.

Revendications

1. Procédé de fabrication d'un dispositif (1) apte à contenir des râcipients à profil en assiette, tels que des assiettes, des plats ou des plateaux de service à une certaine distance réciproque voulue les uns au-dessus des autres, lequel dispositif (1) se compose d’une colonne (2) qui présente des éléments de support (4) disposés à la distance voulue les uns au-dessus des autres pour permettre le logement des râcipients dans une position horizontale, dispositif dans lequel chaque élément de support (4) se compose d'un certain nombre de saillies en forme de broche (5, 6), la colonne sur laquelle sont fixés les éléments (15) étant fabriquée la première et lesdits éléments étant munis de saillies en forme de broche (5, 6) faisant saillie dans la même direction, caractérisé en ce que les éléments sont fabriqués sous la forme de bandes (15) qui sont d'un seul tenant avec les saillies (5, 6) et en ce que des fentes aveugles de mise en prise (12) sont disposées dans les parois latérales de la colonne, les fentes aveugles sont les mêmes que les fentes dotées des saillies sont poussées dans les fentes (12).

2. Procédé selon la revendication 1, caractérisé en ce que la colonne (2) est munie de plusieurs faces latérales qui sont agencées à un certain angle l'une par rapport à l'autre, une partie des fentes de mise en prise étant disposées dans les angles entre les faces latérales, et en ce que des bandes sont produites tandis qu'une gorge (17) est disposée dans la direction longitudinale des bandes (16), et les bandes sont munies de saillies dépassant dans la même direction des deux côtés de la gorge, à la suite de quoi les bandes s'infléchissent autour de la gorge (17) d'un angle qui correspond à l'angle entre les faces latérales de la colonne (2), et en ce que les bandes sont ensuite poussées à l'intérieur des fentes (13) situées dans les angles.

3. Procédé selon l'une quelconque des revendications précédentes, caractérisé en ce que plusieurs bandes courtes (15, 16) sont poussées à l'intérieur de chaque fente (12, 13) tandis que la distance entre la première extrémité de la bande et la saillie la plus proche ainsi que la distance entre l'autre extrémité et la saillie la plus proche de celle-ci sont les mêmes que la distance entre deux saillies adjacentes sur une bande.

4. Dispositif apte à contenir des râcipients à profil en assiette, tels que des assiettes, des plats ou des plateaux de service à une certaine distance réciproque voulue les uns au-dessus des autres, lequel dispositif (1) se compose d'une colonne (2) qui présente des éléments de support (4) disposés à la distance voulue les uns au-dessus des autres pour permettre le logement des râcipients dans une position horizontale, dispositif (1) dans lequel chaque élément de support (4) se compose d'un certain nombre de saillies en forme de broche (5, 6) qui sont fixées sur la colonne au moyen d'éléments, caractérisé en ce que les éléments se composent de bandes (15, 16) qui sont formées d'un seul tenant avec les saillies (5, 6), et en ce que les fentes aveugles de mise en prise (12, 13) sont disposées dans les parois latérales de la colonne, fentes...
à l'intérieur desquelles les bandes sont poussées.

5. Dispositif selon la revendication 4, caractérisé en ce que la colonne (2) comprend plusieurs faces latérales situées à un certain angle l'une de l'autre, une partie des fentes de mise en prise (13) étant disposée dans les angles entre les faces latérales, et en ce que une tout aussi grande partie des bandes s'infléchissent d'un certain angle autour d'une gorge (17) qui est située dans la direction longitudinale à proximité du centre de la bande (16), lequel angle correspond à l'angle entre les faces latérales de la colonne.

6. Dispositif selon la revendication 5, caractérisé en ce qu'une saillie de mise en prise (14) est disposée dans les fentes de mise en prise (13) dans les angles de la colonne, et en ce que la gorge (17) est disposée dans les bandes dans un creux (18) d'une telle largeur que, après que les bandes se sont infléchies, le creux (18) présente la même section transversale que la saillie de mise en prise.