

Combination of trays, in particular for catering purposes onboard aircrafts

The invention relates to a combination of trays as claimed in the preamble of claim 1, in particular for catering purposes onboard aircrafts.

Trays of this kind are wellknown, for example from EP 0 987 972 B1, and include a tray body defining a receiving surface for receiving thereon items to be carried by means of the tray. Usually, catering articles, for example dishes, cups, cutlery and foodstuff items are received on the receiving surface. If a hot meal is to be served to a passenger, the tray is drawn out of a storing trolley. Then a separate container containing the hot meal is placed on the tray which then is served to a passenger. It is a disadvantage of the known trays that they require a substantial amount of space when stored in a trolley. This disadvantage is even more important since the storing space in a trolley onboard aircrafts is very limited.

US-A-4279354 discloses a serving tray which is divided by a bi-forcated wall member which together with the angled side wall structure of the tray is adapted to support a plurality of differently sized containers in a variety of positions thereon, so as to further compartmentalize the assembly in one of many

possible ways for food service.

US-A-4293071 discloses trays for holding prepared food which are provided with an element extending from the upper surface of each tray which engages the lower surface of another tray in the stack and are dimensioned so that the bottom of each tray when in the stack is at an angle to the horizontal.

AT-B-384355 discloses a serving tray with improved stackability.

It is an object of the present invention to provide a combination of trays which may be stored in a more space-saving manner in a trolley.

This object is achieved by the invention as claimed in claim 1.

It is a basic idea of the invention to construct the trays such that similar trays may be stored in a trolley with their receiving surfaces overlapping each other partially. In order to simplify the handling of the trays, the trays according to the invention include interlocking means for releasably engaging interlocking means of the tray body of a similar tray, wherein at least two trays are positioned such that the receiving surfaces of the tray bodies are overlapping each other. Said interlocking means of the trays are interacting such that when one of the trays is drawn in a drawing direction, the other tray is moved along in the drawing direction. In this way, drawing the trays for example out of a trolley is simplified. After drawing a tray out of the trolley, a container containing a hot meal may be placed on the receiving surface, namely in an area, in which the trays were overlapping in their storing position. Consequently, the trays according to the invention may be stored in a highly space-saving manner without restricting the size of the receiving

surface.

The combination of trays according to the invention is particularly useful for catering purposes onboard aircrafts.

According to a preferred embodiment of the invention, the interlocking means include substantially form-locking means.

In order to keep the tray body as simple as possible in order to have it manufactured at low costs, it is preferred that the interlocking means include at least one protrusion located on the upper surface of the tray body and at least one recess located on the lower surface of the tray body, said protrusion engaging the recess of a similar tray, when the tray bodies of two similar trays are overlapping each other. Basically, according to the invention, one protrusion and one recess are sufficient. However, according to the respective requirements a plurality of protrusions and corresponding recesses may be provided. Furthermore, preferably the protrusion is integral with the tray body.

In order to keep the tray body particularly simple and lightweight, it is preferred that the tray body has a shaped-cross section, said shaped-cross section forming the protrusion and the recess.

According to a further preferred embodiment, the protrusion and the recess at least sectionally are shaped substantially complementary to the each other. Basically, the protrusion and the recess may be shaped in an arbitrary way as long as the interlocking function is maintained. However, according to a further preferred embodiment the protrusion and the recess have a substantially triangular cross section.

In order to render the tray body particularly

lightweight, it is preferred that the protrusion and the recess are formed by hollow sections of the shaped cross-section.

According to the respective requirements the tray body may be manufactured from arbitrary materials. In order to have the tray manufactured at particularly low costs, it is preferred that the tray body is manufactured from plastics.

The invention will not be explained in greater detail with reference to the attached drawings.

In the drawings:

- Fig. 1 shows a plan view of an embodiment of a combination of trays according to the invention,
- Fig. 2 shows a section along a line I-I in figure 1 and
- Fig. 3 shows a section along a line II-II in figure 1.

Fig. 1 shows a combination of trays according to the invention including tray 2, in particular for catering purposes onboard aircrafts including a tray body 4 for defining a receiving surface 6 for receiving thereon items to be carried by means of the tray, e.g. dishes, cups, food container, cutlery or foodstuff items. In the illustrated embodiment, the tray body 4 is substantially flat and is manufactured from plastics.

Fig. 2 shows a cross-section along a line I-I in figure 1, wherein the tray 2 is shown together with a similar tray 2'. For parts of the tray 2' corresponding to parts of the tray 2 corresponding reference numerals

are used.

The trays 2, 2' are shown in a position in which the receiving surfaces 6, 6' of the tray bodies 4, 4' are overlapping each other partially. As can be seen in Fig. 1, the receiving surface 6 of the tray 2 is divided into two sections 8, 10. In the position shown in figure 2, the section 8' of the receiving surface 6' of the tray 2' is overlapping the section 10 of the receiving surface 6 of the tray 2 such that the section 10 of the receiving surface 6 of the tray 2 is covered.

Since both trays 2, 2' have an identical structure, in the following only the tray 2 will be explained in greater detail.

According to the invention the tray body 4 includes interlocking means for releasably engaging interlocking means of the tray body 4' of a similar tray 2', when at least two trays 2, 2' are positioned such that the receiving surfaces 6, 6' are overlapping each other partially, as shown in Fig. 1. Furthermore, according to the invention the interlocking means of the trays 2, 2' are interacting such that when one of the trays, e. g. the tray 2', is drawn in a drawing direction symbolized by an arrow 12 in Fig. 2, the other tray 2 is moved along in the drawing direction 12.

In the illustrated embodiment the interlocking means include substantially formlocking means. In particular, in the illustrated embodiment interlocking means include a protrusion 14 located on the other surface of the tray body 4 and a recess 16 located on the lower surface of the tray body 4, said protrusion 14 engaging the recess 16' of the tray 2', when the tray bodies 4, 4' of the two trays 2, 2' are overlapping each other, is shown in Fig. 2.

As can be seen from Fig. 2, in the illustrated embodiment the tray body 4 has a shaped cross-section, said shaped cross-section forming the protrusion 14 and the recess 16, wherein the protrusion 14 and the recess 16 at least sectionally are shaped substantially complementary to each other. In particular, in the illustrated embodiment, the protrusion 14 and the recess 16 have a substantially triangular cross section and are formed by hollow sections of the shaped cross-section.

In use, the trays 2, 2' are stored in a trolley onboard aircrafts in the position shown in figure 2, in which the receiving surfaces 6, 6' of the trays 2, 2' are overlapping each other. In this storing position, catering articles and/or foodstuff items may be received on the sections 8, 8' of the receiving surfaces 6, 6'. In order to serve the tray 2, 2' to a passenger, the tray 2' is drawn in the drawing direction 12. Since the trays 2, 2' are releasably interlocked by the interlocking means, the tray 2 is moved along with the tray 2' in the drawing direction 12.

In order to separate the tray 2' from the tray 2, the recess 16' may be lifted over the protrusion 14 such that the trays 2, 2' are disengaged from each other. In this position, the section 10 of the receiving surface 6 of the tray 2 is no longer covered by the tray 2'. Therefore, e. g. a container containing a hot meal may be placed on the section 10, and the tray 2 may then be served to the passenger.

According to the invention, the trays 2, 2' may be stored in a highly space-saving manner in a trolley without restricting the size of the receiving surface 6.

From Fig. 3 showing a section along the line II-II in figure 1, it can be seen that spaced from their rims the trays 2, 2' have the same cross-section along their width.

Claims

1. A combination of at least two trays, in particular for catering purposes onboard aircrafts, including at least a first tray and a similar second tray,

the tray body of each tray defining a receiving surface for receiving thereon items to be carried by means of the respective tray,

characterized in that

the tray body of the first tray includes interlocking means for releasably engaging interlocking means of the tray body of the second tray, when at least the first tray and the second tray are stored in a trolley and are positioned such that the receiving surfaces of the first and second tray bodies are overlapping each other partially,

said interlocking means of the trays interacting such that when one of the trays is drawn in a drawing direction, the other tray is moved along in the drawing direction.

2. A combination of trays as claimed in claim 1, characterized in that the interlocking means include substantially form-locking means.

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3. A combination of trays as claimed in claim 1 or 2, characterized in that the interlocking means include at least one protrusion located on the upper surface of the tray body and at least one recess located on the lower surface of the tray body, said protrusion engaging the recess of a similar tray, when the tray bodies of two similar trays are overlapping each other.

4. A combination of trays as claimed in claim 3, characterized in that the tray body has a shaped cross-section, said shaped cross-section forming the protrusion and the recess.

5. A combination of trays as claimed in claim 3 or 4, characterized in that the protrusion and the recess at least sectionally are shaped substantially complementary to each other.

6. A combination of trays as claimed in any of claims 3 to 5, characterized in that the protrusion and the recess have a substantially triangular cross-section.

7. A combination of trays as claimed in any of claims 3 to 6, characterized in that the protrusion and the recess are formed by hollow sections of the shaped cross-section.

8. A combination of trays as claimed in any of the preceding claims, characterized in that the tray body is manufactured from plastics.