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(54) Lightweight table top and table provided with such a table top

(57) The invention relates to a lightweight table top (1) and a table provided with the table top, said table top substantially comprising an edge part (2), a bottom plate (14) and a top plate (7) with the space defined thereby being at least partly filled with a material (13) having a honeycomb structure. Preferably, cross-beams (8,9) and a centre beam (10) have further been provided offering a possibility for fastening a support being foldable or otherwise, forming a table together with the table top.

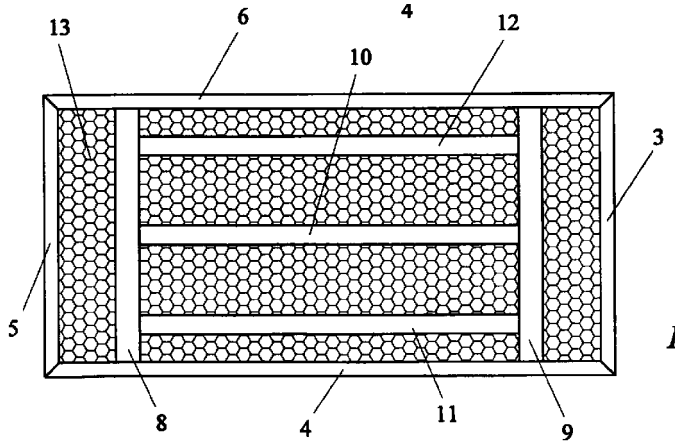

FIG. 2

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Description

[0001] The invention relates to a lightweight table top and a table assembled with such a table top.

[0002] For most tables, the weight of the table top per se is largely decisive for the total weight of the table, since a table top is usually assembled from solid planks, or e.g. a chipboard or plywood having a finishing layer applied on it. For most tables, this is no problem since a table is mostly put on a spot chosen for it and will remain on that place. Only in the more exceptional cases like a rearrangement of the interior, an indoor rebuilding operation or a removal, a table will be removed from its initial position either for a certain period or permanently.

[0003] This is completely different for tables which are used in e.g. meeting halls, conference places and multi-purpose halls, in which different arrangements are desired for the various events, or in which all arranged tables should be removed for a certain occasion and e.g. should be put back again on the next day, for another use of the space concerned.

[0004] Furthermore, the requirements regarding the dimensions of the tables to be used are such, that they must be able to offer enough room for at least 6 persons and preferably for at least 8 persons. The requirements regarding the appearance of such a table are high, which will easily entail the application of a table top of a relatively large thickness among other things. Thus, the weight of the tables used for these purposes up till now is so high, that it requires at least two persons to move them, in which it remains to be seen if one will keep within the ARBO-standards for such work.

[0005] The object of the invention is to eliminate the disadvantages of the tables to be used for said purposes and the provide for a table top and a table assembled with it which is lightweight, durable, and furthermore has an attractive appearance.

[0006] Accordingly, the invention provides for a table top having an edge part extending along the circumference or a part of the circumference, a bottom plate and a top plate, in which bottom plate and top plate connect to said edge part, or extend at least partly across said edge part, and in which a filler is applied in at least a portion of the space enclosed by the edge part, bottom plate and top plate.

[0007] Further, it has been provided for, that the material of the filler has a low specific mass and/or a structure with cavities or that the material of the filler has been embodied in a honeycomb structure or similar structure. Especially by the low weight and the large volume of the filler in relation to the total volume of the table top, it is possible to achieve a considerable weight reduction for the table top.

[0008] A first possibility is to use a plastic foam as filler, in which one can choose from inserting such a filler into plates and injecting the plastic foam into the space between edge part, bottom plate and top plate. With this latter method, it may be troublesome to obtain a uniform distribution of the plastic foam in the space.

[0009] Therefore, one preferably uses a filler having a honeycomb structure or comparable structure, by which a particularly low weight of the filler can be achieved in conjunction with a sufficiently large strength in a direction perpendicular to the plane of the table top. In most cases, a honeycomb structure composed of paper or cardboard will be amply sufficient. In case a higher strength is desired, it is also possible to apply a plastic or aluminium honeycomb structure, for example.

[0010] The bottom plate and top plate, which can be made of one and the same material, like e.g. a high-pressure laminate, are designed very thin in relation to the total thickness of the table top, in order to be able to carry through the weight reduction. Then, bonding together edge part, bottom plate, top plate and filler will yield a sufficiently rigid table top.

[0011] According to a further measure, it has been provided for that at least one cross-beam connected to the edge part is mounted in the space enclosed by the edge portion, bottom plate and top plate, transverse to the longitudinal direction of said table top, or in one or more predetermined other directions. Thereby, the rigidity in transverse direction is further enhanced and there is a possibility for mounting a support or a part of a support being intended for forming a table together with the table top.

[0012] Preferably, two cross-beams spaced-apart across a predetermined distance have been provided, a centre beam being mounted between said cross-beams and being connected with said cross-beams in or near their centres.

[0013] This is particularly important with an elongate table top in which the legs must be located far from each other in longitudinal direction and when there is a risk that the table top may bend under certain loads. Furthermore, such a centre beam provides possibilities for fastening the support in a direction perpendicular to the first direction, due to which the forces to be received between the fastening points and the table top, which can arise e.g. when moving a table, can be distributed and received among the fastening points in a considerably better way. With a round or a polygonal, substantially round table, such a construction is also possible, but it is just as well, and in some cases possibly better to employ two crossing beams. In case of a particularly wide table top or a table top having a large diameter, for a higher rigidity it can additionally be provided for that one or more further beams have been mounted between the cross-beams or between a cross-beam and the edge part.

[0014] A table being composed of the table top defined and a support is also provided for according to the invention, the support preferably also being manufactured from a lightweight material, such as aluminium, for example. Also, preferably it has been provided for, that the support or its assembling parts are pivotable in relation to the table top and can be folded-in. The

advantage thereof is that if the tables should be stored for a certain time, they require only a limited storage space.

[0015] Preferably, such a support consists of two leg pairs, each leg pair substantially comprising a pivoting tube, a ground tube parallel to it and at least one connecting tube mounted between said pivoting tube and ground tube.

[0016] With a table assembled according to the invention, a weight reduction of 60% and more can be achieved in relation to a corresponding table. As a consequence thereof, such a table can be put away by one person, in which one amply stays within the maximum load standards for that work.

[0017] The invention is further explained by way of the example given in the drawing, in which

Fig. 1 shows a plan view of the table top;
Fig. 2 shows a plan view of the table top without top plate;
Fig. 3 shows a cross-section across a part of the table top;
Fig. 4 shows a view of a table with table top; and
Fig. 5 shows a further view of a table with table top.

[0018] The plan view of Fig. 1 shows a table top 1 having an edge part 2 consisting of segments 3, 4, 5, 6, and a top plate 7 mounted on them.

[0019] In Fig. 2, the table top is illustrated without top plate 7. Two cross-beams 8, 9 and a centre beam 10 have been mounted within the space defined by the segments 3, 4, 5, 6. Two further beams 11, 12 extend parallel to the centre beam 10, which should provide additional rigidity in the longitudinal direction of the table top. With a table top of a smaller length, such additional beams will usually not be necessary. The space between the edge part 2 and the beams 8 - 12 is filled-up with filler 13 having a honeycomb structure. Preferably, said honeycomb structure is made of paper, combining a sufficient rigidity with a minimal weight. Fig. 3 shows a cross-section across part of the table top 1, namely across edge segment 5 and cross-beam 8. It is clear that bottom plate 14 and top plate 7 have only a small thickness in relation to the total thickness of the table top. In tests, a table top having a total thickness of 25,6 mm, a thickness of 1,2 mm per plate 7, 14 and a paper honeycomb structure 13 having a cell width proved to be highly satisfactory.

[0020] The bottom plate and top plate are preferably made of a high-pressure laminate, with which a particularly durable table top can be obtained and which further can be provided with attractive designs. The edge part 2 can be made of a special type of wood, e.g. ashen. The other beams are preferably from wood which enables simple mutual fastening and provides the possibility of mounting a support against the bottom side of the table top in a simple way.

[0021] Fig. 4 illustrates a table 15 comprising a table top 1 having a support 16 consisting of leg pairs 17, 18. A leg pair comprises a ground tube 19, a pivoting tube 20 and connecting tubes 21, 22 (see also Fig. 5). The pivoting tube 20 is rotatably mounted in bearing sleeves 23, 24 being fastened against the bottom plate, with fastening means not further indicated engaging a cross-beam 8, 9.

[0022] A connecting part 25, 26 has one outer end rotatably coupled to the connecting tubes 21, 22 and the other outer end is received in a guide 27, 28. A snapping member not further indicated by which the outer end of a connecting part can be secured, is provided near a leg pair 17, 18 at the side of the guide 27, 28.

Claims

1. Table top having an edge part extending along the circumference or a part of the circumference, a bottom plate and a top plate, in which bottom plate and top plate connect to said edge part, or extend at least partly across said edge part, and in which a filler is applied in at least a portion of the space enclosed by the edge part, bottom plate and top plate.

2. Table top according to claim 1, characterized in that the filler has a structure with cavities.

3. Table top according to claim 1, characterized in that the filler consists of a material being embodied in a honeycomb structure or similar structure.

4. Table top according to claim 3, characterized in that the material can be paper, cardboard, plastic or aluminium.

5. Table top according to claims 1 - 4, characterized in that at least one cross-beam connected to the edge part is mounted in the space enclosed by the edge portion, bottom plate and top plate, transverse to the longitudinal direction of said table top, or in one or more predetermined other directions.

6. Table top according to claim 5, characterized in that two cross-beams spaced-apart across a predetermined distance have been provided, a centre beam being mounted between said cross-beams and being connected with said cross-beams in or near their centres.

7. Table top according to claim 6, characterized in that one or more further beams have been mounted between the cross-beams or between a cross-beam and the edge part.

8. Table top according to claims 1 - 7, characterized in that among bottom plate and top plate, at least one plate is a high-pressure laminate plate.

9. Table provided with a table top according to one or more of the preceding claims 1 - 8, characterized in that a support for the table top is secured near at least one of the cross-beams.

10. Table according to claim 9, characterized in that said support substantially comprises two leg pairs secured to the table top by a pivot fastening.

11. Table according to claim 10, characterized in that means for fixing the leg pairs in a vertical position in relation to the table top have been provided.

12. Table according to claim 11, characterized in that said means comprise connecting parts being rotatably connected to a leg pair at or near their first ends and being received in (a) guide(s) mounted in the bottom side of the table top at or near their other ends, a snapping member being mounted in the guide(s) for being able to secure said connecting parts in at least one position.

13. Table according to claims 9 - 12, characterized in that a leg pair substantially consists of a pivoting tube, a ground tube parallel to it and at least one connecting tube mounted between pivoting tube and ground tube.

14. Table according to claims 9 - 13, characterized in that at least the legs or the leg pairs of the support are manufactured from aluminium.

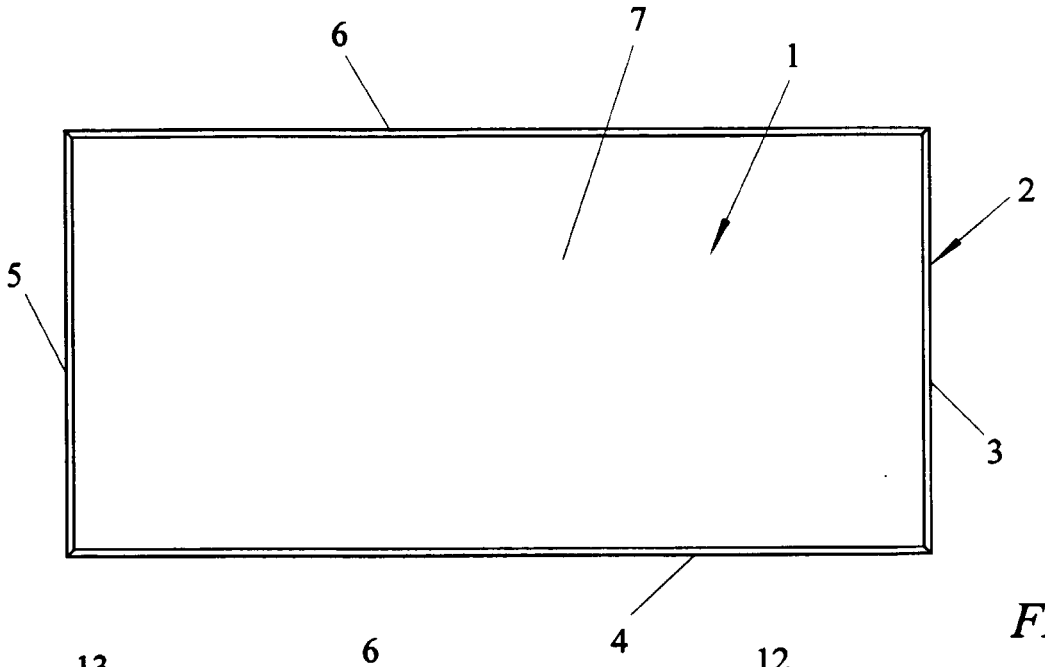

FIG. 1

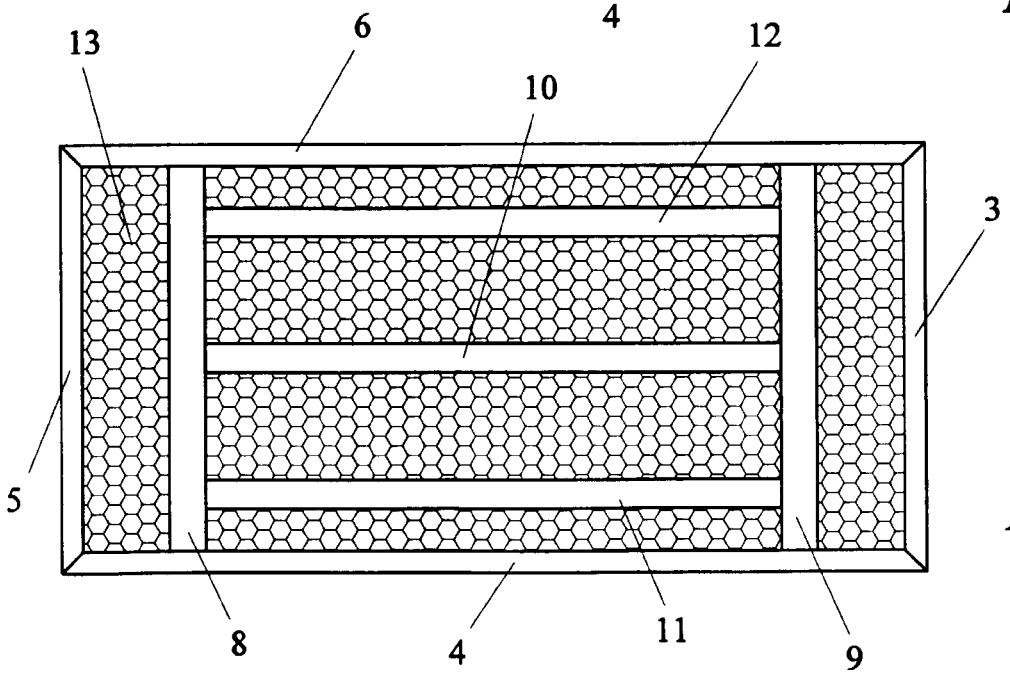

FIG. 2

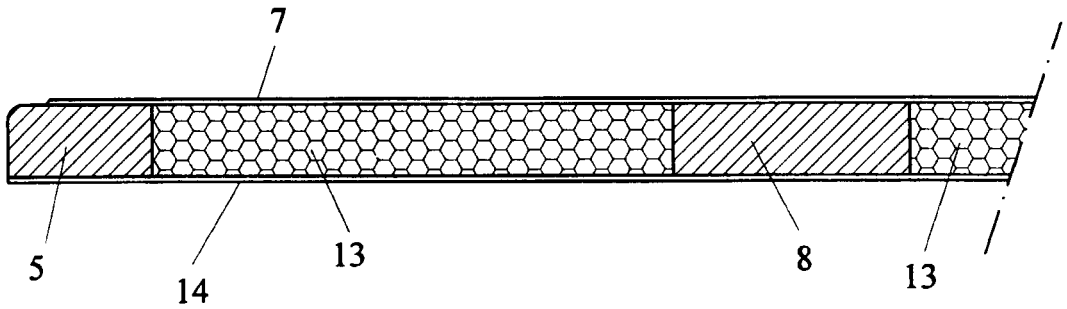

FIG. 3

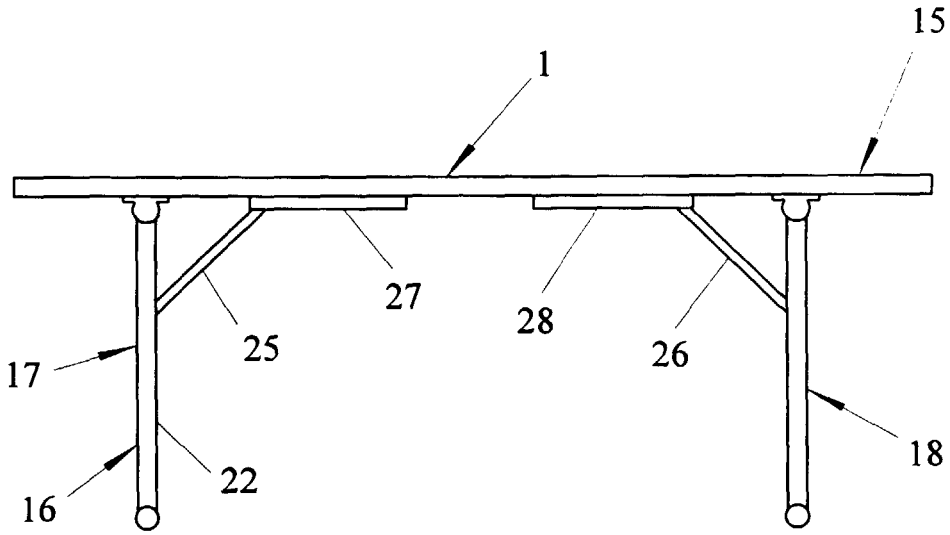

FIG. 4

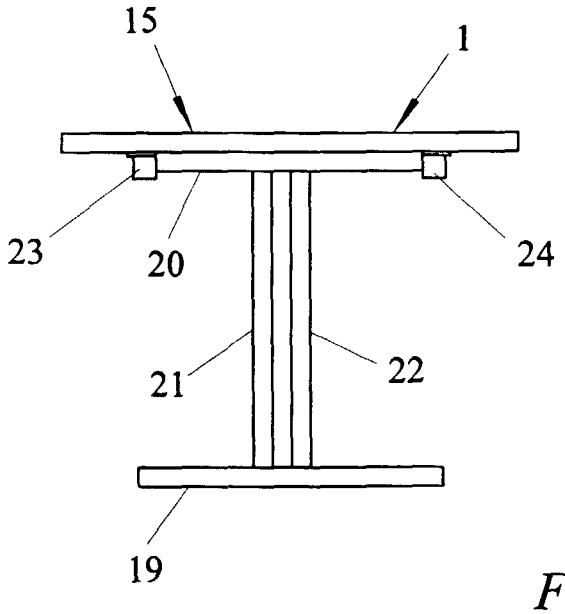

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 00 20 3587

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	6 February 2001	van Hoogstraten, S

CATEGORY OF CITED DOCUMENTS

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