

[54] **COMPOSABLE SUPPORT STRUCTURE FOR TABLES AND THE LIKE**

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248/188, 188.1; 297/440

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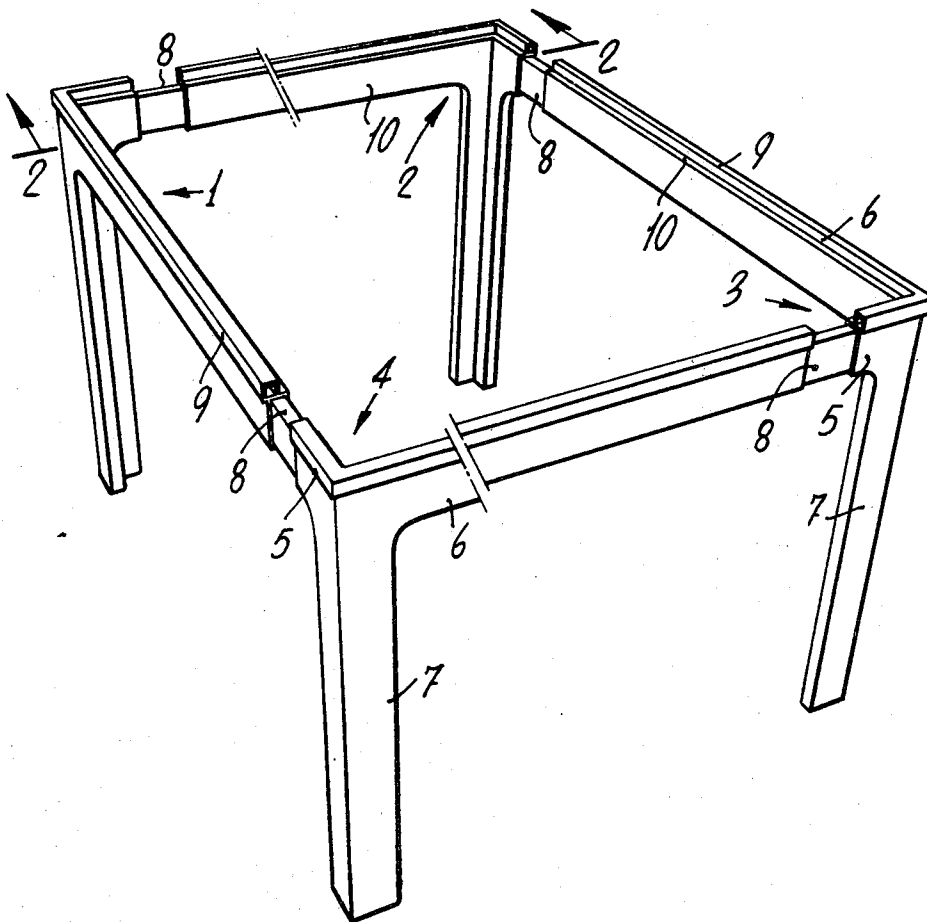
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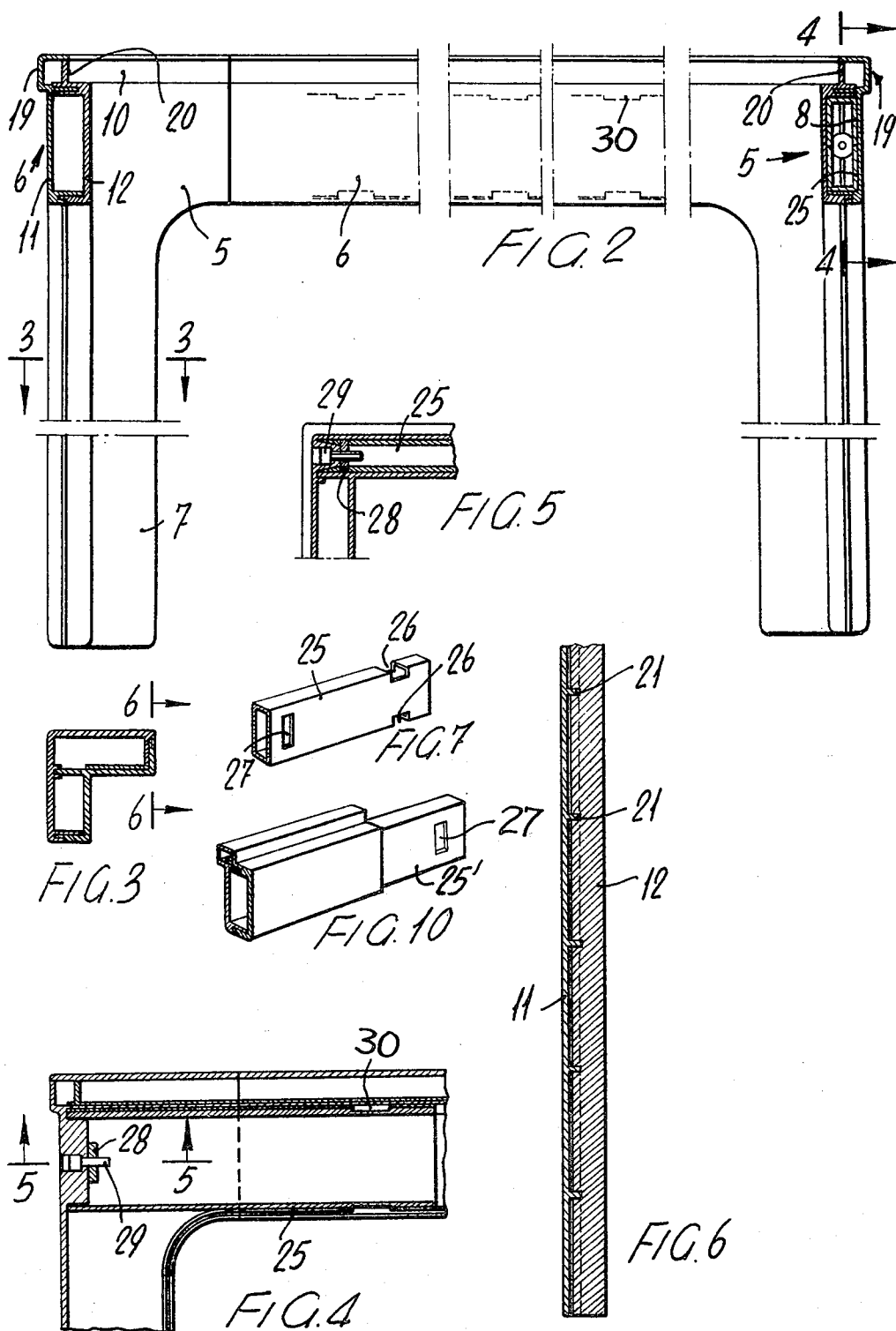
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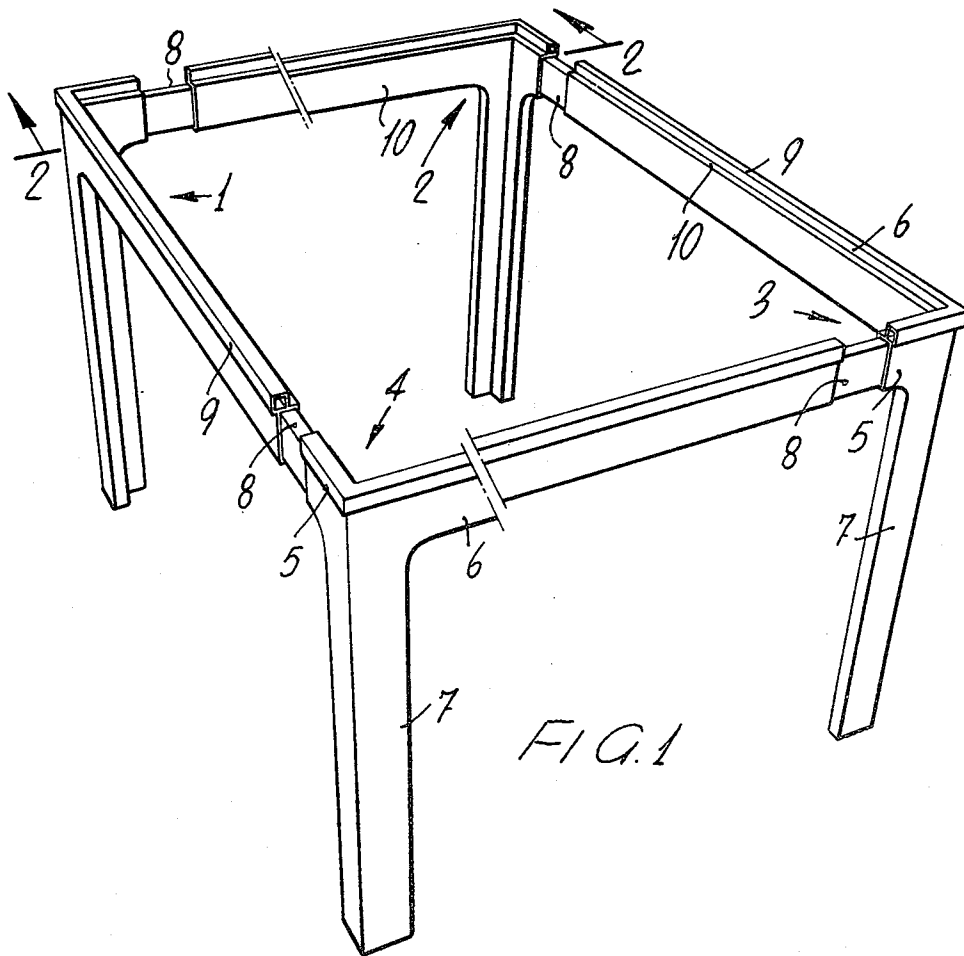
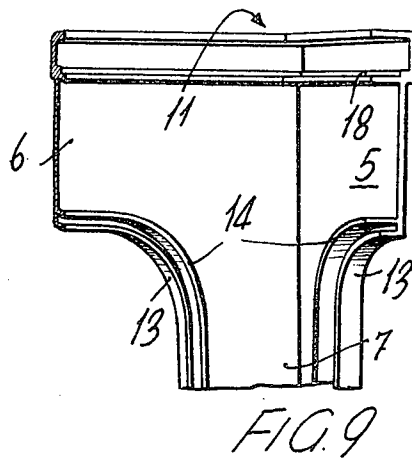
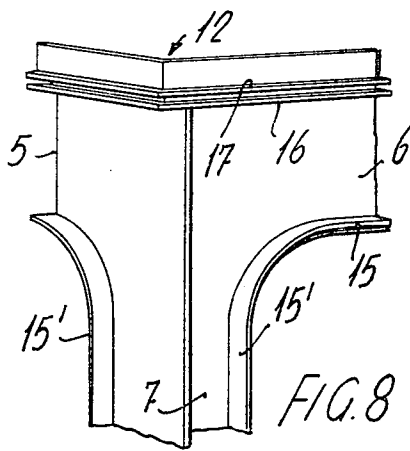
ABSTRACT

A support structure for tables and likewise, comprising a support frame for the table top provided with support legs at the angles, in which the said structure has a tubular section, and comprises four parts of structure distinguished, composable thereamong. Each part of structure showing two arms arranged perpendicularly therebetween, and being formed by a first and a second half-shell which can be coupled one to the other along the longitudinal edges. Each single part of the said structure connecting to the parts of structure contiguous by means of a tenon joint.

12 Claims, 10 Drawing Figures







COMPOSABLE SUPPORT STRUCTURE FOR TABLES AND THE LIKE

This invention relates to a composable support structure in general, and to a support structure for tables, trolleys, and other supports for furniture particularly; hereunder, for the objects of this invention and for facility in speaking, reference to a table is always made; however, this invention is not restricted to it.

A first object of this invention is to provide a structure for table, of the composable type, in a manner that each single parts disassembled may be arranged and packaged for storing and for shipping, capable of minimize the overall dimensions, and therefore a major saving in space.

A further object of this invention is to provide a support structure according to the type above specified, wherein tables with different dimensions and forms depending on the requirement, may be composed.

A support structure for tables and the like, according to this invention comprises a support quadrangular frame for a resting top, said frame being equipped at its angles with support legs, and is characterized by the fact that it has a tubular section comprising four distinguished parts, composable one to the other, each single part of structure showing three arms arranged according to the edges of a trihedron, two arms of which horizontal and suitable to form part of the support frame for the said top, and a vertical arm suitable to form a support leg; each part of the structure being moreover formed by two half-shells which therebetween can couple along their edges each single part of the structure and finally connecting to the parts of contiguous structures by means of a foxtail wedging.

The composable support structure object of this present invention will now be illustrated hereunder in detail, with reference to the accompanying drawings, wherein:

FIG. 1 is a partially exploded perspective view showing the composable structure according to the invention;

FIG. 2 is a cross-section essentially according to the line 2—2 of FIG. 1;

FIG. 3 is a cross-section essentially according to the line 3—3 of FIG. 2;

FIG. 4 is a cross-section essentially according to the line 4—4 of FIG. 2;

FIG. 5 is a cross-section according to the line 5—5 of FIG. 4;

FIG. 6 is a longitudinal cross-section showing a leg, essentially according to the line 6—6 of FIG. 3;

FIG. 7 is a perspective view showing the foxtail wedging;

FIG. 8 is a perspective and partial view showing the internal shell;

FIG. 9 is a partial perspective view showing the internal side of the external half-shell;

FIG. 10 shows an alternative of the foxtail wedging for the parts comprising the table structure.

Referring now to the above figures, and to the FIG. 1 in particular, a support structure for tables and the like, according to this invention, comprises essentially four parts of structure composable thereamong and indicated, respectively, by the numerals 1 to 4 in FIG. 1, which parts define a substantially quadrangular frame for a support top of the table and four support vertical legs, arranged at the angles of the said frame.

As illustrated in FIG. 1, each part of the structure is equipped with three arms, indicated respectively by the numerals 5, 6 and 7, perpendicular thereamong, that is arranged with the edges of a trihedron angle, and the arms 5, 6 of which are arranged horizontally in order to form a part of the support frame of the table top, while the third arm 7 forms one of the support legs.

As clearly shown in FIG. 1, the two horizontal arms 5, 6 have different extensions, that is, the arm 6 is extended for the largest part of the length, respectively of the width of the table, while the second horizontal arm 5 projects for a very reduced portion, and such that when added to the length of the longer arm 6 of the contiguous part of structure, will define the width, respectively the length of the structure of the said table. In this manner, the overall dimensions of packaging can be minimized for, by arranging the four parts of the table structure with their legs 7 and their longer arm 6 according a same plane, the packaging will have a thickness substantially equal to the length of the said shortest arms 5.

Each single part of the structure, as clearly shown in the drawings herewith enclosed, has a tubular section for permitting the connection of the parts by means of groove-and-tongue joints which comprise, as shown in the execution illustrated in FIG. 1, a separated tenon 8 suitable to be inserted and secured into the arms 5, 6 opposite of two parts of contiguous structure.

FIG. 3 shows each leg equipped with a tubular section substantially L-shaped, while as shown also in the upper part of FIG. 2, each horizontal arm 5, 6 has a substantially rectangular section with overlapped a tubular, longitudinal edge 9 with a width less than and slightly extending inwardly, in a manner as to form a ledge or support seat 10 reserved for a support top of the table (not shown).

Referring now to FIGS. 2 through 9, a more detailed description of the execution of each single part of structure 1, 2, 3 and 4 above stated, will be given. Being the parts of the same configuration, a single description is given.

The table structure is tubular and made in moulded plastics. Accordingly, as per this invention, each part of structure 1, 2, 3 and 4 has been executed in a manner of two half-shells, external and internal respectively, which can be coupled thereamong by jointing along their longitudinal edges.

As shown in the figures, both the external and the internal shell 11 and 12, respectively, partially shown in FIGS. 8 and 9, and pertaining to each part of structure, have the arms 5 and 6, respectively, with a transversal section C-shaped with the side flanges of the said sections of each part of the arm overlapping and engaging mutually, in order to define a substantially tubular section of rectangular form. Precisely, the external half-shell 11, as shown in FIG. 5 and in FIG. 9, shows along the lower edge of its horizontal arms 5 and 6, and along the edges of the relevant leg 7, a pair of flanges 13, 14, parallel and separated, one more extended than the other, and which define a seat whereinto the corresponding lower flange 15 of a horizontal arm will engage, along with the corresponding side flanges 15' of the leg of an internal half-shell 12; likewise, along the upper arm of the internal half-shell dual tongues 16, 17 will result with the purpose of defining a seat whereinto the corresponding upper flange 18 of an external half-

shell will engage, as clearly shown in FIGS. 2 and 3 of the drawings attached herewith.

Moreover, the external half-shell shows, along the upper edge of its horizontal arms, a C-shaped part 19 inwardly directed of the table, and cooperating with a vertical tongue 20 obtained at the upper portion along the horizontal arms of the internal shell 12, with the purpose of forming the said tubular edge 9, and defining the support seat 10 of the table top, as detailed above with reference to FIG. 1.

As shown in FIG. 6, with the purpose of preventing that the half-shells can slide one respect the other in the course of the assembling, and also when the table is assembled, a fact which will impair both the stability and the aspect of the table, along the two flanges 15, 15' of the internal half-shell 11, some recesses have been executed and which will engage with some corresponding extensions 21 obtained into the relevant seat on the other half-shell, which are homogeneously and longitudinally separated thereamong — in this specific case — wherein the connection of the parts of the structure of the tables is obtained by means of groove-and-tongue joint comprising a tenon 25, shown in FIGS. 7, 2, and 4, which tenon is inserted into the opposite arms 5 and 6 of two parts of structure which are contiguous. The said tenon 25 shows close to one of its ends, two lateral recesses 26, one of which will engage with a projection 30, with similar form (FIG. 4), formed on a side flange of one of the two half-shells 11, 12. The tenon 25 shows, at its other end, two opposite lateral openings 27 (a single one is shown in FIG. 7), into which a small piece 28 (FIG. 4) provided with a threaded hole is inserted, and whereto a screw 29 is threaded, the latter serving for securing the said tenon 25 to the external half-shell of the other part of structure of the table which is contiguous to the previous one. In this manner tension rods are provided, serving for stiffening the table when assembled. Naturally, during the assembling, the different half-shells can be glued thereamong along the contacting flanges.

The said tenon 25, as stated above, shows some notches, one of which will engage with the projection 30 similarly executed on the longer horizontal arm 6 of each part of structure, while at the same time the said tenon 25 is secured by means of a screw into the contiguous part of structure; thus, when required, the table can easily be disassembled for transport purpose and reassembled. Moreover, this means for securing will permit the execution of tables having different dimensions.

Actually, it will be sufficient to provide a plurality of projections 30 longitudinally each horizontal arm 6 of each part of structure, as for example shown in FIG. 2, thus the said arms can be shortened all of the same quantity or of different quantity, for obtaining support structures which are smaller or with different configuration, for instance, square or rectangular shaped.

In this manner, by means of a single set of moulds prepared for a structure of larger module, structure of minor module and differing compared the original one, can be executed.

An alternative to the system for connecting by tenon as previously illustrated is shown in FIG. 8, wherein the tenon 25' has been formed into two shells, each solidal with the relevant half-shell. It is clear that in this manner, the dimensions of a table cannot be changed.

With reference to the above illustration and to the accompanying drawings, it is clear that a structure of a table or other similar support structures have been provided, of a new execution which will permit an ease and rapid assembling and disassembling of the parts by which it is executed, and moreover to minimize the overall dimensions of the table disassembled, thus reducing the transport expenses and the storing room.

Of course various changes or modifications may be made to the above illustrated embodiment, for example, the two half-shells can be divided therebetween according to longitudinal planes, without departing from the scope of the invention, as defined in the appended claims.

What I claim is:

1. An assemblable table structure comprising a support frame for a working surface having four corners with legs at each of said four corners, said structure having four parts adapted to be connected together to define said support frame and said legs, said four parts each comprising three mutually perpendicular arms, the first and second of said arms lying in a first plane and forming a portion of said support frame, said first arm being longer than said second arm, the third of said arms lying in a second plane perpendicular to said first plane and forming one of said legs, the third arm of each of said four parts being of the same length, each of said arms of said four parts comprising a tubular shell formed by external and internal half-shells, and a tenon joint for connecting the first arm of each one of said four parts to the second arm of another one of said four parts.

2. The structure of claim 1 in which each half-shell is formed from a single piece of molded plastic.

3. The structure of claim 1 in which the arms of each half-shell form a C-shaped structure.

4. The structure of claim 1 in which said external and internal half-shells are joined together by tongue and groove joints.

5. The structure of claim 4 in which said tongue and groove joints comprise two parallel and spaced groove flanges along the longitudinal edge of at least one of said arms of said external half-shell and a corresponding tongue flange formed along the longitudinal edge of at least one of said arms of said internal half-shell.

6. The structure of claim 5 in which each half-shell has two parallel and spaced groove flanges along one longitudinal edge of each arm and a corresponding tongue flange along the other longitudinal edge of each arm.

7. The structure of claim 1 in which said legs are L-shaped in transverse cross section.

8. The structure of claim 1 in which said tenon joint comprises a tenon part, said tenon part having a notch at one end adapted to be engaged by a corresponding internal projection in one of said first and second arms connected together by said tenon part, said tenon part also having an opening at its other end and a corresponding traverse piece received in said opening.

9. The structure of claim 8 in which said traverse piece has a threaded hole through which a set screw can be inserted for connecting said four parts together.

10. The structure of claim 1 in which said tenon joint comprises at least two tenon parts.

11. The structure of claim 1 in which a plurality of internally and longitudinally separated projections are

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provided in one of said arms of each of said four parts of said structure.

12. An assemblable table structure comprising a support frame for a working surface having four corners with legs at each of said four corners, said structure having four parts adapted to be connected together to define said support frame and said legs, said four parts each comprising three mutually perpendicular arms, the first and second of said arms lying in a first plane and forming a portion of said support frame, said first

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arm being longer than said second arm, the third of said arms lying in a second plane perpendicular to said first plane and forming one of said legs, the third arm of each of said four parts being of the same length, each of said arms of said four parts comprising a tubular shell, and means for connecting the first arm of each one of said four parts to the second arm of another one of said four parts.

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