

Supporting structure for furniture and the like  
comprising an upright with lobes

Description

5       The present invention relates to a supporting structure  
for furniture and the like comprising at least one  
upright which has a cross-section with a profile in the  
form of lobes extending longitudinally over the entire  
length of the upright itself, each pair of adjacent  
10       lobes defining a corresponding longitudinal seat; each  
lobe and seat is also designed for coupling with  
corresponding locking means for positioning brackets  
supporting surfaces and auxiliary elements  
complementing the structure.

15       In the technical sector of interior furnishing, in  
particular for offices and the like, it is known of the  
need for supporting structures which are suitable for  
forming tables, desks and the like and can be easily  
20       assembled, ensuring the necessary rigidity of the  
assembled components, and which allow several support  
surfaces to be provided in accordance with the various  
requirements and can also be connected together so as  
to form multiple working units suitable for use by  
25       several persons.

30       In addition to this, it is also required that said  
structures should be easy to assemble and disassemble  
and be able to be combined so as to form tables of  
different dimensions and geometrical configurations  
without having to vary the elements which make up the  
supporting structure.

35       It is also known that the technical problems associated  
with said functional requirements have already been  
considered and solved in accordance with three main

types of solution which can be summarised as follows:

- 5       - Conventional solution, where the supporting structures may be jointly used by several accessory elements, as, for example, in the case of adjacent tables, the surfaces of which are supported by common uprights; in such a case, however, extension of the structure is performed only along one axis, i.e. the horizontal one, of the theoretical set of three reference axes defining the volume of the area to be furnished.
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- 15       - Combined solution, where the structures are still jointly used by several working surfaces and, if necessary, by screens separating the actual work stations; in this case the structure may be expanded along all three axes of the aforementioned set of three axes defining the volume to be furnished and allows a large amount of space to be saved compared to the conventional solution. However, it has the drawback consisting in the fact that, in order to vary the arrangement of part of the work stations, it is necessary to disassemble the structure by performing operations which, although they are simple, take time and require disassembly of the entire structure which must be then re-assembled with additional parts.
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- 30       - Add-on solution, which is composed of structures for supporting the various components which are totally independent; the multiple configuration is obtained in this case by simply arranging the tables next to one another in the two horizontal directions of the aforementioned set of three reference axes. In this case also, it is possible to obtain an expansion in the vertical direction for the use of screens, accessories and the like, which, however, are joined together
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without the possibility of relative movement.

5 All the solutions described above are, however,  
independent of one another and it is not possible to  
change from one to the other, without modifying  
entirely the elements which make up the basic  
structure.

10 The technical problem which is posed, therefore, is  
that of providing a supporting structure for office  
furniture, such as tables and the like, which allows  
different types of furniture to be assembled and also  
arranged alongside one another so as to form multiple  
work stations, by means of a varying use of the same  
15 basic elements which make up the structure.

20 Within the scope of this problem, a further need is  
that this structure should be modular and allow the  
rapid assembly of the various parts in all three  
directions - width, height and depth - of the set of  
three reference axes defining the volume to be  
furnished, allowing in particular modification of the  
height, from the ground, of the working surfaces  
independently of the position of the dividing screens  
25 and/or similar accessories completing the structure.

30 These technical problems are solved according to the  
present invention by a supporting structure for  
furniture and the like, comprising at least one upright  
and at least one bracket which can be attached to said  
upright, wherein the upright itself has a cross-section  
with a profile in the form of lobes extending  
longitudinally over the entire length of the upright,  
each pair of adjacent lobes defining a corresponding  
longitudinal seat; said lobes and seats being designed  
35 to be coupled with corresponding locking means for

respectively positioning said bracket and auxiliary elements complementing the structure.

5 Further details may be obtained from the following description of a non-limiting embodiment of the invention, provided with reference to the accompanying drawings, in which:

10 Figure 1 shows an exploded partial view of the basic components of the support structure according to the invention;

15 Figure 2 shows a partial view of an example of application of the support structure according to the invention;

20 Figure 3 is a partially sectioned side view of the upright and the bracket of the structure according to Fig. 1;

Figure 4 is a section along the plane indicated by IV-IV in Fig. 3;

25 Figure 5 is a view of the upright and the bracket in the direction of the arrow "A" of Fig. 3;

Figure 6 is a front view of a dividing wall obtained with a structure according to the invention;

30 Figure 7 is a partially sectioned view, on a larger scale, of the upright of the dividing wall according to Fig. 6;

35 Figure 8 is a section along the plane indicated by VIII-VIII in Fig. 7; and

Figure 9 is a section along the plane indicated by IX-IX in Fig. 8.

5 As shown in Figures 1 and 2, the support structure according to the invention comprises substantially: an upright 10 to which there may be attached brackets 20 designed to support, for example, the surface 1a of a table 1.

10 The uprights 10 may also have coaxially engaged with them extension elements 110 onto which, for example, dividing elements 2 or arms 3 carrying accessories 4 are mounted.

15 In more detail (Figs. 3, 4 and 5) the uprights 10 consist of a profiled member shaped in the form of lobes 11, extending symmetrically outwards; each pair of adjacent lobes defines a corresponding longitudinal groove 12 extending over the entire height of the  
20 upright itself.

As will emerge from the description, the lobes 11 and the grooves 12 are designed for coupling with the elements supporting the parts which make up the  
25 structure.

More particularly, each lobe 11 may have fixed to it said bracket 20 which has two substantially vertical arms 21 which are joined at the opposite ends where  
30 they form respectively: an upper horizontal surface 22 which can be attached to the surface 1a of the table by means of screws 22a and locking means 23 for fixing the bracket 20 to the upright 10 at the desired height from the ground.

35 Said locking means 23 substantially consist of a clamp

comprising a fixed jaw 23a joined to the bracket 20, which is provided with a transverse through-hole 23b which has inserted inside it a screw 23c designed to engage with a female thread 24a formed in a movable counter-jaw 24.

In this way operation of the screw 23c causes symmetrical tightening of the clamp 23 and consequent fixing of the bracket on the upright 10.

As shown in Fig. 4, the clamp 23 and the lobe 11 have arranged between them a thin layer 25 of plastic material for protecting the parts which make contact. Said layer of plastic material has, moreover, reference extensions 25a on which corresponding seats 23d of the clamp 23 are positioned for precise positioning and supporting thereof.

Moreover, according to the invention, the structure also allows extension of the work station in the vertical direction (Figs. 6, 7 and 8); for this purpose extension elements 110 are provided, said elements 110 being coaxially connected together by means of the intervening arrangement of transverse elements 113 having a cross-section with a profile corresponding to that of the upright 10.

Said transverse elements 113 are provided with a coaxial hole 113a and a pin 113b formed in each lobe 111 for the precise positioning and the stable coupling of the associated extensions 110 in the vertical direction.

The stable connection and structural rigidity of said extension sections is obtained by means of a tie-rod 114, the opposite ends of which are threaded and

respectively designed to engage with a female thread 115a formed in a horizontal bracket 115 welded on the inside of the upright 110 and with a lock nut 116, tightening of which against a second bracket 115 results in tensioning of the tie-rod itself.

The open top part of each upright 10, 110 is then closed by a cover-piece 5.

As shown in Fig. 7, inside each longitudinal seat 12 it is possible to insert modular panels 2, the opposite end sections 2a of which have coupling means 6 formed in the manner of shaped studs designed to engage with the corresponding seat 12, into which they are inserted from the top in the longitudinal direction; the positioning or locking of the panels is performed either by means of abutment of the upper panel onto the lower panel or, if the latter is absent, by the application of expansion elements which are fitted in the transverse direction onto the seat 12.

In the latter case it is obviously possible to leave empty spaces between one panel and the next, for example so as to allow documents to be passed from work station to the other.

According to the invention (Fig. 7) it is also envisaged that a base-piece 14 may be fitted to the bottom end of the upright 10, said base-piece being attachable to the seat 12 by means of a joint 15 which is locked in position by means of transverse pins 16 which can be translatably operated in the transverse direction by means of eccentric screws 16a which cause expansion of the joint in the seat 12 and hence locking thereof in position.

It is therefore obvious how the supporting structure according to the invention allows the assembly of a large variety of furniture of a different type by means of a few basic modular elements, thus also making it possible to expand the basic configuration in all the directions of the set of three reference axes of the volume to be furnished either with combined use of supporting elements or by means of the simple arrangement next to one other of mutually independent parts.

In addition, as a result of the structure according to the invention it is also possible to adjust with continuity the height of the various parts such as surfaces, brackets and dividing walls without necessarily having to act on the other parts of the same configuration as well.

Claims

1. Supporting structure for furniture or the like, comprising at least one upright (10) and at least one bracket (20) which can be attached to said upright (10), characterized in that the upright (10) has a cross-section in the form of lobes (11) extending longitudinally along the upright (10), each pair of adjacent lobes defining a corresponding longitudinal seat (12), said lobes (11) and seats (12) being designed for coupling with corresponding locking means (23,6,15) for respectively positioning said bracket (20) and auxiliary elements (2,3,14) complementing the structure.
2. Structure according to Claim 1, characterized in that said lobes (11) have a rounded profile.
3. Structure according to Claim 1, characterized in that said seats (12) have a rounded profile.
4. Structure according to Claim 1, characterized in that said means (23) for locking the bracket (20) consist of a clamp (23) joined to the bracket itself.
5. Structure according to Claims 1 and 4, characterized in that said clamp consists of a first jaw (23a) joined to the bracket and a second jaw (23b) which can be clamped onto the first jaw via screw means (23c).
6. Structure according to Claim 1, characterized in that a layer (25) of protective material is arranged between the jaws (23a, 23b) and the corresponding lobe (11) of the upright.
7. Structure according to Claims 1 and 6,



characterized in that said layer of protective material has a transverse relief (25a) designed for coupling with a corresponding seat (23d) of the jaw (23a).

5        8.    Structure according to Claim 1, characterized in that said means for locking the auxiliary elements consist of expansion elements (6) which are joined to said auxiliary elements (2) and can be inserted longitudinally into said seats (12) of the upright  
10       (10).

9.    Structure according to Claims 1 and 8, characterized in that said auxiliary elements are dividing panels (2).

15       10.   Structure according to Claim 1, characterized in that said elements for locking the auxiliary elements consist of a joint (15) which can be expanded by means of transverse pins (16) which can be translatably  
20       operated via eccentric means (16a).

11.   Structure according to Claims 1 and 10, characterized in that said auxiliary elements are base-pieces (14).

25       12.   Structure according to Claim 1, characterized in that said uprights may be extended in the vertical direction by means of extension sections (110) which can be attached to one another and to the upright via  
30       connecting means (111) and locking means (114, 115, 115a, 116).

13.   Structure according to Claims 1 and 12, characterized in that said connecting means consist of  
35       transverse elements (113) having a cross-section with a profile corresponding to that of the upright (10) and



provided with a coaxial hole (113a) and a pin (113b) formed in each lobe (111) for precise positioning and stable coupling, in the vertical direction, of the associated extensions (110).

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14. Structure according to Claims 1 and 12, characterized in that said means for locking the extensions (110) in the vertical direction consist of a tie-rod (114), the opposite ends of which are threaded and respectively designed to engage with a female thread (115a) formed in a horizontal bracket (115) inside the upright (110) and with a lock nut (116).

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