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

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Abstract

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

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Supporting structure for furniture and 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.



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Invention Title: Supporting Structure for Furniture and the Like  
Comprising an Upright with Lobes

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

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  
assembled, ensuring the necessary rigidity of the  
20       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  
several persons.

25       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  
30       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.

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

without the possibility of relative movement.

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.

5 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 basic elements which make up the structure.

10 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 and/or similar accessories  
15 completing the structure.

It is the object of the present invention to substantially overcome or at least ameliorate one or more of the above disadvantages.

Accordingly, in a first aspect, the present invention provides a support structure for an article of furniture, comprising:

20 an upright having in cross section a plurality of lobes extending the full length of said upright and defining longitudinal grooves between them also extending the full length of said upright, each of said lobes being shaped so as to be symmetrical to a radial plane of said upright; and

25 at least one bracket secured to said upright and comprising a leg extending toward a respective one of said lobes, and a clamp securing said leg to said lobe, said clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first clamp jaw and shaped to fit partly around said one of said lobes, and at least one tightening screw traversing one of said jaws and threaded into the other of said jaws and  
30 inclined to a respective radial plane of said upright at said one of said lobes.

In a second aspect, the present invention provides a support structure for an article of furniture, comprising:

35 an upright having in cross section a plurality of lobes extending the full length of said upright and defining longitudinal grooves between them also extending the full length of said upright; and



at least one bracket secured to said upright and comprising a leg extending toward a respective one of said lobes, a clamp securing said leg to said lobe, said clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first clamp jaw and shaped to fit partly around said one of said lobes, and at least one tightening screw traversing one of said jaws and threaded into the other of said jaws, and a layer of a protective material between said jaws and said one on said lobes, said layer having a transverse relief fitting into a seat formed in one of said jaws.

In a third aspect, the present invention provides a support structure for an article of furniture, comprising:

an upright having in cross section a plurality of lobes extending the full length of said upright and defining longitudinal grooves between them also extending the full length of said upright, each of said lobes being shaped so as to be symmetrical to a radial plane of said upright; and

at least one bracket secured to said upright and comprising a leg extending toward a respective one of said lobes, a clamp securing said leg to said lobe, said clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first clamp jaw and shaped to fit partly around said one of said lobes, and at least one tightening screw traversing one of said jaws and threaded into the other of said jaws and inclined to a respective radial plane of said upright at said one of said lobes, and a layer of a protective material between said jaws and said one on said lobes, said layer having a transverse relief fitting into a seat formed in one of said jaws.

Preferred forms of the present invention will now be described by way of example only with reference to the accompanying drawings, wherein:

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

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

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;

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;



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

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

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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 upright itself.

20 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 structure.

25 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 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.

30 Said locking means 23 substantially consist of a clamp

5 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.

10 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.

15 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.

20 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.

25 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.

30 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



5 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.

10 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.



20 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.



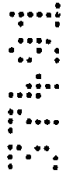
30 According to the invention (Fig. 7) it is also envisaged that a base-piece 14 may be fitted to the bottom end of the upright 10, said base-piece being attachable to the seat 12 by means of a joint 15 which is locked in position by means of transverse pins 16 which can be translatably operated in the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

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5 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.

10 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.



The claims defining the invention are as follows:

1. A support structure for an article of furniture, comprising:  
an upright having in cross section a plurality of lobes extending the full length of  
said upright and defining longitudinal grooves between them also extending the full  
length of said upright, each of said lobes being shaped so as to be symmetrical to a radial  
plane of said upright; and  
at least one bracket secured to said upright and comprising a leg extending  
toward a respective one of said lobes, and a clamp securing said leg to said lobe, said  
clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said  
one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first  
clamp jaw and shaped to fit partly around said one of said lobes, and at least one  
tightening screw traversing one of said jaws and threaded into the other of said jaws and  
inclined to a respective radial plane of said upright at said one of said lobes.
2. The support structure defined in claim 1 wherein said lobes have  
rounded profiles.
3. The support structure defined in claim 1 wherein said grooves have  
rounded profiles.
4. The support structure defined in claim 1 wherein said clamp jaws have  
rounded recesses on opposite sides of a separation between said jaws for engaging around  
said one of said lobes.
5. The support structure defined in claim 4, further comprising a layer of a  
protective material between said jaws and said one of said lobes.
6. The support structure defined in claim 5 wherein said layer has a portion  
extending between said jaws.
7. The support structure defined in claim 1, further comprising a panel  
having an element shaped to be received in one of said grooves upon axial insertion of  
said element from an end of said upright.
8. The support structure defined in claim 7, further comprising a member  
forming a base piece for said panel and comprising transverse pins received in a  
respective one of said grooves and translatable by an eccentric.
9. The support structure defined in claim 1 further comprising connecting  
means for securing extension sections to said upright.
10. The support structure defined in claim 9 wherein said connecting means  
comprises a transverse element having a cross section corresponding to that of the upright  
and provided with a coaxial hole and a pin formed in each lobe for precise positioning of  
a respective one of said extensions.



11. The support structure defined in claim 10 further comprising a tie rod for securing said extension to said upright.

12. A support structure for an article of furniture, comprising:

an upright having in cross section a plurality of lobes extending the full length of said upright and defining longitudinal grooves between them also extending the full length of said upright; and

at least one bracket secured to said upright and comprising a leg extending toward a respective one of said lobes, a clamp securing said leg to said lobe, said clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first clamp jaw and shaped to fit partly around said one of said lobes, and at least one tightening screw traversing one of said jaws and threaded into the other of said jaws, and a layer of a protective material between said jaws and said one on said lobes, said layer having a transverse relief fitting into a seat formed in one of said jaws.

13. A support structure for an article of furniture, comprising:

an upright having in cross section a plurality of lobes extending the full length of said upright and defining longitudinal grooves between them also extending the full length of said upright, each of said lobes being shaped so as to be symmetrical to a radial plane of said upright; and

at least one bracket secured to said upright and comprising a leg extending toward a respective one of said lobes, a clamp securing said leg to said lobe, said clamp comprising a first clamp jaw fixed to said leg and shaped to fit partly around said one of said lobes, a second clamp jaw movable on said bracket, juxtaposed with said first clamp jaw and shaped to fit partly around said one of said lobes, and at least one tightening screw traversing one of said jaws and threaded into the other of said jaws and inclined to a respective radial plane of said upright at said one of said lobes, and a layer of a protective material between said jaws and said one on said lobes, said layer having a transverse relief fitting into a seat formed in one of said jaws.

14. A support structure for an article of furniture, said support structure being substantially as hereinbefore described with reference to the accompanying drawings.



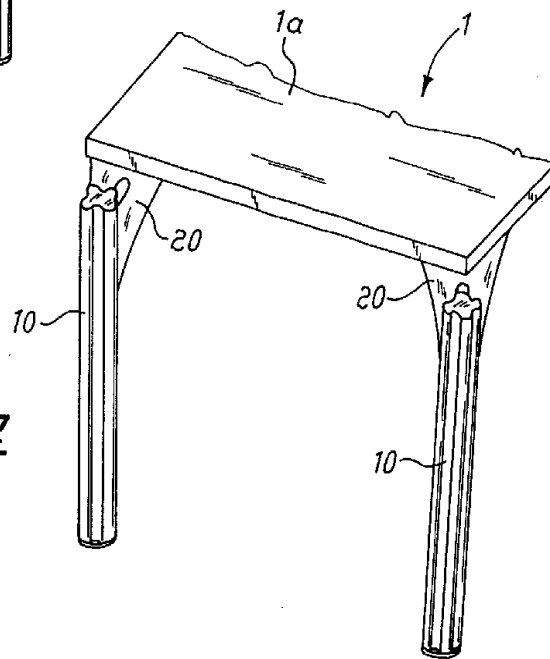
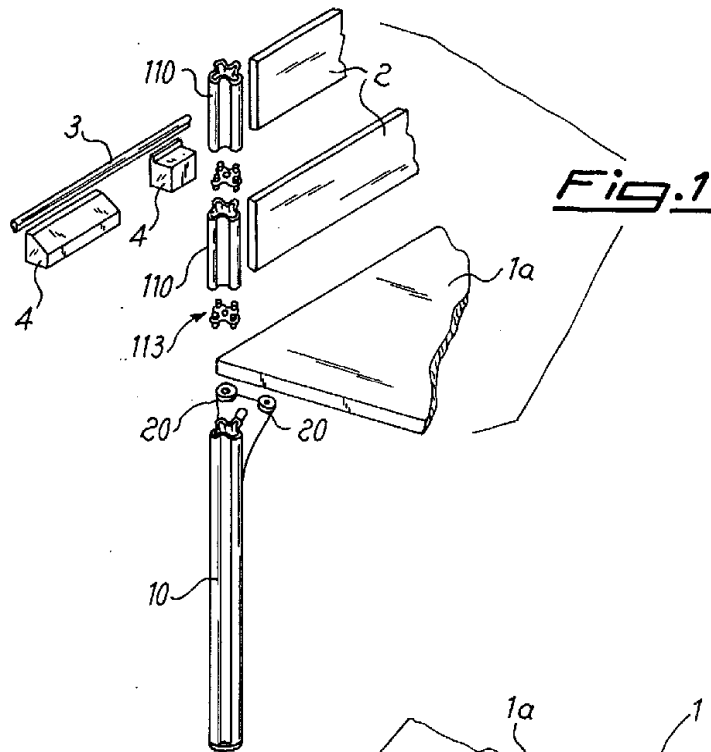
**Dated 4 August, 2000**

**Coopsette S.c.r.l.**

**Patent Attorneys for the Applicant/Nominated Person**

**SPRUSON & FERGUSON**

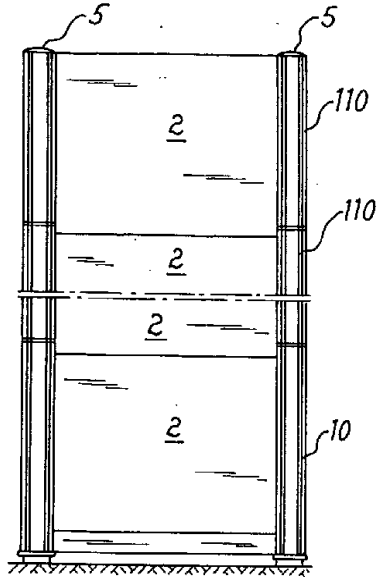




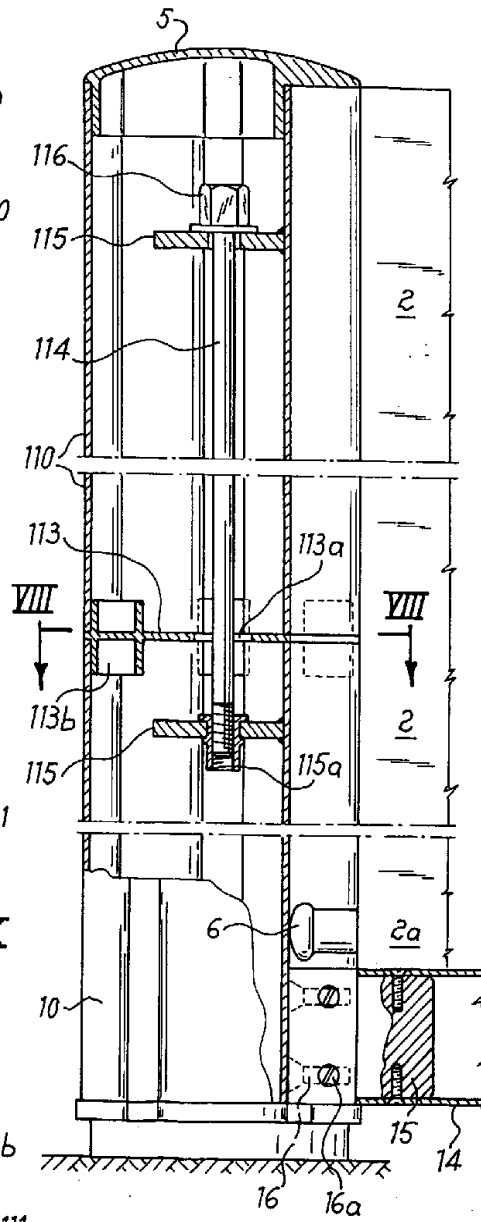
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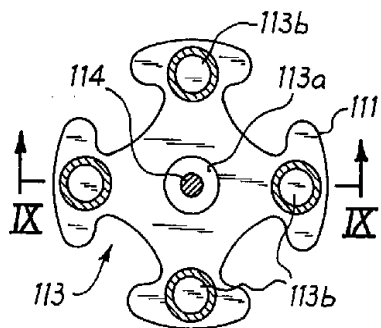
**Fig. 6**



**Fig. 7**



**Fig. 8**



**Fig. 9**

