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(54) **AN ARTICLE OF FURNITURE, IN PARTICULAR A SITTING/STANDING TABLE**

MÖBELSTÜCK, INSBESONDERE EIN SITZ-/STEHTISCH

**ARTICLE D'AMEUBLEMENT, EN PARTICULIER UNE TABLE A LAQUELLE ON PEUT
S'ASSEOIR/SE TENIR DEBOUT**

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Description

[0001] The present invention relates to an article of furniture, in particular a sitting/standing table comprising an adjustable element, such as a tabletop, a drive unit having an electric motor for causing the adjustment of the adjustable element, an electrical control unit in a housing and a control panel for activating the drive unit.

[0002] In step with the increasing popularity of sitting/standing tables, and the consequent intensified competition, a number of differentiated products have been developed, adapted to customer-specific needs and including a variety of new special functions. For some, the rate of adjustment may be decisive, while the lifting capability requirement is of minor importance, and, conversely, others require a great lifting capability, while the rate of adjustment is of minor importance. Examples of special functions include height indicator, control via a control panel as well as a PC, squeeze protection, etc.

[0003] DE 199 01 483 A1 suggests that adjustable furniture can be differentiated in the production by interchangeable hardware modules forming an extension to the main board of the control unit. The module includes all the electronics needed for adding an extra motor, vibrator or heating element to the furniture.

[0004] In terms of logistics, it is a great task to handle all these different variants, which results in increased costs, slowness of production and distribution as well as an increased risk of wrong supplies.

[0005] The object of the invention is to make it possible to ease the logistics task and maintain the diversity of the product range at the same time.

[0006] The task is solved according to the invention in that the electrical control unit is basically manufactured with the fundamental components which are necessary for meeting the various customer-specific requirements. A plurality of modules, which may be inserted into gates in the control unit, then allow the various services and special functions to be modified, activated or deactivated. The advantage is that, if not preferably with a single one, then with just a few basic control units, it is possible to configure the control unit to customer-specific wishes. A further advantage is then that the control unit may easily be changed, if the customer's needs change. The same basic control unit, e.g., can meet the requirement of high rate and low load, and meet the requirement of higher load and lower rate with another module. With the presence of squeeze protection in the control unit, this may be made active with a module, as will e.g. a height indicator, etc. For a single function, it is also possible to have several modules to achieve a quite specific property, e.g. as regards the squeeze protection, it is possible to have a number of modules graduated so that the squeeze protection function is released at various squeeze forces. Alternatively, the module may be provided with a rotary potentiometer for adjusting the sensitivity of the squeeze function; a further alternative is a switch. In its simplest form, the module may merely consist of a simple electrical

connection for reconfiguration of the control unit. Then, the customer himself may adapt the control unit to his specifications with the various plug-shaped modules, and, if the need arises, subsequently change the control unit. The modules are expediently provided with icons, indicia and colour identification which reflects the function of the module, and as a form of a modular jack they may be sent in an ordinary envelope.

[0007] Additional features of the invention appear from the claims and the following description of an exemplary embodiment of the invention.

[0008] In the drawing:

Fig. 1 shows a sitting/standing table,

fig. 2 shows a control box with mains and cable connections as well as a module provided with a modular jack at one end, and

fig. 3 shows the module on an enlarged scale.

[0009] The sitting/standing table shown in fig. 1 comprises a lifting column 1 at each end and consists of three mutually telescopic sections 2a, 2b, 2c. The movement of the columns is caused by an incorporated drive unit 8 which is powered by an electric motor 10 connected to a control box 6 having a power supply. The control box also contains a control unit, which is activated by a control panel 7 arranged at the front edge of table. The control unit may be based on rotary potentiometers, optical or magnetic encoders for determining the height of the table top or purely electronically, as disclosed in WO 02/091539.

[0010] The table may be provided with a squeeze protection or an anti-collision protection, as disclosed e.g. in WO 03/056976 A1, or traditionally be based on measurement of the power consumption.

[0011] In fig. 2, the control box 6 is shown with a mains cable 3 and two wires 4 to the drive units 8. Moreover, a plug-shaped module 5 according to the invention is shown, more particularly configured as a modular jack (RJ45 connector) which may be inserted into a gate 9 in the control box 6 intended for the purpose. The module 5 and the control unit are arranged such that the module contains a portion of the control unit, and the anti-collision protection is activated only when the module 5 is inserted into the gate 9, and only then does the anti-collision protection become complete.

[0012] In a further design, the module 5 is provided with a trim potmeter for adjusting the sensitivity of the anti-collision protection.

[0013] For convenience, the invention has been described in the foregoing on the basis of a height-adjustable table, but it will be appreciated that the invention is applicable to adjustable articles of furniture in general. Be it adjustable armchairs, beds, etc. As for beds, it may be beds for domestic use, nursing beds or hospital beds. The beds may have an adjustable backrest section, headrest section and legrest section, and as for nursing

and hospital beds, the entire bed may moreover be raisable. For various reasons, e.g. in case of a fractured leg, it may be desirable to lock the legrest section, which may be done with a module as mentioned.

Claims

1. An article of furniture, in particular a sitting/standing table, comprising

- an adjustable element, such as a tabletop,
- at least one drive unit (8) having an electric motor for causing the adjustment of the adjustable element,
- an electrical control unit (6) in a housing,
- a control panel (7) for activating the drive unit, **characterized in**
- **that** the control unit (6) is configured to perform a number of special functions,
- **that** the control unit (6) has a number of externally accessible gates (9), each gate (9) being arranged for insertion of an external module (5), and
- **that** the control unit (6) is configured to modify, activate or deactivate various special functions when at least one of a plurality of external modules (5) configured with a plug (11) is inserted into a gate (9).

2. An article of furniture according to claim 1, **characterized in that** said special functions comprise at least one of

- a rate of adjustment;
- a lifting capability;
- a height indicator;
- control via a control panel as well as a PC;
- a squeeze protection; and
- an anti-collision protection.

3. An article of furniture according to claim 1 or 2, **characterized in that** the plug (11) is provided at one end of the module (5).

4. An article of furniture according to claim 1 or 2, **characterized in that** the module is configured as a modular jack (RJ45) plug.

Patentansprüche

1. Ein Möbelstück, insbesondere ein Sitz-/Stehtisch mit

- einem einstellbaren Element, beispielsweise einer Tischplatte,
- mindestens einer Antriebseinheit (8) mit einem elektrischen Motor zum Bewirken der Einstel-

lung des einstellbaren Elements,

- einer elektrischen Steuereinheit (6) in einem Gehäuse,
- einem Steuerbedienfeld (7) zum Aktivieren der Antriebseinheit **dadurch gekennzeichnet, dass**
- die Steuereinheit (6) ausgebildet ist, um eine Anzahl von Spezialfunktionen auszuführen,
- die Steuereinheit (6) eine Anzahl von außen zugänglich Steueranschlüsse (9) aufweist, wobei jeder Steueranschluss (9) angeordnet ist für das Einfügen eines externen Moduls (5), und
- die Steuereinheit (6) eingerichtet ist, um verschiedene Spezialfunktionen zu modifizieren, aktivieren oder deaktivieren, wenn mindestens eines aus einer Mehrzahl von externen Modulen (5), das mit einem Stecker (11) ausgestaltet ist, in einen Steueranschluss (9) eingesetzt ist.

2. Ein Möbelstück nach Anspruch 1, **dadurch gekennzeichnet, dass** die Spezialfunktionen mindestens eine von folgenden aufweisen

- eine Einstellgeschwindigkeit
- eine Anhebefähigkeit
- einen Höhenindikator
- eine Steuerung sowohl über ein Steuerbedienfeld als auch über einen PC
- einen Quetschschutz; und
- einen Anti-Kollisionsschutz.

3. Ein Möbelstück nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Stecker (11) an einem Ende des Moduls (5) vorgesehen ist.

4. Ein Möbelstück nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Modul als Modularsteckverbindung (RJ45) -stecker ausgebildet ist.

Revendications

1. Article de mobilier, en particulier table assis/debout, comprenant

- un élément ajustable, tel qu'un plateau de table,
- au moins une unité d'entraînement (8) ayant un moteur électrique pour provoquer l'ajustement de l'élément ajustable,
- une unité de commande électrique (6) dans un boîtier,
- un panneau de commande (7) pour activer l'unité d'entraînement, **caractérisé en ce que**
- l'unité de commande (6) est configurée pour réaliser un certain nombre de fonctions spéciales,

- l'unité de commande (6) comporte un certain nombre de portes accessibles par l'extérieur (9), chaque porte (9) étant agencée pour l'insertion d'un module externe (5), et
- l'unité de commande (6) est configurée pour modifier, activer ou désactiver diverses fonctions spéciales, lorsqu'au moins l'un d'une pluralité de modules externes (5) configurés avec une prise (11) est inséré dans une porte (9).

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2. Article de mobilier selon la revendication 1, **caractérisé en ce que** lesdites fonctions spéciales comprennent au moins l'un parmi

- un taux d'ajustement ;
- une capacité de lavage ;
- un indicateur de hauteur ;
- une commande par la biais d'un panneau de commande ainsi qu'un PC ;
- une protection contre les coincements ; et
- une protection anticollision.

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3. Article de mobilier selon la revendication 1 ou 2, **caractérisé en ce que** la prise (11) est prévue à une extrémité du module (5).

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4. Article de mobilier selon la revendication 1 ou 2, **caractérisé en ce que** le module est configuré comme une prise mâle modulaire (RJ45).

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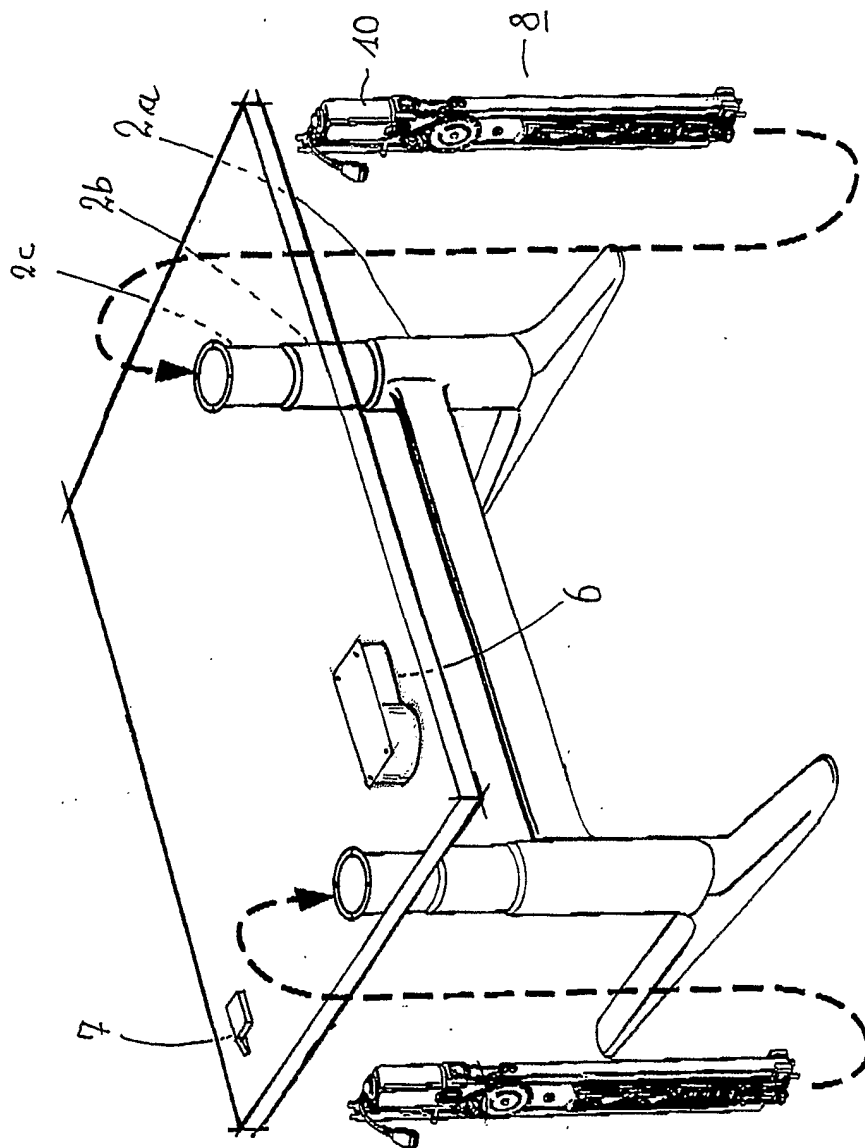


Fig. 1

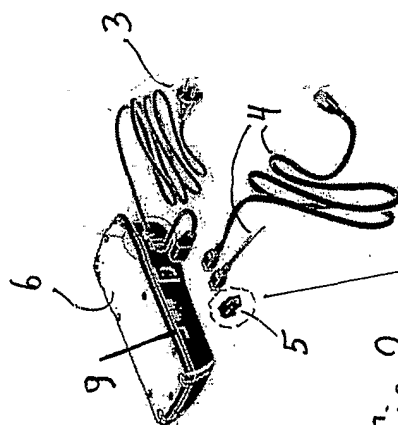


Fig. 2

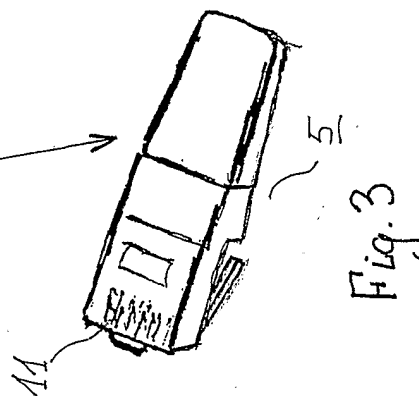


Fig. 3

REFERENCES CITED IN THE DESCRIPTION

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