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(54) **Covering and protecting device for sectional doors**

(57) The invention concerns a covering and protective system for sectional doors made up of panels, in particular for the horizontal shaft, and devices associated with it, supported on a fixed structure above the sectional door. The system comprises a protective covering (18) either mounted directly or to an element (23) fitted to the top of the door, moving with the latter and covering said shaft when the door is closed. The protective covering can be fixed or hinged so as to tip from a protective to an inactive position.

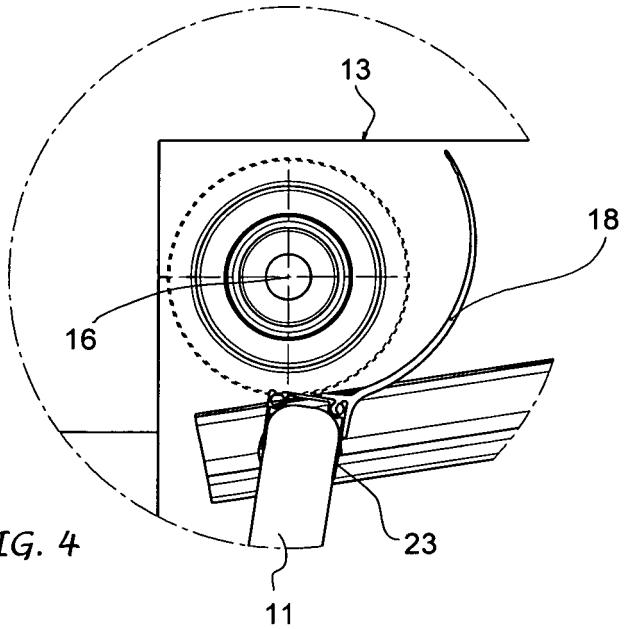

FIG. 4

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Description

Field of the Invention

[0001] This invention concerns both manual and powered sectional doors in general, and refers in particular to an innovative covering and protective device for the pivoting and/or motorization devices of said doors.

State of the Technique

[0002] Sectional doors comprise a plurality of horizontal linked panels, folding level with the connections between the panels and for the use in closing garages or other openings. Each sectional door is mounted and slides between lateral guide tracks, each having a rectilinear segment that extends upwards, almost vertically starting from the ground, and which connect at the top with a horizontal segment by means of curvilinear guide sections. The guide tracks can be supported by door jambs and these in turn can be connected to a header above the door.

[0003] A sectional door generally moves between a closed position, where it is in a lowered vertical position, and an open position, where it is in a raised position and can be controlled other than manually also by a motor unit. For its movements between said extreme positions, the door is connected laterally to cables connected to respective drums or pulleys which are fixed to a transmission shaft which extends and is supported horizontally on parts fixed above the door.

[0004] When the door is operated manually, balancing springs can be mounted on the shaft to facilitate the movements of the door. When the door is motorized, the transmission shaft is connected to and driven by a power unit.

[0005] In both cases it is usual to hide the transmission shaft and the other devices associated with it by a covering. According to the known technique, the covering is positioned astride of the shaft with its longitudinal sides constrained to two anchoring profiles placed statically above the door, fixed to the header connecting the door jambs and/or to the wall above. Mounting the covering in this way is however relatively awkward and demanding and any maintenance work involving the shaft means the covering has to be dismantled which always remains idle without being able to follow the movements of the door.

Objects and Summary of the Invention

[0006] One of the objects of this invention is to create the conditions to avoid the drawbacks of the known technique and to facilitate the assembly of the element or covering of the shaft and the devices fixed to it, without involving fixed parts of the door structure.

[0007] A further object of the invention is to provide a covering and protective system for the abovementioned use which is easier and less costly to produce, even in plastic, easily applicable to the header of the sectional door, following the movements of the latter and that above all does not need to be dismantled for maintenance work on the shaft or on other devices fixed to it.

[0008] These objectives are reached in a covering and protective system for sectional doors made up of panels, and in particular with the horizontal shaft supported on a fixed structure above a sectional door, characterized in that it comprises a protective covering either mounted directly or to an element fitted to the top of the door, moving with the latter and covering said shaft when the door is closed, and wherein said protective covering is formed of a curved section profile with an intrados facing towards said shaft and having a lower side including at least a longitudinal anchoring portion to connect it to the top of the sectional door and an upper side free.

Brief Description of the Drawing

[0009] The enclosed drawings show an example of the system according to the invention and which will be described in greater detail below. In said drawings:

Fig. 1 shows part of a sectional door in the closed position, but without the protective covering;
Fig. 2 shows a view as in Fig. 1 but of a sectional door complete with protective covering;
Fig. 3 shows a vertical section view of the door in Fig. 2;
Fig. 4 shows an enlargement of item A circled in Fig. 3;
Fig. 5 shows a method of mounting the protective covering; and
Fig. 6 shows a protective covering hinged so as to turnover when it is operating.

Detailed Description of the Invention

[0010] As shown, a sectional door 10 is made up of several panels 11 connected consecutively and is moved between two lateral guide tracks 12 for its movements between a lowered closed position and a raised open position. The lateral tracks can be connected by a fixed horizontal header that extends above the door and in any case the opening the door is attached to can be formed at the top by a fixed structure 13.

[0011] For its closing and opening movements, the sectional door 10 is connected laterally to cables 14 turning on drums or pulleys 15 mounted on a horizontal shaft 16 supported on the header or the fixed part 13 above the door. The shaft 16 can be associated with torsion springs 17 as shown in Fig. 1 or a power unit - not shown - when the door is motorized.

[0012] According to the invention, the horizontal shaft 16 and the devices attached to it are concealed by a horizontal protective covering 18 as shown in Figs. 2 and 3. The protective covering 18 can be formed preferably by a curved section profile made also by extruding plastic

material and it has an intrados 18' facing towards the shaft 16 and has, at the bottom, a side bearing longitudinally at least one anchoring portion 19 and two almost orthogonal equilibrating fins 20, 21 and at the top a free side 22.

[0013] The protective covering 18 is applied directly or by means of a profiled element 23 fitted to the top of the sectional door 10: in the first case the top panel of the door has at least a groove into which the anchoring portion 19 of the protective covering can be inserted and fitted; in the second case through the fitted profiled element 23 which is mounted and constrained astride the summit of the top panel of the door 10 and which will have at least a longitudinal groove 23' designed to receive the anchoring portion 19 of said protective covering as shown in Figs. 4 and 5. In both cases, the orthogonal fins 20, 21 will help to maintain the operating disposition of the covering which can remain fixed in the covering and protective position of the shaft 16 when the door is closed.

[0014] Anchoring of the covering can also be stabilized by fixing it with bolts. In a different way of configuration as shown in Fig. 6, the protective covering 18 can, on the other hand, have a parliament hinge 24, adjacent to its lower side so as to allow it to tip backwards and uncover the shaft 16 and the devices associated with it in order to have easy access to them also when the door is closed.

[0015] Worthy of note is the fact that the protective covering can be associated with the top panel of the door or the additional profiled element 23 by directly hinging them together so that it will turn over from the active protection position to a passive access position to the shaft 16 and devices attached to it.

Claims

1. Covering and protective system for sectional doors made up of panels, in particular for the horizontal shaft supported on a fixed structure above a sectional door and devices associated with said shaft, **characterized in** the fact that it comprises a protective covering (18) either mounted directly or to an element (23) fitted to the top of the door, moving with the latter and covering said shaft when the door is closed.

2. Covering and protective system according to claim 1, in which said protective covering (18) is made up of a curved section profile with an intrados facing towards said shaft and having a lower side including at least a longitudinal anchoring portion (19) to connect it to the top of the sectional door and an upper side free (22).

3. Covering and protective system according to claims 1 and 2, in which said protective covering (18) also comprises two basically orthogonal longitudinal fins (20, 21) associated with said anchoring portion (19) and designed to rest against the header of the door to maintain the protective covering in its operating position.

4. Covering and protective system according to claims 1 and 2 or 3, in which said protective covering (18) has a longitudinal hinge axis (24) adjacent to said lower side to enable it to tip from a covering position to a position which uncovers said shaft.

5. Covering and protective system according to claims from 1 to 3 or 4, in which the anchoring portion (19) along the lower side of the protective cover (18) is inserted into at least one groove in the upper part of the top panel of the sectional door, and said longitudinal fins rest against the two orthogonal sides of said top panel.

6. Covering and protective system according to claims from 1 to 3 or 4, in which the anchoring portion (19) along the lower side of the protective cover (18) is inserted into at least one groove provided along the fitted element (23), and said longitudinal fins rest against the two orthogonal sides of said fitted element, the fitted element being made up of a profile positioned and held astride of the top panel of the sectional door.

7. Covering and protective system according to claims 1 and 2, in which the anchoring portion (19) along the lower side of the protective cover (18) is inserted into at least a groove provided in the top part of the top panel of the sectional door which being turnable is able to tip said protective cover from a covering position to a position which uncovers said shaft.

8. Covering and protective system according to any of the previous claims, in which the protective cover or fitted element are made of an extruded plastic material.

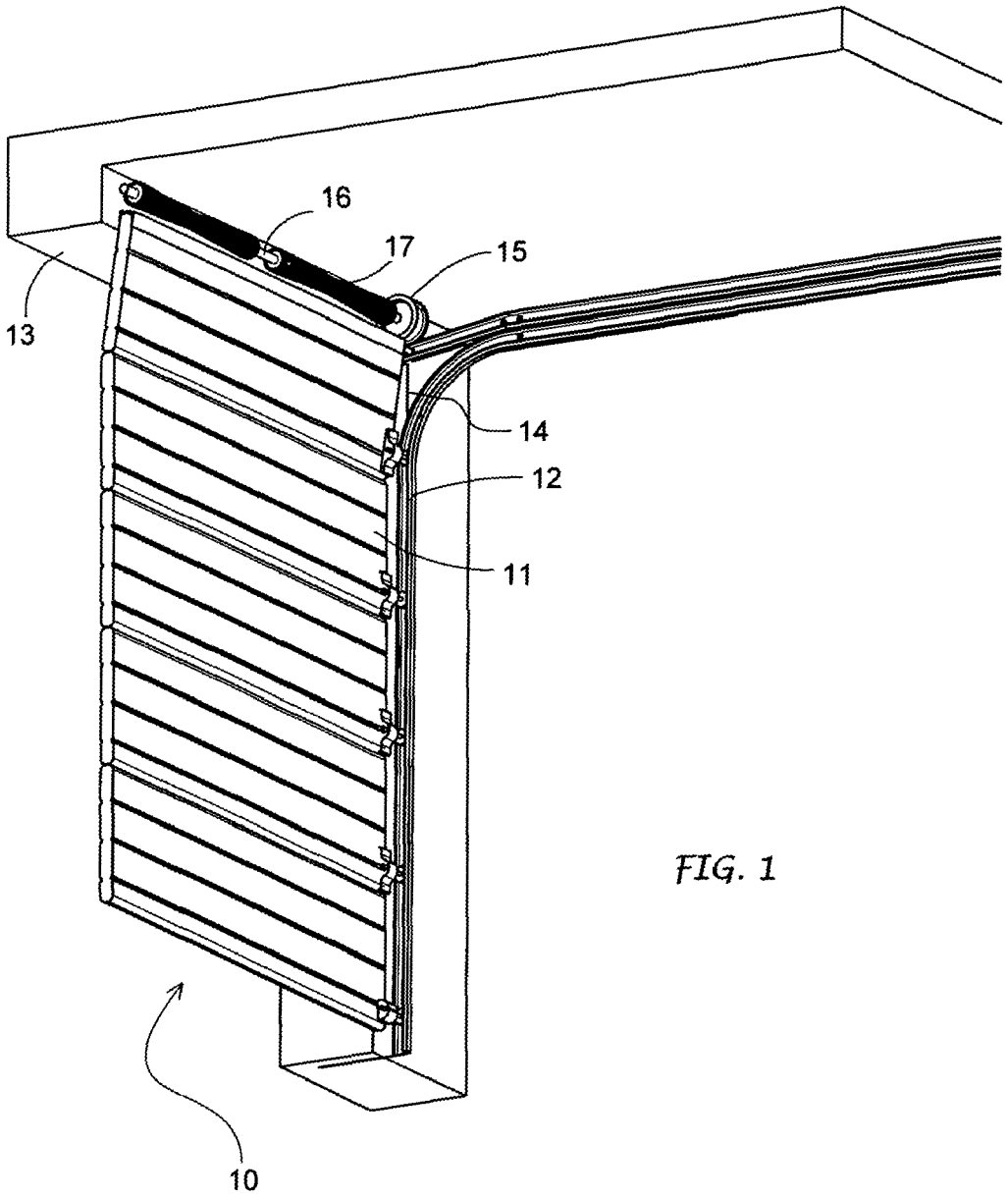

FIG. 1

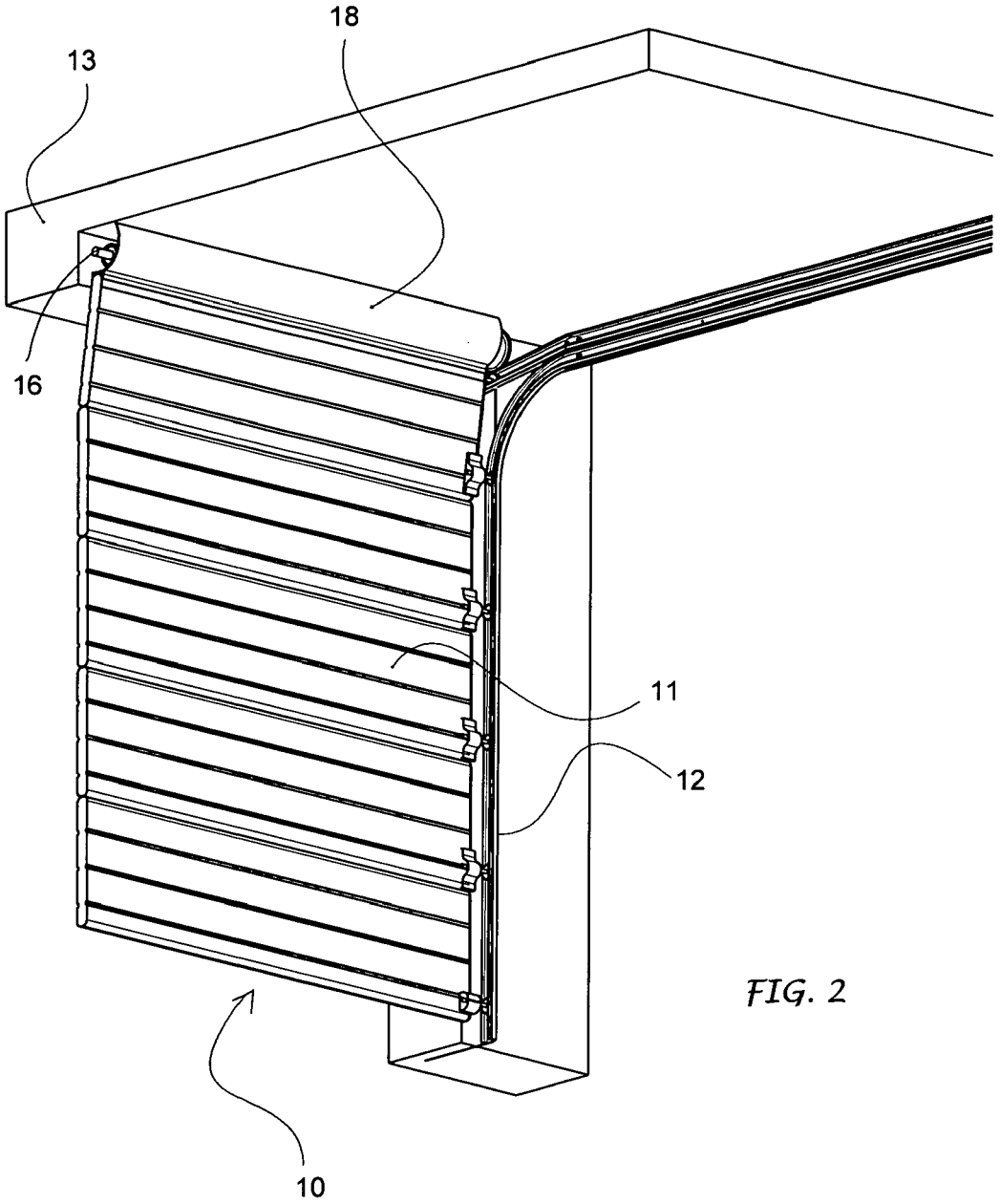

FIG. 2

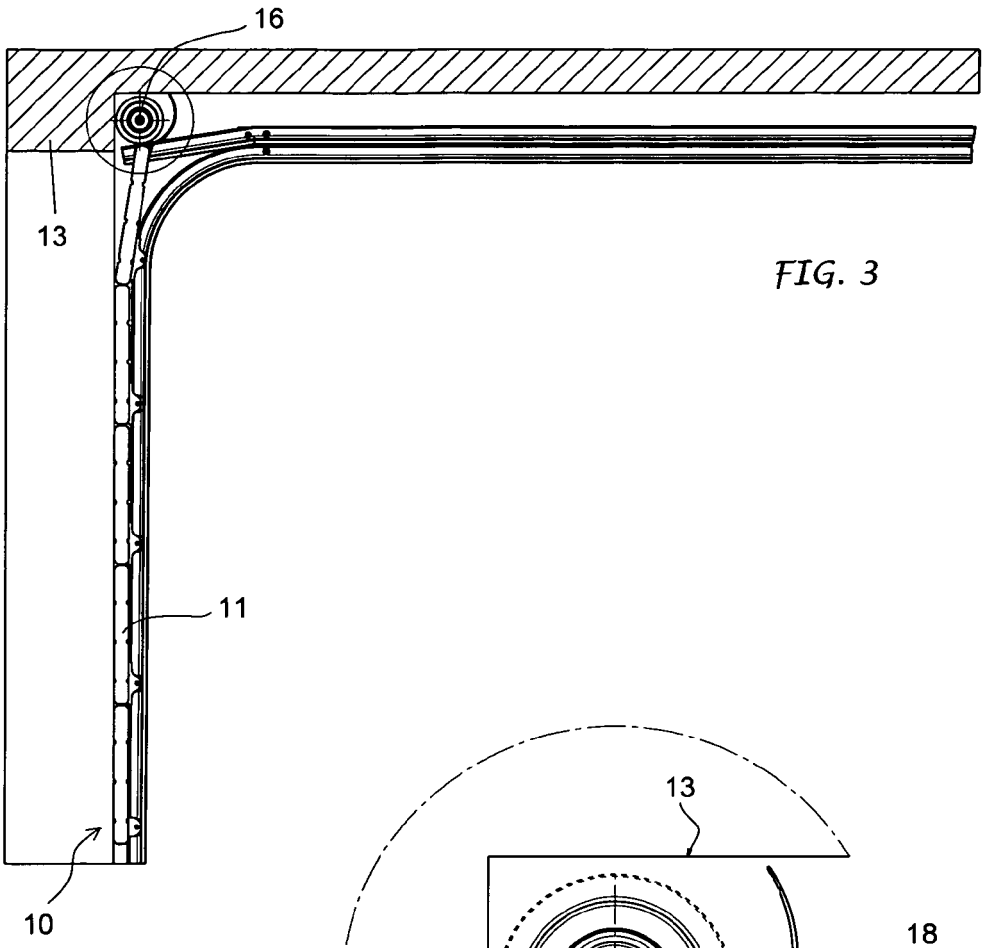

FIG. 3

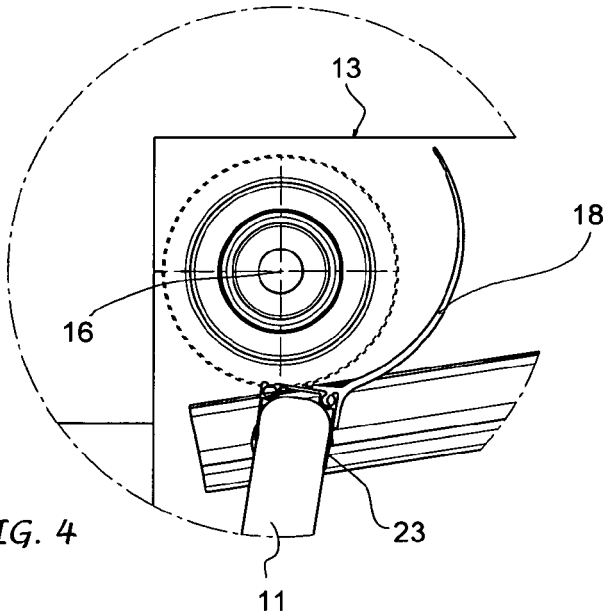

FIG. 4

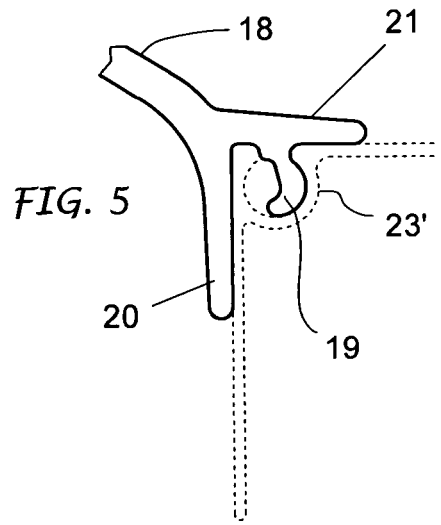

FIG. 5

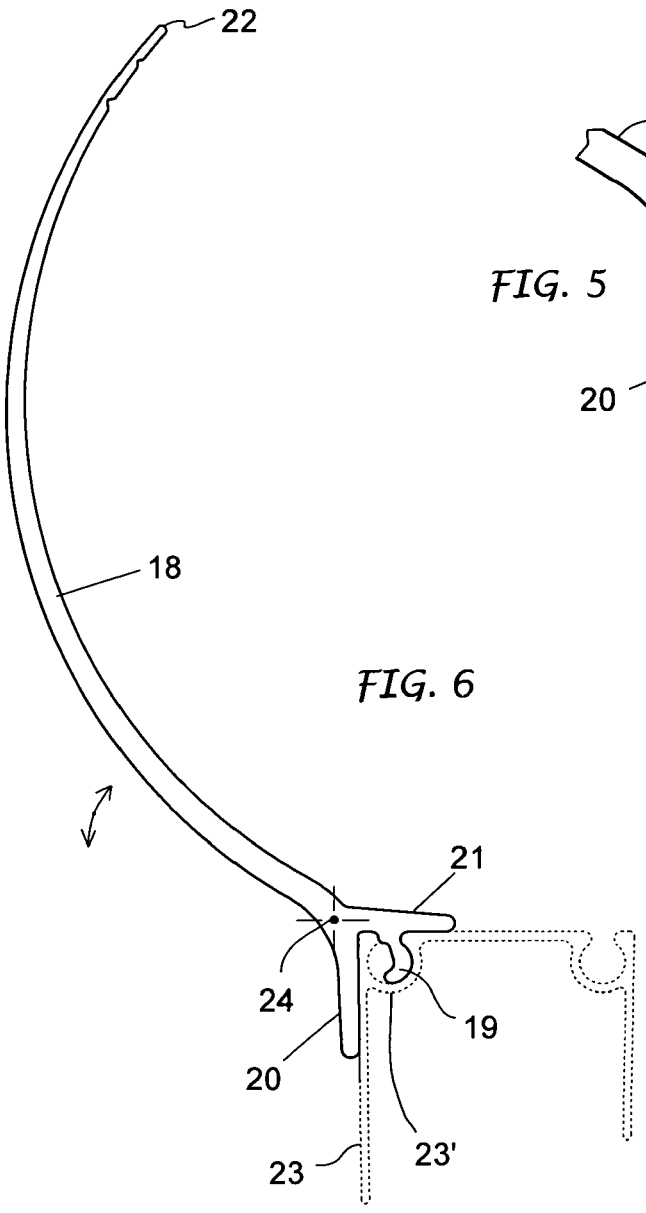

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 07 42 5790

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 737 802 A (JELLA JOHN F [US]) 14 April 1998 (1998-04-14) * figures 47-51 * -----	1	INV. E06B3/48 ADD. E05D15/24

TECHNICAL FIELDS SEARCHED (IPC)

E05D
E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	1 July 2008	Peschel, Gerhard

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 42 5790

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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01-07-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5737802 A	14-04-1998	NONE	

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