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(54) **Detachable hinge**

(57) The hinge device comprises a single pin and hinge body equipped with a pivot for coupling and centring in opposing orifices of the door and cabinet thereof, and an upper body with a resilient tongue capable of being introduced into a lateral notch of a recess having

a mating shape of the cabinet door, allowing a hinge pin retaining position to be achieved which corresponds to its active use and allows easy assembly and disassembly thereof by pressing the resilient tongue to liberate it from its retaining position in the notch of the cabinet door.

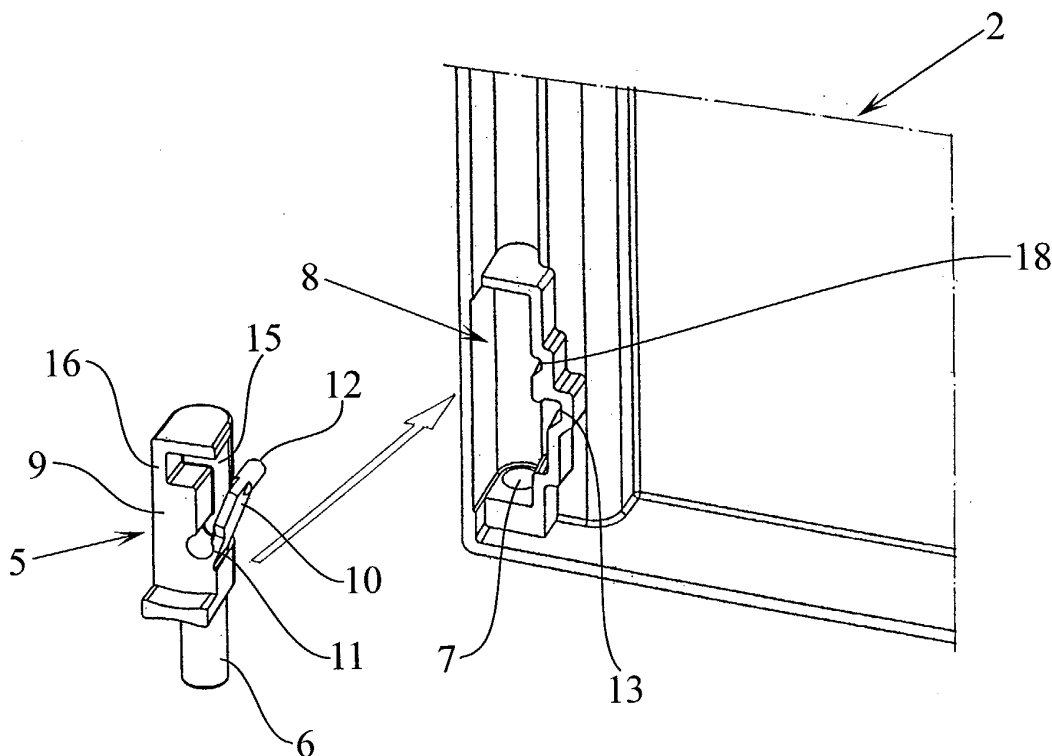


FIG. 3

Description

[0001] The present invention relates to a detachable hinge device for electrical control cabinets and the like, which has considerable advantages over that known in the field.

[0002] The object of the hinge device according to the present invention is to obtain articulated interconnecting components or hinge components between the door of a cabinet, in particular of an electrical control cabinet, and the body of the cabinet itself.

[0003] The hinge device object of the present invention is basically characterised in that it comprises, on the one hand, a single part produced by injection moulding of a material with properties of flexibility and resilience, for example a synthetic material, simultaneously having means for its positioning and centring in the door of the cabinet and retaining means formed by a resilient retaining strip. On the other hand, the hinge device is completed by a recess having a shape mating with that of the hinge device and disposed in the cabinet door.

[0004] In a specific embodiment the hinge device according to the present invention will comprise a lower centring shaft and an upper body, from which a resilient laminar part projects laterally and which has basically two positions, one position which is stable in itself or natural position which forms a specific angle, preferably acute, with the axis of the hinge device, and a second position in which said laminar piece may be forced to rock on its base and fit in a notch of mating shape in the body itself to allow displacement of said hinge device in the vertical direction to detach the door. Obviously said position also coincides with the assembly position. A recess having a shape mating with that of the hinge device and having, at the bottom, a recess for the cylindrical shaft and, at the top, a zone for receiving the resilient laminar component of the hinge device and an upper free zone allowing vertical displacement for assembly and disassembly of the hinge device in its position of use is produced in the door.

[0005] To assist understanding there follow, by way of descriptive but non-limiting example, some representative drawings of a preferred embodiment of the present invention.

Fig. 1 is a perspective view of a cabinet equipped with a door carrying the hinge device according to the present invention.

Fig. 2 is a perspective view on an enlarged scale of the individual hinge device.

Fig. 3 is a perspective view showing the first operation of introducing the hinge device into the mating recess of the door.

Fig. 4, 5 and 6 are respective elevations with a partial section showing the operating phase, the phase of disassembly of the hinge device, and the position in which the door is released from the cabinet.

[0006] The hinge device according to the present invention is intended for use in a cabinet 1 essentially formed by a parallelepiped shaped body with an open front face, in which is positioned a rebatable closing door 2 equipped with a conventional lock 3 and with the hinge device unit 4 according to the invention.

[0007] The hinge device unit 4 is composed of a hinge pin body based on two different parts, shown in the figures and in particular in Fig. 3, in which the hinge pin body, indicated in its entirety by reference numeral 5, has a lower shaft 6 or centring and turning axis for fitting in a mating opening 7 of a recess in the corner zone of the door 2, said recess being designated in its entirety by reference numeral 8. The hinge device 5 also has an upper body 9 for insertion into the interior of the hollow 8 and equipped with a tongue or laminar component with resilient properties 10 joined to the body 9 by its base 11. The laminar part or resilient tongue 10 has, at the top, an enlargement 12 for lining up inside a lateral notch 13 produced in one of the walls of the recess 8, and this represents the conventional operating position of the hinge device, as shown in Fig. 4, in which the tongue 10 impedes the backward movement of the hinge device 5 which, when the door 2 is connected to the lower part 14 of the cabinet body 1, Fig. 2 and 4 to 6, allows the conventional functions of the hinge to be carried out, and this obviously provides the advantage of great simplicity in construction and assembly.

[0008] The assembly, service and disassembly phases are shown in Fig. 3 to 6, Fig. 3 showing the introduction of the hinge device unit 5 into the interior of the recess 8, occupying the top part of said recess 8 which has a greater height than the hinge device 5, corresponding to the position shown in Fig. 6. In this position, the tongue 10 is adapted to the notch 15 in the body 5 which has a shape mating with that of the tongue 10, in other words a lower narrower zone to line up with the body of the tongue 10 and a deeper upper part, indicated by reference numeral 16, for insertion of the enlargement 12 of said tongue. In this position the hinge device will be introduced into the interior of the recess 8, then descend manually, as can be seen in Fig. 5, resulting in the normal operating position shown in Fig. 4. As illustrated, Fig. 5 and 6 also show the disassembly sequence which involves manual lateral flexion of the tongue 10 to release it from the recess 13, upward displacement, as indicated by the vector 17, and removal of the door with its hinge, as shown in Fig. 6.

[0009] The recess 8 of the door 2 comprises, in the proximity of the recess 13, a second recess of smaller dimensions 18 for laterally receiving the enlargement 12 so that, in the assembly and disassembly position, the hinge device 5 can be retained to prevent its free displacement, as can be seen in Fig. 6.

[0010] The individual hinge device 5 also comprises a front wing 19 which allows easy fixing of the hinge stud for its upward and downward displacement during the assembly and disassembly operations.

[0011] As will be appreciated, the detachable hinge according to the invention may adopt different variations within the scope defined by the appended claims.

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Claims

1. Detachable hinge device for electrical control cabinets and the like, **characterised in that** it comprises a single pin and hinge body equipped with a pivot for coupling and centring in opposing orifices of the door and cabinet thereof, and an upper body with a resilient tongue capable of being introduced into a lateral notch of a recess of mating shape of the cabinet door, allowing a hinge pin retaining position to be achieved which corresponds to its active use and allows easy assembly and disassembly thereof by pressing the resilient tongue to liberate it from its retaining position in the notch of the cabinet door. 10 15 20
2. Detachable hinge device for electrical control cabinets and the like according to claim 1, **characterised in that** the hinge device is produced in a single piece injection-moulded from a flexible resilient material, the resilient tongue comprising a stable position which forms a specific angle with the axis of said hinge device. 25
3. Detachable hinge device for electrical control cabinets and the like according to claim 1, **characterised in that**, at the top, the tongue comprises an enlargement capable of being introduced, in the operating position, into a lateral notch of the cabinet door recess which receives the hinge pin. 30 35
4. Detachable hinge device for electrical control cabinets and the like according to claim 1, **characterised in that** the body of the hinge device has a notch with a shape mating, on one side, with that of the resilient tongue to allow it to be fitted in the assembly and disassembly phases of the hinge. 40
5. Detachable hinge device for electrical control cabinets and the like according to claim 1, **characterised in that** the recess of the cabinet door, receiving the hinge device, has a greater height than the hinge, allowing assembly and disassembly thereof. 45 50 55

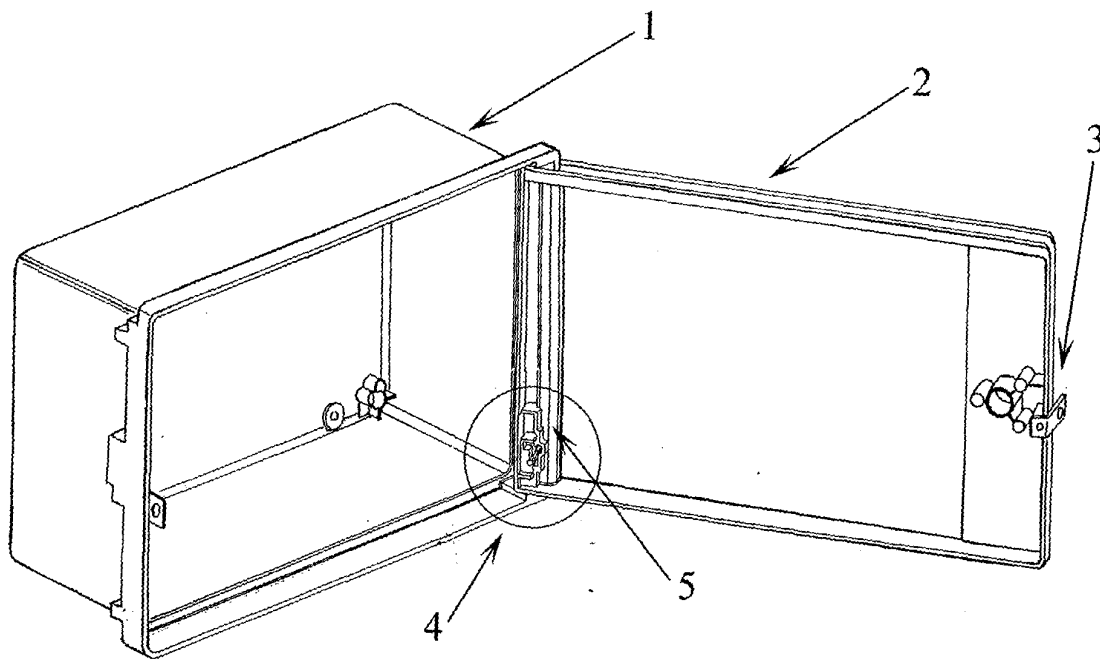


FIG. 1

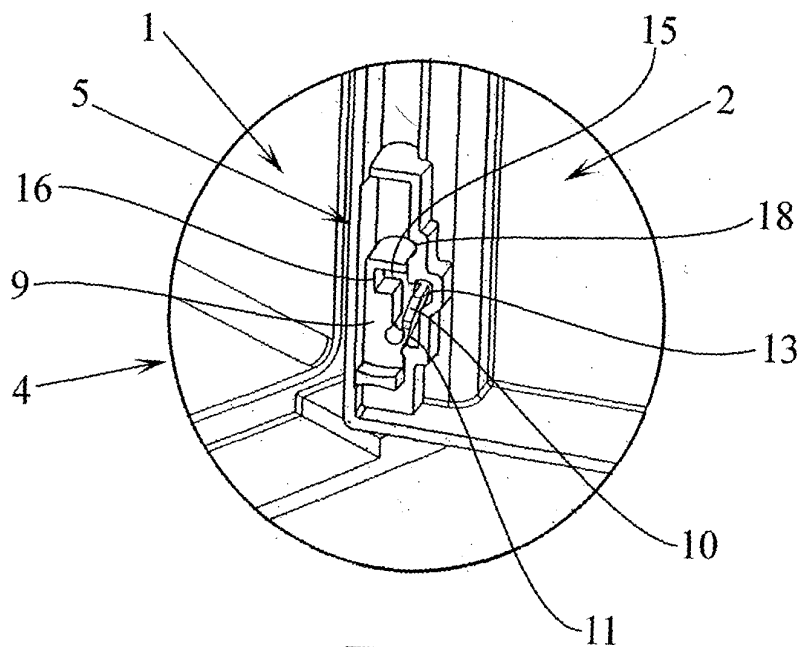


FIG. 2

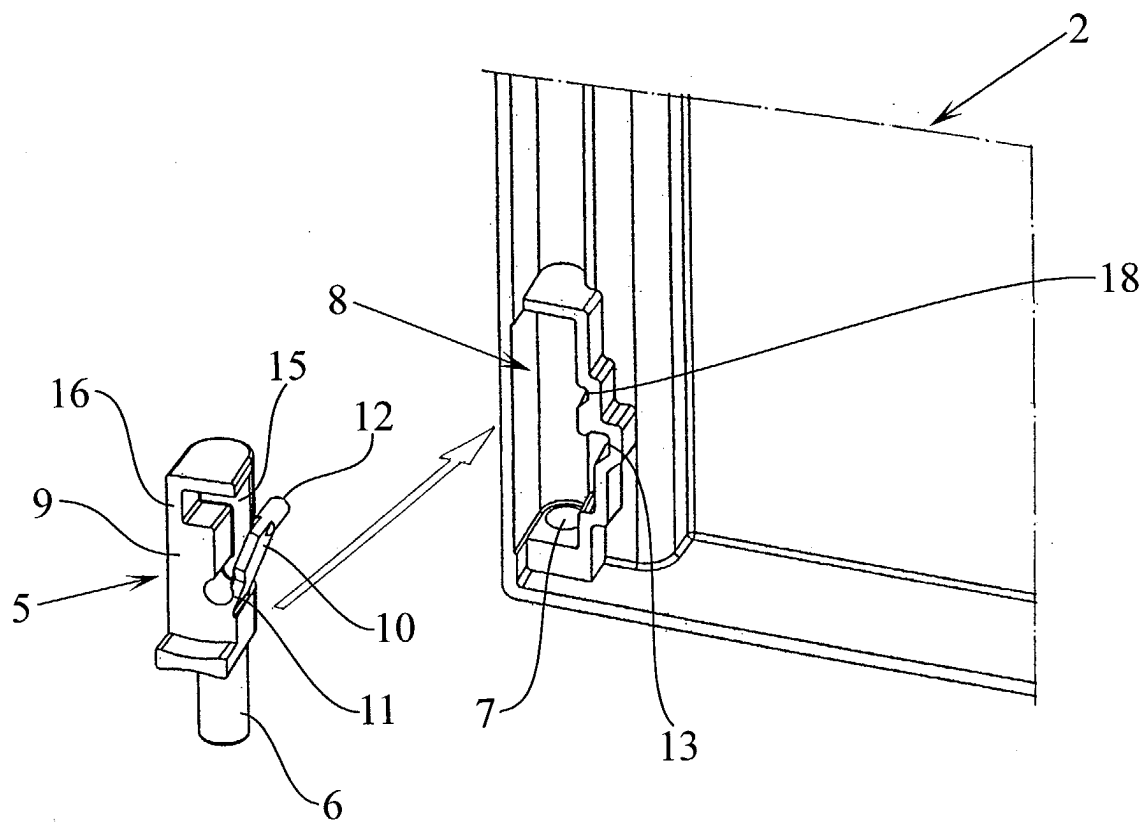


FIG. 3

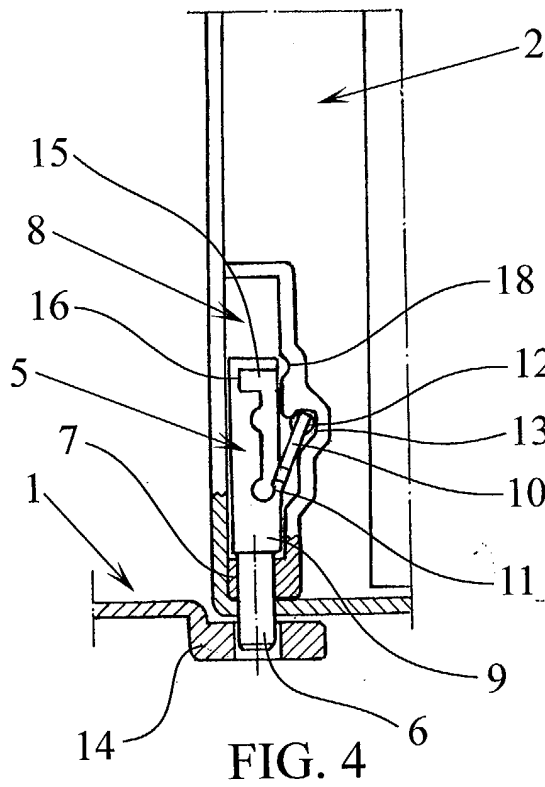


FIG. 4

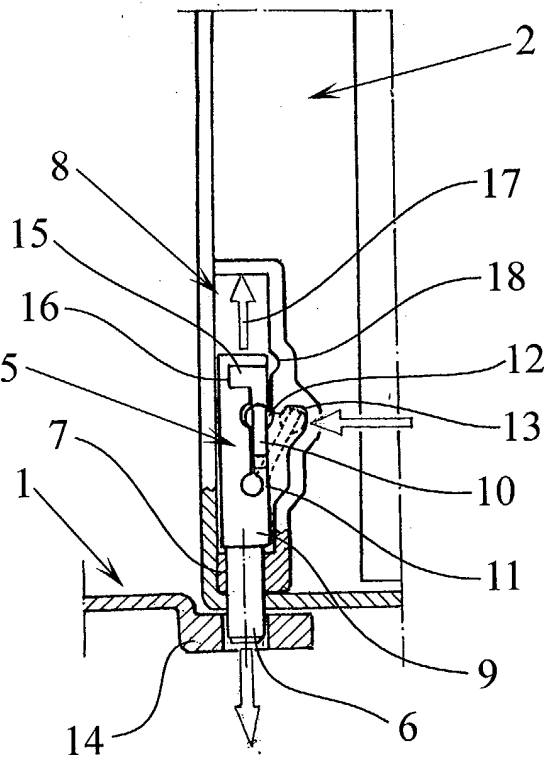


FIG. 5

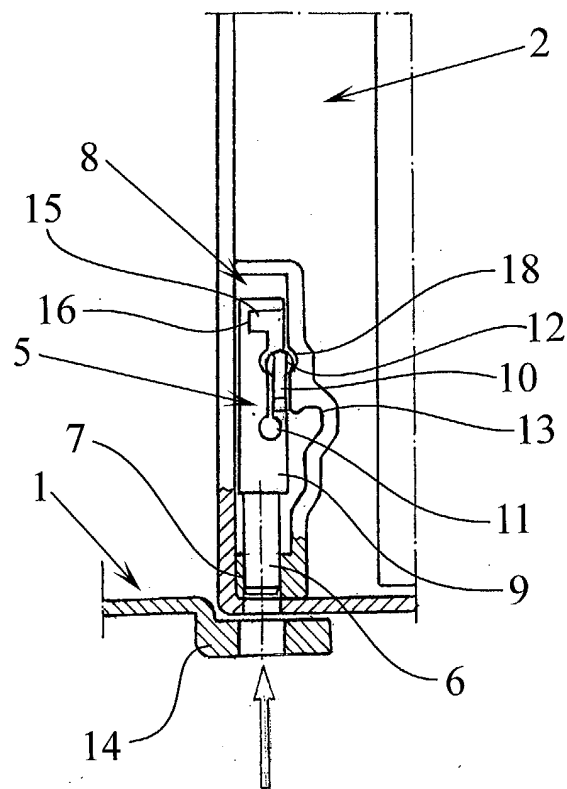


FIG. 6



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 38 0156

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 87 01 805 U (HUWIL WERKE GMBH) 9 April 1987 (1987-04-09) * page 3 - page 6; claims 1,2; * figures 1,2 * -----	1-5	E05D7/10
X	GB 360 677 A (JAMES CULLEN POLLOK; DAVID AMBROSE MCERLANE) 12 November 1931 (1931-11-12) * page 1, line 52 - page 2, line 70; figures 2,3 *	1-5	
X	DE 40 10 466 A (BAYERISCHE MOTOREN WERKE AG) 2 October 1991 (1991-10-02) * column 2, line 15 - column 3, line 4; claim 1; figures 1,3,4 * -----	1	
A		2-5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E05D H02B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 4 November 2004	Examiner Balice, M
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 38 0156

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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04-11-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 8701805	U	09-04-1987	DE 8701805 U1	09-04-1987
GB 360677	A	12-11-1931	NONE	
DE 4010466	A	02-10-1991	DE 4010466 A1	02-10-1991