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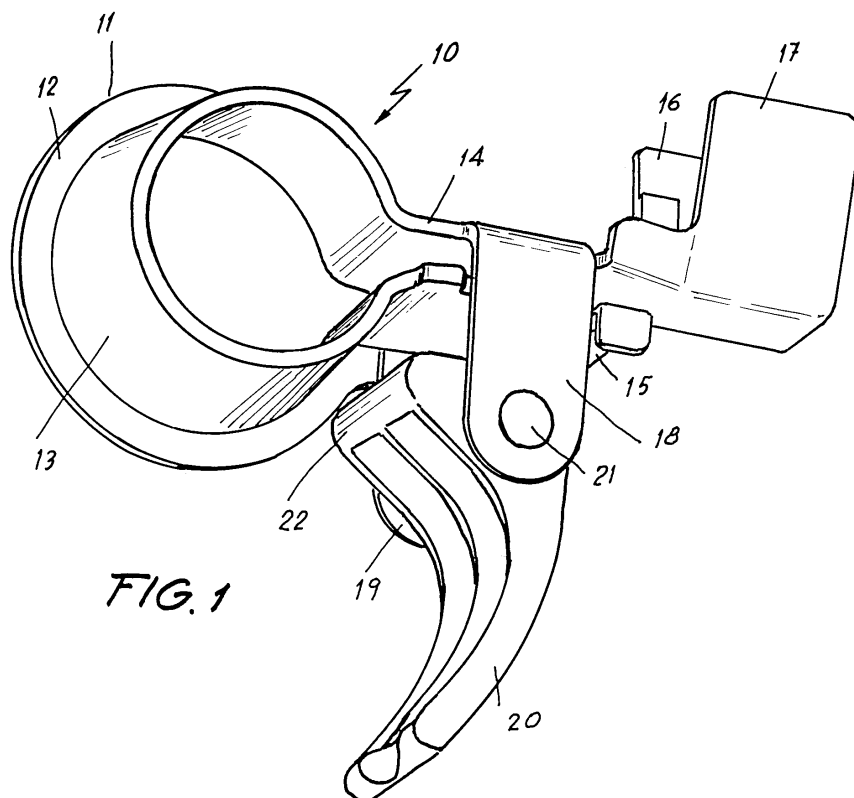
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(54) **Battery terminal with cam fastening**

(57) The terminal is shaped with a bracket or ring, with a perimeter skirt (12), which open ends are extended with appendixes, from the appendixes (16,17) extend ears (18,19) in which is mounted the part acting as a lever (21) and cam (22) respectively, one of the appen-

dices (16,17) extends in the side with rison the conductive portion of the electric lead, the bracket or ring (14,15) has a perimeter skirt, which extends into other, showing ears which are provided with holes allowing the fixation and rotation of the lever (20).



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Description

[0001] The present application for a Patent of Invention consists, as indicated in its title, in a "BATTERY TERMINAL WITH CAM FASTENING", which novel characteristics of manufacturing, shaping and design fulfill the object for which had been specifically designed with a maximum of safety and efficiency.

[0002] More particularly the invention relates to a battery terminal with an excentric cam which shape or locking system has been modified with regard to what can be considered the state of the art.

[0003] In the technical sector dealt with, i. e. that of the parts, pieces and equipment for the automotive sector, are found the battery terminals, being the best known those formed with an open ring extended with appendixes perpendicularly crossed over with a pressure bolt, allowing to that ring to be fixed to the battery terminals.

[0004] Therefore it is necessary the use of bolts and nuts as well as the adequate tools for placing them which, in some circumstances and owing to the placement of the battery, may fall from place during the assembly operation.

[0005] The electric lead in charge of the power transport and distribution from the battery to the different services is linked to the terminal ring, as is a known solution, by the distortion with enough pressure of both appendixes over the conductive portion, thus establishing the electrical continuity between the battery and said services.

[0006] With the same goal had been designed other pressure and tightening systems, but always bearing in mind that in order to establish a good contact between the ring or bracket of the terminal and the battery terminal it is not enough a simple contact but a high and even pressure of said rings or brackets over the surface of said terminals.

[0007] Said pressure is achieved in some types of terminals by providing a lever acting over the extensions of the ring or bracket trapping same and reducing its diameter in order of adjusting same at the maximum to the battery terminal.

[0008] Achieving the necessary pressure of the terminal over the battery terminal with the elements of the state of the art makes necessary a manufacturing cost so high in hand work as in materials and mechanization.

[0009] In the model of Utility to same assignee No. U-970 2159 (8) for an IMPROVED BATTERY TERMINAL is disclosed and claimed a battery terminal that among its specific features there is used a thightening system which may be considered to be pertaining to the above disclosed state of the art.

[0010] The terminal object of the present invention, obtaining the same assembly speed and achieving the same thightening strength of the above mentioned terminals over the battery terminals, incorporates a new locking system consisting in a lever which in the closed

position obliges the appendixes of the terminal ring to approach imprisoning forcefully the terminal, whilst in the open position said lock allows the separation of said appendixes and the terminal release.

[0011] The disclosed terminal, in grace to its design further to being quick for the opening and closing operations does not need any special tool, by which it is of a simple handling for the user without any loss of efficiency, doing without bolts and nuts with the advantages that this means of a quick assembly, without the need of using tools, simple structure of the terminal, thightening mechanism by lever and easy dismantling.

[0012] Other details and characteristics of the present application for a Patent of Invention will be manifest through the reading of the description given herebelow, in which reference is made to the figures attached to this description where the above details are depicted in a rather schematic way. These details are given as an example, referring to a case of a possible practical embodiment, but is not limited to the details outlined; therefore this description must be considered from an illustrative point of view and with no limitations whatsoever.

[0013] There follows a report of the several elements numbered in the drawings accompanying the present Patent of Invention application: (10) terminal, (11) body, (12) perimeter skirt, (13) bracket or ring, (14, 15) appendixes, (16, 17) wings, (18, 19) ears, (20) lever, (21) bolt, (22) cam, (23) notch.

[0014] Figure 1 is a perspective view of the proposed terminal (10) with the lever (20) in the open position.

[0015] Figure 2 is a perspective view of the terminal (10) similar to the above in the closed position.

[0016] In one of the preferred embodiments of what is the object of the present Patent of Invention: the terminal (10) of body (11) is shaped with a bracket or ring (13), with a perimeter skirt (12), which open ends are extended with appendixes (14, 15). From the appendix (14) extends ears (18, 19) in which is mounted the part acting as a lever (20) and cam (22) at the same time.

[0017] The appendix (14), see Figure 1, extends in the side with rison the conductive portion of the electric lead (not shown in the Figures, Model of Utility No. 970 2159 (8)).

[0018] The bracket or ring (13) has a perimeter skirt (12), see Figure 1, which extends into other, showing ears (18, 19) which are provided with holes allowing the fixation and rotation of the lever (20).

[0019] In the appendix (15) is provided a notch (23) the object of which is that of preventing possible undesired effects over the terminal (10) as a consequence of imperfections of (10) as well as of the battery terminal not shown in the drawings, and guiding the ear (18).

[0020] The lever shows an elongated portion (20) with respect to the rotation axis (21) which is where the effort for opening or closing the bracket or ring (13) is applied.

[0021] The shorter portion (22) is the one acting as a cam (22), which pushes the appendix (15) against the appendix (14) of the bracket or ring (13) in order to ob-

tain the necessary tightening of the battery terminal.

[0022] The operation of terminal (10) is as follows; first and with pliers or a similar element are plied the wings (16, 17) over the conductive portion of the lead connecting the battery of the car with the different services of same, in order to proceed then to place the bracket or ring (13) in the battery terminals, in order to rotating the lever (20) around the bolt (21), which forces, in grace to the cam (22), the action in the appendixes (14, 15) to imprison forcefully the bracket or ring (13) against the lateral surface of the battery terminals.

[0023] When it s desired to open the electrical circuit of the car, there is to proceed in the reverse order to the disclosed in the above paragraph, i. e., with a rotation around the axis (21) of the lever (20) the terminal (10) is opened being free, since the cam (22) ceases to thigthen over the appendixes (14, 15), all that made without the use of any tool.

[0024] Enough disclosed what the present application for a Patent of Invention is in agreement with the attached figures, it s understood that can be introduced in same any detail modifications regarded as convenient, always provided that any the modifications entered do not depart from the essence of the present Patent of Invention as summarized in the following claims.

Claims

1. BATTERY TERMINAL WITH CAM FASTENING, of those shaped with a bracket or ring (13) which open ends extend by appendixes (14, 15) which approach and imprison the battery terminal with the help of a simple lever in combination with bridges mounted on said appendixes (14, 15), characterized in that one of the appendix (14) has ears (18, 19) passed through with the axis (21) over which rotates a part with a lever s (20) and cam (22) that function simultaneously.
2. BATTERY TERMINAL WITH CAM FASTENING, as per the above Claim characterized in that the appendix (15) is provided with a notch (23) which into which fits the ear (18)

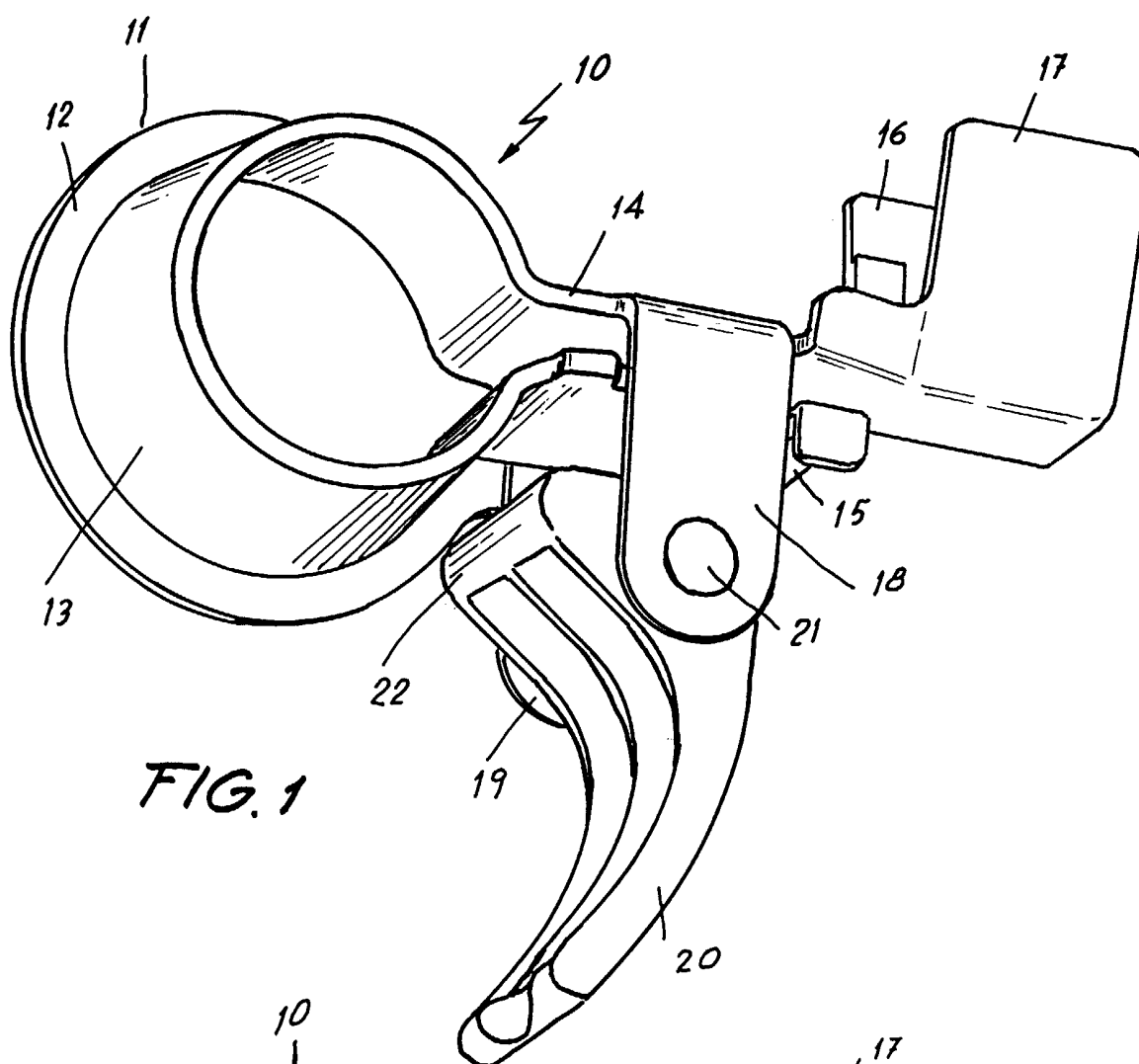


FIG. 1

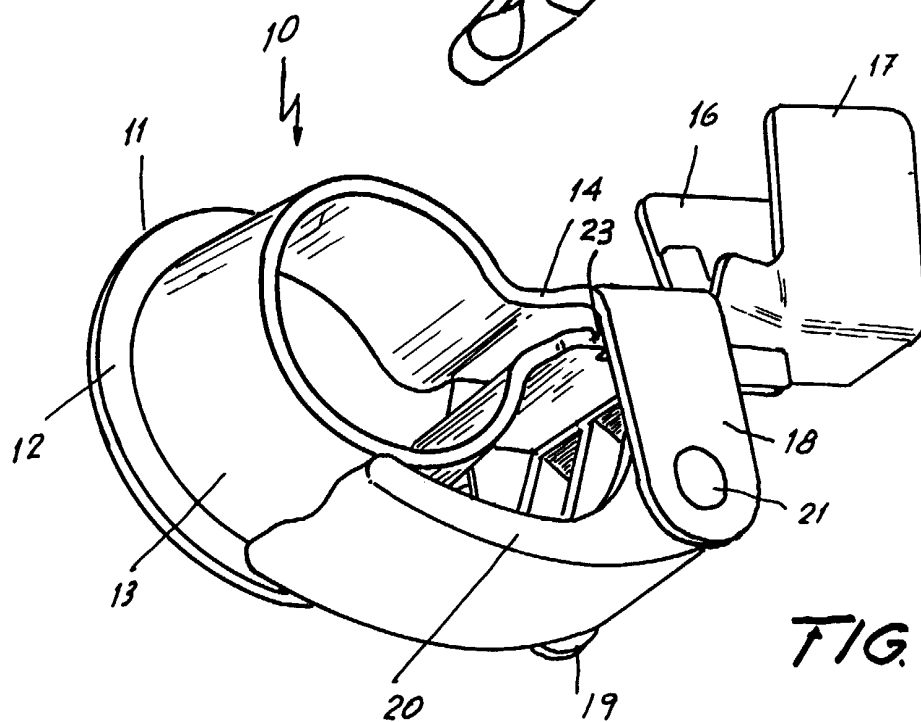


FIG. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 99 50 0096

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	EP 0 575 964 A (SUMITOMO WIRING SYSTEMS) 29 December 1993 (1993-12-29)	1	H01R11/28
Y	* abstract; figures 1,3 * * column 4, line 23 - column 5, line 26 * * column 6, line 11 - line 30 *	2	
Y	GB 727 351 A (I, HANS GUENTER EICHLER) 30 March 1955 (1955-03-30) * figures 1,2 * * page 1, line 55 - line 81 *	2	
A	US 1 754 053 A (DANIEL H. SCHLAEGEL) 8 April 1930 (1930-04-08) * figure 5 * * page 1, line 27 - page 2, line 4 *	1	
A	FR 2 636 783 A (ARMEL LOUIS) 23 March 1990 (1990-03-23) * abstract; figures 3,12 * * page 1, line 19 - page 2, line 29 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H01R
Place of search	Date of completion of the search	Examiner	
THE HAGUE	19 October 1999	Serrano Funcia, J	
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P4/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 50 0096

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The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82