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(54) **Electromagnetic safety relay**

(57) An electromagnetic safety relay (90) comprising a coil (10) wound about a core, a metal frame (20), a movable armature (30) secured to the frame (20) and used to operate an assembly of contact carrier strips (50) consisting of fixed strips (5F) and mobile strips (5M), an actuator (40) guiding the movement of the strips (50), and a return spring (80) positioned below the frame (20) such that the system of active forces (given by the movable armature (30)) and of reactive forces (given by the return spring (80)) is asymmetric, ie is applied on the same side of the actuator (40). This constructional arrangement enables the fixed contact carrier strips (5F) to be given sufficient rigidity and enables a single compact and robust actuator model (40) to be used for the various configurations of the electrical contacts (70) of the relay (90). Moreover, differential malfunctions between the two sides of the assembly of electrical contacts (70) are prevented and it becomes possible to determine and indicate anomalies in the case of breakage of the actuator (40) with the relay (90) energized.

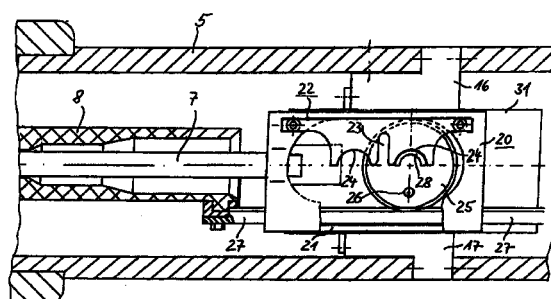


FIG 1

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# EUROPEAN SEARCH REPORT

Application Number  
EP 98 20 0107

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       |                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
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|                                                                                                                                                                                                                                                        |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       | H01H                                         |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       |                                              |
| Place of search<br><b>THE HAGUE</b>                                                                                                                                                                                                                    |                                                                                                                                                                 | Date of completion of the search<br><b>21 January 1999</b>                                                                                                                                                                                                                            | Examiner<br><b>Ramírez Fueyo, M</b>          |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                                                 | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                              |

EPO FORM 1503 03.82 (P4/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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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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