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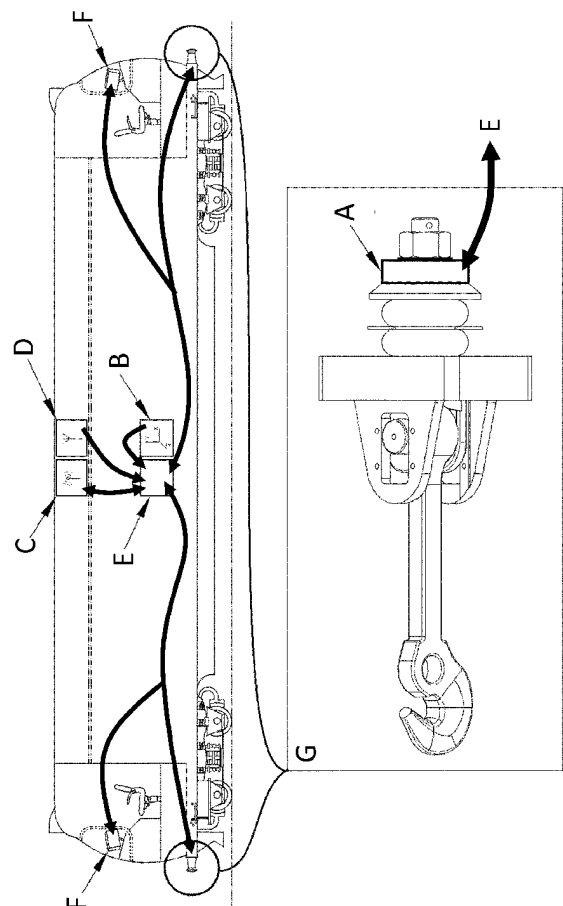
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(62) Document number(s) of the earlier application(s) in
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(54) **AUTOMATIC DETECTION OF TRAIN DERAILMENT**

(57) The invention has for object an automatic radio-electro-mechanical system for the detection of the derailment of one or more railway wagons towed by a locomotive, with an alarm signal in the cabin. The system involves the use of 2 electromechanical sensors (load cells) for detecting the tensile stress to the hook (one for each direction of travel of the locomotive), an accelerometer, a GPS module and a module that uses common GSM-R mobile telephone technology specific for railways (Global System for Mobile Communications - Railways). The electro-mechanical sensors are constituted by load cells of the type to bending, tension, or cut, equipped with strain gauges installed preferably according to the electrical diagram of a double full Wheatstone bridge in order to detect the stress at the locomotive traction hook. In the preferred embodiment, the accelerometer detects at least the acceleration on three axes. In the preferred embodiment, the GPS module detects the data according to the NMEA 0183 standard. In the preferred embodiment, the mobile phone module sends and receives data to and from remote via GSM-R commonly used by railways for air transmission and reception. The audio and visual alarm in the cabin is automatically launched by the software following the processing of the data related to the abnormal driving or when a derailment occurs. The system involves the use of an HMI (human machine interface) for the installation and operation of the software.



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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 20 November 2024	Examiner Janssen, Axel
CATEGORY OF CITED DOCUMENTS			
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		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	

ANNEX TO THE EUROPEAN SEARCH REPORT
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