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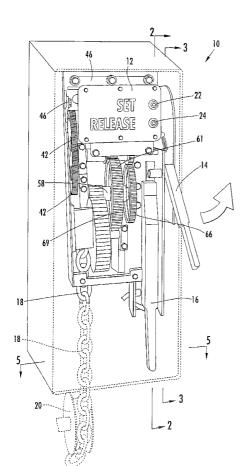
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(54) Title: LOCOMOTIVE PARKING BRAKE



(57) Abstract: An electronically controlled parking or safety brake is disclosed. The brake is capable of reliably immobilizing a locomotive (9). A brake may employ both manual and automatic modes, and be capable of providing for either mode in operation. The electronic control system facilitates the setting and releasing of the brake in the automatic mode without any manual manipulation or readjustment of gears, handles, levers, pawls, and the like being required by an operator. An actuating mechanism (10) is capable of operaitn in a first mode to set the brake and in a second mode to release the brake. A motor (50), clutch (48), gearing means (47), ratchet mechansim (81), solenoid (86), and electronic control system are operatively connected to a chain (18) to set the brake on the locomotive wheel (79). Further, remote operation of the brake is possible through hard wired control signals or by wireless communication using a transmitter to send signals to the electronic control means. Further, determination of the applied brake force may be through local sensing of motor current or remote sensing through a load sensor located at the wheel braking device.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B61H13/04 B60 B60T7/16 B60T13/74 B60T15/14 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) B60T B61H IPC 7 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) WPI Data, PAJ, EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category ° 1,2,5-9, US 5 004 077 A (CARLSON HAROLD L ET AL) 20,22,23 2 April 1991 (1991-04-02) column 3, line 24 -column 5, line 2; figures 1-1,7,20 DE 196 03 193 C (WILKE RICHARD) Α 3 April 1997 (1997-04-03) abstract; figure 1 1,7,20 DE 197 05 105 A (KUESTER & CO GMBH) Α 14 August 1997 (1997-08-14) column 5, line 32 -column 7, line 63; figures 1-5 1,7,20 US 6 039 158 A (STEINBACHER DAVID M ET Α AL) 21 March 2000 (2000-03-21) cited in the application the whole document Patent family members are listed in annex. Further documents are listed in the continuation of box C. ° Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not cited to understand the principle or theory underlying the considered to be of particular relevance invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-"O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. "P" document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 12/09/2002 4 September 2002 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Blurton, M Fax: (+31-70) 340-3016

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