

**EUROPEAN PATENT APPLICATION**

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**DE GB IT**

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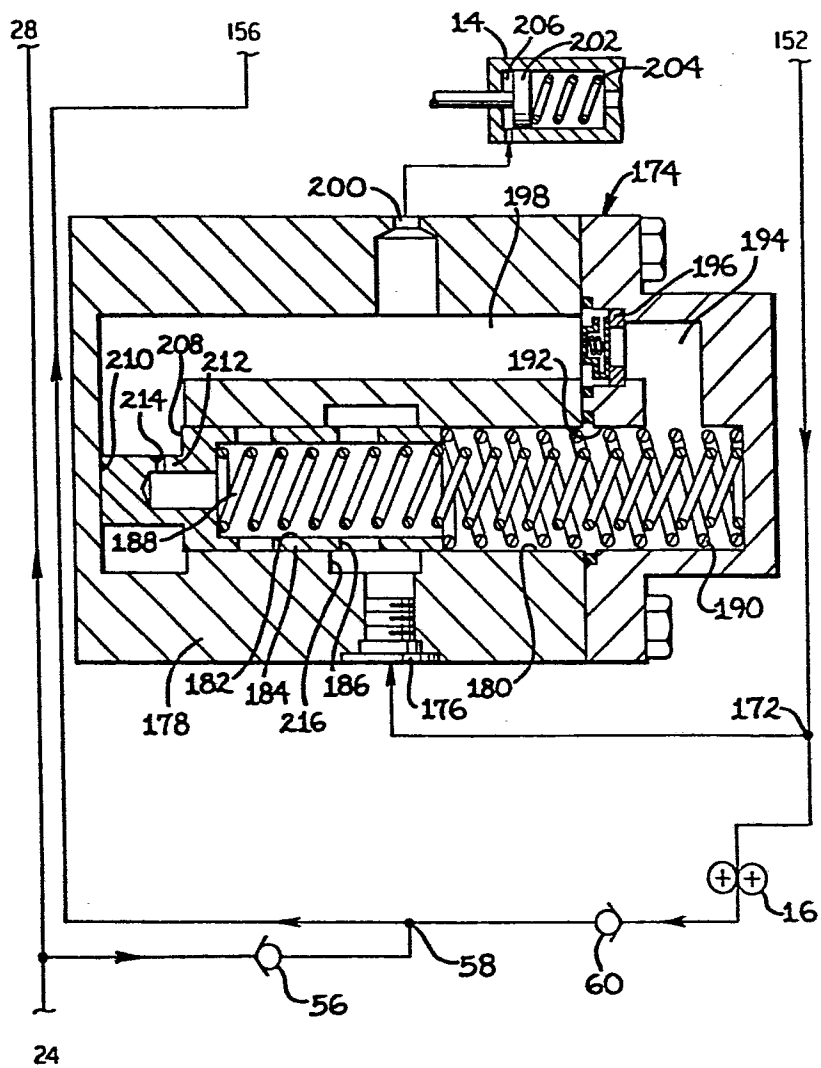
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**Draw works control system.**

In a control system (28) for a hydraulically operated draw works or the like having a hydraulically disengaged brake (14), a transmission (10, 12) and a brake control valve (114, 122), an accumulator (174) is provided having a check valve (196) connected between the brake control valve outlet (152) and the brake (14) to modulate application of the brake (14) when it is applied after the brake (14) has been fully released and to provide unmodulation application of the brake (14) when it is applied after the brake (14) has been only partially released, thereby to minimize shock in the draw works components when a load is lowered rapidly and the brake is then applied and yet provide rapid actuation of the brake when the load is being lowered slowly.

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Fig 4.





DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<u>DE - A - 1 431 991 (GUTEHOFFNUNGS-HUTTE STERKRADE)</u> * Page 1, paragraph 1; page 2, last paragraph; page 4, 2 last paragraphs; page 5, complete; page 6, paragraphs 2 and 3 * --	1,2,3,6	B 66 D 5/26
	<u>DE - B - 1 011 132 (SIEMENS-SCHUTTKERTWERKE)</u> * Complete * --	1,2,4,5,6	TECHNICAL FIELDS SEARCHED (Int. Cl.)
	<u>US - A - 4 088 305 (WINEBURNER)</u> * Column 5, lines 54-68; column 6, complete; column 7, lines 1-62 * --	3-6	B 66 D F 16 D
	<u>US - A - 3 463 278 (BROEKER)</u> * Column 1, lines 29-63; figure 2 * --	1,3,6	
	<u>US - A - 2 912 286 (EVANS)</u> * Column 1, lines 15-47; column 2, lines 44-72; column 3, lines 1-73 * --	1	CATEGORY OF CITED DOCUMENTS
A	<u>US - A - 3 578 817 (EASTCOTT)</u>		X: particularly relevant
A	<u>US - A - 3 170 543 (COOK)</u>		A: technological background
A	<u>US - A - 4 046 162 (RODEGHIERO)</u>		O: non-written disclosure
	./.		P: intermediate document
			T: theory or principle underlying the invention
			E: conflicting application
			D: document cited in the application
			L: citation for other reasons
			&: member of the same patent family.
			corresponding document
<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
The Hague	28-11-1980	VAN DEN BERGHE	

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