

## Title (en)

HYDRAULIC STEERING SYSTEM AND AUTOMOTIVE WORKS-VEHICLE PROVIDED WITH SUCH A STEERING SYSTEM

## Publication

**EP 0367038 B1 19921230 (DE)**

## Application

**EP 89119462 A 19891020**

## Priority

US 26239988 A 19881025

## Abstract (en)

[origin: US4915186A] The present invention is directed to a mechanical hydraulic pressure dampening devices for use in a steering system of an articulated self-propelled work vehicle. The dampening devices are hydraulically positioned between the steering cylinders of the work vehicle and absorb hydraulic pressure spikes in the steering system. In the preferred embodiment, the pressure dampener comprises a pressure accumulator that is fluidly coupled to the steering cylinder by a shuttle check valve. The shuttle check valve shifts in response to a pressure spike so that it can be absorbed by the pressure accumulator. In a second embodiment, the pressure dampener comprises a cylinder having two pistons that are biased into a normal position by a spring extending between the pistons. Spaces are formed on either side of the pistons and are hydraulically coupled to the steering cylinders. A central space formed between the two pistons is hydraulically coupled to a sump return line. Both of the pistons are also provided with restricted orifice having check valves which permit hydraulic fluid to flow out of the central space and into the adjoining outer spaces. A third embodiment of the pressure dampener comprises a cylinder having a single piston which is biased into a normal position by two springs located on either side of the piston. Each of the spaces formed on either side of the piston are hydraulically coupled to one of the steering cylinders.

## IPC 1-7

**E02F 9/08**; **E02F 9/22**

## IPC 8 full level

**B62D 5/07** (2006.01); **E02F 9/08** (2006.01); **E02F 9/22** (2006.01); **F15B 11/00** (2006.01)

## CPC (source: EP US)

**E02F 9/0841** (2013.01 - EP US); **E02F 9/2217** (2013.01 - EP US); **E02F 9/225** (2013.01 - EP US)

## Cited by

EP0909690A3

## Designated contracting state (EPC)

DE FR GB IT

## DOCDB simple family (publication)

**EP 0367038 A1 19900509**; **EP 0367038 B1 19921230**; **EP 0367038 B2 19950517**; CA 1320980 C 19930803; DE 58903167 D1 19930211; JP 2937364 B2 19990823; JP H02171387 A 19900703; US 4915186 A 19900410

## DOCDB simple family (application)

**EP 89119462 A 19891020**; CA 608135 A 19890811; DE 58903167 T 19891020; JP 27830089 A 19891025; US 26239988 A 19881025