

Title (en)
MULTISTAGE ROW-PARALLEL DAMPER FOR A TORQUE CONVERTER

Title (de)
MEHRSTUFIGER REIHEN-/PARALLEL-DÄMPFER FÜR EINEN DREHMOMENTWANDLER

Title (fr)
AMORTISSEUR EN RANGEE-PARALLELE A PLUSIEURS ETAGES POUR CONVERTISSEUR DE COUPLE

Publication
EP 1945968 A2 20080723 (DE)

Application
EP 06775922 A 20060905

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Abstract (en)
[origin: US2007051577A1] A method and apparatus for damping torque output from a torque converter turbine to input to a transmission. The damper includes: (a) an input device for connection to an engine; (b) a first spring set having drive springs; (c) a second spring set having secondary springs; (d) a third spring set having parallel springs; (e) a floating apparatus; and (f) an output device. Springs of the first spring set are compressible in a forward direction toward the output device as a result of torque applied to the input device and compressible in a reverse direction toward the input device as a result of torque applied by the output device. The first and second spring sets are in series between the input device and output device during a first forward compression of the first spring set, and the series is in parallel with the third spring set between the input apparatus and output device during a second compression of the first spring set. The first spring set is in parallel with the third spring set between the input apparatus and output device without the second spring set during a third compression of the first spring set. The floating apparatus is between the input apparatus and the output device and between springs of said first and second spring sets during the first forward compression of the first spring set. The method includes the steps of: (a) operating a spring set one and a spring set two in series between torque input and torque output; (b) placing a spring set three in parallel with spring sets one and two allowing more torque per degree of wind-up than in step (a); and (c) removing spring set two from series with spring set one resulting more torque per degree of wind-up than in step (b).

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