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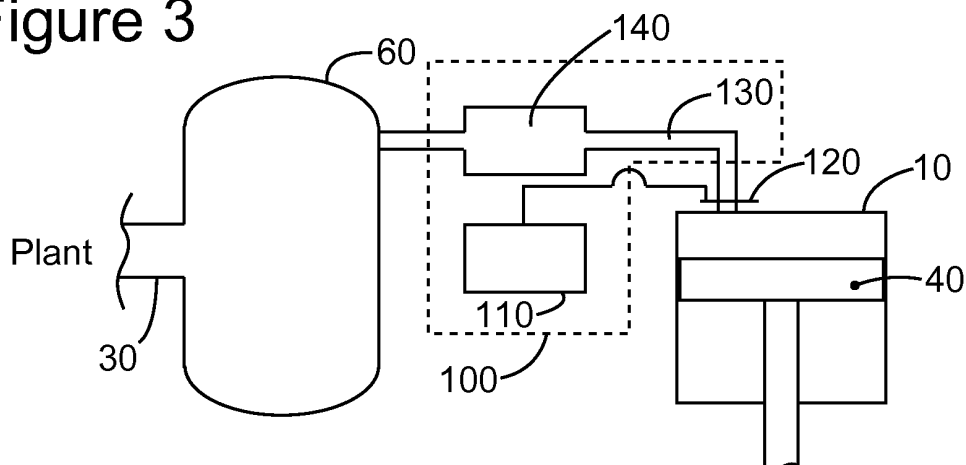
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(54) **Methods and devices for constructively using the pressure pulsations in reciprocating compressors installations**

(57) Apparatuses and methods for constructively use pressure pulses to enhance the volumetric efficiency of a reciprocating compressor are provided. An apparatus includes a gas circulation device and a controller 110. The gas circulation device provides a path through which the gas circulates between a reciprocating compressor 10 and a volume bottle 50 buffering the reciprocating compressor from an installation. The gas circulation device is configured to have to have a resonance frequency

substantially equal to a frequency of performing compression cycles in the reciprocating compressor. The controller 110 is configured to control timing of switching a valve located between the reciprocating compressor and the gas circulation device, in order to use constructively pressure pulsations occurring in the gas circulation device, to enhance the volumetric efficiency of the reciprocating compressor.

**Figure 3**





## EUROPEAN SEARCH REPORT

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EP 12 19 6357

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F04B
Place of search		Date of completion of the search	Examiner
Munich		18 January 2017	Jurado Orenes, A
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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