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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Michelle K. Lee

Deputy Director of the United States Patent and Trademark Office



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(12) **United States Patent**
Vagapov et al.

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(54) **HYDRAULIC JAR**

USPC 166/301, 178, 311, 99
See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 462 days.

(57) **ABSTRACT**

The present invention relates to hydraulic jars which include a jar body; a spindle axially movable within the jar body and coupled to the jar body by means of a helical splined coupling; the spindle being connectable to a pipe string and the stuck object; a cylinder concentrically placed within the jar body with a radial gap, and having chambers for filling with a work fluid, the chambers being separated by a piston and fluidly connected by a channel, wherein the channel is provided by a back valve. The piston is axially movable within the cylinder, and is connectable to the spindle by means of a tractive rod, and to the body by means of a compensative rod. The piston is further provided with elastic split compression rings having initial gaps equal or close to zero.

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E21B 31/00 (2006.01)
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CPC **E21B 31/1135** (2013.01)
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(58) **Field of Classification Search**
CPC E21B 31/113; E21B 31/1135

8 Claims, 2 Drawing Sheets

