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TRANSLATION

HYDRAULIC VOLUMETRIC PUMP

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FOREIGN TECHNOLOGY DIVISION

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HYDRAULIC VOLUMETRIC PUMP

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Hydraulic Volumetric Pump

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The invention concerns a volumetric pump with a pressure chamber provided with two electrodes, used for creation of spark discharges, causing pressure pulses in the compressed liquid.

In a known pump of analogous mode of operation not enough provisions were made to prevent the ejection of liquid from the pressure chamber into the feeding channel.

To eliminate the mentioned deficiency in the proposed pump the feeder is made of several channels, connected with each other in sequence under an angle of 90°.

In fig.1 and 2 is shown the pump in two mutually perpendicular plans. In fig. 3 - the electric circuit for connecting the pump.

The pump consists of body 1 and receiver 2, provided for equilibration of pulsating pressure of the liquid with a dampfer, the air pad of which is included in the rubber shell 3. The pressure chamber 4 connected with the hollow of the receiver by a window, which can be covered by a spring type check valve 5. To boost the movement of the liquid in direction of the receiver the wall of chamber 4 situated opposite valve 5, is of semispherical form.

In body 1 with the aid of textolite insulators 6 and 7 and bushings 8 are fastened two electrodes 9 and 10. The negative electrode 10 is grounded and is provided at the tip with disk 11 entering into the pressure chamber 4.

The receiving channel for delivering compressed liquid into the chamber 4 is composed of several channels 12, 13, 14 and 15 connected with each other under an

angle of 90°. The channels are provided with dead ends for more effective prevention of liquid ejection from pressure chamber 4 under the effect of pressure pulses. Feeding of liquid to channels 12,13,14 and 15 is realized by pipe line 16 under atmospheric pressure, and discharge of same is realized over pipe line 17 under high pressure, originating in the pressure chamber 4 as result of spark discharges obtained on electrodes 9 and 10 . Thr air bubbles separated from the liquid at the time of spark discharges are removed from chamber 4 through an outlet window into the receiver. In case the pump is in operation in upside down position, when chamber 4 is situated with its outlet window sideways or downwards, the tapping of air bubbles is done through feeder channel 16.

Electrodes 9 and 10 are connected to high voltage transformer 18 through additional spark gaps 19 and 20, forming the basic spark discharge on electrodes 9 and 10.

Control of pump delivery and pressure of compressed liquid is realized by changing the voltage and capacitance of the electric discharge circuit, and by changing the length of the spark gap between electrodes 9 and 10 and spark gaps 19 and 20.

Object of Invention

1. Hydraulic volumetric pump with pressure chamber, fed liquid through a feeder and equippen with pressure check valve and two electrodes, used for the obtainment of spark discharges and for the creation of pulsating pressure and with a nipple of a pressure pipe line, characterized by the fact that, for the purpose of preventing the ejection of liquid into the feeder pipe line, the pump is provided with an intake suction elbowed channel, the elbows of which are situated at a 90° angle.

2. Use in pump according to par.1 of a receiver with air damper, bounder by rubber shell-chamber.

3. The shape of the pump according to par.1.-3 is characterized by the fact, that the wall of the pressure chamber, situated opposite the check valve or outlet window, is made semi-spherical.

4. Form of pump according to par.1-3, is distinguished by the fact, that the control of the pressure magnitude of the compressed liquid in the pressure pipe line is realized by changing the electric parameters of the discharge circuit and by changing the length of the spark interval (gap) between the electrodes.

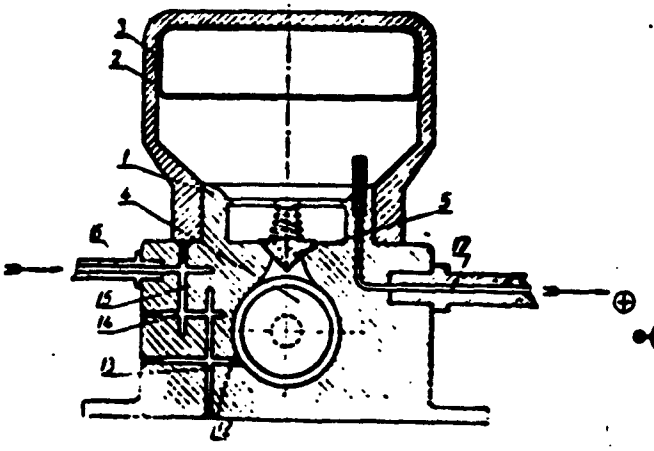

Fig. 1

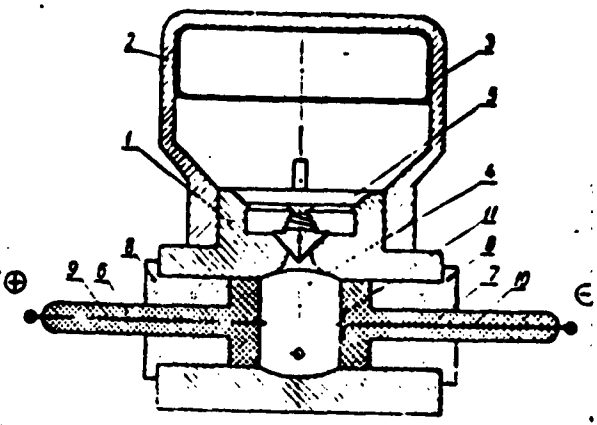

Fig. 2

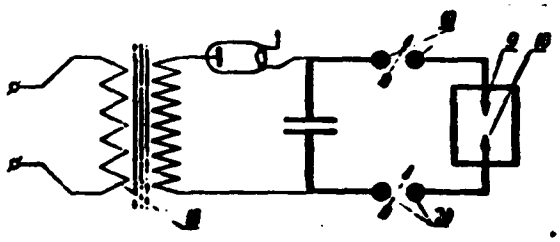

Fig. 3

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