

Discrete Power Converter

A new patented mechanical compound machine is proposed for converting the energy of the falling under gravity force flow of water (or another free-flowing mass) directly in the energy of reciprocating motion (simultaneously in vertical and horizontal plane) of the linkage of machine. The kinematic scheme of machine is based on particular combination of two rocking levers which are provided with periodical working strokes. The machine is capable to accumulate periodically the working mass into levering up capacities and to multiply (as mechanical advantage) the gravity force (as effort) during of each discrete stroke in accordance to law of the lever. Due to mechanical feedbacks the mechanism is switching between lower and higher position as sequence of discrete actions, so that it operates in free-running mode (as oscillator) under gravity force. Discrete Power Converter (DPC or Kornich machine) can be connected in easy way (without some intermediate mechanisms) with mechanical loads of reciprocal nature (piston pumps, for example). The mechanical loads of rocking nature (sieve, for example) can be applied to the main shaft (periodical torque generating) at the same time. As result the total efficiency and reliability of the system will be increased as well complexity and cost price will be decreased. The usage of DPC for practical applications allows expanding the possibilities of gravity force as prime mover in addition to water wheel as simple machine, for example. In addition to the transformation of mechanical energy the DPC is able to split the input stream of free-flowing mass on two equal output streams, separated in space depending on the geometry of the converter. The principal kinematic scheme of DPC is represented on Fig. 1. More technical details are available on: <http://dpc-renewable-energy.com/> The working model of DPC:

<https://www.youtube.com/watch?v=8W5SY651wXg&feature=youtu.be>

Input stream of moving mass

(see Table 1, 2; # 4.1 – 4.11)

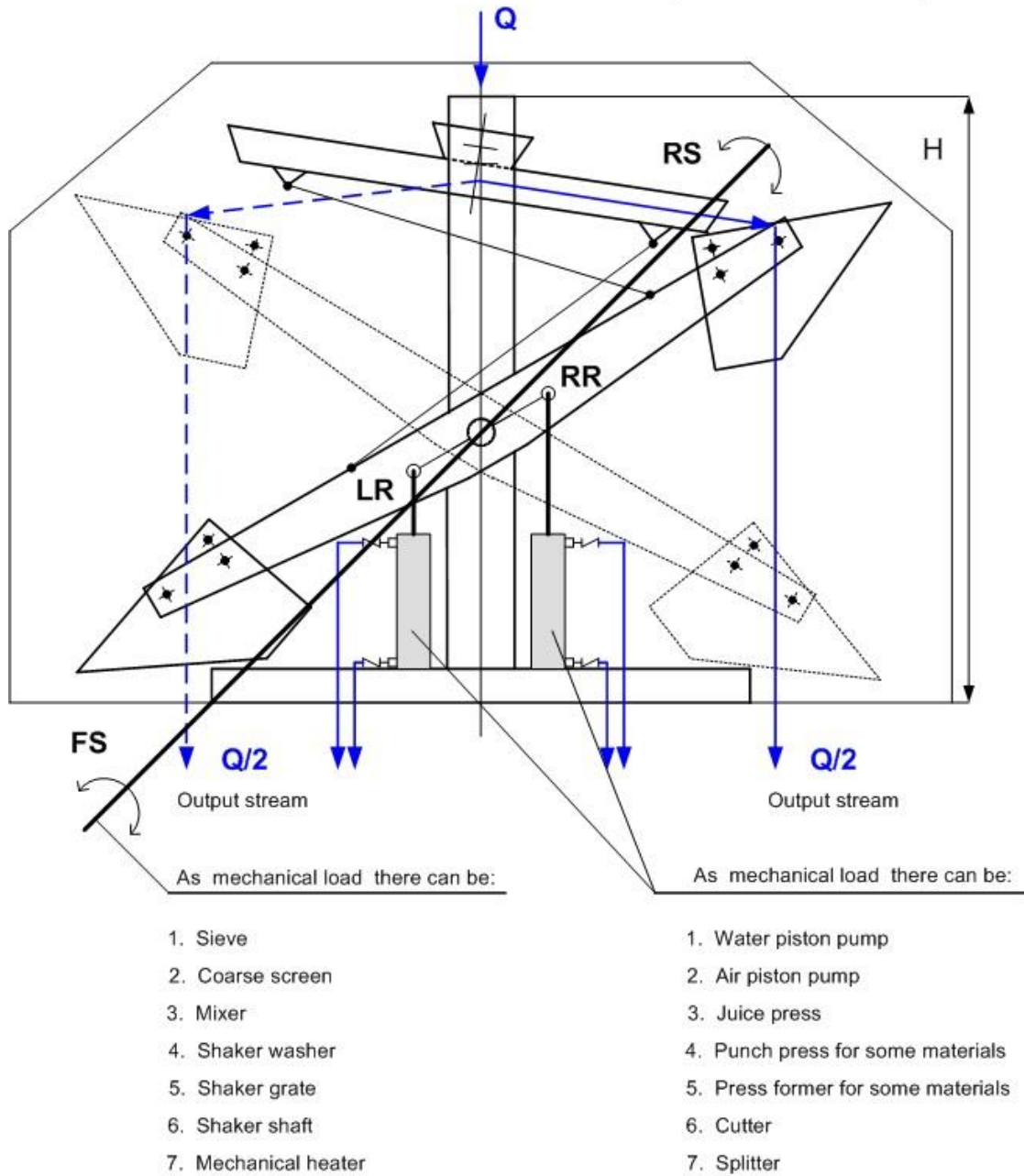


Fig. 1

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