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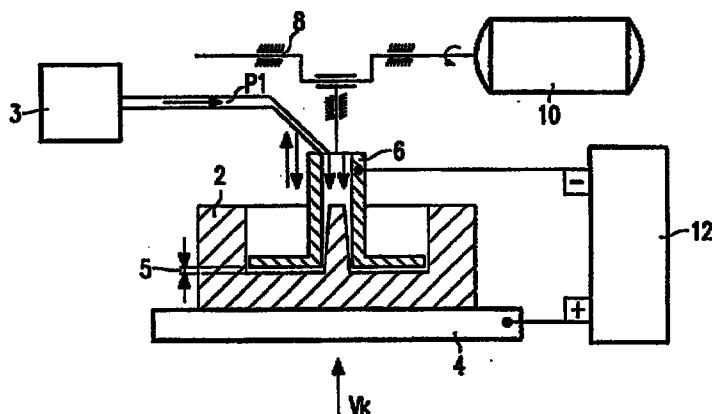
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(54) Title: METHOD OF ELECTROCHEMICAL MACHINING BY BIPOLAR PULSES



(57) Abstract

Method of electrochemically machining an electrically conductive workpiece (2) in an electrolyte by applying bipolar electric pulses between the workpiece (2) and an electrically conductive electrode (6), one or more current pulses of normal polarity alternating with voltage pulses of opposite polarity. The amplitude (U_n) of the voltage pulses is adjusted between two predetermined values (U_{n1} , U_{n2}) derived from the occurrence of a given surface quality of the workpiece (2) and the occurrence of wear of the electrode (6). The derivation is effected by means of at least one test which precedes the machining of the workpiece (2). During the test the amplitude (U_n) of the voltage pulses is increased gradually from an initial value to a final value. The two predetermined values (U_{n1} , U_{n2}) are determined upon the occurrence of a sign reversal in the difference between successive values of a parameter which is representative of a property of a gap (5) between the electrode (6) and the workpiece (2). The parameter may be the amplitude (U_{min}) of a global minimum in the voltage across the gap (5) during the current pulses, which global minimum results from an oscillatory movement of the workpiece (2) and the electrode (6) relative to one another. The parameter may also be the integral (Q_n) of the current across the gap (5) during the voltage pulses; or the integral (F_p) of the voltage across the gap (5) during the current pulses; or the resistance across the gap (5); or the size (S_t) of the gap (5).

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