CLAIMS

1. Device for generating percussive pulses or vibrations for a construction machine, with
   - a housing (6),
   - a piston (8) which is reversibly reciprocable in a working space in the housing (6) between a first reversal point and a second reversal point,
   - a pressure fluid supply (P), through which a pressure fluid can in each case be led into and out of the working space in the region of the first reversal point and the second reversal point, wherein the piston (8) can be set into the reversible movement in order to generate the percussive pulses or vibrations,
   - at least one controllable valve (9), through which the pressure fluid can be led into and/or out of the working space, and
   - a control unit (PLC) which is connected to the at least one controllable valve (9), wherein by the control unit (PLC) the movement of the piston (8) in the working space can be controlled and changed,

   characterized in that
   - the control unit (PLC) is designed to move the piston (8) at a frequency that corresponds to a resonance frequency of an overall arrangement consisting of the piston and the pressure fluid, the resonance frequency being dependent on at least one characteristic of the piston (8) and at least one parameter of the pressure fluid.

2. The device according to claim 1,
   characterized in that
   the valve (9) is an electromagnetic valve.

3. The device according to claim 1 or 2,
   characterized in that
   a measuring means (10) for determining a position of the piston (8) in the working space is provided.

4. The device according to claim 3,
characterized in that
the measuring means (10) has a linear sensor.

5. The device according to any one of claims 1 to 3,
characterized in that
on at least one reversal point a percussion surface is arranged, onto which the piston (8) strikes specifically to generate a percussive pulse.

6. The device according to any one of claims 1 to 4,
characterized in that
the overall arrangement also consisting of the housing, the resonance frequency also dependent on at least one characteristic of the housing.

7. The device according to any one of claims 1 to 5,
characterized in that
the mass of the piston (8) and/or the housing can be changed by mounting or removing adjustment weights.

8. Construction machine
characterized in that
a device for generating percussive pulses or vibrations according to any one of claims 1 to 7 is arranged.

9. The construction machine according to claim 8,
characterized in that t
this construction machine is an earth drilling apparatus.

10. The construction machine according to claim 7,
characterized in that t
this construction machine is a pile driver or a vibrator.

11. Method for generating percussive pulses or vibrations for a construction machine, in particular with a device according to any one of claims 1 to 6,
in which
- a piston (8) is reversibly reciprocated in a working space in a housing between a first reversal point and a second reversal point,

- wherein, for the purpose of generating the percussive pulses or vibrations, the piston (8) is set into a reversible movement by means of a pressure fluid and the pressure fluid is led into and out of the working space in the region of the first reversal point and the second reversal point,
- wherein a control unit (PLC) controls at least one controllable valve (9), through which the pressure fluid is led into and/or out of the working space,
  and
- by the control unit (PLC) the movement of the piston (8) is controlled,

characterized in that

- the at least one valve (9) is controlled by the control unit (PLC) such that the piston (8) is moved at a frequency that corresponds to a resonance frequency of an overall arrangement consisting of the piston (8) and the pressure fluid, the resonance frequency being dependent on at least one characteristic of the piston (8) and at least one parameter of the pressure fluid.