

Title (en)
PROCESS AND DEVICE FOR CONTROLLING A RAM INSTALLATION

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Application
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Abstract (en)
[origin: EP0447837A2] A process for reversing a compressed-air-operated ram installation for its control positions of forward travel and return travel in the ground is specified, in which arrangement rotation is performed against a relatively slight arresting force for the reversal, and the force of the operating compressed air is used for locking the control means in the individual control positions and for damping the transmission of vibrations from a ram housing to the control means. Reversal of the ram installation is thereby reliably prevented while the operating compressed air is applied. <??>This process can be used in a ram installation which has a forward travel and/or a return travel. It has a percussion piston (2) which can be moved axially in a reciprocating manner in a ram housing (1) by compressed air, a control means (3) controlling the compressed air in such a way that the percussion piston (2) strikes the front side of the ram housing (1) during the forward travel of the ram installation or the rear side of the ram housing (1) during the return travel of the ram installation. This control means (3) projects on the one side into the part of the percussion piston (2) remote from the tip of the piston and interacts with control ports in the percussion piston (2) which result in the control action from forward to return movement of the percussion piston (2). On the other side, it is displaceably seated in a lid (4) closing off the ram housing (1) and is connected to a hose connection (5), passed through this lid (4), for connecting to an air supply hose (6). A locking means (7) for the control means (3) is provided which temporarily fixes the control means (3) relative to the lid (4) in its individual control positions, which are set by turning the air supply hose (6). According to the invention, the locking means (7) is at the same time designed as a damping means, in which arrangement at least one air chamber (7.1), variable in its size, is provided as locking and damping element and is arranged essentially parallel to the axis of the control means (3). The air chamber (7.1) is defined at the end face by a rear and a front closure ring (7.2.1 and 7.3.1 respectively) which are axially displaceable relative to one another. The rear closure ring (7.2.1) can be connected or is connected to the control means (3), and the front closure ring (7.3.1) can be connected or is connected to the lid (4) or the ram housing (1). An outer circumferential surface (3.1) of the control means (3) on the one hand and a cylinder-like inner surface (4.1) of the lid (4) on the other hand are provided as axial walls of the air chamber (7.1). Provided between the closure rings (7.2.1 and 7.3.1) are at least two energy-accumulator elements (7.4) which push these closure rings (7.2.1 and 7.3.1) apart. A positioning device (7.5) which is set up for interacting with the front closure ring (7.3.1) on the one hand and with the control means (3) on the other hand fixes each of the control positions by interlocking the control means relative to the lid. The air chamber (7.1) is connected by a connecting line (8) to a space (9) holding the compressed air and can be filled with or drained of compressed air from this space (9), the compressed air preventing reversal during the forward or return travel.

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