

ABSTRACT

HYDRAULIC CONTROL CIRCUIT AND VALVE ASSEMBLY

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A hydraulic power and control system for operating a reciprocating hydraulic mechanism including pump means connected to the hydraulic mechanism, a continuous torque hydraulic motor, a direction control driven by the motor to sequentially direct hydraulic power fluid to separate inlets of the mechanism, an escapement for restraining the motor at 180° intervals of rotation for sequentially holding the direction control at two separate positions, one for supplying one inlet and the other for supplying the other inlet of the mechanism, and hydraulic limit valves for controlling the escapement when a reciprocating member of the mechanism reaches the end of each stroke. One embodiment has two constant volume hydraulic pumps connected with the hydraulic mechanism through a reversing valve assembly operated by a scotch yoke connected with the escapement. Another embodiment has a reversible variable volume hydraulic pump controlled by an operating link coupled to a cam follower operating in a continuous cam groove of a rotary cam connected with the escapement. Also disclosed is an acceleration and deceleration control valve assembly including the escapement, the continuous torque motor, pilot piston control assemblies for the escapement, the scotch yoke mechanism, and the reversing valve from the hydraulic pumps.