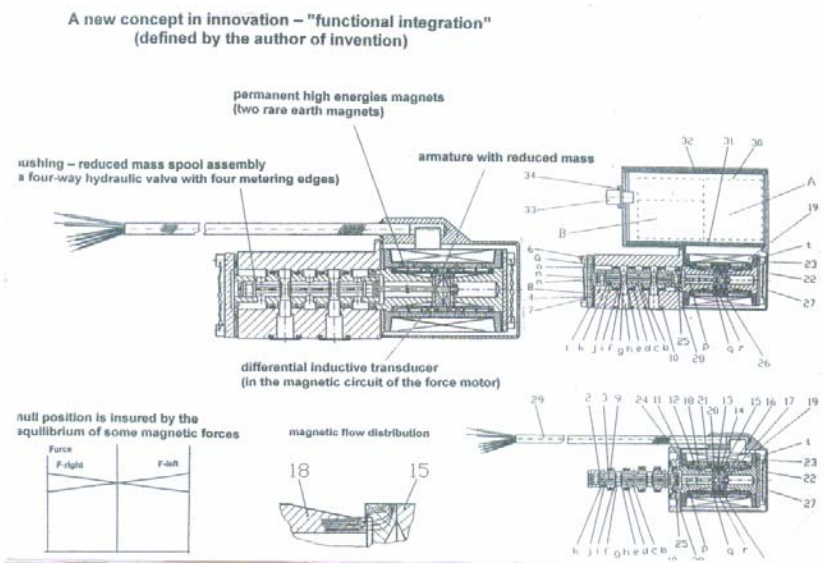
CCPCMA - Inventions

A New Direct Drive Servovalve (DDSV) , with a Simplified Mechanical and Electrical Structure

Author: **Ion Ionescu** – **Patent Application no. A/01050/December 22, 2003** ("**Genius" medal** – Budapest, 2004; **Bronze medal** at the 53th World Exhibition of Innovation, Research and New Technology – Bruxelles, 2004; **Bronze medal** at the International Exhibition of Inventions – Geneva, 2005).
Conception: A new concept in innovation – **"functional integration"** (defined by author).
Destination: Flow regulation to drive hydraulic actuators or motors in closed-loop servo-systems in aeronautical field (autostabilization systems, autopilot systems, nosewheel control, kerosene feed regulation, spoiler actuator etc.), torpedo fin control, elevation and bearing control for tank turrets, hydraulic circuits for submarines, robots, machine-tools etc.



Advantages:
- the decrease of the production cost;
- the number of the pieces is reduced/ decreased;
- ingenious construction, extremely simple;
- the LVDT is eliminated, keeping an electrical feedback for spool control in closed loop, without introducing extra pieces, as in case of LVDT;
- it keeps the flow linearity; the special construction elastic membrane is eliminated;
- a more reduced movable mass, resulting a large frequency band;
- simple configuration of the magnetic circuit with samarium cobalt magnets or others with a more reduced price;
- simple adjustment of the zero position.

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