

CPC COOPERATIVE PATENT CLASSIFICATION

F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

ENGINEERING IN GENERAL

F15 FLUID-PRESSURE ACTUATORS; HYDRAULICS OR PNEUMATICS IN GENERAL

F15C FLUID-CIRCUIT ELEMENTS PREDOMINANTLY USED FOR COMPUTING OR CONTROL PURPOSES (transducers [F15B 5/00](#), {[F15B 21/00](#)}; fluid dynamics in general [F15D](#); computer comprising fluid elements [G06D](#), [G06G](#); {electric control by means of electro-hydraulic or electro-pneumatic amplifiers [G05B 7/02](#)})

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- | | | |
|--|--------------|---|
| <p>1/00 Circuit elements having no moving parts</p> <p>NOTE</p> <p>Group F15C 1/22 takes precedence over groups F15C 1/08 - F15C 1/20.</p> <p>{This Note corresponds to IPC Note (1) relating to F15C 1/08 - F15C 1/20.}</p> | <p>1/005</p> | <ul style="list-style-type: none"> • {for measurement techniques, e.g. measuring from a distance; for detection devices, e.g. for presence detection; for sorting measured properties (testing); for gyrometers; for analysis; for chromatography (fluid information or impulse transducers F15B 5/00; postal sorting according to size B07C 1/10; dial gauges, spherometers G01B 3/22, G01B 5/22; gyroscopic apparatus G01C 19/00; viscosimeters G01N 11/00; speed measurement, flowmeters G01P } |
| <p>1/001</p> <ul style="list-style-type: none"> • {for punched-card machines (punched-card machines G06K); for typewriters (typewriters B41J); for keyboards; for conveying cards or tape; for conveying through tubes (transport through tubes B65G 51/00, B65G 53/00); for computers (non-electric computers G06C, G06D, G06G); for dc-ac transducers for information processing (dc-ac converters H02M); for signal transmission (telegraphic apparatus H04L) } | <p>1/006</p> | <ul style="list-style-type: none"> • {for aeronautics; for rockets (drives, controls); for satellites; for air cushion vehicles; for controlling vessels or torpedoes (injectors F04F 5/00; aircraft control by jet reaction B64C 15/00; air pressure regulation in aircraft B64D 13/04; instruments adapted to be mounted in aircraft B64D 43/00) } |
| <p>1/002</p> <ul style="list-style-type: none"> • {for controlling engines, turbines, compressors (starting, speed regulation, temperature control or the like) (control of internal-combustion piston engines F02D; of turbines F01D, F02C; of fans F04D 27/00; speedometers G01P) } | <p>1/007</p> | <ul style="list-style-type: none"> • {for indicating devices for fluid signals (output arrangements in electronic computers G06F 3/14; luminous advertising G09F 13/00; name or number plates with interchangeable characters G09F 7/00; fluid operating means for indicating or recording members in measuring instruments G01D 5/42; fluid information or pulse transducers for converting variations of fluid pressure into other physical quantities F15B 5/003) } |
| <p>1/003</p> <ul style="list-style-type: none"> • {for process regulation, (e.g. chemical processes, in boilers or the like); for machine tool control (e.g. sewing machines, automatic washing machines); for liquid level control; for controlling various mechanisms; for alarm circuits; for ac-dc transducers for control purposes (automatic washing machines D06F 33/00; electric regulation of mechanical working machines B23Q 35/00, G05B 19/00; valve-controlled servomotors F15B 9/08; thread feeding devices for sewing machines D05B 51/00; special provisions on lathes B23B 25/00, B23Q; non-electric signal transmission G08C 23/00) } | <p>1/008</p> | <ul style="list-style-type: none"> • {Other applications, e.g. for air conditioning, medical applications, other than in respirators, derricks for underwater separation of materials by coanda effect, weapons } |
| | <p>1/02</p> | <ul style="list-style-type: none"> • Details {, e.g. special constructional devices for circuits with fluid elements, such as resistances, capacitive circuit elements; devices preventing reaction coupling in composite elements (servomotor systems adapted for maintaining constant speed F15B 11/05); Switch boards; Programme devices (hydraulic programme control F15B 21/02) } |

- 1/04 . . Means for controlling fluid streams to fluid devices, e.g. by electric signals {or other signals, no mixing taking place between the signal and the flow to be controlled (fluid information or pulse transducers [F15B 5/00](#); electric regulation with electro-fluid amplifiers [G05B 7/02](#); fluid operating means for indicating or recording members in measuring instruments [G01D 5/42](#); distribution or supply devices for servomotors with electrically-controlled pilot valves [F15B 13/043](#)}
- 1/06 . . Constructional details; Selection of specified materials {; Constructional realisation of one single element; Canal shapes; Jet nozzles; Assembling an element with other devices, only if the element forms the main part ([F15C 5/00](#) takes precedence)}
- 1/08 . Boundary-layer devices, e.g. wall-attachment amplifiers {coanda effect (fluid oscillators of pulse generators [F15B 21/12](#))}
- 1/10 . . for digital operation, e.g. to form a logical flip-flop, OR-gate, NOR-gate {, AND-gate; Comparators; Pulse generators}
- 1/12 . . . Multiple arrangements thereof for performing operations of the same kind, e.g. majority gates, identity gates {(static stores [G11C 25/00](#)); Counting circuits; Sliding registers}
- 1/14 . Stream-interaction devices; Momentum-exchange devices, e.g. operating by exchange between two orthogonal fluid jets {; Proportional amplifiers}
- 1/143 . . {for digital operation, e.g. to form a logical flip-flop, OR-gate, NOR-gate, AND-gate ([F15C 1/10](#) takes precedence)}
- 1/146 . . {multiple arrangements thereof, forming counting circuits, sliding registers, integration circuits or the like ([F15C 1/12](#) take precedence)}
- 1/16 . Vortex devices, i.e. devices in which use is made of the pressure drop associated with vortex motion in a fluid {(vortex chambers [F15D 1/0015](#); vortex chambers as resistances [F15C 1/02](#); vortex chambers associated with amplifiers for improving the switching time by interaction [F15C 1/14](#))}
- 1/18 . Turbulence devices, i.e. devices in which a controlling stream will cause a laminar flow to become turbulent {; Diffusion amplifiers}
- 1/20 . Direct-impact devices i.e., devices in which two collinear opposing power streams are impacted
- 1/22 . Oscillators
- 3/00** **Circuit elements having moving parts (valves, construction of valves [F16K](#))**

NOTE

Group [F15C 3/16](#) takes precedence over groups [F15C 3/02](#) - [F15C 3/14](#).

- 3/002 . {using fluid droplets or similar deformable bodies (using solid balls [F15C 3/06](#))}
- 3/005 . {using loose plates or foils (using diaphragms [F15C 3/04](#))}
- 3/007 . {using a spiral spring which allows fluid bass upon deformation (using reeds [F15C 3/08](#))}
- 3/02 . using spool valves
- 3/04 . using diaphragms ({using loose plates or foils [F15C 3/005](#)); connection of valves to inflatable elastic bodies [B60C 29/00](#)}

- 3/06 . using balls {or pill-shaped disks (using fluid drops or similar deformable bodies [F15C 3/002](#))}
- 3/08 . using reeds {(using spiral springs [F15C 3/007](#))}
- 3/10 . using nozzles or jet pipes {(fluid information or pulse transducers [F15B 5/00](#))}
- 3/12 . . the nozzle or jet pipe being movable
- 3/14 . . the jet the nozzle being intercepted by a flap
- 3/16 . Oscillators
- 4/00** **Circuit elements characterised by their special functions**
- 5/00** **Manufacture of fluid circuit elements; Manufacture of assemblages of such elements {integrated circuits}**
- 7/00** **Hybrid elements, i.e. circuit elements having features according to groups [F15C 1/00](#) and [F15C 3/00](#)**