

# 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.

### 1/00 Circuit elements having no moving parts

#### NOTE

Group [F15C 1/22](#) takes precedence over groups [F15C 1/08](#) - [F15C 1/20](#).

{This Note corresponds to IPC Note (1) relating to [F15C 1/08](#) - [F15C 1/20](#).}

- 1/001 • {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](#))}
- 1/002 • {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](#))}
- 1/003 • {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](#))}

- 1/005 • {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](#))}
- 1/006 • {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](#))}
- 1/007 • {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](#))}
- 1/008 • {Other applications, e.g. for air conditioning, medical applications, other than in respirators, derricks for underwater separation of materials by coanda effect, weapons}
- 1/02 • 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**