

**CPC****COOPERATIVE PATENT CLASSIFICATION****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](#) } )

**F15C 1/00**

**Circuit elements having no moving parts**

**F15C 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](#) ) }

**F15C 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](#) ) }

**F15C 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](#); data processing machines for controlling production processes [G06F 15/46](#); 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](#) ) }

**F15C 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](#) ) }

**F15C 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](#) ) }

**F15C 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](#) ) }

**F15C 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 }

- F15C 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](#) ) }
- F15C 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](#) ) }
- F15C 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 ) }

**NOTE**

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

- F15C 1/08 . Boundary-layer devices, e.g. wall-attachment amplifiers { coanda effect ( fluid oscillators of pulse generators [F15B 21/12](#) ) }
- F15C 1/10 . . for digital operation, e.g. to form a logical flip-flop, OR-gate, NOR-gate, { AND-gate; Comparators; Pulse generators }
- F15C 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 }
- F15C 1/14 . Stream-interaction devices; Momentum-exchange devices, e.g. operating by exchange between two orthogonal fluid jets; { Proportional amplifiers }
- F15C 1/143 . . { for digital operation, e.g. to form a logical flip-flop, OR-gate, NOR-gate, AND-gate ( [F15C 1/10](#) takes precedence ) }
- F15C 1/146 . . { multiple arrangements thereof, forming counting circuits, sliding registers, integration circuits or the like ( [F15C 1/12](#) take precedence ) }
- F15C 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](#) ) }
- F15C 1/18 . Turbulence devices, i.e. devices in which a controlling stream will cause a laminar flow to become turbulent; { Diffusion amplifiers }
- F15C 1/20 . Direct-impact devices i.e., devices in which two collinear opposing power streams are impacted
- F15C 1/22 . Oscillators

**F15C 3/00** Circuit elements having moving parts ( valves, construction of valves [F16K](#) )

**NOTE**

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

- [F15C 3/002](#) . { using fluid droplets or similar deformable bodies ( using solid balls [F15C 3/06](#) ) }
- [F15C 3/005](#) . { using loose plates or foils ( using diaphragms [F15C 3/04](#) ) }
- [F15C 3/007](#) . { using a spiral spring which allows fluid bass upon deformation ( using reeds [F15C 3/08](#) ) }
- [F15C 3/02](#) . using spool valves
- [F15C 3/04](#) . using diaphragms ( { using loose plates or foils [F15C 3/005](#) }; connection of valves to inflatable elastic bodies [B60C 29/00](#) )
- [F15C 3/06](#) . using balls { or pill-shaped disks ( using fluid drops or similar deformable bodies [F15C 3/002](#) ) }
- [F15C 3/08](#) . using reeds ( { using spiral springs [F15C 3/007](#) ) }
- [F15C 3/10](#) . using nozzles or jet pipes ( { fluid information or pulse transducers [F15B 5/00](#) ) }
- [F15C 3/12](#) . . the nozzle or jet pipe being movable
- [F15C 3/14](#) . . the jet the nozzle being intercepted by a flap
- [F15C 3/16](#) . Oscillators
- [F15C 4/00](#)** **Circuit elements characterised by their special functions**
- [F15C 5/00](#)** **Manufacture of fluid circuit elements; Manufacture of assemblages of such elements { integrated circuits }**
- [F15C 7/00](#)** **Hybrid elements, i.e. circuit elements having features according to groups [F15C 1/00](#) and [F15C 3/00](#)**