

# CPC COOPERATIVE PATENT CLASSIFICATION

## F04F PUMPING OF FLUID BY DIRECT CONTACT OF ANOTHER FLUID OR BY USING INERTIA OF FLUID TO BE PUMPED {(evacuating by sorption F04B)}; SIPHONS {(Conveying materials in bulk by flows of gas, liquid of foam B65G 53/00)}

### NOTES

1. Attention is drawn to the notes preceding class F01.
2. Combinations of pumps belonging to this subclass with other pumps are only classified in this subclass if such other pumps are fore pumps of diffusion pumps.

<b>1/00</b>	<b>Pumps using positively or negatively pressurised fluid medium acting directly on the liquid to be pumped (using only negative pressure F04F 3/00; jet pumps F04F 5/00; siphons F04F 10/00)</b>	5/30	. . . . with axially-slidable combining nozzle
		5/32	. . . . with hinged flap in combining nozzle
		5/34	. . characterised by means for changing inducing fluid source
1/02	. using both positively and negatively pressurised fluid medium, e.g. alternating	5/36	. . characterised by using specific inducing fluid
1/04	. . generated by vaporising and condensing	5/38	. . . the inducing fluid being mercury vapour
1/06	. the fluid medium acting on the surface of the liquid to be pumped (F04F 1/02 takes precedence)	5/40	. . . the inducing fluid being oil vapour
1/08	. . specially adapted for raising liquids from great depth, e.g. in wells	5/42	. characterised by the input flow of inducing fluid medium being radial or tangential to output flow (cyclones B04C)
1/10	. . of multiple type, e.g. with two or more units in parallel (F04F 1/08 takes precedence)	5/44	. Component parts, details, or accessories not provided for in, or of interest apart from, groups F04F 5/02 - F04F 5/42
1/12	. . . in series	5/46	. . Arrangements of nozzles
1/14	. . adapted to pump specific liquids, e.g. corrosive or hot liquids	5/461	. . . {Adjustable nozzles}
		5/462	. . . {with provisions for cooling the fluid}
1/16	. . characterised by the fluid medium being suddenly pressurised, e.g. by explosion	5/463	. . . {with provisions for mixing}
1/18	. the fluid medium being mixed with, or generated from the liquid to be pumped	5/464	. . . {with inversion of the direction of flow}
1/20	. . specially adapted for raising liquids from great depths, e.g. in wells	5/465	. . . {with supersonic flow (mixing of supersonic fluids B01F 5/04)}
		5/466	. . . {with a plurality of nozzles arranged in parallel}
<b>3/00</b>	<b>Pumps using negative pressure acting directly on the liquid to be pumped (siphons F04F 10/00)</b>	5/467	. . . {with a plurality of nozzles arranged in series}
		5/468	. . . {with provisions for priming}
		5/469	. . . {for steam engines}
<b>5/00</b>	<b>Jet pumps, i.e. devices in which flow is induced by pressure drop caused by velocity of another fluid flow (diffusion pumps F04F 9/00; combination of jet pumps with pumps of other than jet type F04B; use of jet pumps for priming or boosting non-positive-displacement pumps F04D)</b>	5/48	. . Control
		5/50	. . . of compressing pumps
		5/52	. . . of evacuating pumps
		5/54	. Installations characterised by use of jet pumps, e.g. combinations of two or more jet pumps of different type
5/02	. the including fluid being liquid	<b>7/00</b>	<b>Pumps displacing fluids by using inertia thereof, e.g. by generating vibration therein</b>
5/04	. . displacing elastic fluids	7/02	. Hydraulic rams
5/06	. . . of rotary type	<b>9/00</b>	<b>Diffusion pumps</b>
5/08	. . . the elastic fluid being entrained in a free falling column of liquid	9/02	. of multi-stage type
5/10	. . displacing liquids, e.g. containing solids, or liquids and elastic fluids	9/04	. in combination with fore pumps, e.g. use of isolating valves
5/12	. . . of multi-stage type	9/06	. Arrangement of vapour traps
5/14	. the inducing fluid being elastic fluid	9/08	. Control
5/16	. . displacing elastic fluids	<b>10/00</b>	<b>Siphons</b>
5/18	. . . for compressing	10/02	. Gravity-actuated siphons
5/20	. . . for evacuating	<b>13/00</b>	<b>Pressure exchangers</b>
5/22	. . . . of multi-stage type	<b>99/00</b>	<b>Subject matter not provided for in other groups of this subclass</b>
5/24	. . displacing liquids, e.g. containing solids, or liquid and elastic fluids		
5/26	. . . of multi-stage type (F04F 5/28 takes precedence)		
5/28	. . . Restarting of inducing action		