

CPC COOPERATIVE PATENT CLASSIFICATION

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

LIGHTING; HEATING

F28 HEAT EXCHANGE IN GENERAL (NOTES omitted)

F28G CLEANING OF INTERNAL OR EXTERNAL SURFACES OF HEAT-EXCHANGE OR HEAT-TRANSFER CONDUITS, e.g. WATER TUBES OR BOILERS (cleaning pipes or tubes in general [B08B 9/02](#); devices or arrangements for removing water, minerals, or sludge from boilers while the boiler is in operation, or which remain in position while the boiler is in operation, or are specifically adapted to boilers without any other utility [F22B 37/48](#); removal or treatment of combustion products or combustion residues [F23J](#); removing ice from heat-exchange apparatus [F28F 17/00](#))

1/00	Non-rotary, e.g. reciprocated, appliances (F28G 3/00 takes precedence)	7/005	. {by explosions or detonations; by pressure waves generated by combustion processes}
1/02	. having brushes ({ F28G 1/12 takes precedence;} brushes A46B)	9/00	Cleaning by flushing or washing, e.g. with chemical solvents (appliances using jets of fluid for removing debris F28G 1/16 , F28G 3/16)
1/04	. having articulated tools, e.g. assembled in chain manner	9/005	. {of regenerative heat exchanger}
1/06	. having coiled wire tools, i.e. basket type	11/00	Cleaning by combustion, e.g. using squibs, using travelling burners ({ F28G 7/005 takes precedence})
1/08	. having scrapers, hammers, or cutters, e.g. rigidly mounted	13/00	Appliances or processes not covered by groups F28G 1/00 - F28G 11/00; Combinations of appliances or processes covered by groups F28G 1/00 - F28G 11/00
1/10	. . resiliently mounted	13/005	. {cleaning by increasing the temperature of heat exchange surfaces (F28G 7/005 , F28G 11/00 take precedence)}
1/12	. Fluid-propelled scrapers, bullets, or like solid bodies	15/00	Details (measuring thickness of deposit G01B)
1/125	. . {forced back and forth by means of flow reversal}	15/003	. {Control arrangements}
1/14	. Pull-through rods	2015/006	. {Arrangements for processing a cleaning fluid after use, e.g. filtering and recycling}
1/16	. using jets of fluid for removing debris (F28G 1/12 takes precedence)	15/02	. Supports for cleaning appliances, e.g. frames
1/163	. . {from internal surfaces of heat exchange conduits}	15/04	. Feeding and driving arrangements, e.g. power operation
1/166	. . {from external surfaces of heat exchange conduits}	15/06	. . Automatic reversing devices
3/00	Rotary appliances	15/08	. Locating position of cleaning appliances within conduits
3/02	. having abrasive tools	15/10	. Masks for delimiting area to be cleaned
3/04	. having brushes (brushes A46B)		
3/06	. having articulated tools, e.g. assembled in chain manner		
3/08	. having coiled wire tools, i.e. basket type		
3/10	. having scrapers, hammers, or cutters, e.g. rigidly mounted		
3/12	. . resiliently mounted		
3/14	. . thrown into working position by centrifugal force		
3/16	. using jets of fluid for removing debris		
3/163	. . {from internal surfaces of heat exchange conduits}		
3/166	. . {from external surfaces of heat exchange conduits}		
5/00	Cleaning by distortion (by vibration F28G 7/00)		
7/00	Cleaning by vibration {or pressure waves}		