

# CPC COOPERATIVE PATENT CLASSIFICATION

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

### LIGHTING; HEATING

#### F22 STEAM GENERATION (NOTE omitted)

#### F22G SUPERHEATING OF STEAM

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|-------------|---|-------------|---|
| <b>1/00</b> | <b>Steam superheating characterised by heating method</b>   | 5/08        | . . preventing furnace gas backflow through recirculating fan   |
| 1/005       | . {the heat being supplied by steam}  | 5/10        | . by displacing superheater sections  |
| 1/02        | . with heat supply by hot flue gases from the furnace of the steam boiler   | 5/12        | . by attenuating the superheated steam, e.g. by injected water sprays                                 |
| 1/04        | . . by diverting flow or hot flue gases to separate superheaters operating in reheating cycle, e.g. for reheating steam between a high-pressure turbine stage and an intermediate turbine stage | 5/123       | . . {Water injection apparatus}   |
| 1/06        | . with heat supply predominantly by radiation   | 5/126       | . . . {in combination with steam-pressure reducing valves}  |
| 1/08        | . . from heated brickwork or the like   | 5/14        | . . by live steam   |
| 1/10        | . with provision for superheating by throttling   | 5/16        | . by indirectly cooling or heating the superheated steam in auxiliary enclosed heat-exchanger         |
| 1/12        | . by mixing steam with furnace gases or other combustion products   | 5/18        | . by by-passing steam around superheater sections   |
| 1/14        | . using heat generated by chemical reactions  | 5/20        | . by combined controlling procedures  |
| 1/16        | . by using a separate heat source independent from heat supply of the steam boiler, e.g. by electricity, by auxiliary combustion of fuel oil  | <b>7/00</b> | <b>Steam superheaters characterised by location, arrangement, or disposition</b>                      |
| 1/165       | . . {by electricity}  | 7/005       | . {for locomotive boilers ( <a href="#">F22G 7/065</a> , <a href="#">F22G 7/105</a> take precedence)} |
| <b>3/00</b> | <b>Steam superheaters characterised by constructional features; Details or component parts thereof</b>  | 7/02        | . in fire tubes   |
| 3/001       | . {Steam tube arrangements not dependent of location}   | 7/04        | . in jackets around fire tubes  |
| 3/002       | . . {with helical steam tubes}  | 7/06        | . in furnace tubes  |
| 3/003       | . {Superheater drain arrangements}  | 7/065       | . . {for locomotive boilers}  |
| 3/004       | . {Steam tubes with steam flowing in opposite directions in one pipe, e.g. Field tubes ( <a href="#">F22G 3/005</a> takes precedence)}  | 7/08        | . in fire-boxes   |
| 3/005       | . {Annular steam tubes, i.e. the steam being heated between concentric tubes with the heating fluid flowing in inner and around outer tube}   | 7/10        | . in smoke-boxes  |
| 3/006       | . {Steam superheaters with heating tubes ( <a href="#">F22G 3/005</a> takes precedence)}  | 7/105       | . . {for locomotive boilers}  |
| 3/007       | . {Headers; Collectors, e.g. for mixing}  | 7/12        | . in flues  |
| 3/008       | . {Protection of superheater elements, e.g. cooling superheater tubes during starting-up periods, water tube screens}   | 7/14        | . in water-tube boilers, e.g. between banks of water tubes  |
| 3/009       | . {Connecting or sealing of superheater or reheater tubes with collectors or distributors}  | 7/145       | . . {of inclined type, i.e. the water-tube sets being inclined with respect to the horizontal plane}  |
| <b>5/00</b> | <b>Controlling superheat temperature</b>  |             |   |
| 5/02        | . Applications of combustion-control devices, e.g. tangential-firing burners, tilting burners   |             |   |
| 5/04        | . by regulating flue gas flow, e.g. by proportioning or diverting   |             |   |
| 5/06        | . by recirculating flue gases   |             |   |