

CLASS 237, HEATING SYSTEMS**SECTION I - CLASS DEFINITION**

Apparatus and processes for heating rooms, chambers, houses, and other enclosing structures, including combinations of two or more heat generators and combinations of a heat generator with means for distributing a fluid heated thereby.

- (1) Note. This class does not include the distributing means alone unless it is peculiarly adapted for heating, nor the heat generator alone.
- (2) Note. The term "water" is used in the generic sense of "liquid".

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

For steam traps adapted for heating systems see Class 137, Fluid Handling, subclasses 171+, and Class 236, Automatic Temperature and Humidity Regulation.

For methods and apparatus for heating rooms, chambers, houses and other enclosing structures where the source of heat is claimed to be a solar collector, classification in the appropriate subclass in Class 126, Stoves and Furnaces.

SECTION III - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

- 34, Drying and Gas or Vapor Contact With Solids, and see the Note to the class definition of Class 34 for the line with Class 237.
- 60, Power Plants, for power plants combined with heating apparatus which does not constitute a heating system.
- 62, Refrigeration, particularly subclasses 90, 159+, 238.1+, 260, and 324.1+ for a refrigeration system, per se, which may utilize the heat rejecting portion.
- 122, Liquid Heaters and Vaporizers, for a boiler that may include a heat system for other than heating an enclosure.
- 126, Stoves and Furnaces, for a heating means that may provide heat for a heating system.

- 137, Fluid Handling, appropriate subclasses, for fluid handling and distributing systems not otherwise classifiable; see particularly subclasses 334+ for combinations of such systems with means to heat the system or its contents (see (3) Note above).
- 148, Metal Treatment, appropriate subclasses for processes of treating solid or semi-solid metal to modify or maintain the internal physical structure (i.e., microstructure) or chemical property of the metal.
- 165, Heat Exchange, subclasses 58+; 201+ for combined heating and cooling processes; subclasses 201+ for automatic control of a heating and cooling system; subclasses 48.1+ for an installed heating and cooling system; subclasses 58+ for a heating and cooling system; and appropriate subclasses for structure for exchanging heat between two noncommunicating fluids not having features specializing it for use in a heating system.
- 219, Electric Heating, for heating by electric current.
- 236, Automatic Temperature and Humidity Regulation, for automatic heat regulation for heating systems when the heating system is not specifically defined, the modifications relating wholly to the control (see (3) Note above).
- 248, Supports, for stands, etc., adapted to support heating apparatus.
- 252, Compositions, particularly subclasses 67+ and 71+. Patents are placed in Class 252 (1) claiming admixtures of ingredients, or claims to an old compound, limited to use in a heat transfer agent, (2) processes of transferring heat comprising known heating system steps broadly recited, distinguished solely by the composition or compound used, and (3) apparatus with the composition or compound therein, where characteristics of apparatus structure are not claimed. The preceding are placed in Class 252, Compositions, even though freezing or boiling points or temperatures of use are specified.
- 376, Induced Nuclear Reactions: Processes, Systems, and Elements, appropriate subclasses, particularly subclasses 402+ for reactor structures which may be adaptable for general heating systems purposes.
- 405, Hydraulic and Earth Engineering, subclass 56 for a method or apparatus for heating or cooling the earth surrounding a fluid storage cavity; and subclasses 130+ for heating or cooling of an earthen formation in general

- 417, Pumps, for pumps, per se.
 418, Rotary Expansible Chamber Devices, for rotary expansible chamber pumps, per se.
 432, Heating, subclasses 121+ for a residual work chamber having both heating and work handling means; subclasses 159+ for a residual work heating chamber in which work is heated by contact with combustion products; and appropriate subclass for a residual work chamber heated without the use of a distribution system between the generator and chamber space.
 454, Ventilation, for means specialized for distributing air to rooms or buildings, even with a conventional heating apparatus, and for rooms, buildings, cars, etc., with hollow walls for the passage of air.

SUBCLASSES

- 1 MISCELLANEOUS:**
 This subclass is indented under the class definition. Means for heating not otherwise provided for.
- 2 AUTOMATIC CONTROL:**
 This subclass is indented under the class definition. Heating systems with means for regulating temperature and pressure independent of manual control.
- SEE OR SEARCH CLASS:
 236, Automatic Temperature and Humidity Regulation, for automatic controllers when the structure of the apparatus for heating is not specifically defined.
- 3 Brooder and incubator:**
 This subclass is indented under subclass 2. Automatic control for heating apparatus for brooders and incubators.
- SEE OR SEARCH CLASS:
 119, Animal Husbandry, subclasses 30, 31+, and 35+ for brooder and incubator structure including heating systems.
- 4 Water:**
 This subclass is indented under subclass 3. Automatic control for water-circulating heaters for incubators.

- 5 Car:**
 This subclass is indented under subclass 2. Automatic control for heating apparatus for cars, either freight or passenger.
- SEE OR SEARCH CLASS:
 126, Stoves and Furnaces, for stove structure.
- 6 Steam:**
 This subclass is indented under subclass 5. Automatic control for steam heating apparatus.
- SEE OR SEARCH CLASS:
 236, Automatic Temperature and Humidity Regulation, especially subclass 22, for automatic control, per se.
- 7 Combined radiator and boiler:**
 This subclass is indented under subclass 2. Automatic control of a unitary structure consisting of steam or water radiators combined with a boiler.
- SEE OR SEARCH CLASS:
 122, Liquid Heaters and Vaporizers, for a boiler that may include a heat system for other than heating an enclosure, subclass 13.3 for a stand boiler (e.g., water heater, etc.) having a delivery means to a dispense a feature (e.g., faucet, shower, washing machine, dishwasher, etc.).
 236, Automatic Temperature and Humidity Regulation, for controller, per se.
- 8 Water:**
 This subclass is indented under subclass 2. Automatic control of water heating systems.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
 4, for incubator heaters.
 5, for car heaters.
 7, for combined heater and boiler.
- 9 Steam:**
 This subclass is indented under subclass 2. Automatic control of steam heating systems.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
 6, for car heaters.

7, for combined heater and boiler.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, subclasses 535+ and 549+, for heaters peculiar to Class 34 apparatus.

10 Gas displaced:

This subclass is indented under subclass 9. Steam heating systems which displace the steam in the radiators by a gas, such as air or products of combustion.

11 Compressed air:

This subclass is indented under subclass 2. Automatic control in which air is compressed and thereby heated and circulated through the radiators.

12 Processes:

This subclass is indented under subclass 2. Processes for the automatic control of heating systems.

12.1 HEAT AND POWER PLANTS:

This subclass is indented under the class definition. Systems combining means for generating and distributing heat to buildings or other enclosures with means for the production of power by a motor.

SEE OR SEARCH CLASS:

60, Power Plants, subclass 648 for a power plant that in operation supplies heat for external use or produces a withdrawable hot gas product.

12.2 Fire engine:

This subclass is indented under subclass 12.1. Combinations including a fire engine.

12.3 Vehicle:

This subclass is indented under subclass 12.1. Combinations including a heating system for a vehicle other than a railway car or train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

2, for similar systems claiming automatic controls.

SEE OR SEARCH CLASS:

123, Internal-Combustion Engines, subclass 142.5, for internal combustion engines combined with means to heat the engine or engine parts there provided for and see notes in that subclass (142.5).

165, Heat Exchange, subclasses 43+ for a heated and cooled vehicle with a common power and heat source.

454, Ventilation, subclasses 159+ for automobile heating and ventilating.

12.4 Car:

This subclass is indented under subclass 12.1. Heating systems for a car or train, combined with the locomotive or other power plant.

12.5 Smoke:

This subclass is indented under subclass 12.4. Heating systems in which the car or train is heated directly by the furnace gases from the power plant.

12.6 Air:

This subclass is indented under subclass 12.4. Heating systems in which the car or train is heated by a supply of warm air supplied by the power plant.

12.7 Radiator:

This subclass is indented under subclass 12.6. Heating systems in which the warm air is passed through radiators.

12.8 Steam:

This subclass is indented under subclass 12.4. Heating systems in which the car or train is heated by steam, usually from the power plant.

13 PLANTS:

This subclass is indented under the class definition. Systems combining means for generating heat at one place and distributing it to other buildings, including mains or conduits having no other apparent use than with these systems.

SEE OR SEARCH CLASS:

137, Fluid Handling, for fluid distributing and handling systems not otherwise provided for, see particularly subclass 236.1 for fluid distributing systems including geographic features

- and subclasses 356+ for such systems having as a support a structural member immovably joined to the ground.
- 138, Pipes and Tubular Conduits, for conduits and underground ways adapted for use in heating plants and otherwise.
- 14 BROODER AND INCUBATOR:**
This subclass is indented under the class definition. Heating systems peculiarly adapted for subclasses 302+ and 311+ incubators and brooders.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for automatic control.
- SEE OR SEARCH CLASS:
119, Animal Husbandry, for specific brooder and incubator structure combined with the heating means.
122, Liquid Heaters and Vaporizers, for structure of a closed water heater.
126, Stoves and Furnaces, for structure of air heaters and stoves.
236, Automatic Temperature and Humidity Regulation, for automatic control
- 15 Water:**
This subclass is indented under subclass 14. Systems in which the heating medium is water.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
4, for automatic control
- SEE OR SEARCH CLASS:
236, Automatic Temperature and Humidity Regulation, for automatic control, per se.
- 16 COMBINED RADIATOR AND BOILER:**
This subclass is indented under the class definition. Heating systems comprising steam or water radiators combined with a boiler in a unitary structure.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
7, for automatic control.
- SEE OR SEARCH CLASS:
122, Liquid Heaters and Vaporizers, for a boiler that may include a heat system for other than heating an enclosure, subclass 13.3 for a stand boiler (e.g., water heater, etc.) having a delivery means to dispense a feature (e.g., faucet, shower, washing machine, dishwasher, etc.).
219, Electric Heating, for electrically heated radiators.
236, Automatic Temperature and Humidity Regulation, for automatic control.
- 17 Fluid fuel:**
This subclass is indented under subclass 16. Combined radiators and boilers heated by combustion of fluid fuel.
- 18 Solid fuel :**
This subclass is indented under subclass 16. Combined radiators and boilers heated by combustion of solid fuel.
- 19 COMBINED WITH WATER HEATER:**
This subclass is indented under the class definition. Heating systems having means for heating the fluid used in the system and also for additional volume of water.
- SEE OR SEARCH CLASS:
122, Liquid Heaters and Vaporizers, subclass 20, for subsidiary boilers.
126, Stoves and Furnaces, subclass 5 for a steam or hot water generator for house heating, power, or cooking; subclasses 350.1-350.2 for a fluid fuel burner other than a top-accessible liquid heating vessel; subclasses 367.1 and 368.1 for a solid fuel burner submerged underneath the surface of the liquid that may be held in an open-top vessel, or subclasses 513 and 514 for a fireplace or accessory having a liquid heater.
- 28 VEHICLE:**
This subclass is indented under the class definition. Heating systems specialized for a vehicle.

- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclasses 56 and 57 for car stoves.
- 169, Fire Extinguishers, subclass 55 for fire extinguishers associated with car heaters.
- 219, Electric Heating, for systems including electric heaters.
- 29 Stove:**
This subclass is indented under subclass 28. Vehicle-heating systems comprising stoves combined with vehicle structure.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, for stove structures, especially subclasses 56 and 57.
- 30 Air casing:**
This subclass is indented under subclass 29. Vehicle-heating stoves having a casing for heating the air.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclasses 67+ for hot air stoves, per se.
- 31 Depending:**
This subclass is indented under subclass 29. Vehicle-heating systems comprising a stove depending from the vehicle.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclass 56 for car stoves.
- 32 Fluid fuel:**
This subclass is indented under subclass 28. Vehicle-heating systems utilizing a fluid-fuel burning apparatus.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, appropriate subclasses, for heater, per se.
- 33 Radiator:**
This subclass is indented under subclass 32. Vehicle-heating systems with a radiator through which the products of combustion pass.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclass 91 for heater.
- 34 Water:**
This subclass is indented under subclass 28. Vehicle-heating systems utilizing a hot water circulating system.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
12.4, for car heater combined with power plants.
- 35 Car boiler:**
This subclass is indented under subclass 34. Vehicle-heating systems having a boiler located on the vehicle and piping for heating and circulating water.
- 36 Fluid fuel:**
This subclass is indented under subclass 35. Subject matter in which the boiler is heated by fluid fuel.
- SEE OR SEARCH CLASS:
122, Liquid Heaters and Vaporizers, for boilers, per se.
- 37 Train steam:**
This subclass is indented under subclass 35. Subject matter with additional means for heating the water by steam from the train pipe.
- 38 Injected:**
This subclass is indented under subclass 37. Subject matter having means for injecting steam from the train pipe into the water circuit.
- 39 Train steam:**
This subclass is indented under subclass 34. Subject matter having means for heating the water circuit by steam from the train pipe.
- 40 Steam:**
This subclass is indented under subclass 28. Heating systems utilizing steam radiators.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
6, for automatic control of the system.

- 41 Car boiler:**
This subclass is indented under subclass 40. Steam heating systems in which the steam is formed in a boiler on the car.
- 42 Train steam:**
This subclass is indented under subclass 41. Subject matter having also means whereby steam may be admitted to the radiators from the train pipe.
- 43 Heated floor:**
This subclass is indented under subclass 28. Heating systems in which the floor is heated from beneath, as by steam, hot water, or hot air circulation.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
69, for means for heating floors of other than vehicles.
- 44 Heat accumulator:**
This subclass is indented under subclass 28. Heating systems comprising apparatus for storing heat on the vehicle by heat absorbing bodies.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
45, for incased radiators.
75, for heat accumulators, per se.
- 45 Encased radiator:**
This subclass is indented under subclass 28. Heating systems comprising radiators in casings, through which air may pass.
- SEE OR SEARCH CLASS:
392, Electric Resistance Heating Devices, subclasses 407+ for electrically heated radiators including heat, storage or transfer means.
- 46 VENTILATING:**
This subclass is indented under the class definition. Heating systems for rooms, chambers, or other enclosures provided with means for removing air from the rooms.
- (1) Note. Apparatus for only admitting fresh air and heating it are not included.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclass 84 for combined stove and ventilator, and subclass 293 for combined damper and ventilator.
165, Heat Exchange, subclasses 248+ for the automatic control of ventilation in a heating and cooling system; subclass 54 for heat exchanger installed in a wall traversing passage; and subclass 59 for a heating and cooling system with a ventilation feature.
454, Ventilating, for specific ventilating apparatus combined with an undefined heater.
- 47 Stove:**
This subclass is indented under subclass 46. Ventilating heating-systems having a stove as a heater.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclasses 80, 84, 216, and 293, for stove and ventilator combinations.
454, Ventilation, subclass 43 for flue heated ventilators.
- 48 Furnace:**
This subclass is indented under subclass 46. Ventilating heating-apparatus having a hot-air furnace as a heater.
- 49 Enclosed radiator:**
This subclass is indented under subclass 46. Ventilating heating apparatus having radiators enclosed in an air flue.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
45, for similar devices on vehicles.
79, for radiator shields.
- 50 AIR:**
This subclass is indented under the class definition. Heating systems in which air is heated directly by a combustion apparatus and distributed.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, for structure of heater.

- 52 Stove:**
This subclass is indented under subclass 50. Air heating-systems having a stove as the source of heat.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
29, for similar devices on vehicles.
47, for ventilating heating systems using a stove.
- 53 Furnace:**
This subclass is indented under subclass 50. Air heating-systems having a hot-air furnace as the source of heat.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
48, for ventilating heating systems using a furnace.
- 54 Upper-room drum:**
This subclass is indented under subclass 50. Air heating-systems having a drum in an upper room of the building, through which products of combustion pass.
- 55 Flue heated:**
This subclass is indented under subclass 50. Air heating-systems ... in which the air is heated in a smoke flue.
- SEE OR SEARCH CLASS:
126, Stoves and Furnaces, subclasses 523+ for fireplace-type heater.
- 56 WATER:**
This subclass is indented under the class definition. Heating system in which the room or building is heated by the circulation of water or some other liquid.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
8, for automatic control.
12.4, for car heaters.
15, for brooder heaters.
17, 18, for combined radiator and boiler.
34+, for vehicle heaters.
- 57 Fluid fuel:**
This subclass is indented under subclass 56. Water heating-systems in which the water is heated by fluid fuel.
- 58 Steam:**
This subclass is indented under subclass 56. Water heating-systems where the water is heated by steam.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
37+, for train steam heaters.
71+, for steam radiators.
- 59 Circulation:**
This subclass is indented under subclass 56. Water heating systems having special means for circulating the heating liquid.
- SEE OR SEARCH CLASS:
138, Pipes and Tubular Conduits, subclasses 37+ for fittings and pipes of general utility having means therein to direct the flow of fluid therein and even though intended to be used in a heating system.
- 60 Geyser boiler:**
This subclass is indented under subclass 59. Subject matter in which the water is heated and forced out of a boiler by intermittent pulsations.
- 61 Auxiliary boiler:**
This subclass is indented under subclass 59. Subject matter having an auxiliary boiler for aiding the circulation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
37+, for train steam boiler combinations.
- 62 Boiler loop:**
This subclass is indented under subclass 59. Subject matter in which only a part of the water is bypassed through a boiler.
- 63 Pump:**
This subclass is indented under subclass 59. Subject matter having a pump for circulating the water.

- 64 Steam displacing:**
This subclass is indented under subclass 63. Subject matter wherein the pump consists of a chamber where water enters and is forced out by means of steam pressure.
- 65 Pressure regulator:**
This subclass is indented under subclass 56. Water heating-systems with means for regulating or varying the pressure on the circulating system.
- SEE OR SEARCH CLASS:
137, Fluid Handling, subclasses 455+ for line condition change responsive valves, particularly subclasses 505+ for fluid pressure regulators, per se.
236, Automatic Temperature and Humidity Regulation, appropriate subclasses.
- 66 Expansion tanks:**
This subclass is indented under subclass 56. Tanks or chambers limited in use to provide for the expansion of the water in the circulating pipes and radiators of water heating systems.
- SEE OR SEARCH CLASS:
137, Fluid Handling, appropriate subclasses for fluid handling apparatus including tanks in combination with other fluid handling means, see particularly subclass 593 for such systems including an expansion chamber in combination.
220, Receptacles, for tank structure not necessarily limited to water heating systems.
- 67 STEAM:**
This subclass is indented under the class definition. Systems for heating buildings, rooms, or chambers by means of steam circulating through conduits or passing through radiators.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
6, for automatic control of car heating.
9, for automatic control.
12.8, for car heating.
40, for vehicle heaters.
- SEE OR SEARCH CLASS:
34, Drying and Gas or Vapor Contact With Solids, subclasses 119 and 124 for heaters for dryers.
- 68 Air discharge:**
This subclass is indented under subclass 67. Steam heating systems with special means for removing the incondensable gases in the system.
- SEE OR SEARCH CLASS:
137, Fluid Handling, subclasses 197+ for discriminating outlets for gas (gas vents which do not pass liquid).
236, Automatic Temperature and Humidity Regulation, for thermal valves.
417, Pumps, for pumps, per se.
- 69 HEATED FLOOR:**
This subclass is indented under the class definition. Heating systems in which the room is heated by heated fluid circulated within or beneath or caused to contact with the underside of a floor.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
43, for the heating of vehicle floors.
- SEE OR SEARCH CLASS:
454, Ventilation, subclasses 185+ for hollow walls and floors having vents for passage of air.
- 70 HEAT RADIATORS:**
This subclass is indented under the class definition. Hollow bodies of considerable surface area peculiarly adapted to have a heating fluid passed through it and to radiate heat from the surface. Radiators must be absolutely limited to heating purposes by radiation in order to fall within this subclass and those indented thereunder.
- SEE OR SEARCH CLASS:
165, Heat Exchange, subclasses 128+ for a heat exchanger having vertically extending flues for producing a thermosyphonic flow of fluid not having features specializing it to use in heating air within a chamber; subclasses 168+ for a panel with conducting pas-

sages for a heat exchange fluid; and subclasses 172+ for an assembly of tubes for transferring heat.

71 Water, steam:

This subclass is indented under subclass 70. Radiators adapted to contain water heated by steam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

75, for steam heat accumulator.

72 Injected:

This subclass is indented under subclass 71. Radiators containing water heated by steam either injected into the water or heated by steam passing through conduits that heat the water, the steam finally coming into contact with the water in the radiator. These radiators may also be convertible as steam radiators or water radiators heated by steam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

74, for injecting means for steam circuits.

73 Steam:

This subclass is indented under subclass 70. Radiators limited to the use of steam as a heating fluid and incapable of being used as a condenser for steam.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

40, for steam heaters for vehicles.

74 Circuit:

This subclass is indented under subclass 73. Steam-heated radiators having injecting means for causing a continued circulation of steam through or around within the radiator or for injecting air into the radiator or for circulating water therein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

72, for means to inject steam into the water.

75 Heat accumulator:

This subclass is indented under subclass 73. Steam-heated radiators having either a liquid or solid therein which absorb heat from the steam,

stores it therein, and radiates the heat after the steam is turned off.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

44, for systems having heat accumulators on vehicles.

69, for floor heaters.

76, for ceramic radiators.

76 Ceramic:

This subclass is indented under subclass 70. Radiators made in whole or in part of ceramic material (earthy plastic) or natural stone.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

69, for floor-type heating systems.

77 Foot warmer:

This subclass is indented under subclass 70. Radiators with special features for warming the feet.

SEE OR SEARCH CLASS:

126, Stoves and Furnaces, subclasses 204+ for other body warmers.

248, Supports, subclasses 205.1+ for a non-heated footrest having general utility.

297, Chairs and Seats, subclasses 423.1+ for a nonheated footrest.

78 Air moistener:

This subclass is indented under subclass 70. Radiators combined with means for moistening the air or air moistening apparatus necessitating its application to a radiator when in use.

SEE OR SEARCH CLASS:

236, Automatic Temperature and Humidity Regulation, subclasses 12.1+ for fluid mixers and 44, for humidity control.

261, Gas and Liquid Contact Apparatus, appropriate subclasses for contact structure.

454, Ventilation, subclasses 110, 157, 223, 291, 328, and 337 for ventilators having liquid contact devices.

79 Shields:

This subclass is indented under subclass 70. Heat shields applied to radiators or air directors combined with dust guards.

SEE OR SEARCH CLASS:

- 148, Metal Treatment, subclasses 640+ for processes which utilize a protective or insulating shield of metal from heat in a method of treating solid or semi-solid metal to modify or maintain the internal physical structure (i.e., micro-structure) or chemical property of metal.
- 165, Heat Exchange, subclass 55 for a wall mounted heat exchanger with a projecting shield; subclass 129 for a heat exchanger equally adapted for conducting heating or cooling fluid arranged with a distinct flue forming enclosure; and subclass 134 for a heat exchanger with a protector.
- 454, Ventilation, subclasses 245+ and 284+ for floor and wall registers.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 12, for processes including automatic control.

END

80 ANTIFREEZING DEVICES:

This subclass is indented under the class definition. Devices for preventing freezing in heating conduits or other hollow heaters or for thawing out heating conduits not provided for in other classes.

SEE OR SEARCH CLASS:

- 137, Fluid Handling, for fluid handling systems including means to prevent freezing see particularly subclasses 59+, 301+ and 375.
- 138, Pipes and Tubular Conduits, subclasses 32+ for antifreezing devices for pipes of general utility, though intended to be used in a heating system.
- 428, Stock Material or Miscellaneous Articles, appropriate subclasses, for a stock material product in the form of a single or plural layer web or sheet, and especially subclasses 304.4+ for such a product embodying a component which is porous or cellular.

81 PROCESSES:

This subclass is indented under the class definition. Processes for heating houses, rooms, or other enclosures, except processes involving automatic control.