

Claims

1. A method of cleaning a gas inlet nozzle of an abatement burner combustion chamber, the abatement burner intermittently receiving gas for combustion from a feed process, the nozzle comprising a cleaning mechanism including a movable
5 cleaning member for removing unwanted deposits from the nozzle, the cleaning member being movable from a retracted first position wherein the cleaning member is outside a path of a flame associated with the nozzle to a second cleaning position wherein the cleaning member is in a path of the flame associated with the nozzle; the method comprising the steps of:
 - 10 a. identifying when the nozzle flame is off;
 - b. moving the cleaning member from the first position to the second position while the nozzle flame is off; and
 - c. returning the cleaning member to the first position before the nozzle flame is on.
- 15 2. A method of cleaning a gas inlet nozzle of an abatement burner combustion chamber, the abatement burner intermittently receiving gas for combustion from a feed process, the nozzle comprising a cleaning mechanism including a movable cleaning member for removing unwanted deposits from the nozzle, the cleaning
20 member being movable from a retracted first position wherein the cleaning member is outside a path of a flame associated with the nozzle to a second cleaning position wherein the cleaning member is in the path of the flame associated with the nozzle; the method comprising the steps of:
 - 25 a. identifying a step in the feed process when gas is provided to the abatement system for combustion; and
 - b. directing the movement of the cleaning member to ensure the cleaning member is in the first position during the identified step, preferably for the duration of the identified step.
- 30 3. The method according to claim 2 wherein the content of the gas from a feed process may vary and the method comprises the steps of:
 - a. identifying a step in the feed process when a specific gas chemistry is being provided to the abatement system for combustion; and

- b. directing the movement of the cleaning member to ensure the cleaning member is in the first position for the duration of the identified step.
4. The method according to claims 2 or 3 further comprising identifying all such steps in the feed process and directing the movement of the cleaning member to ensure the cleaning member is in the first position for the duration of all the identified steps.
5. The method according to any one of claims 2 to 4 comprising the step of moving the cleaning member to the second position when the nozzle flame is out of use.
6. The method according to any preceding claim comprising the step of returning the cleaning member to first position before the occurrence of one of the identified steps and/or the nozzle flame is returned to use.
7. A cleaning system for a gas inlet nozzle of an abatement system combustion chamber, the abatement system intermittently receiving exhaust gas for combustion from a feed process, the cleaning system comprising:
- a cleaning mechanism associated with the nozzle including a movable cleaning member for removing unwanted deposits from the nozzle, the cleaning member being movable from a first position wherein the cleaning member is outside a path of the flame associated with the nozzle to a second position wherein the cleaning member is in the path of the flame associated with the nozzle;
- wherein the system is configured to coordinate movement of the cleaning member such that the cleaning member is in the first position before and during the provision of exhaust gas by the feed process to the nozzle for combustion.
8. The cleaning system according to claim 7 wherein the system is configured to coordinate movement of the cleaning member such that the cleaning member is only in the second position when combustion of exhaust gas from the feed process is ceased.

- 14 -

9. The cleaning system according to claim 7 or 8 wherein the coordinated movement of the cleaning member is automated.
- 5 10. A gas abatement burner comprising a combustion chamber, said combustion chamber comprising a gas inlet nozzle and a cleaning system according to claim 7 to 9.
- 10 11. The gas abatement burner according to claim 10 comprising a plurality of gas inlet nozzles each having an individual cleaning system associated therewith.
12. The gas abatement burner according to claim 11 wherein each cleaning system is independently coordinated with an external process with which it is associated.
- 15 13. A method or system according to any preceding claim wherein the cleaning member is a helical cleaning spring.