

[SS 12] Generator and pressure and waves and steam

Results in EPODOC **39**

[SS 13] process and hidrocarbons

Results in EPODOC **7**

[SS 14] 12 and 13

Results in EPODOC **0**

[SS 15] processand hidrocarbons and generator and pressure

Results in EPODOC **0**

EPODOC: term 'PROCESSAND HIDROCARBONS' not found in index 'BI'. *WARNING(1)*

[SS 16] processand and hidrocarbons and generator and pressure

Results in EPODOC **0**

[SS 17] 12 and hidrocarbons

Results in EPODOC **0**

[SS 18] 12 and process

Results in EPODOC **4**

[SS 19] ..li



1/4 © EPODOC / EPO

PN - [CN104595882](#) A 20150506

PNFP - CN104595882B B 20160608

PR - CN2015124562 20150119

AP - CN2015124562 20150119

DT - I

CT - || STSE (A)

[CN204420969U](#) U 20150624 [R] (ZHEJIANG XUSHI KITCHEN APPARATUS CO LTD);

[US5782209](#) A 19980721 [A] (VANDENBERG JAMES P [CA]);

[CN202065992U](#) U 20111207 [A] (ZHEJIANG XUSHI KITCHEN APPARATUS CO LTD);

[CN202092107U](#) U 20111228 [A] (ZHEJIANG XUSHI KITCHEN APPARATUS CO LTD);

[CN1345410](#) A 20020417 [A] (MITSUBISHI HEAVY IND LTD [JP]);

[EP0874196](#) A2 19981028 [A] (MARTIN UMWELT & ENERGIE TECH [DE])

PA - (A)
ZHEJIANG XUSHI KITCHEN APPARATUS CO LTD

TI - (A)
Descaling device of gas **steam generator**

AB - (A)
The invention relates to a descaling device of a gas **steam generator**. According to the descaling device of the gas **steam generator**, the side wall of an inner cavity is provided with an ultrasonic **generator** which is used for removing dirt in an inner container; a shell is provided with a control device which is used for controlling operation of the ultrasonic **generator**; the inner container is further provided with a high-**pressure** water gun which is matched with the ultrasonic **generator** so as to remove the dirt in the inner container together; a gun barrel is provided with a nozzle, and the nozzle can rotate around the gun barrel and spray high-**pressure** water flow to the side wall of the inner container. The ultrasonic **generator** and the high-**pressure** water gun are arranged, so that in a descaling **process**, the ultrasonic **generator** generates ultrasonic **waves** to smash water scales which are positioned on the side wall of the inner container, then the smashed water scales are rapidly washed down by the water flow which is sprayed out by the high-**pressure** water gun, and therefore the descaling efficiency of the **steam generator** is greatly improved.

2/4 © EPODOC / EPO

PN - [CA2755921](#) A1 20130421

PR - CA20112755921 20111021

AP - CA20112755921 20111021

DT - *; Rep

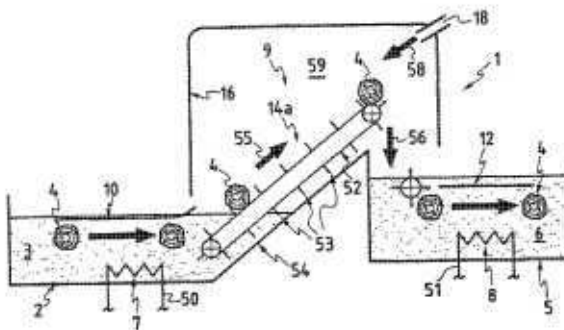
CCI - [B05B7/1626](#) ; [B05B12/06](#) ; [C23C24/04](#)

PA - ZYGMUNT BARAN [CA]

TI - PULSE COLD GAS DYNAMIC SPRAYING APPARATUS

AB - The ultimate objective of this invention is to provide an improved Cold Gas Dynamic Spray (CGDS) apparatus capable of discharging powdered materials at greater velocities with higher deposition efficiency, as well as a greater variety of materials (e. g. nanopowders). This objective is achieved by attaching a specialized device to an existent CGDS system. The device is a pulse-**generator** and is attached behind the converging portion of the De Laval-type nozzle. This device significantly increases the efficiency of the spray **process** in three ways. First, it creates a higher **pressure** environment that introduces a wave of pulses to the exit stream, thereby increasing the speed of any introduced powder materials. Second, the addition of this device introduces **steam** to the overall **process** which also increases the speed of the exit stream. Third, the introduction of **steam** into the **process** also increases the drag coefficient of any injected powders, thereby once again contributing to an increase in the velocity of the exit stream. This improved design and the resulting increased efficiency of the CGDS **process** also permits a greater choice in the type of powdered materials that may be used. The pulse-**generator** generates detonation-type impulse **waves** by injecting hot compressed water into the low-**pressure** (vacuum) and high-temperature discharge chamber. The vacuum or low-**pressure** environment in the discharge chamber provides a greater **pressure** gradient for the creation of detonation-type impulse **waves**. The injections are repeated in a cyclical manner at a pre-determined frequency.

The **process** to treat wood, or similar material, uses heat and impregnation. The wood (4) is initially made wet to give a water content of ~25 mass%. The heating stage gives a strong evaporation of the contained water within the wood structure, followed by a dwell time in a controlled ambient environment



for cooling. When cool, the wood is given a rapid chilling action by immersion in a bath of a preserving medium. The wood is heated to a level of at least 10 kW/m^2 or 2 MW/m^3 , for the surface or the vol. The moisture content of the wood (4) is raised to 40-80 mass% of the dry mass. The heating and cooling is effected by successive immersion in two baths of oil (3,6), with a min. transfer time of 30 secs. from the first bath to the second, and pref. min. 10 secs. The first bath is held at a temp. of 110-250 deg C, and the temp. of the second bath is 10-70 deg C. Before the heating stage, the ends of the wood (4) are covered or treated to make them liquid-proof, or the longitudinal wood fibers are shrouded to give an inner **pressure** within the wood material during heating and reduce the scope for some of the wood to be untreated. The wood processing time is from 30 mins. to 4 hrs., with a cooling phase which is longer than the heating stage. The heat is applied to the wood surface with a flow density of $10\text{-}300 \text{ kW/m}^2$ by contact with a hot liquid, infra red rays or superheated **steam** (at 140-300 deg C) or air at a high temp. of 150-300 deg C, by high frequency or very high frequency **waves** at a density of $2\text{-}20 \text{ MW/m}^3$. The cooling phase is by water where the wood has a dry mass content of 60% to 20%. An Independent claim is included for a wood processing assembly with a heating stage (7) to raise the temp. of the wood (4) with a flow of at least 10 kW/m^2 or 2 MW/m^3 , to give a strong

evaporation of any moisture within the wood material. A cooling stage (8) reduces the temp. of the wood by immersion in a liquid (6). A transfer system (9) moves the wood (4) between the stages (7,8), which prevents any significant dwell time in a non-processing environment such as ambient air, to give the best impregnation during the rapid cooling action. Preferred Features: The assembly has a basin (2) for a bath (3) with a heater (7) such as a heat exchanger, and a mechanism (10) to ensure that the wood (4) is immersed within the bath (3). There is relative movement between the wood (4) and the bath (3) liquid by a recirculation pump or a wood agitator. A second basin (5) holds a bath (6) with a cooling unit (8) such as a heat exchanger, and a system (12) to keep the wood (4) immersed together with a recirculation pump and/or a conveyor to give a relative movement between the wood (4) and the bath (6) liquid. The transfer unit (9) between the two baths has a conveyor (14) or a traversing unit with a sieve or a lock. A hood (16) shrouds the two basins (2,5) at least partially and the transfer system (9) between them. Non-contact heat for the wood is provided by a microwave **generator** or an infra red radiator. A hot gas is fed (18) into the shrouding around the processing stages (2,5). The assembly can contain at least two alternating heating (2) and cooling (5) basins, with transfer units for the wood between them. A further Independent claim is included

for the wood where at least a part is impregnated with a used preservation oil at a rate of 0.05-2.0 kg per kg of dry non-oily material. The oil is a composition of used or contaminated oil and pref. a vegetable oil. Preferred Features: The wood has an outer roasted layer with a thickness of 0.5-2.0 cm. The layer of impregnated wood has a thickness of 10-100% of its dia., with a water content of ≤ 0.4 kg per kg of dry material.

TXT - High frequency pretreatment of wood followed by impregnation in a colder impregnating agent; Effect: pores opening at higher temperature leads to deeper penetration, colder liquid leads to a vacuum in the pores

4/4 © EPODOC / EPO

PN - [CN2792626Y](#) Y 20060705

PR - CN20042116046U 20041206

AP - CN20042116046U 20041206

DT - I

PA - YUAN MINJIAN [CN]

TI - **Steam** cleaner with micro-computer control

AB - The utility model relates to a **steam** cleaner controlled by a microcomputer, which is composed of a microcomputer control panel 1, an electromagnetic induction type **steam generator** 2, a **steam** transportation flexible pipe 3 and a high-**pressure steam** spray rod 4, wherein the electromagnetic induction type **steam generator** 2 is connected with the high-**pressure steam** spray rod 4 through the **steam** transportation flexible pipe 3; **steam** generated by the electromagnetic induction type **steam generator** 2 is sprayed out by the high-**pressure steam** spray rod 4. The cleaner is adapted for cleaning vehicles and mechanical products, and cleaning and sterilizing hotels, restaurants, hospitals and families. When the **steam** cleaner controlled by a microcomputer is adopted to clean vehicles or other dirty places, the blast **waves** and the heating power of the **steam** sprayed from the high-**pressure steam** spray rod can rapidly and effectively strip and clear dust, greasy dirt, etc. on vehicle bodies, in seat cabs or in other dirty places so as to sterilize the vehicle bodies, the seat cabs or the other dirty places. The cleaning **process** needs no chemical cleaning agent, and a towel is used for a wipe after the cleaning **process**. The utility model belongs to a water saving (the water consumption for cleaning one vehicle is less than 2 liters) and environment-friendly product, and has the characteristics of heating without open fire, a good safe

coefficient, high calorific efficiency, high reliability, high automaticity and wide suitability.

ISS 191