



(43) International Publication Date
21 February 2013 (21.02.2013)

- (51) **International Patent Classification:**
F24H 7/04 (2006.01) *F24H 9/18* (2006.01)
- (21) **International Application Number:**
PCT/TH2012/000035
- (22) **International Filing Date:**
16 August 2012 (16.08.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
1101001578 17 August 2011 (17.08.2011) TH
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- (81) **Designated States** (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM,
ZW.

(84) **Designated States** (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

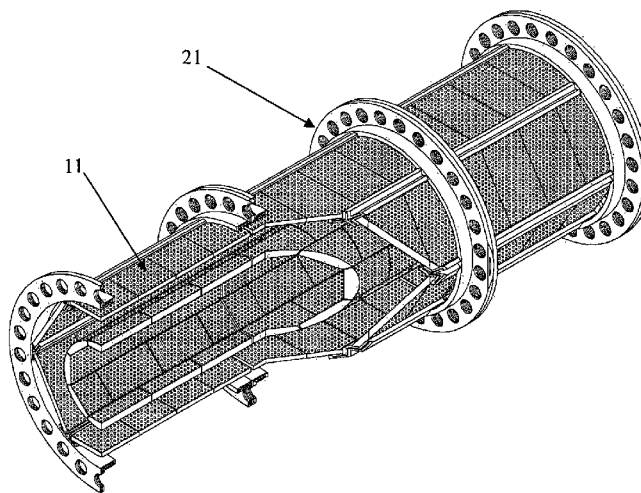
Published:

— *with international search report (Art. 21(3))*

(88) **Date of publication of the international search report:**

10 October 2013

(54) **Title:** HEAT EXCHANGER



(57) **Abstract:** The present invention discloses an apparatus for sustaining and releasing heat for boilers as per the preferred embodiment shown in Figure 1. The apparatus is preferably provided in a cylindrical form having at least one open end. The apparatus comprises a frame which can support the installation of heat sustaining materials, manufactured from heat resistant materials. It is also preferable to have at least 2 columns of bases extended along the side of the frame for supporting the installment. Heat sustaining materials are installed on the surface of the frame, the said materials are provided in the form of square or curved plate, which forms a square, polygonal or cylindrical shaped frame. The plates must have at least one pore, and must be punched to allow passage of air for ventilation of air and heat. The size of pores is varied depending on type of fuel being used. The heat exchange is conducted by heat conduction and radiation. The surface where heat radiation takes place may be varied by height in order to ensure the heat distribution and circulation. The plate at one end of the frame has a curved or straight profile for directing the flame toward the side surface of the frame. This will ensure circulation of flame on the side surface, and sustaining heat. The present invention improves the performance through the continuous heat radiation from heat sustaining materials.

