

Title (en)

Tube sheet protection device at the hot extremity of a vertical heat exchanger.

Title (de)

Schutzeinrichtung für die Rohrplatte an der heissen Seite eines vertikaler Wärmetauschers.

Title (fr)

Dispositif de protection de la plaque tubulaire à l'extrémité chaude d'un échangeur de chaleur vertical.

Publication

**EP 0057643 A2 19820811 (FR)**

Application

**EP 82400166 A 19820129**

Priority

FR 8101954 A 19810202

Abstract (en)

[origin: US4418748A] A heat exchanger comprising an outer casing closed at its hot and cool ends by two tube plates, a cluster of tubes which is connected to the tube plates to discharge into inlet and outlet collectors of a fluid flowing inside the tubes, and inlet and outlet tubings of a liquid flowing in the casing and around the tubes, wherein the exchanger comprises at its hot end a device for protecting the tube plate, such device comprising two plates united by a casing to define a first zone filled with such liquid in the static state forming a thermal screen, such plates being substantially parallel with the tube plate and a first one of such plates being disposed adjacent the tube plate, the protective device also comprising passages extending through such zone from one plate to another, and means for setting up a negative pressure between such first plate and the tube plates, to ensure that such liquid flows towards the tube plate inside such passages. Special application to heat exchangers for steam generators with liquid sodium primary fluid.

Abstract (fr)

Dispositif de protection de la plaque tubulaire (2) à l'extrémité chaude d'un échangeur de chaleur vertical à faisceau tubulaire entre de l'eau à vaporiser et surchauffer, circulant dans les tubes (4) du faisceau, et un métal alcalin liquide circulant en contre-courant autour des tubes. Il comporte deux plaques parallèles (7, 8) perpendiculaires à l'axe de l'échangeur, réunies par une virole circulaire mince (9), et dont l'une (8) est à proximité de la plaque tubulaire, et des moyens permettant une circulation ascendante du métal alcalin liquide chaud à travers ces plaques parallèles vers la plaque tubulaire. Application aux échangeurs de chaleur pour générateurs de vapeur à fluide primaire constitué par du sodium liquide.

IPC 1-7

**F22B 1/06**; **F28D 7/00**; **F28F 9/02**

IPC 8 full level

**F22B 1/06** (2006.01); **F22B 37/22** (2006.01); **F28D 7/16** (2006.01); **F28F 9/02** (2006.01); **F28F 9/18** (2006.01); **F28F 19/00** (2006.01)

CPC (source: EP US)

**F22B 1/063** (2013.01 - EP US); **F28F 9/0229** (2013.01 - EP US); **F28F 19/00** (2013.01 - EP US); **F28F 21/083** (2013.01 - EP US)

Cited by

FR2683897A1; EP0070758A1; EP0136127A3; EP0190075A1; FR2576708A1; DE202012104092U1

Designated contracting state (EPC)

BE CH DE GB IT NL

DOCDB simple family (publication)

**EP 0057643 A2 19820811**; **EP 0057643 A3 19820825**; **EP 0057643 B1 19840704**; DE 3260305 D1 19840809; ES 509230 A0 19831216; ES 8401599 A1 19831216; FR 2499212 A1 19820806; FR 2499212 B1 19850222; JP H0231320 B2 19900712; JP S57148197 A 19820913; US 4418748 A 19831206

DOCDB simple family (application)

**EP 82400166 A 19820129**; DE 3260305 T 19820129; ES 509230 A 19820201; FR 8101954 A 19810202; JP 1470582 A 19820201; US 34324682 A 19820127