

Title (en)
Shell and tube heat exchanger.

Title (de)
Rohrbündelwärmetauscher.

Title (fr)
Echangeur de chaleur tubulaire.

Publication
EP 0259895 A1 19880316 (EN)

Application
EP 87113723 A 19840327

Priority
• US 47923483 A 19830328
• US 58297584 A 19840223

Abstract (en)
A heat exchanger comprising a generally tubular shell (12), a pair of end assemblies (14, 16) coupled to the axially opposed ends of the shell (12) and a plurality of multi-walled tubes (75) having inner and outer walls (57, 96) and extending axially between the end assemblies (14, 16). Each end assembly (14, 16) comprising a tube sheet (40, 42) for receiving an outer wall (96) of a tube (75) and a center flange (32, 34) for receiving an inner wall (57) of the tube (75). At least in one end assembly (14) the outer wall (96) and the inner wall (57) of each multi-walled tube (75) are supported by the tube sheet (40) and the center flange (32) with an axially movable relationship, respectively, the center flange (32, 34) is disposed in an axially spaced relationship to the tube sheet (40, 42), and sealing means are provided between the tube sheet (40, 42) and the center flange (32, 34) for sealing the outer wall (96) of each tube (75) in an axially movable relationship to the tube sheet (40, 42) and for sealing the inner wall (57) of each tube (75) in an axially movable relationship to the center flange (32, 34).

IPC 1-7
F28F 1/00; **F28F 9/02**; **F28F 9/04**

IPC 8 full level
F28D 7/16 (2006.01); **F28F 1/00** (2006.01); **F28F 1/08** (2006.01); **F28F 9/02** (2006.01); **F28F 9/22** (2006.01)

CPC (source: EP)
F28D 7/1638 (2013.01); **F28F 1/003** (2013.01); **F28F 1/08** (2013.01); **F28F 9/0219** (2013.01); **F28F 9/0229** (2013.01); **F28F 9/22** (2013.01); **F28F 2275/20** (2013.01)

Citation (search report)
• [YD] EP 0066425 A2 19821208 - NEW ZEALAND DAIRY & IND [NZ]
• [Y] FR 1537988 A 19680830 - DANTO ROGEAT & CO
• [A] GB 315934 A 19290725 - HENRY KIRK
• [A] EP 0052522 A2 19820526 - NEW ZEALAND DAIRY & IND [NZ]
• [A] GB 208822 A 19240103 - HARRY FRANCIS JACKSON THOMPSON
• [A] GB 2047400 A 19801126 - BLYTHE & CO LTD WILLIAM
• [A] DE 2930577 A1 19810212 - WIESSNER GMBH
• [A] DE 1064966 B 19590910 - ZELLWOLLE LENZING AG
• [A] US 3181606 A 19650504 - VICTOR BELANGER CELESTIN
• [A] US 2762611 A 19560911 - MONROE PAUL S, et al

Cited by
CN107449314A; EP0644394A1; US4972902A; US10190765B2; US11193669B2

Designated contracting state (EPC)
BE DE FR GB IT NL SE

DOCDB simple family (publication)
EP 0259895 A1 19880316; **EP 0259895 B1 19900718**; CA 1264735 A 19900123; DE 3479153 D1 19890831; DE 3482777 D1 19900823; DK 168684 A 19841109; DK 168684 D0 19840327; EP 0120497 A2 19841003; EP 0120497 A3 19851023; EP 0120497 B1 19890726

DOCDB simple family (application)
EP 87113723 A 19840327; CA 450745 A 19840328; DE 3479153 T 19840327; DE 3482777 T 19840327; DK 168684 A 19840327; EP 84103378 A 19840327