



US 20010013406A1

(19) **United States**

(12) **Patent Application Publication**
Duran

(10) **Pub. No.: US 2001/0013406 A1**

(43) **Pub. Date: Aug. 16, 2001**

(54) **TO HEAT EXCHANGERS**

(30) **Foreign Application Priority Data**

(75) Inventor: **Jesus Pagan Duran**, Murcia (ES)

Jul. 16, 1998 (ES) ES P 9801521

Correspondence Address:

William M. Hienz III

Dicke, Billig & Czaja, P.A.

Suite 1250

701 Fourth Avenue South

Minneapolis, MI 55415 (US)

Publication Classification

(51) **Int. Cl.⁷** **F28G 1/00; F28F 17/00**

(52) **U.S. Cl.** **165/94; 165/95**

(73) Assignee: **HRS Spiratube S.L.**

(21) Appl. No.: **09/761,449**

(22) Filed: **Jan. 16, 2001**

Related U.S. Application Data

(63) Continuation of application No. PCT/EP99/05077,
filed on Jul. 16, 1999.

(57) **ABSTRACT**

A heat exchanger assembly comprises a tubular casing (1) housing product conduit pipe (8) and a rod (14) extending through each pipe (8). The rod (14) being reciprocatingly moveable along the pipe (8) and having a scraping means (15) projecting from it such that upon reciprocation of the rod (14) within the pipe (8) the scraping means (15) will scrape product residues from the inner walls of the product conduit (8), allowing improved heat transfer to be achieved whilst the assembly continues to operate.

