

⑫ **EUROPEAN PATENT APPLICATION**

⑳ Application number: **81305446.7**

⑤① Int. Cl.<sup>3</sup>: **F 28 F 1/42, F 28 D 7/10,**  
**F 28 D 7/02**

㉔ Date of filing: **18.11.81**

③① Priority: **19.11.80 NZ 195589**

⑦① Applicant: **New Zealand Dairy & Industrial Supplies Limited, 61 Mahana Road Te Rapa, Hamilton (NZ)**

④③ Date of publication of application: **26.05.82**  
**Bulletin 82/21**

⑦② Inventor: **Sulzberger, Kevin John, 24 Ashurst Avenue, Hamilton (NZ)**

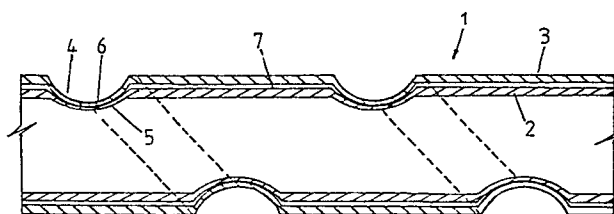
⑧④ Designated Contracting States: **AT BE DE FR GB NL SE**

⑧⑧ Date of deferred publication of search report: **24.11.82 Bulletin 82/47**

⑦④ Representative: **Haggart, John Pawson et al, Page, White & Farrer 27 Chancery Lane, London, WC2A 1NT (GB)**

⑤④ **An enhanced surface tube.**

⑤⑦ An enhanced surface tube is made up of at least two conduits with the inner conduit (2) being stainless steel and with a spiral groove (4) extending in from the outer surface of the twin wall tube and forming a radially inwardly extending spiral protuberance (5) on the inner surface of the stainless steel conduit thus interconnecting the two conduits so that in use they will act as a single enhanced surface tube.





| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                    |                                                |                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Citation of document with indication, where appropriate, of relevant passages                                      | Relevant to claim                              | CLASSIFICATION OF THE APPLICATION (Int. Cl. 3) |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | GB-A-1 145 513 (KABEL UND METALLWERKE)<br>* Page 1, lines 53-68; page 2, lines 89-106; figure 4 *                  | 1,2,6                                          | F 28 F 1/42<br>F 28 D 7/10<br>F 28 D 7/02      |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CH-A- 287 675 (CALUMET AND HECLA)<br>* Page 2, lines 23-42, 52-53; figures 1,2,4 *                                 | 1,5                                            |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FR-A-1 562 938 (CALUMET AND HECLA)<br>* Page 2, right-hand column, paragraph 3; figures 1-3 * & GB - A - 1 174 640 | 1                                              |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-A-3 777 343 (D'ONOFRIO)<br>* Column 2, lines 62-65; column 3, lines 8-38; column 6, lines 17-26; figures 1,4 *  | 1,4,6                                          |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-A-3 566 615 (ROEDER)<br>* Column 2, line 57 - column 3, line 49; figures 1,3 *                                  | 1,2,4                                          | F 28 F<br>F 28 D<br>F 16 L<br>B 21 D           |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | GB-A- 960 628 (CALUMET AND HECLA)<br>* Page 2, lines 71-112; figure 1 *                                            | 1,9,10                                         |                                                |
| <p style="text-align: center;">---</p> <p style="text-align: center;">-/-</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    |                                                |                                                |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    |                                                |                                                |
| Place of search<br>THE HAGUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                    | Date of completion of the search<br>20-08-1982 | Examiner<br>FILTRI G.                          |
| <p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                    |                                                |                                                |



| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                |                                                |
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| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Citation of document with indication, where appropriate, of relevant passages       | Relevant to claim                              | CLASSIFICATION OF THE APPLICATION (Int. Cl. 3) |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FR-A-2 347 642 (ETAT FRANCAIS)<br>* Page 1, line 35 - page 2, line 15; figure *     | 7,9,10                                         |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-A-4 228 848 (WADKINSON)<br>* Column 2, line 56 - column 3, line 3; figures 1,2 * | 6,7,9,10                                       |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-A-4 228 852 (TOGASH)                                                             |                                                |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DE-A-1 551 488 (NAGAHARA)                                                           |                                                |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FR-A- 525 503 (NORSKE SALTVERKER)                                                   |                                                |                                                |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-A-3 826 304 (WITHERS et al.)                                                     |                                                |                                                |
| D,A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-A-2 913 009 (KUTHE)                                                              |                                                |                                                |
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