

**EUROPEAN PATENT APPLICATION**

Application number: **87302043.2**

Int. Cl.<sup>4</sup>: **F 04 C 2/10**

Date of filing: **10.03.87**

Priority: **14.03.86 GB 8606326**

Date of publication of application:  
**28.10.87 Bulletin 87/44**

Designated Contracting States:  
**AT BE CH DE ES FR GB GR IT LI LU NL SE**

Date of deferred publication of search report:  
**09.03.88 Bulletin 88/10**

Applicant: **HOBURN-EATON LIMITED**  
**Priory Road Strood**  
**Rochester, Kent ME2 2BD (GB)**

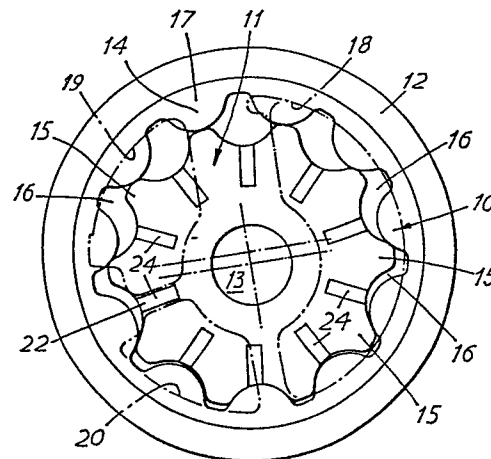
Inventor: **Bristow, Ian Trevor**  
**4 Hayes Close**  
**Higham Kent (GB)**

**Thornelaw, Alec**  
**67 Ingle Road**  
**Chatham Kent (GB)**

Representative: **Brooke-Smith, Fred et al**  
**STEVENS, HEWLETT & PERKINS 5 Quality Court**  
**Chancery Lane**  
**London WC2A 1HZ (GB)**

**Rotary positive displacement pump.**

A gerotor or  $N(N+1)$  type pump comprises outer and inner lobed rotors 10, 11 defining pumping chambers 16 and has an inlet port 18 and two outlet ports 19, 20. Ports 19, 20 are separated from each other by a radially extending land 22. Between each pair of neighbouring lobes on the inner rotor 11 a radial slot 24 is formed which opens to the periphery of the rotor and extends inward a sufficient distance to overlap the two outlet ports 19, 20 radially when the said two lobes flank circumferentially opposite sides of the land 22. The circumferential extent of each slot 24 is sufficient to ensure that there is always a leakage path from the pumping chamber to which the slot opens to one or other of the two outlet ports as the slot passes the land 22.



*FIG. 1*



EP 87302043.2

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                     |                                                                                      |                                                                                                                                                                                                                                                                              | EP 87302043.2                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Category                                                                                                                                                                                                                | Citation of document with indication, where appropriate, of relevant passages        | Relevant to claim                                                                                                                                                                                                                                                            | CLASSIFICATION OF THE APPLICATION (Int. Cl.4) |
| A                                                                                                                                                                                                                       | <u>GB - A - 1 146 913</u> (GERMANE)<br>* Totality; especially fig. 15 *              | 1                                                                                                                                                                                                                                                                            | F 04 C 2/10                                   |
|                                                                                                                                                                                                                         | --                                                                                   |                                                                                                                                                                                                                                                                              |                                               |
| A                                                                                                                                                                                                                       | <u>GB - A - 681 883</u> (HOBURN-EATON)<br>* Totality; especially claims; fig. *      | 1                                                                                                                                                                                                                                                                            |                                               |
|                                                                                                                                                                                                                         | --                                                                                   |                                                                                                                                                                                                                                                                              |                                               |
| A                                                                                                                                                                                                                       | <u>DE - A1 - 3 243 394</u> (DANFOSS)<br>* Totality; especially claims; fig. 2 *      | 1,2                                                                                                                                                                                                                                                                          |                                               |
|                                                                                                                                                                                                                         | --                                                                                   |                                                                                                                                                                                                                                                                              |                                               |
| A                                                                                                                                                                                                                       | <u>GB - A - 1 407 282</u> (DANFOSS)<br>* Totality; especially fig. 2,3,4 *           | 1,2                                                                                                                                                                                                                                                                          |                                               |
|                                                                                                                                                                                                                         | --                                                                                   |                                                                                                                                                                                                                                                                              |                                               |
| A                                                                                                                                                                                                                       | <u>DE - A - 1 703 573</u> (RELIANCE)<br>* Totality; especially fig. 7, pos. no. 70 * | 1,2                                                                                                                                                                                                                                                                          |                                               |
|                                                                                                                                                                                                                         | --                                                                                   |                                                                                                                                                                                                                                                                              |                                               |
| A                                                                                                                                                                                                                       | <u>US - A - 4 411 607</u> (WÜSTHOF)<br>* Totality; especially fig. 8 *               | 1,2                                                                                                                                                                                                                                                                          |                                               |
|                                                                                                                                                                                                                         | ----                                                                                 |                                                                                                                                                                                                                                                                              |                                               |
| The present search report has been drawn up for all claims                                                                                                                                                              |                                                                                      |                                                                                                                                                                                                                                                                              |                                               |
| Place of search<br>VIENNA                                                                                                                                                                                               |                                                                                      | Date of completion of the search<br>21-12-1987                                                                                                                                                                                                                               | Examiner<br>WERDECKER                         |
| <b>CATEGORY OF CITED DOCUMENTS</b>                                                                                                                                                                                      |                                                                                      |                                                                                                                                                                                                                                                                              |                                               |
| 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 |                                                                                      | 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<br>& : member of the same patent family, corresponding document |                                               |

