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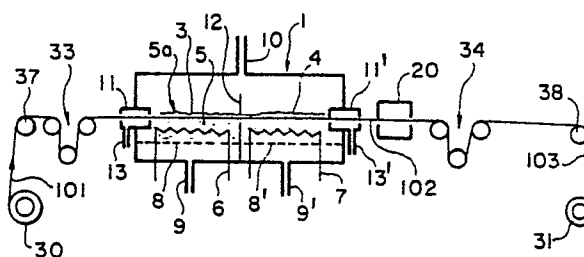
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54 **Method for producing oxidized filaments.**

57 In a method for producing oxidized filaments (102) by treating precursor filaments (101) in a bed (5a) fluidized by an oxidizing gas and heat treating the precursor filaments (101) in the fluidized bed (5a), the fluidized bed (5a) is formed with heat-medium particles (5), not less than 80% by weight of which are of solid particles each having a particle diameter of not greater than 10 mesh, and the oxidation is carried out under optimum conditions within an optimum range of the treatment temperatures, an optimum range of depths H of the fluidized bed (5a) and an optimum gas speed of the oxidizing gas. By the method, the period of time required for the oxidation can be greatly shortened and oxidized filaments (102) having excellent characteristics can be obtained. Furthermore, where the oxidized filaments thus obtained are carbonized, carbon fibers having excellent mechanical properties can be produced.

**FIG. 2**





EP 88 30 7084

| 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. 4) |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | WO-A-8 401 368 (SERAPHIN)<br>* Claims; page 7, line 25 - page 10, line 12 *<br>---                                                                                                                                                                                                    | 1                                              | D 01 F 9/22<br>D 01 F 9/32                     |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FR-A-1 556 024 (COURTAULDS)<br>* Abstract; whole description *<br>---                                                                                                                                                                                                                 | 1-2                                            |                                                |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | GB-A- 911 542 (TOKAI DENKYOKU SEIZO)<br>* Whole document *<br>-----                                                                                                                                                                                                                   | 1-5                                            |                                                |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                       |                                                | TECHNICAL FIELDS SEARCHED (Int. Cl.4)          |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                       |                                                | D 01 F                                         |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       |                                                |                                                |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| Place of search<br>THE HAGUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       | Date of completion of the search<br>25-09-1989 | Examiner<br>HELLEMANS W.J.R.                   |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| <table><tr><td><b>CATEGORY OF CITED DOCUMENTS</b><br/>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</td><td>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/>.....<br/>&amp; : member of the same patent family, corresponding document</td></tr></table> |                                                                                                                                                                                                                                                                                       |                                                |                                                | <b>CATEGORY OF CITED DOCUMENTS</b><br>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>.....<br>& : member of the same patent family, corresponding document |
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