

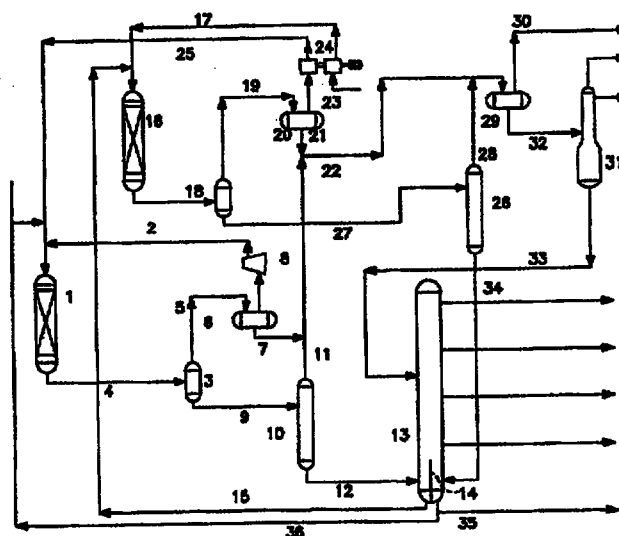


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| <b>(51) International Patent Classification <sup>6</sup>:</b><br><b>C10G 65/12, 73/38</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 97/23584</b><br><b>(43) International Publication Date:</b> 3 July 1997 (03.07.97)                                                                                                                                                                                                                                                 |
| <b>(21) International Application Number:</b> PCT/US96/16231<br><b>(22) International Filing Date:</b> 11 October 1996 (11.10.96)<br><br><b>(30) Priority Data:</b><br>08/578,295      26 December 1995 (26.12.95)      US<br><br><b>(71) Applicants:</b> THE M.W. KELLOGG COMPANY [US/US];<br>601 Jefferson Avenue, Houston, TX 77002-7990 (US).<br>MOBIL OIL CORPORATION [US/US]; 3225 Gallows<br>Road, Fairfax, VA 22037 (US).<br><br><b>(72) Inventors:</b> GOEBEL, Kenneth, W.; 5135 Ancinetta Drive, Sch-<br>necksville, PA 18078 (US). HILBERT, Timothy, Lee; 17<br>Charles Lane, Sewell, NJ 08080 (US). HUNTER, Michael,<br>G.; 22322 Crystal Bay Drive, Katy, TX 77450 (US). PAP-<br>PAL, David, A.; 118 Peyton Avenue, Haddonfield, NJ<br>08033 (US). GENTRY, Arthur, R.; 17322 Taylorcrest,<br>Houston, TX 77079 (US). PARTRIDGE, Randall, David;<br>229 Mountwell Avenue, Haddonfield, NJ 08033 (US).<br><br><b>(74) Agents:</b> PRATER, Penny, L. et al.; Mobil Oil Corporation,<br>3225 Gallows Road, Fairfax, VA 22037 (US). |           | <b>(81) Designated States:</b> CA, JP, KR, SG, European patent (AT, BE,<br>CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,<br>PT, SE).<br><br><b>Published</b><br><i>With international search report.<br/>         Before the expiration of the time limit for amending the<br/>         claims and to be republished in the event of the receipt of<br/>         amendments.</i> |

**(54) Title:** INTEGRATED HYDROPROCESSING SCHEME WITH SEGREGATED RECYCLE**(57) Abstract**

Petroleum products are refined in an integrated hydroprocessing scheme involving a hydrocracking stage (1) and subsequent dewaxing stage (16). Materials boiling in the middle distillate or lube oil range may be dewaxed. The bottoms streams (12, 34) and optionally other streams from each stage are maintained separately from one another during processing. Dewaxing may occur using either hydroisomerization catalysts or shape-selective catalysts or both in series. One embodiment employs a baffle (14) in the flash zone of a fractionator (13) to separate bottoms streams from each other. Alternatively, the effluent (4) from the hydrocracking stage may be processed separately from the effluent (18) from the dewaxing stage. The bottoms fraction from the dewaxing stage may be recycled back to the hydrocracking stage for further processing or used as lube base stock.