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(54) Title: IMPELLER FOR CENTRIFUGAL PUMP

(57) Abstract: A centrifugal pump includes a rotatable shaft; and at least one impeller attached to the rotatable shaft, wherein at least one impeller includes a top plate, and a bottom plate, and a plurality of vanes enclosed between the top plate and the bottom plate, wherein at least one of the plurality of vanes has a trailing end that comprises a first surface that adjoins the top plate substantially at an outer edge of the top plate and a second surface that is substantially flush with an axially outward surface of the bottom plate.
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG). before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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## A. CLASSIFICATION OF SUBJECT MATTER

**IPC:** B63H 11/16 (2006.01); F01D 5/22 (2006.01)

**USPC:** 415/120; 416/186R, 228

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S.: 415/120; 416/186R, 228

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</thead>
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<tr>
<td>X</td>
<td>US 5,628,616 A (LEE) 13 May 1997 (13.05.1997), the whole document.</td>
<td>1, 2, 4, 7-9, 12</td>
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<tr>
<td>X</td>
<td>US 6,299,409 B1 (MATSUNAGA et al.) 9 October 2001 (09.10.2001), column 5, lines 16-36, column 6, lines 51-67, column 7, lines 1-29.</td>
<td>1, 3, 6, 8, 10</td>
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<td>X</td>
<td>US 6,854,517 B2 (GAY et al.) 15 February 2005 (15.02.2005), column 3, lines 47-67, column 4, lines 1-6.</td>
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