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(54) **Free vortex pump**

(57) An electric water pump rotating in the correct direction, comprising a water pump body (2) that has a chamber (3), which is basically cylindrical in shape, and a chamber cover (8), which is fitted at the axial outward end of said chamber (3); an impeller (42) is accommodated and rotates inside said chamber (3) coaxially; said impeller (42) includes at least two impeller vanes (45) that project from the impeller disc surface (44) and said impeller vanes (45) bend to the same direction around the rotating axis OO' of said disc surface (44); Assuming V as the volume inside said chamber (3) and v as the volume enveloped by all the said impeller vanes (45)

when said impeller (42) rotates, a design can be made about relations of geometrical parameters between volume of said chamber (3) in said electric water pump and said volume enveloped by all the impeller vane (45) rotating inside said chamber (3) to be in the following range, i.e., ratio between volume enveloped by all the said impeller vane (45) in rotation and volume of said chamber (3):

$$v/V = 0.08 \sim 0.18$$

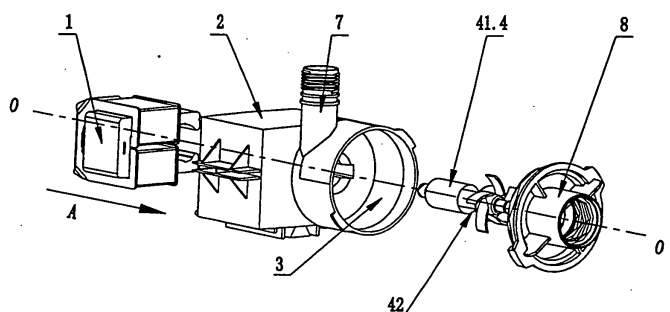


Fig. 1



EUROPEAN SEARCH REPORT

Application Number
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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
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Place of search		Date of completion of the search	Examiner
The Hague		2 July 2012	Ingelbrecht, Peter
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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