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[Continued on next page]

(54) Title: RAIL LINEAR TURBINE WITH PISTON AND FLEXIBLE VANES

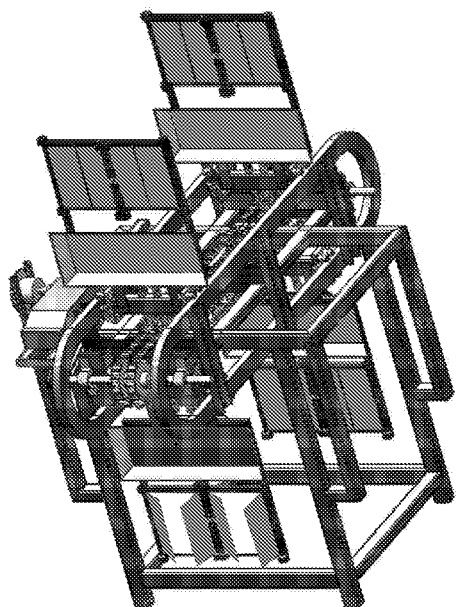


FIG 4

(57) Abstract: The efficiency rises in liner rail turbine with piston and flexible vanes which its rowing vanes are placed on the longitudinal axis of turbine in a radial and perpendicular manner and as a result of stroke with fluid receive its energy and transfer it to augmentative gearbox by chain, shaft, bearing and finally to the generator in order to turn it into electricity. In order to facilitate the rotation of vanes and strengthen them against fluid flow, an orbital path in the form of a geometrical stadium is used at both sides of turbine. In this turbine, in order to extract the energy, the longitudinal axis of turbine which is also horizontal must be put at the end of fluid flow which makes the strike of fluid flow to the vanes to be direct and perpendicular. Using rowing vanes with flexible blades decreases the waste of energy obtained from the fluid to overcome drag force exerted on the vanes and finally the efficiency of turning the fluid kinetic energy to rotational energy increases.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

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)
B66B F03B

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 66456 A (BRIGGS ELISHA) 9 July 1867 (1867-07-09) the whole document -----	1-10
X	US 1 432 271 A (HENRY ALLES) 17 October 1922 (1922-10-17) page 1, line 41 - line 98; figures -----	1-10
X	DE 20 2010 013527 U1 (SCHULTE ARNIM [DE]) 10 February 2011 (2011-02-10) paragraph [0003] - paragraph [0005]; figures -----	1-10
X	JP S57 151074 A (HOKUTO MFG) 18 September 1982 (1982-09-18) abstract; figures -----	1-10

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See patent family annex.

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 66456	A	09-07-1867	NONE	

US 1432271	A	17-10-1922	NONE	

DE 202010013527 U1		10-02-2011	NONE	

JP S57151074	A	18-09-1982	NONE	
