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(54) Title: APPARATUS FOR CHARGING A BATTERY OF A PORTABLE ELECTRONIC DEVICE COMPRISING TRANSPARENT HOUSING

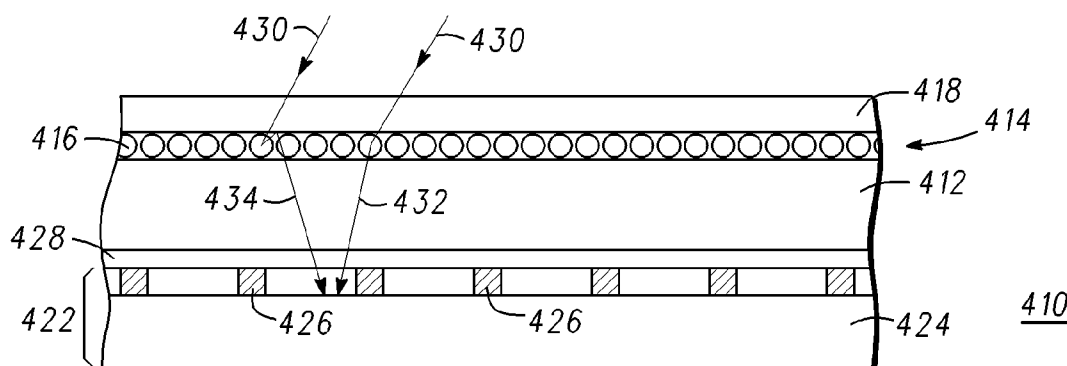


FIG. 4

(57) Abstract: A power source (212) is disclosed for charging a battery (330) within a portable electronic device (310). An apparatus (422), such as a photovoltaic or thermoelectric cell, for charging the battery (330) is disposed contiguous to and within a transparent housing (412) of the portable electronic device (310). A fluorescent species (416), such as quantum dots or a fluorescent dye, is disposed on a side of the housing (412) opposed to the apparatus (422). Light (430) striking the fluorescent species (416) is converted into photons (432, 434) having a narrower spectrum that passes through the housing (412) to the apparatus (422). An optional layer (418) may be disposed on the fluorescent species (416) that reflects light from the fluorescent species (416) to the apparatus (422). Photonic crystals (415) may be combined with the fluorescent species (416) to increase reflectivity.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

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H02J

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 practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 35 22 602 A1 (BASF AG [DE]) 9 January 1986 (1986-01-09) abstract figures 1,2 claims 1-3 page 2 - page 3	1-22
A	US 6 586 906 B1 (BESSA JERRY [US] ET AL) 1 July 2003 (2003-07-01) abstract figures 1,3-5 claim 1 column 3, line 61 - column 4, line 12 column 4, line 45 - column 6, line 11 ----- -/--	1-22

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/134668 A1 (MEKURIA DEMELASH [US]) 17 July 2003 (2003-07-17) abstract figures 22A-C claim 1 page 2, column 2, paragraph 34 - page 3, column 1, paragraph 37 -----	1-22

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
DE 3522602	A1	09-01-1986	NONE
US 6586906	B1	01-07-2003	NONE
US 2003134668	A1	17-07-2003	NONE