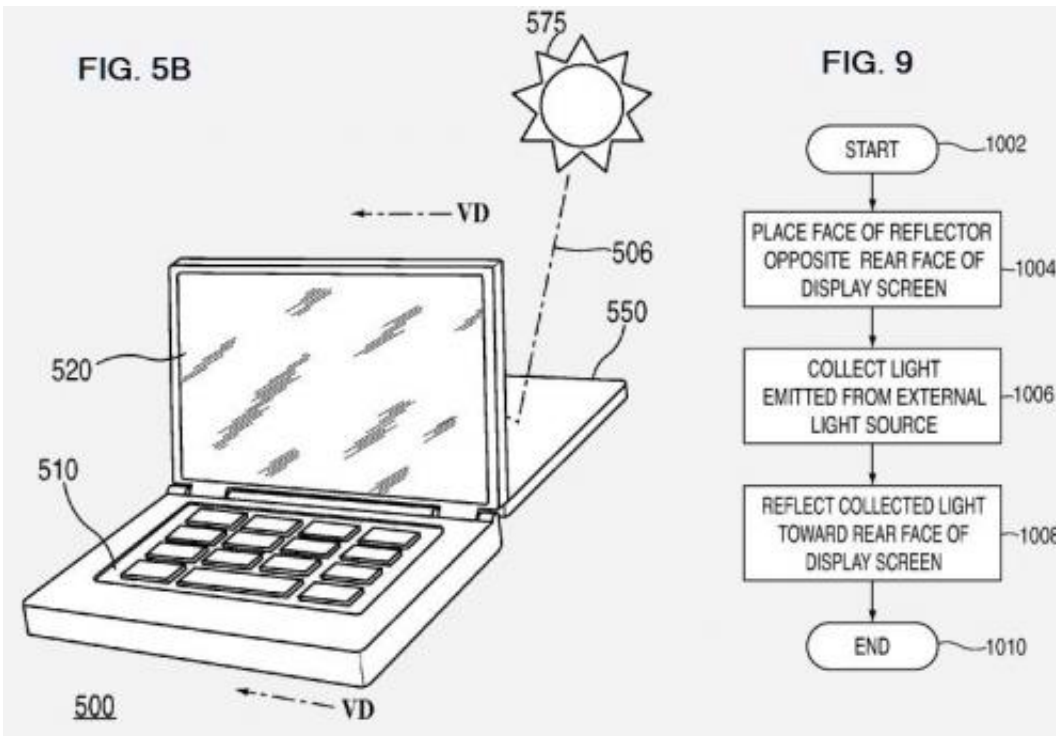


# Apple has solar designs, wins patents

October 23 2011, by Nancy Owano



(PhysOrg.com) -- Apple recently won patents with the US Patent and Trademark office. These patents focus on ideas for using solar technology for laptops, smartphones and tablets. One such patent involves using sunlight to light up a laptop's screen. The patent application explains the idea as an "apparatus and methods for harnessing external light to illuminate a display screen of an electronic device."

Apple's concept indicates that the display screen may be illuminated using a light harness, reflector, translucent surface, or any combination thereof. The light harness may be cylindrical or hexahedral and coupled to an external light input or collector. The reflector may be repositioned toward or away from the display screen to reflect external light toward the display screen. The translucent surface may allow external light to pass through it to illuminate the display screen. The translucent surface may protect the rear face of the display screen, or the rear face of the display screen may itself be translucent.

The other patent is titled "Method of assembling integrated circuit components." Inventors listed on this application are Bradley Spare, Michael Hillman and Gregory Tice.

The abstract says that the idea involves methods of mounting integrated circuits including solar cells to a substrate, where the circuits are mounted before being singulated into discrete die. Once the die sites or other circuits are formed on a wafer, the wafer will be attached, whole or divided into multi-die site wafer segments, to a substrate. After mounting, the die sites are singulated to form discrete die already mounted to the supporting substrate. The singulation may be performed by laser dicing of the wafer segments.

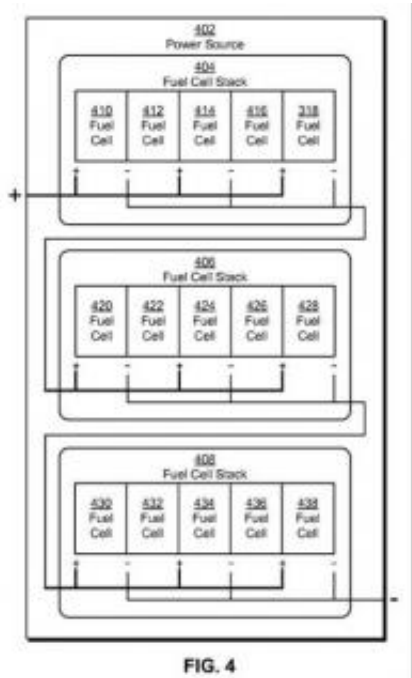


FIG. 4

Laser dicing wafer fragments helps achieve greater density of cell manufacture on the wafer and greater density in placement on a printed circuit board or other substrate, according to Apple's [patent application](#).

Apple points out the significance of its invention: The techniques, according to Apple, offer efficiencies in the handling of semiconductor wafers and the devices formed. "The present invention provides a new method of assembling semiconductor device components, including but not limited to solar cells, to a supporting substrate; with such methods providing efficiencies not present in prior art methods."

Responding to the news of Apple's designs, Apple watchers see the [patents](#) as one more sign that, like Intel, Apple is not wasting any time thinking about the most efficient ways to harness solar energy to make optimized computing devices for end users.

Earlier this year, stories were circulating that Apple was indeed busy experimenting with solar power, and considering which company would produce [panels](#) for future products. [Apple](#) was also reported as looking into ways to embed solar cells in devices.

**More information:**

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