US 20200097044A1

(19) United States

(12) Patent Application Publication

Kim et al.

(10) Pub. No.: US 2020/0097044 A1

(43) Pub. Date: Mar. 26, 2020

(54) **HYBRID COVERLAY/WINDOW STRUCTURE FOR FLEXIBLE DISPLAY APPLICATIONS**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventors: **Hoon Sik Kim**, Los Gatos, CA (US); **Chang-Chia Huang**, San Jose, CA (US); **Christopher D. Jones**, Los Gatos, CA (US); **Masato Kuwabara**, Tsukuba (JP); **Nikhil D. Kalyankar**, Fremont, CA (US); **Terry C. Shyu**, San Jose, CA (US); **Yasmin F. Afsar**, San Jose, CA (US); **Paul S. Drzaic**, Morgan Hill, CA (US)

(21) Appl. No.: **16/528,271**

(22) Filed: **Jul. 31, 2019**

Related U.S. Application Data

(60) Provisional application No. 62/735,569, filed on Sep. 24, 2018.

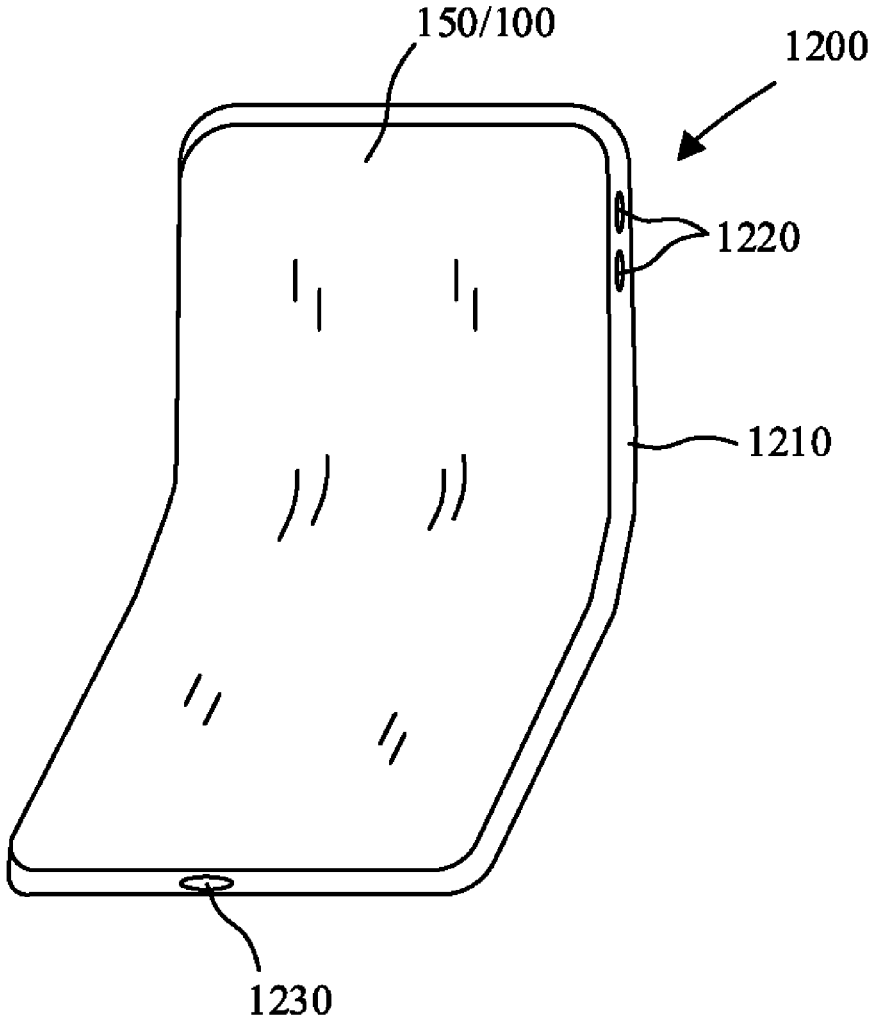
Publication Classification

(51) **Int. Cl.**

G06F 1/16	(2006.01)
H04M 1/02	(2006.01)
H05K 5/03	(2006.01)
B32B 7/12	(2006.01)
B32B 17/06	(2006.01)

(52) **U.S. Cl.**

CPC ***G06F 1/1607*** (2013.01); ***H04M 1/0268*** (2013.01); ***H05K 5/03*** (2013.01); *B32B 2457/208* (2013.01); ***B32B 17/067*** (2013.01); ***G06F 1/1643*** (2013.01); ***G06F 1/1652*** (2013.01); ***B32B 7/12*** (2013.01)

(57) **ABSTRACT**

Protective cover layers for electronic devices are described. In an embodiment, an electronic device includes a display panel and a protective cover layer over the display panel. The protective cover layer includes a transparent support substrate and a hardcoat layer covering an exterior facing surface of the transparent support substrate. The display panel may be a flexible display panel and the protective cover layer may flex with the flexible display panel.