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HORNG et al.(10) **Pub. No.: US 2024/0235477 A1**(43) **Pub. Date: Jul. 11, 2024**(54) **CRYSTAL OSCILLATOR AND METHOD FOR MAKING THE SAME**(52) **U.S. Cl.**CPC **H03B 5/32** (2013.01); **H10N 30/063** (2023.02)(71) Applicant: **AKER TECHNOLOGY CO., LTD.**,
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ABSTRACT

A crystal oscillator includes an oscillating main body, a top electrode layer, a bottom electrode layer, and a magnetic layer. The oscillating main body includes a thinned portion and a side portion. The thinned portion has an upper surface and a lower surface opposite to each other and respectively defining an upper surface work portion and a lower surface work portion. The side portion is connected to one end of the thinned portion and extends upwardly. The top electrode layer is disposed on the upper surface of the thinned portion, and includes a top work portion disposed on the upper surface work portion. The bottom electrode layer is disposed on the lower surface of the thinned portion, and includes a bottom work portion disposed on the lower surface work portion. The magnetic layer is disposed on the side portion, and is spaced apart from the top electrode layer.

