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(19) **United States**(12) **Patent Application Publication****Kawauchi et al.**(10) **Pub. No.: US 2022/0407499 A1**(43) **Pub. Date: Dec. 22, 2022**(54) **VIBRATOR ELEMENT, VIBRATOR DEVICE,
AND METHOD OF MANUFACTURING
VIBRATOR ELEMENT**(52) **U.S. Cl.**CPC *H03H 9/215* (2013.01); *H03H 3/04*
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ABSTRACT

A vibrating arm of a vibrator element has a first surface, a second surface at an opposite side to the first surface in a Z direction, a first side surface and a second side surface as side surfaces, and a third side surface as a tip surface. At least one of the first side surface, the second side surface, and the third side surface includes a first side surface part tilted with respect to a Z direction, and a second side surface part tilted toward the first surface or the second surface with respect to the first side surface part. The first weight is arranged so that an outer edge of the first weight is located at inner side of innermost parts in the first side surface part and the second side surface part, or at the same position as the innermost parts when viewed from the Z direction.

