Mouth Organ: A Musical Cantilever

D K PATTNAIK[1], A P SAHU[2], N K SHARMA[3*]

[1,3]Siksha 'O' Anusandhan University, Bhubaneswar, OR, India, 751030
[2]Centurion University of Technology and Management, Bhubaneswar, OR, India
* nachiketasharma@soauniversity.ac.in

Abstract. At first sight, a mouth organ appears not to be connected in any way with a mechanical device like a cantilever. But by treating each plate associated with a particular note in a mouth organ as a cantilever and applying the formula of the cantilever in calculating the frequency we have shown that, in fact, the ratio of any two frequencies has remarkable agreement with the experimental value. Again, the frequency of a note calculated on the basis of cantilever bears a ratio of two small integers with the experimental value of the corresponding note. This approach can be applied to any musical instrument having same inner plate like structure.

[Full Paper]