Resonance Column I

AIM: To find the velocity of sound in air at room temperature using the resonance column by determining two resonance positions.

APPARATUS: Resonance column apparatus, Tuning forks ,Rubber hammer etc.

THEORY:

Resonance occurs when

1. the length of air column is equal to one-fourth of the wavelength of the sound waves (first resonance).

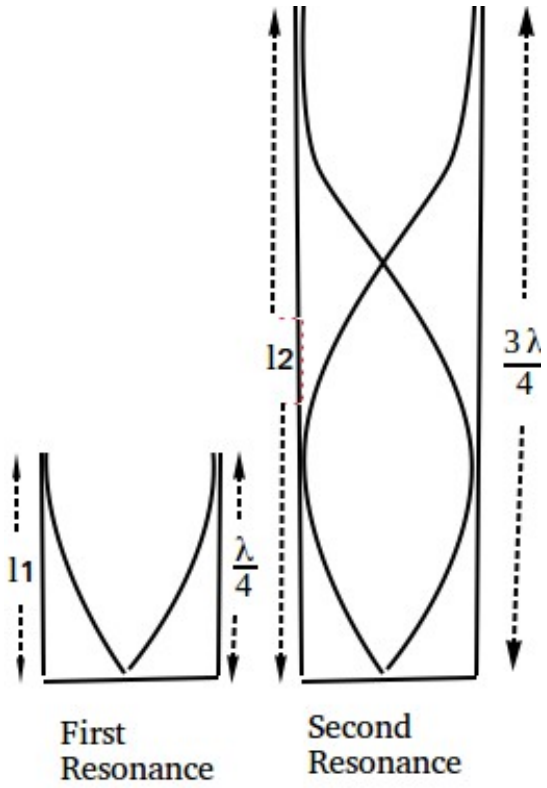
   For this $l_1 = \frac{\lambda}{4}$

2. the length of air column is equal to three-fourth of the wavelength of sound waves (second resonance).

   For this $l_2 = \frac{3\lambda}{4}$

   Using these equations,

   we get $v = f\lambda = 2f(l_2 - l_1)$



OBSERVATIONS:

Trial No	Frequency of tuning fork, f (Hz)	First resonating length, l_1			Second resonating length, l_2			v = $2f(l_2 - l_1)$ cm/s
		1	2	Mean (cm)	1	2	Mean (cm)	
1								
2								
3								
4								

Mean Velocity of sound = cm/s = m/s

RESULT:

1. Velocity of sound at room temperature = m/s