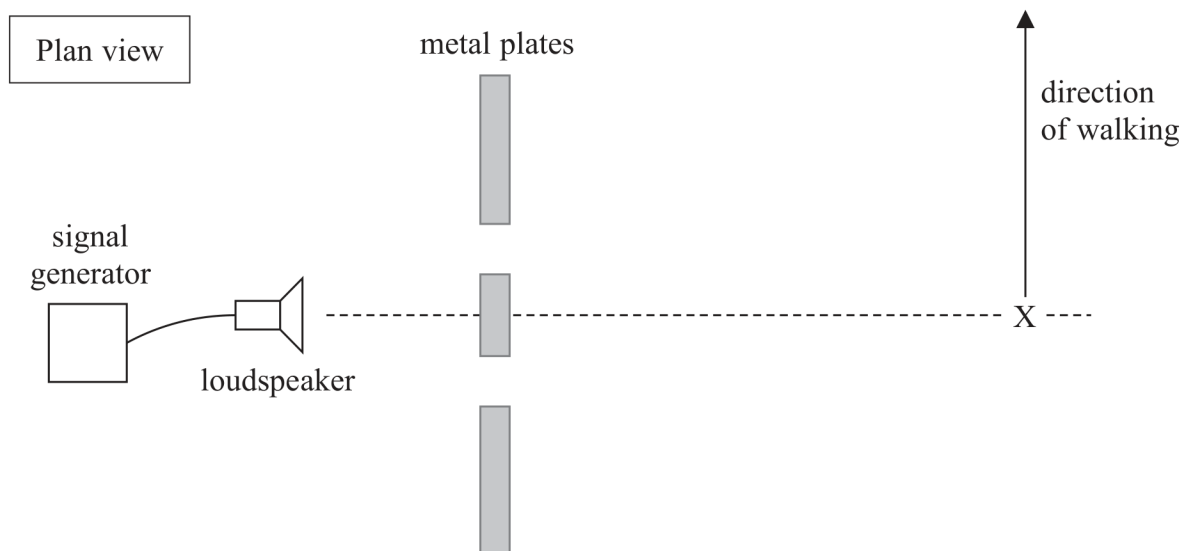


- 15 A student connected a signal generator to a loudspeaker. The student arranged metal plates in front of the loudspeaker, as shown. The student left gaps between the metal plates.

Sound waves from the loudspeaker passed through the gaps. The gaps were approximately the same size as the wavelength of the sound waves.



The student stood at point X and heard a loud sound. The student walked in a straight line in the direction of the arrow. As her position changed, the sound became quieter until she heard no sound.

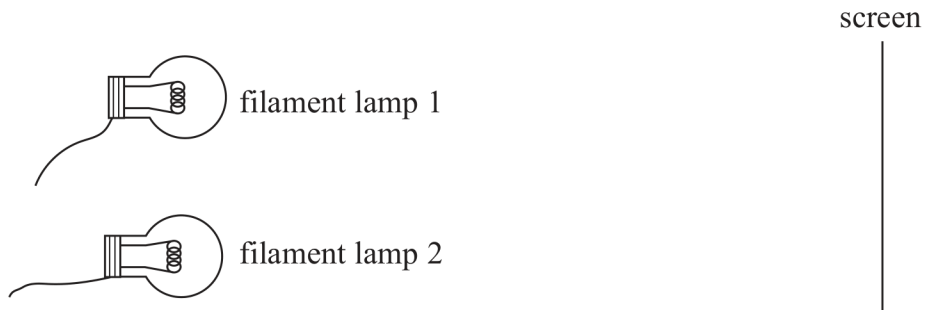
- *(a) Explain why the sound became quieter until there was no sound.

Your explanation should refer to interference.

(6)

(b) Interference can be demonstrated using visible light.

A student connects two filament lamps to the same power supply. A screen is placed at a distance from the lamps, as shown.



Explain why it is **not** possible to create a consistent interference pattern on the screen using this arrangement.

(2)