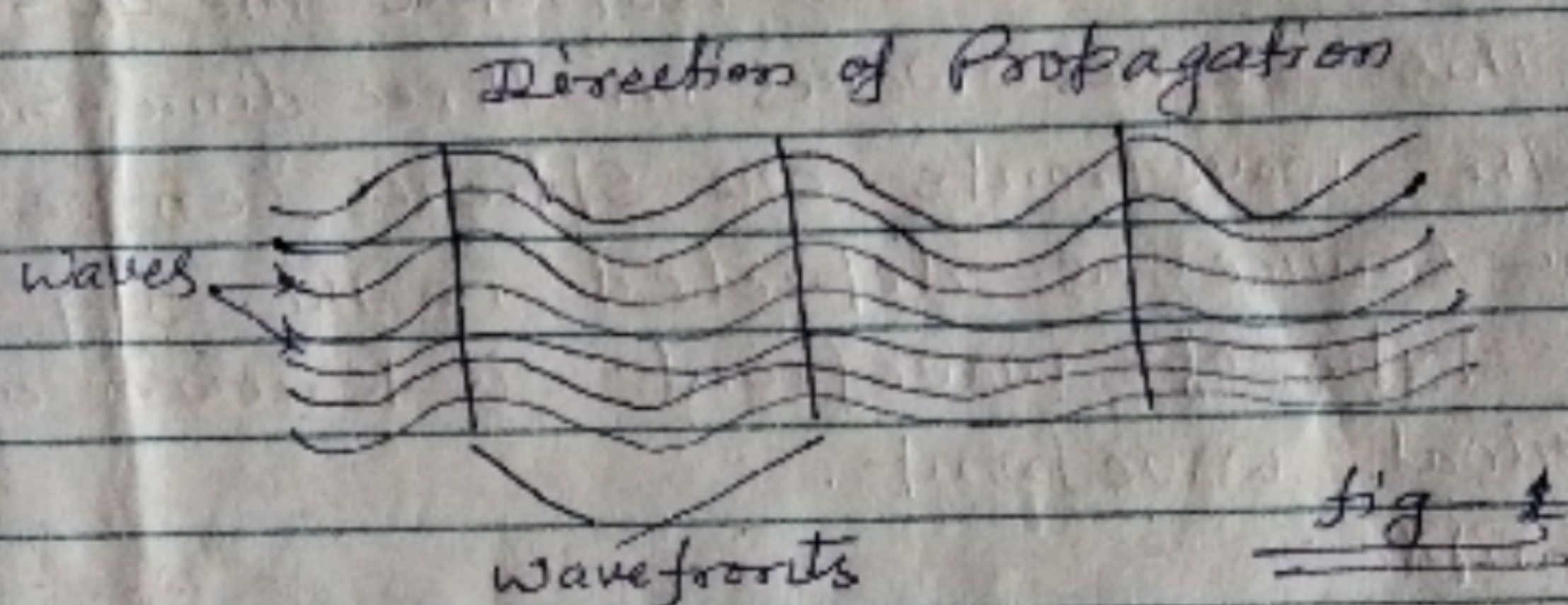


1.) Wave MotionWave Front :

A wavefront is defined as an imaginary surface that represents corresponding points of a wave which vibrate in unison.



The set of all locations in a medium where the wave is at the same phase is known as wavefront. It is used to represent how waves are moving in 2 dimensions. The length between two lines on a wavefront is exactly one wavelength.

Wavefront types

The different types of wavefronts are obtained by the path followed by the particles emanating from a source.



There are three types of wavefronts which are based on path followed by the particles emanating from a source.

These wavefronts are discussed below:

1.) Spherical wavefront:

If there is a point source which is in an isotropic medium and this sends waves in three dimensions then the wavefronts are spheres centred on the source as depicted in the fig.

This type of wavefront is known as spherical wavefront.

Example:

1.) In vacuum electromagnetic waves form a spherical wavefront.

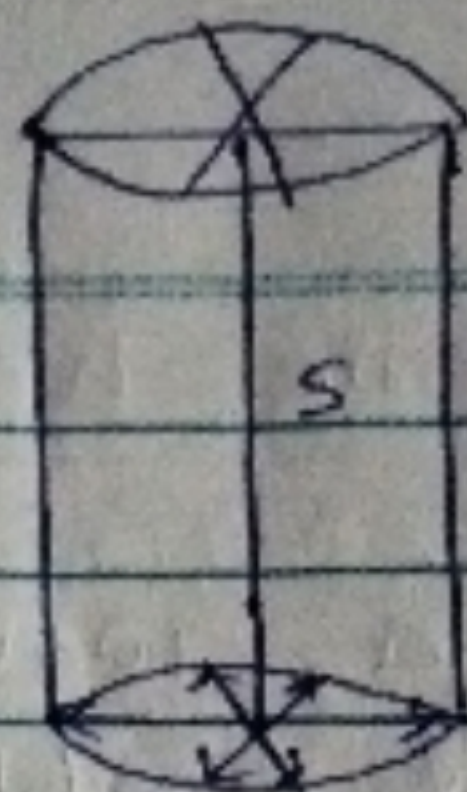
2.) When a stone is dropped in water then concentric circles are formed.

3.) An army soldier patrolling the opposition on the radar through the camera shows the attacker with the spherical wavefront symbol.



(a)

fig-2



(b)

(2) Cylindrical Wavefront:

A Cylindrical wavefront is obtained at that time when the light source is linear. The fig-2 depicts the Cylindrical wavefront where all the points equidistant from the linear source lie on the cylinder's surface.

The Cylindrical wavefront looks like a cylinder. Although, concentric circles like a spherical wavefront is obtained by drawing the wavefront from one plane.

Example:

When rays of light coming out of a lens fall on another lens. They converge at a given point. As they bend and converge at a point, it takes the form of a cylinder.