
Homerton Hospital
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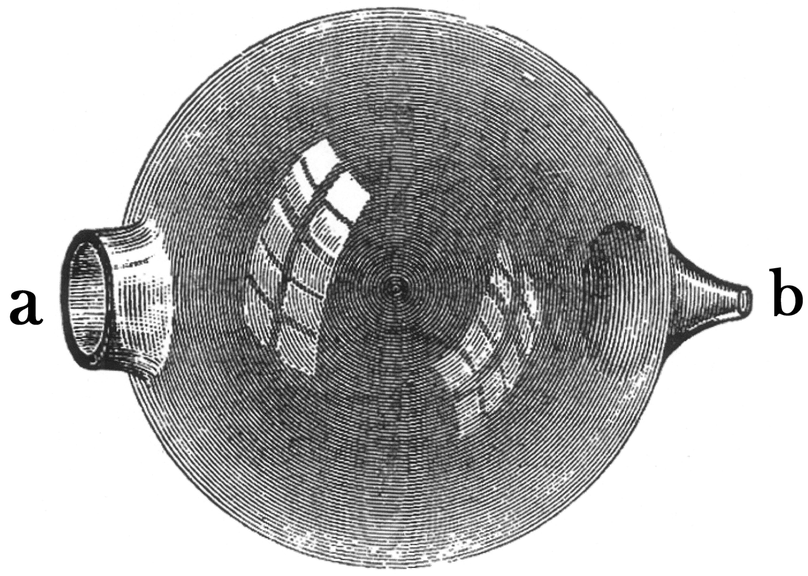
FIG. 1.

The Listening Glass



It is possible to identify *musical tones* in sound through attentive aural observation. We shall hereafter become acquainted with an instrument, called a *listening glass*, which will assist the ear in making this distinction.

Listening glasses are hollow spheres of glass tuned to particular musical tones. They have two openings as shown in FIG. 1. One opening (a) has sharp edges, the other (b) is funnel shaped for insertion into the ear.

If we apply a listening glass to one ear, most of the tones produced in the surrounding air will be dampened; but if the proper tone of the glass is sounded it brays into the ear quite powerfully. Hence anyone, even if he has no ear for music, or is quite unpracticed in detecting musical sounds, can pick them out of a great number of others. The proper tone of the glass may even sometimes be heard cropping up in the whistling of the wind and the rattling of carriage wheels.

Hermann von Helmholtz (1863) *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*

FIG. 2.

Strategy for Recording

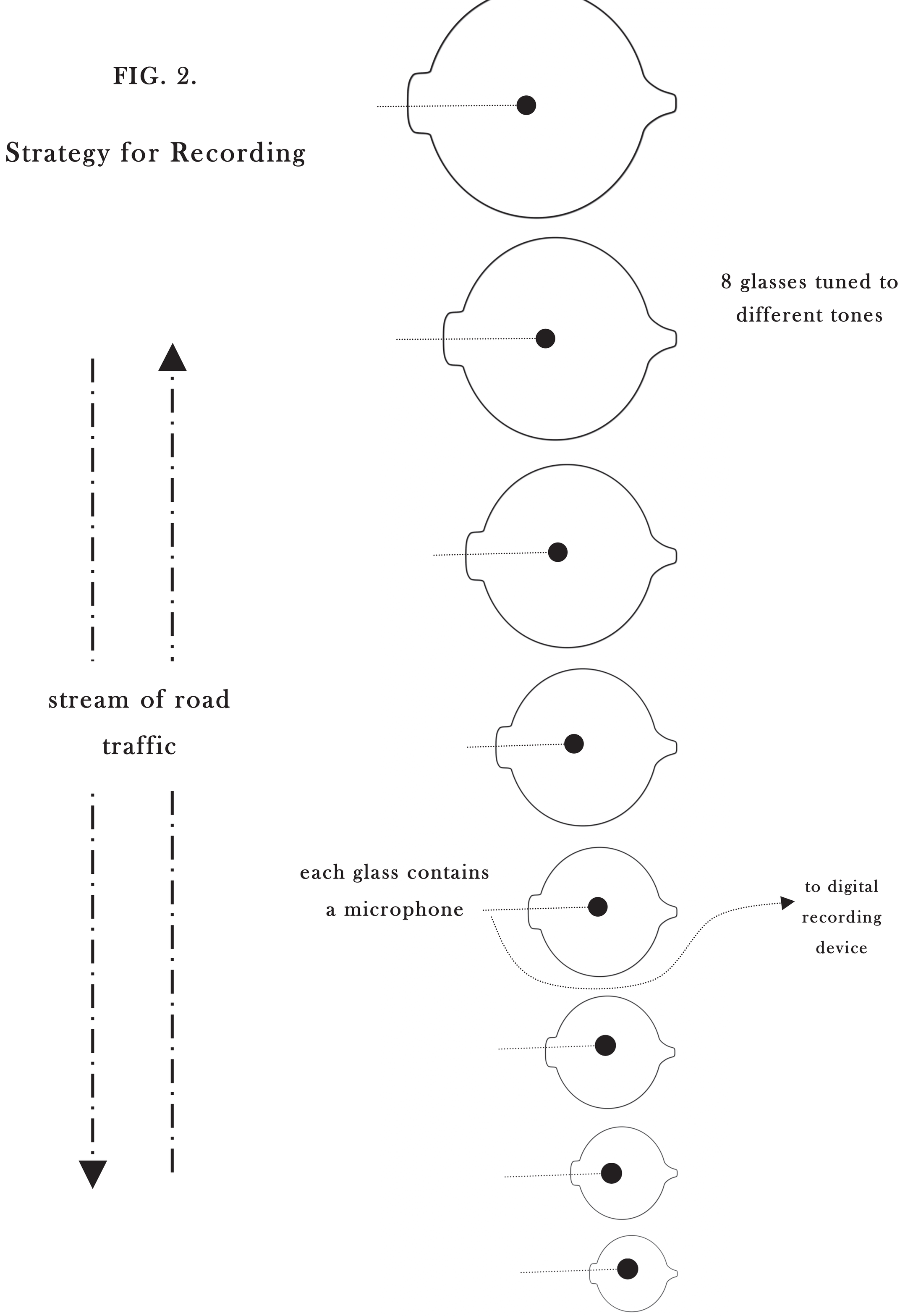
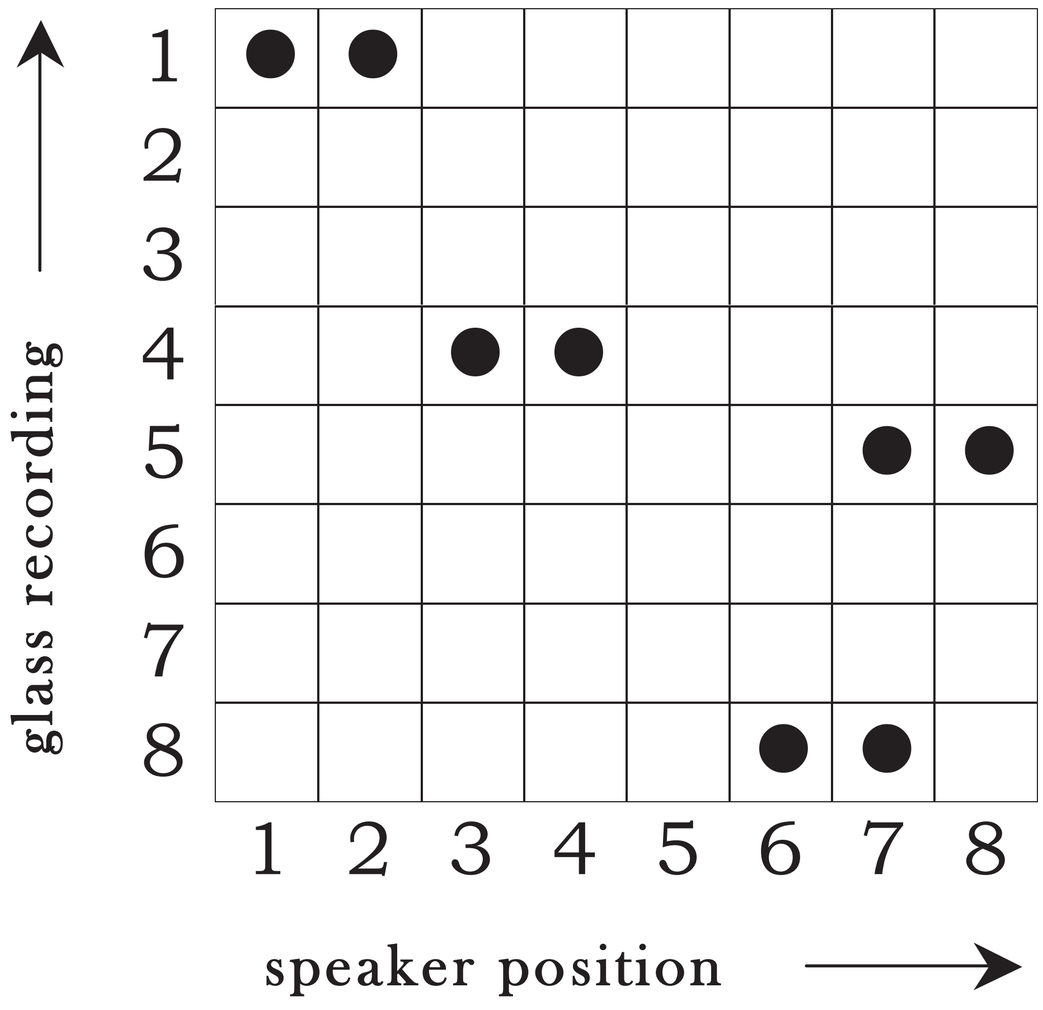
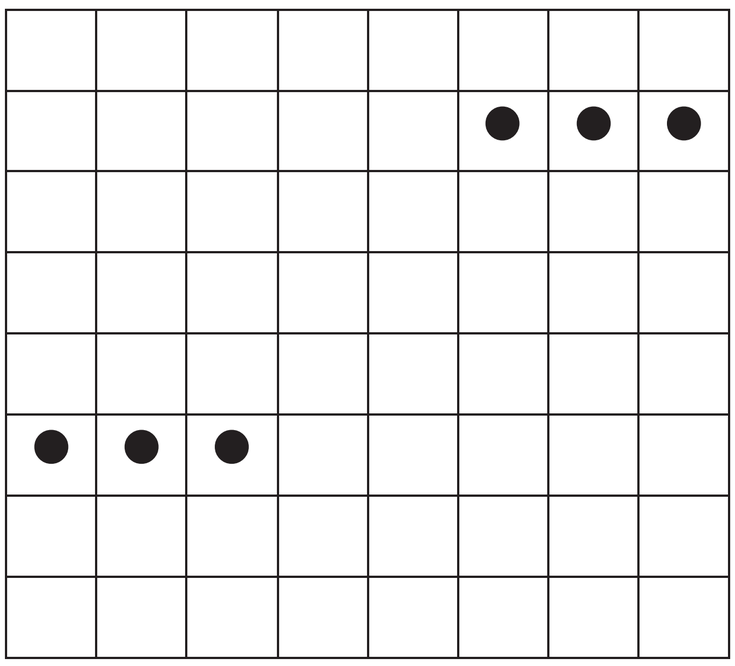


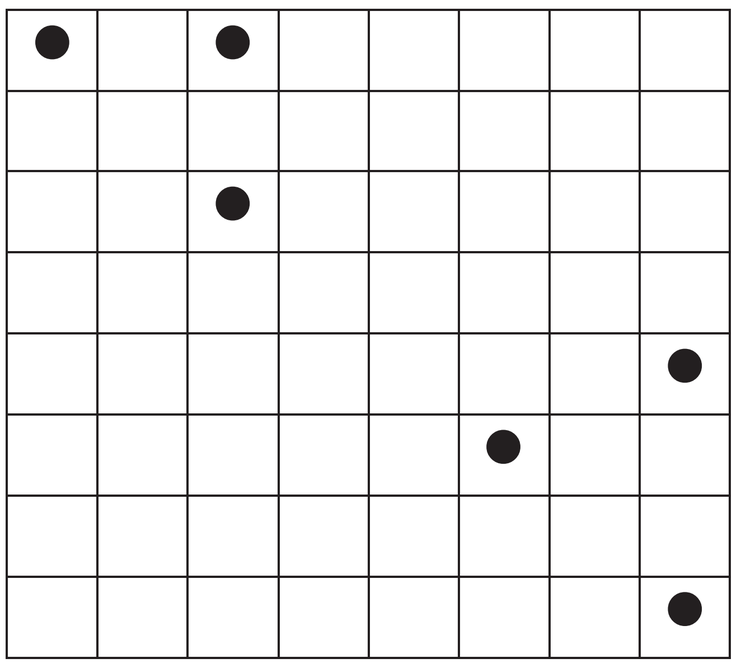
FIG. 3.

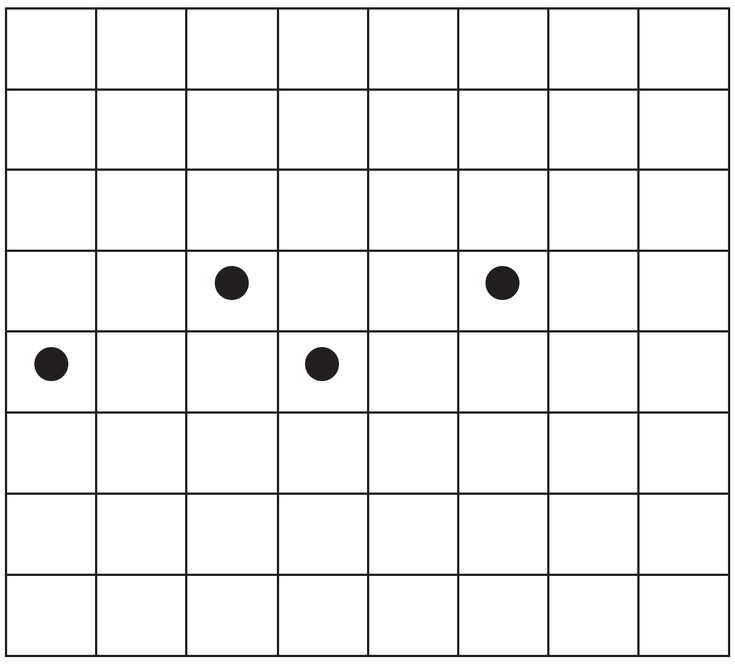
Strategy for Playback

examples of tonal range and distribution









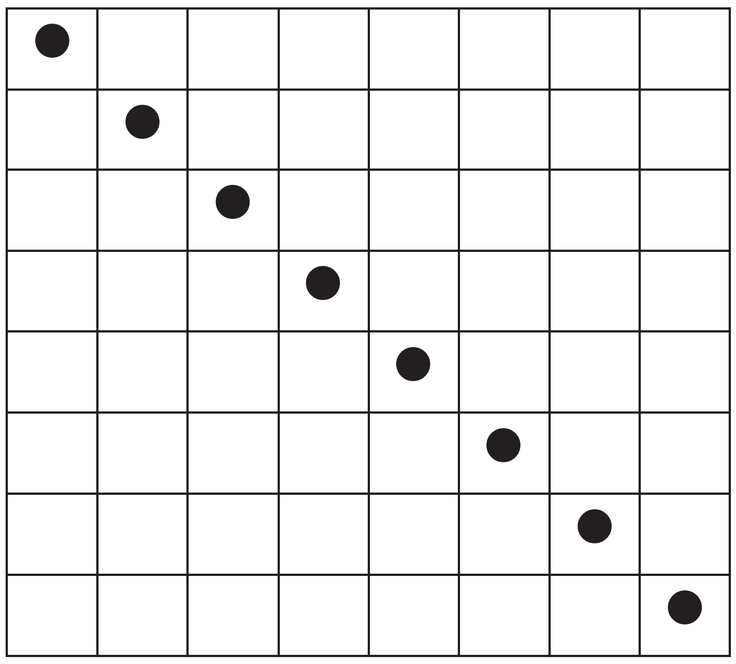


FIG. 4.

Empedocles Theory of Perception Applied to Hearing