

ACOUSTIC DEVICE

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2 Sheets-Sheet 1

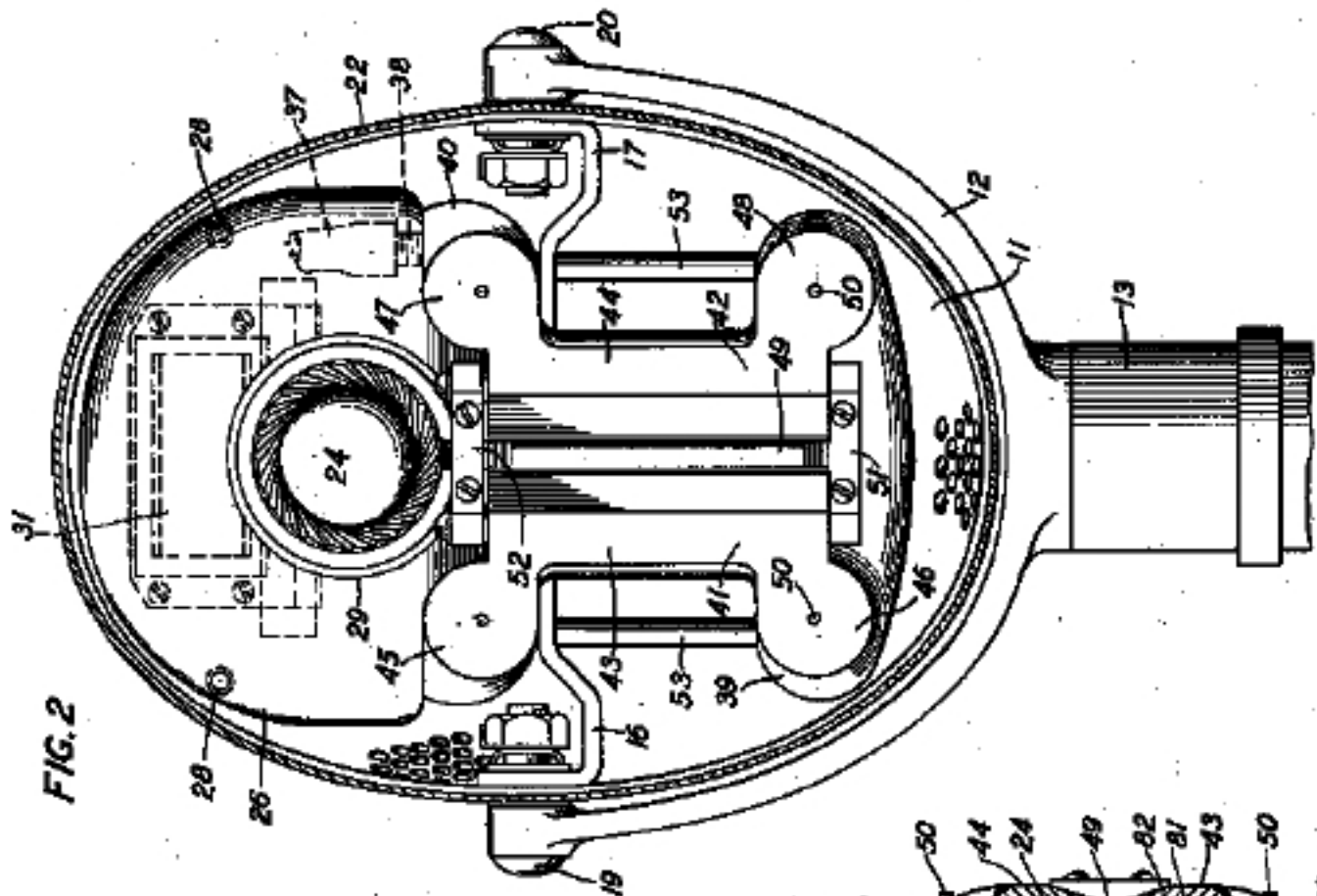


FIG. 2

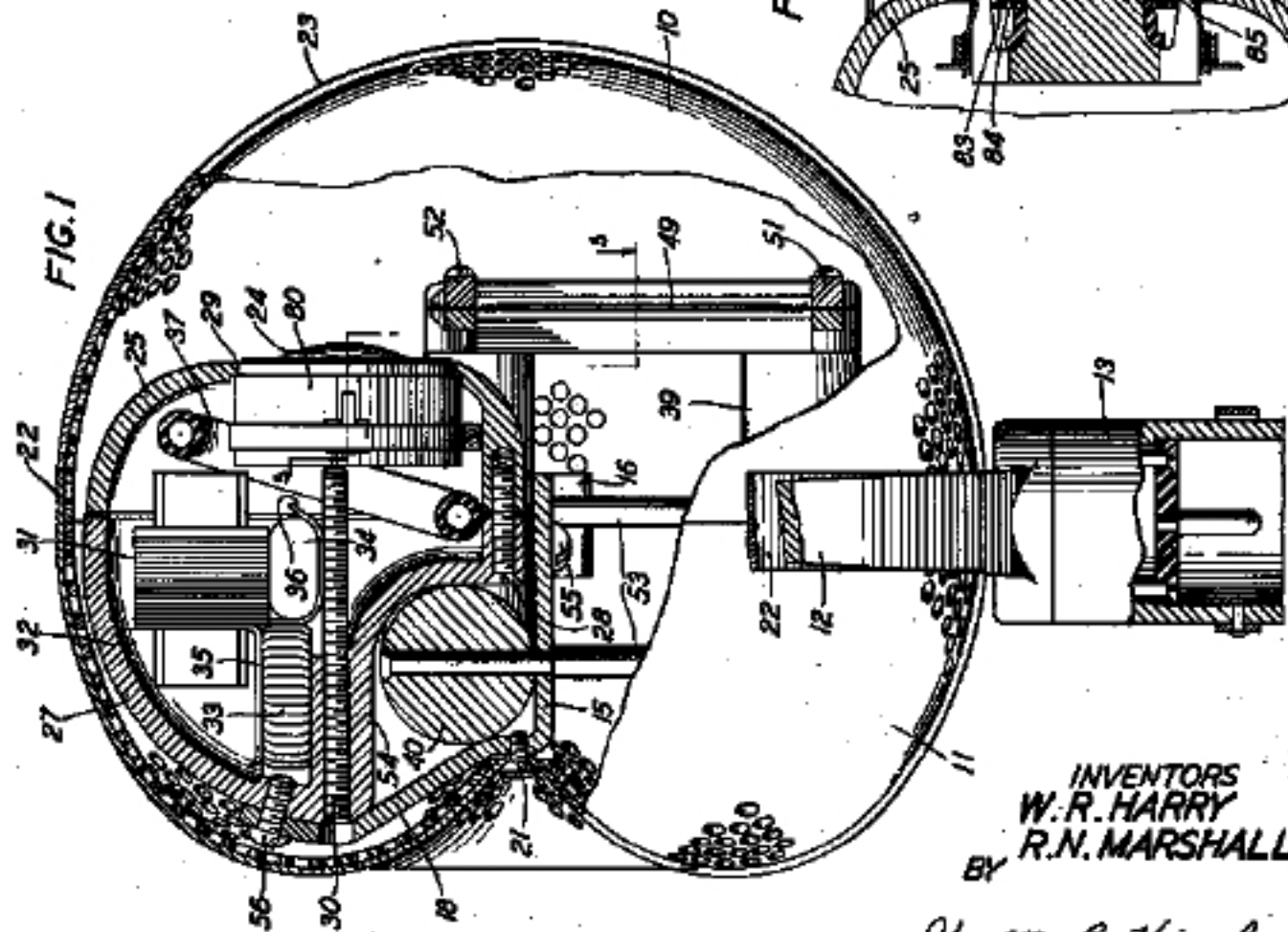
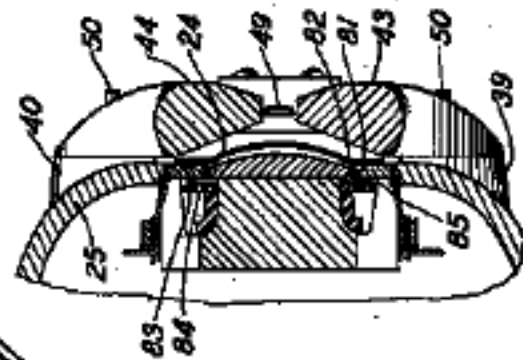


FIG. 1

FIG. 5



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to the plane of the ribbon diaphragm, said pressure unit having its casing recessed to interfit with one of said magnets, thereby allowing the respective diaphragms of the two units to be located sufficiently close together to minimize relative phase difficulties.

8. A unidirectional acoustic transmitter comprising a velocity microphone unit and a pressure microphone unit, said velocity unit comprising two U-shaped permanent magnets and a thin ribbon diaphragm mounted between parallel pole-pieces, the pole-pieces each being secured at either end to a pole portion of one of the magnets, said magnets being of generally circular cross-section and extending at right angles to the plane of said ribbon diaphragm, and said pressure microphone comprising a moving coil unit mounted in a casing, the casing having a reduced portion fitting within one of the U-shaped magnets to provide a compact unitary transmitter structure.

9. A unidirectional electroacoustic transmitter in which a pressure and a velocity microphone unit are combined, said transmitter including electrical impedance means connected across the velocity microphone terminals and acoustic impedance means comprising a tube connected to the pressure microphone for substantially equalizing the low frequency response of the two microphones.

10. A unidirectional acoustic transmitter comprising a ribbon velocity microphone and a moving coil pressure microphone combined in a unitary structure, said ribbon microphone having an electrical impedance shunted across its terminals and said moving coil microphone having an acoustic impedance connected thereto, the relative values of said impedances being such as to so equalize the low frequency responses of said mi-

crophones that they combine efficiently for unidirectional response.

11. In combination, a moving coil pressure type transmitter unit, a ribbon diaphragm velocity type transmitter unit, a casing for said pressure unit, said casing having a recess for receiving a portion of the velocity unit therein, and means for combining the outputs of said units so that the combination has a substantially unidirectional response characteristic.

12. A unidirectional acoustic transmitter comprising a ribbon velocity microphone and a moving coil pressure microphone, said velocity microphone including a pair of parallel pole-pieces defining an elongated air-gap, a ribbon diaphragm mounted in said air-gap, and a pair of substantially parallel U-shaped magnets of circular section secured at substantially right angles to said pole-pieces, said pressure microphone including a moving coil unit, a casing enclosing said unit and defining an air chamber therebehind, said casing being generally convexly curved exteriorly and having a portion shaped to fit within and partly around one of the U-shaped magnets, means for equalizing the responses of the two microphones comprising electrical and acoustic impedance elements, all of said impedance elements being housed in the pressure microphone casing, and an exterior perforated casing enclosing said transmitter.

13. A velocity microphone comprising a ribbon diaphragm of the order of .00025 inch thickness and having a compliant portion adjacent at least one end and a stiffened portion intermediate its ends, and a low frequency damping means comprising an electrical impedance shunted across said diaphragm.

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