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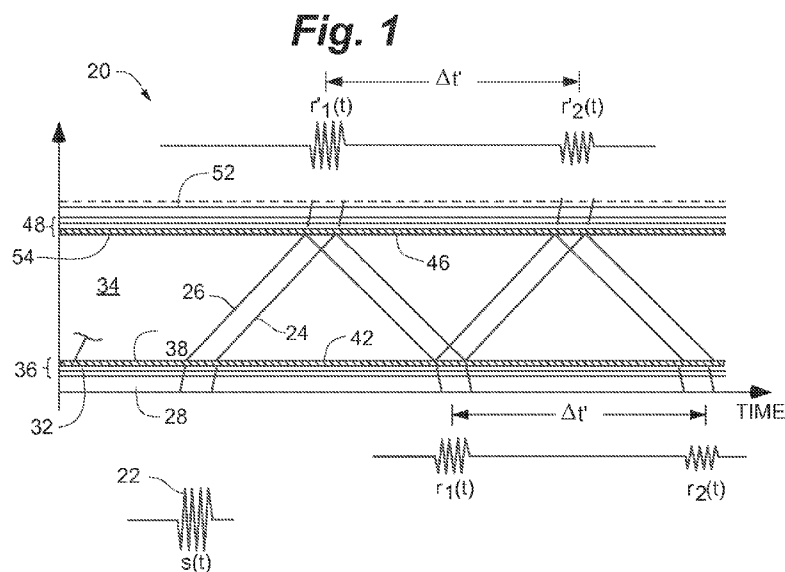
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- (54) **Title:** APPARATUS AND METHOD FOR IMPROVED ACOUSTICAL TRANSFORMATION



- (57) **Abstract:** An acoustical transformer having a last matching section that includes a protective barrier of low permeability. The protective barrier is in contact with a test medium. In one embodiment, the protective barrier comprises one or more low permeability layers, such as a metallic foil or metallic coating(s) disposed on a low impedance layer such as polyimide, so that the low impedance layer and the protective barrier constitute the last matching section of the acoustical transformer. In other embodiments, the protective barrier comprises a fluoropolymer. A method for determining the thicknesses of the various layers of the acoustical transformer for enhanced performance is also disclosed.



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