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(54) Title: ACOUSTIC REFLECTORS

(57) Abstract: An acoustic reflector primarily for underwater use comprising a shell surrounding a core in which holes are provided in the shell to allow air and water freely to enter and leave the interior of the shell when the reflector is immersed in water. Various embodiments are described including the use of a metal shell matched to a water core, the use of a mounting bar, provision of a frame to reflect acoustically alpha numeric characters, a soluble plug to delay operation of the reflector, and coating the reflector with polyurethane to limit damage. Also proposed is a pulse pattern to improve the identification of an acoustic reflector in some circumstances. Designs of reflectors particularly suitable for use with the relatively low frequency sonars found in the fishing industry with an aluminium or aluminium alloy shell are described, as are reflectors with a non-metal shell suitable for use with the higher frequency sonars in the underwater exploration industry. The reflectors can be spherical, toroidal, ovoid, or cylindrical provided that they have at least on circular cross section. A particularly important development with the current invention is the ability to mark and trace underwater non-ferromagnetic pipes.



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