ADHESIVE-FASTENED PADEYE DEVICE

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ABSTRACT

A padeye fastening assembly for attachment to a surface, having an eye or ring affixed to a disc, and having cemented to the disc a plurality of microcapsules containing the constituents of a two-part polyester epoxy adhesive system. The microcapsules are protected from being removed during handling by a disposable cap. The padeye is secured to the desired place by pressing and wringing it against the surface, thereby crushing the shells of the capsules, mixing the constituents, and maintaining contact until curing takes place.

6 Claims, 2 Drawing Figures
FIG. 1.

FIG. 2.
ADHESIVE-FASTENED PADEYE DEVICE

BACKGROUND OF THE INVENTION

This invention relates generally to an attachment device and, more particularly, to a padeye and disc which may be readily and quickly secured to a surface by an adhesive system. In the conduct of naval warfare, the attachment of explosives and weapons, such as mines, to the hulls of enemy ships by clandestine underwater swimmers is an ancient art. But the practice poses many problems to the worker, including lack of prior knowledge of the surface and material of the hull, the limited time he has to work, and his endurance to perform the work and return to a safe location. Another problem is that significant noises may alert the enemy personnel or activate noise detectors on the ship to which the padeye is attached. The means of attachment must, therefore, be silent lest the mission be aborted and the worker's life endangered.

Past devices for hull attachment used fastener, magnetic and adhesive principles, and each has inherent drawbacks. Nails or threaded fasteners cannot be used on metal hulls, and magnetic devices cannot be used on wooden and non-magnetic metal hulls. While some adhesives may be used on all types of hulls, the surface must be barnacle- and slime-free. Furthermore, magnetic attachment devices are susceptible to being jarred loose by vibration and shock due to internal machinery, manual pounding from inside, or from the ship's movement in the water.

SUMMARY OF THE INVENTION

Accordingly, an object of the present invention is to provide a padeye fastening device for use in air, in space, and underwater.

Another object of the invention is to provide a padeye fastening device that can be attached to a surface in a short period of time.

Still another object of the present invention is to provide a padeye fastening device that can be attached to a surface with no tools or accessories.

A still further object of the instant invention is to provide a padeye fastening device using a quick-setting adhesive for attachment to a surface.

Another still further object of this invention is to provide a reliable means for attaching devices to the underwater hulls of ships.

One other object of this invention is to provide a padeye fastening device that may be attached to metallic and non-metallic surfaces.

One other object of this invention is to provide a padeye fastening device that may be attached to the hulls of ships silently and undetectably.

Briefly, these and other objects of the present invention are attained by providing an eye attached to one side of a flat disc or plate. A plurality of frangible microcapsules, containing the constituents of a two-part adhesive system, are cemented one layer thick to the other side of the disc. These microcapsules readily crush and the constituents mix to form an almost instantaneous bond between the disc and the selected surface.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily appreciated as the same becomes better under-
3. A shallow, cup-shaped protective cover adapted to engage the edge of said plate and spaced therefrom to cover and protect said microcapsules.

2. The padeye attachment assembly of claim 1 wherein said protective cover further comprises: a spacing shoulder on the inside of said cover to preclude its contact with said microcapsules.

3. The padeye attachment assembly of claim 2 wherein said protective cover further comprises: an inwardly protruding lip for sealingly engaging the handle side of said plate.

4. The padeye attachment assembly of claim 3 further comprising: a weight affixed to said protective cover.

5. The padeye attachment assembly of claim 4 wherein said handle is a ring.

6. The padeye attachment assembly of claim 4 wherein said plate is a disc.

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