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Curtis

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- [54] **ELASTOMERIC SHUTTER MECHANISM**
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- [73] Assignee: **The United States of America as represented by the Secretary of the Navy, Washington, D.C.**
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- [52] U.S. Cl. **89/1.81; 114/320**
- [58] Field of Search **89/1.809, 1.810; 114/320, 325, 116, 201 A, 238**

ABSTRACT

An elastomeric shutter mechanism for opening and closing a passageway in the wall of a vessel, such as a submarine hull. A single, unitary, retractable shutter member made of an elastomeric material is partially attached to the wall around a portion of a passageway. The single, unitary, retractable shutter member is moveable from a closed position when the unattached portion of the shutter member is abutting the wall around the passageway to an open position when the unattached portion of the shutter member is retracted away from the wall around the passageway. Cables are attached to the inside surface of the shutter member for retracting the shutter member and opening the passageway. Mechanical stops are positioned inside of the vessel for abutting the shutter member when retracted to the open position by the cables. On an underwater vessel such as a submarine, the shutter member is sealed in the closed position by a pressure differential between the inside surface and the outside surface of the shutter member or latched in place in the closed position. Split ribs are included on the inside surface of the shutter member to resist the expansion of the shutter member when maintained in the closed position by the pressure differential.

- [56] **References Cited**
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11 Claims, 3 Drawing Sheets

