



US00001061H

United States Statutory Invention Registration [19]

[11] Reg. Number: H1061

Rozner et al.

[43] Published: Jun. 2, 1992

[54] COMPOSITE SHIELDS

[75] Inventors: Alexander G. Rozner, Potomac;
James C. Waldron, Silver Spring;
William R. Walton, Clarksville, all of
Md.

[73] Assignee: The United States of America as
represented by the Secretary of the
Navy, Washington, D.C.

[21] Appl. No.: 520,275

[22] Filed: Jun. 29, 1983

[51] Int. Cl.⁵ F41H 5/04[52] U.S. Cl. 89/36.02; 109/82;
428/412; 428/463; 428/911[58] Field of Search 89/36.02; 109/78, 80,
109/82, 84; 428/412, 461, 462, 463, 911

[56] References Cited

U.S. PATENT DOCUMENTS

2,279,110	4/1942	Collins	109/82
2,348,130	5/1944	Hardy	89/36.02
2,723,214	11/1955	Meyer	89/36.02
3,179,553	4/1965	Franklin	89/36 A
3,382,136	1/1962	Bugel et al.	428/461
3,634,177	1/1972	Glaser	89/36.02
4,424,254	1/1984	Hedrick et al.	428/412

FOREIGN PATENT DOCUMENTS

1386794 3/1975 United Kingdom 428/461

OTHER PUBLICATIONS

Chemical Abstract: vol. 85, 1976, No. 129377, "Bullet--proof glass." Evers Fritz.
Chemical Abstract: vol. 91, 1979, No. 25995, "Transparent ceramic armor." Ballard, C. P. Jr.
Chemical Abstract: vol. 76, 1972, No. 128354, "Light-weight, transparent, penetration-resistant laminated structures". Glaser, John H.
Chemical Abstract: vol. 39, (1945) No. 3240, "Method of making layered armors." Paul Schwarzkopf.
Chemical Abstract: vol. 36, 1942, No. 5130, "Armor

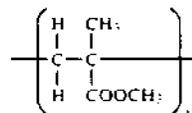
plate formed of a plurality of bonded steel sheets". Allan J. Collins

Chemical Abstract: vol. 39, 1945, No. 137, "Laminated armor plating." Charles J. Hardy, Jr.

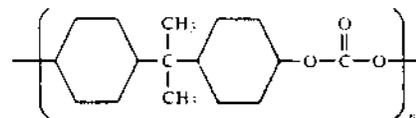
Primary Examiner—Stephen C. Bentley
Attorney, Agent, or Firm—Kenneth E. Walden; Roger D. Johnson

[57] ABSTRACT

A composite armor shield comprising alternating layers of steel and a polymeric material which is either a poly-methyl methacrylate of the general formula



or a polycarbonate of the general formula



9 Claims, 1 Drawing Sheet

A statutory invention registration is not a patent. It has the defensive attributes of a patent but does not have the enforceable attributes of a patent. No article or advertisement or the like may use the term patent, or any term suggestive of a patent, when referring to a statutory invention registration. For more specific information on the rights associated with a statutory invention registration see 35 U.S.C. 157.

