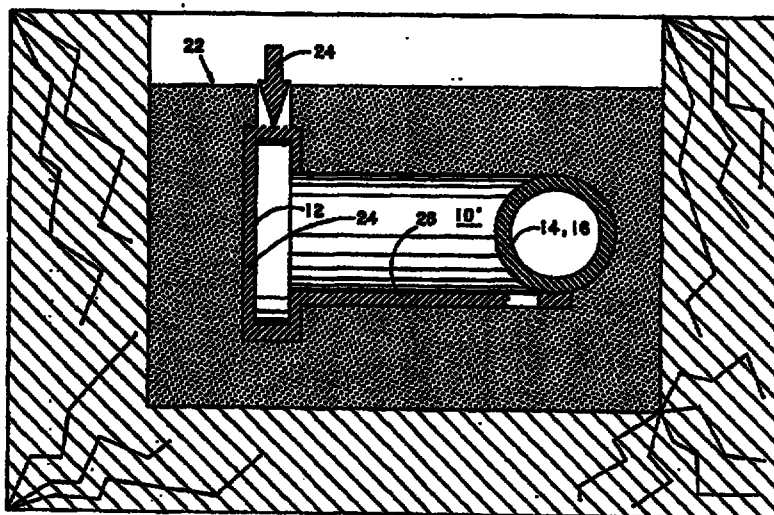


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(54) Title: METAL COATED, CERAMIC, FIBER REINFORCED CERAMIC MANIFOLD



(57) Abstract

This invention relates to parts of an internal combustion engine or the like and, more particularly, to a reinforced ceramic matrix composite exhaust manifold (10) for internal combustion engine applications. The present invention solves the problems of failure due to thermal shock, damage from minor impacts, erosion, engine weight, and the like. A method of making the exhaust manifold (10) comprises the steps of forming a liner of a castable monolithic ceramic material containing pores, filling the pores with a pre-ceramic polymer resin, coating reinforcing fibers with an interface material, forming a mixture of a pre-ceramic polymer resin and reinforcing fibers coated with the interface material, forming an exhaust manifold shaped structure from the mixture by placing the mixture on at least a portion of the castable material, and firing the structure, thereby forming a reinforced ceramic composite.