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Betts et al.

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[54] MISSILE MOTOR IGNITER ASSEMBLY

[75] Inventors: **Robert E. Betts; Nathan P. Williams,** both of Huntsville, Ala.

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

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[52] **U.S. Cl.** **102/49.7,** 60/256, 102/27

[51] **Int. Cl.** **F42b 15/00,** F02k 9/04

[58] **Field of Search** ..... 102/49.7, 27 R; 60/256, 39.82 E

[56] **References Cited**

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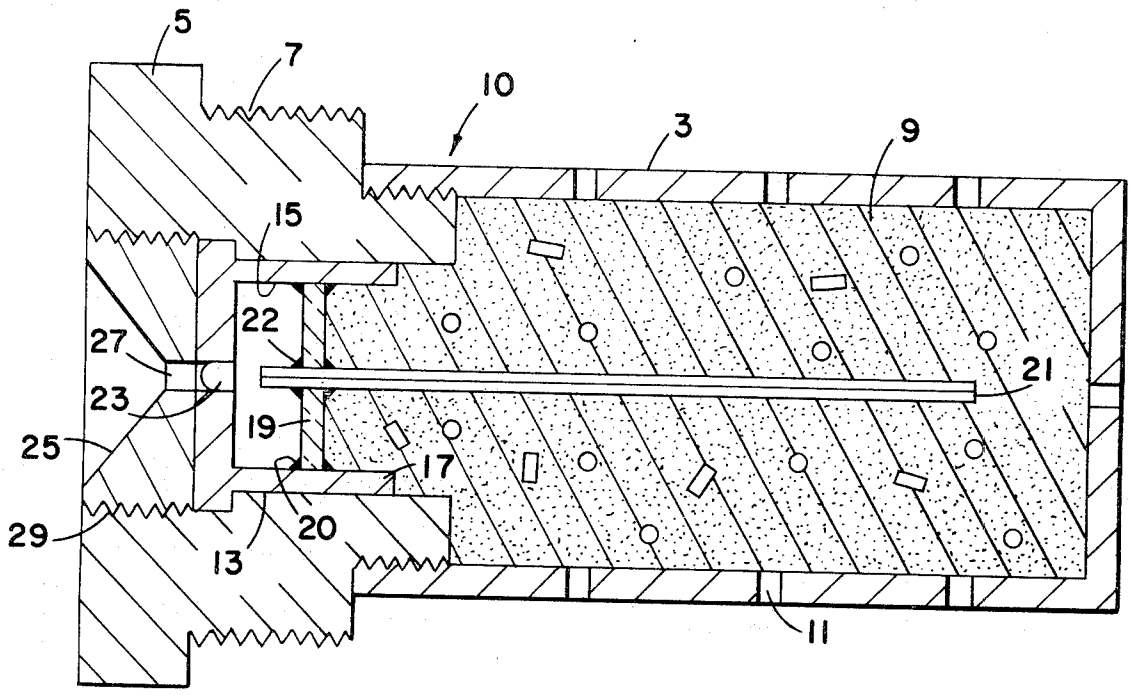
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Primary Examiner—Benjamin A. Borchelt
Assistant Examiner—G. E. Montone
Attorney—Harry M. Saragovitz, Edward J. Kelly et al.

[57] **ABSTRACT**

An assembly for igniting a missile motor from a percussion primer carried in a cartridge case to an igniter charge located in the missle motor. A detonating cord, having one of its ends positioned in the cartridge case, is used to transfer ignition from the primer to the igniter charge. The end of the detonating cord adjacent the cartridge case is retained in position by a holder mounted in the cartridge case.

2 Claims, 2 Drawing Figures



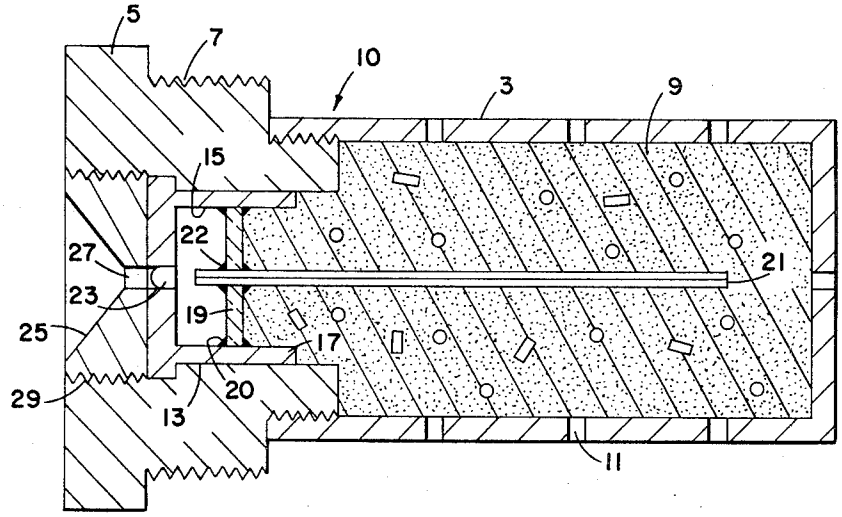


FIG. 2

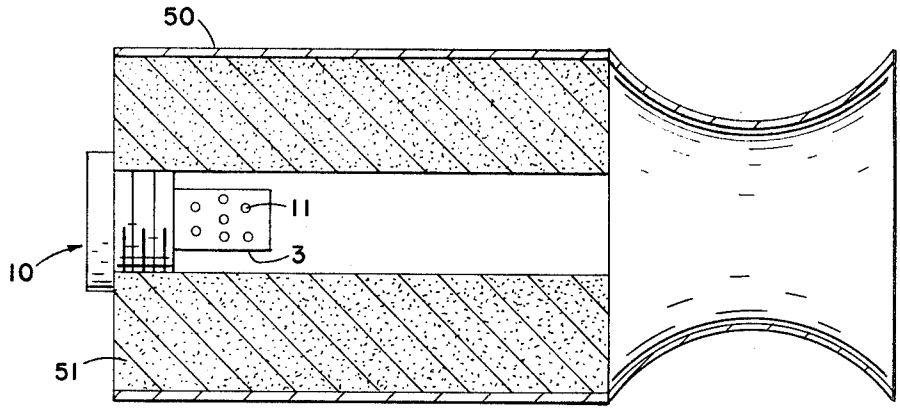


FIG. 1

Robert E. Betts
Nathan P. Williams,
INVENTORS

BY Harry M. Saragovitz
Edward J. Kelly
Herbert Berl
Charles R. Carter

MISSILE MOTOR IGNITER ASSEMBLY

BACKGROUND OF THE INVENTION

This invention relates to the field of missile motor igniters. Existing missile motor igniter assemblies are rather detailed in design and hence very costly. These igniters require extensive screw machining of the cap end of igniter and other machine operations to fit a detonating cord in the igniter which causes a high cost.

SUMMARY OF THE INVENTION

The present invention has utilized a cartridge case provided with a percussion primer at the cap end of the igniter assembly to actuate the igniter charge. The use of this cartridge case in conjunction with a percussion primer has resulted in a much cheaper cap for missile motor igniters.

The invention may be better understood from the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagrammative view showing the igniter assembly mounted in position on a missile.

FIG. 2 is a enlarged sectional view of the igniter assembly removed from the missile motor.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference numeral **10** generally indicates an igniter assembly for igniting a motor of a missile **50.** The assembly includes a tube **3** attached to a cap **5** which is provided with means **7** thereon for mounting the assembly on the missile motor. An igniter charge **9** is located in the tube which is vented by several openings **11** for allowing the igniter charge gases to escape thus enhancing the burning rate of the charge. The cap is provided with a central opening **13** and a cartridge case **15** is located in this opening. The cartridge case includes a portion **17** to provide a support for mounting a PLEXIGLAS holder **19** thereon. This holder is fitted snug in the cartridge case and is sealed thereto by a sealing means **20** such as epoxy. A detonating cord **21,** such as pyrocore or a mild detonating fuse, is fixedly mounted in the holder by a sealing means **22.** By sealing the holder to the cartridge case protection is provided against external environmental effects on the igniter charge and against deterioration of the end of the detonating cord. One end of the cord is disposed adjacent a percussion primer **23** located in the end of the cartridge case. Experimentation has determined that the proper stand-off distance of the detonating cord from the percussion primer will insure reliable ignition of the detonating cord. This stand-off distance is in the range of **20** thousands of an inch to one-fourth of an inch. The opposite end of the cord extends into the igniter charge **9** for transferring the ignition from the primer to the igniter charge. A member **25,** provided with a firing pin opening **27,** is located in an enlarged section of opening **13** and is provided with means **29** for engaging cap **3** to retain the cartridge case in the cap.

In operation a firing pin (not shown) strikes the percussion primer and causes it to fire and ignite the detonating cord. The ignited cord then burns until it ignites the igniter charge which in turn ignites a propellant **51** of the missile motor.

We claim:

1. An assembly for igniting a missile motor comprising: a cartridge case provided with a percussion primer; a PLEXIGLAS holder mounted in said case in spaced relationship to said percussion primer cartridge, and a detonating cord secured to said holder with one of its ends at a predetermined distance from said percussion primer to enhance ignition of said cord and its opposite end extending away from said holder and into the motor igniter charge.

2. An assembly for igniting a missile motor comprising: a cap provided with means for mounting said assembly in said missile motor; a cartridge case supported in said cap and provided with a percussion primer; said cap having a member for retaining the cartridge case in said cap, said member having an opening juxtaposition said percussion primer; a tube connected to said cap and provided with an igniter charge; said tube having a plurality of openings to enhance the burning rate of the igniter charge; a PLEXIGLAS holder mounted in said cartridge case in spaced relationship to said percussion primer, and a detonating cord secured to said holder with one of its ends at a predetermined distance from said percussion primer to enhance ignition of said cord and its opposite end extending away from said holder and into the motor igniter charge.

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