

[54] TARGET GAME

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[58] Field of Search 42/54, 55, 84; 46/176, 196, 46/199; 273/101 I, 102 R, 102 A, 102.1 R, 102.2 R

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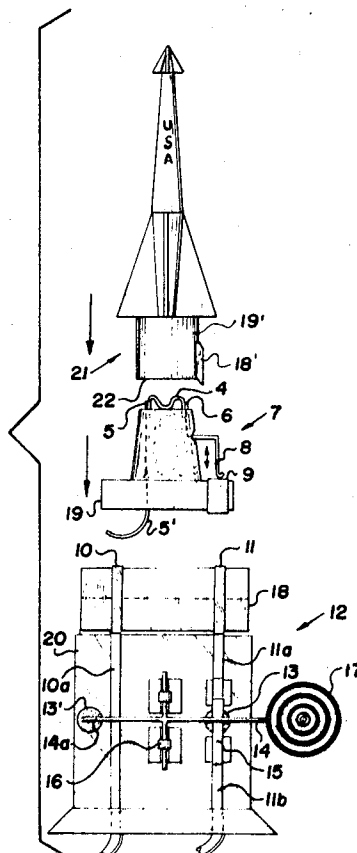
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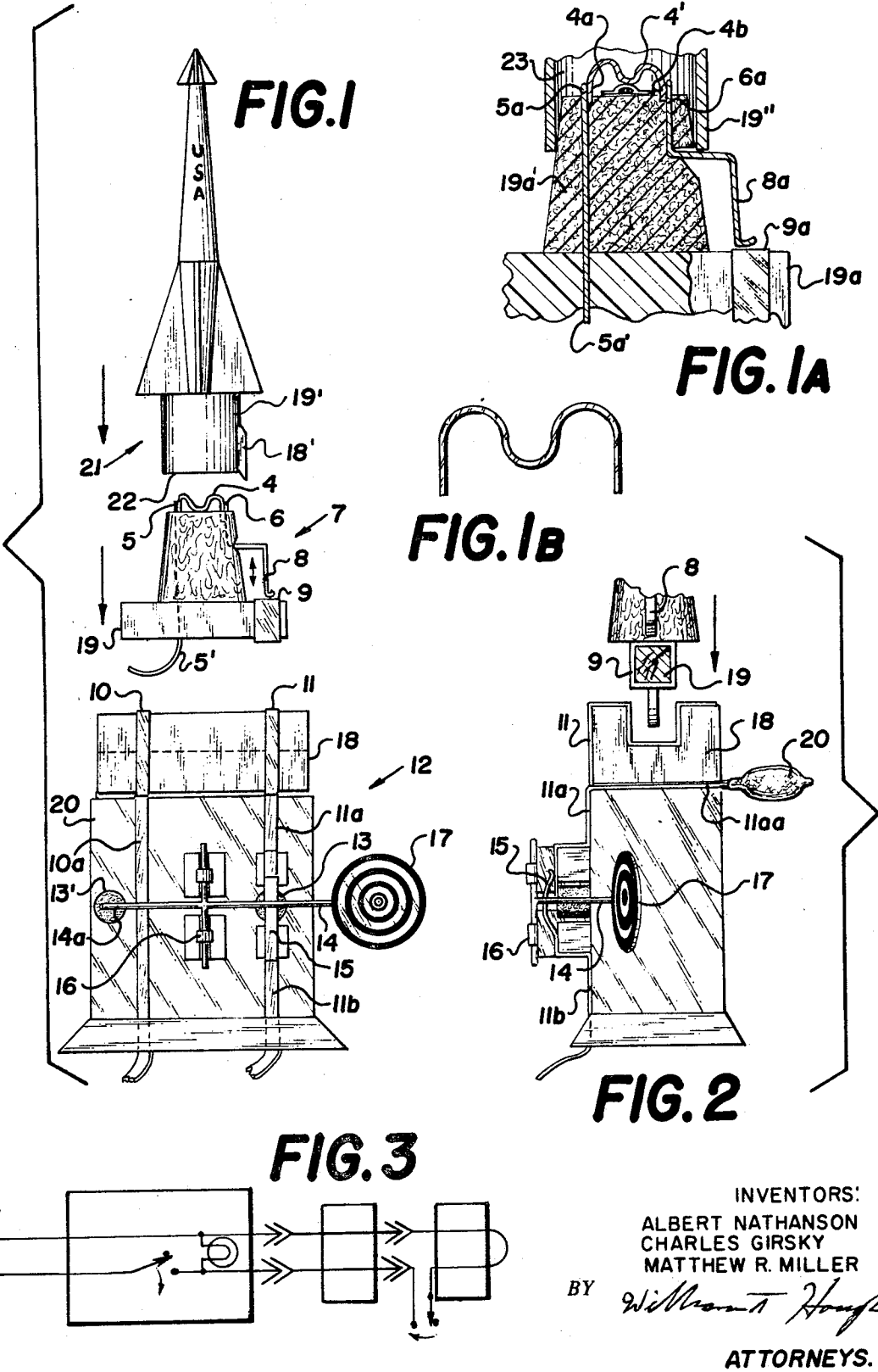
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[57] ABSTRACT

A toy device which in a preferred embodiment is a target game having a target receivable of a blow by a mallet, a dart, a BB, a bullet, or the like, a closing of the switch by a hitting of the target or a hitting of the bull's eye of the target serving to close a switch which is held in a closed position by a magnet, the closing of the circuit actuating an electrical circuit providing heat to an electrode in contact with an inserted cap which heat explodes the cap to cause a snugly fitting but removable enclosure to pop off because of the heat effect on the gases within the enclosure, the circuit being broken by a safety switch when the enclosure around the filament is popped off or otherwise removed, the filament being of a removable and replaceable variety and mountable in a position such as to provide sufficient room for a cap to be inserted beneath the filament with the head of the cap in contact with a contact surface of the filament.

12 Claims, 5 Drawing Figures





TARGET GAME

This application is a continuation-in-part of the parent application U.S. Ser. No. 53,377, filed July 9, 1970, now abandoned.

This invention relates to either a game or a sporting device characteristically utilizable by either children or adults.

BACKGROUND

Prior to this invention, there have been various devices for exploding miniature explosive caps such as the type for example as would be utilized in a cap pistol, for example. Even caps utilizable in a cap pistol however have sufficient charge and are capable of producing sufficient flame and burning as to be dangerous to children, if the children are directly exposed to an exploding charge which in a cap pistol is by virtue of concussion. In the parent application, there was disclosed the inventive concept of enclosing a cap in contact with an electrical filament together with a safety switch closed by virtue of a conductor on the underside of the plastic hood being mounted downwardly over the filament and cap to be exploded. In that disclosure, it was necessary to utilize tape of a suitable type for sticking down the electrode filament in contact with the cap. Although there is no particular objection to such a procedure, the procedure nevertheless is time consuming and not convenient nor desirable for the purposes of simplicity and simple maneuvers which may easily be conducted by a child and adult alike. Also, in such a system, the filament wire rapidly became brittle and would break after a short period of repeated use. A particular problem arises where the current flows through the filament and the wire is not in secure contact with the surface of the head of the cap, whereby the filament rapidly burns itself out because heat is not transferred to the cap. Also, it is desirable to have an improved type of safety switch which does not necessitate the inclusion of a metallic contact on the container to be mounted enclosingly around the filament and cap. Also, it is desirable that such a toy device be of a shape and design more flexible to different end uses.

SUMMARY OF THE INVENTION

An object of this invention is to obtain a toy, game, or sporting device overcoming one or more of the problems and/or difficulties of prior such devices.

Another object is to obtain such a device having new and novel advantages.

Another object is to obtain an apparatus of simple structure and of easy operation.

Another object is such a device with removable and replaceable filaments.

Another object is such a device in which the filaments because of their respective shapes are longer lasting.

Another object is to obtain such a toy or game device with an improved safety switch of simplified structure and mechanism of operation.

Another object is a target game offering a new high level of excitement and amusement.

Other objects become apparent from the preceding and following disclosure.

One or more of the preceding objects are obtained by this invention as defined hereafter.

The invention broadly includes a new insertable long-life filament having typically an M-shape in which the downward pointing central portion of the filament is contactable with the raised head of a cap slidable beneath the downwardly pointed contact surface, this particular design offering a spring resiliency whereby as the cap is slid under the contact surface of the filament the contact surface is such that it may be slightly flexed upwardly against the normal spring bias of the downwardly pointed contact surface, thereby assuring firm contact of the filament with the heat-sink cap raised-head.

Additionally, the filament-opposite-end legs are insertable downwardly into slots which slots respectively provide positive and negative lead contact surfaces. At least one of the negative or positive leads at a point actuatable by mounting of an enclosing container downwardly mountable over the filament is a safety switch which is normally spring biased in an open state and upon the mounting of the container over the filament is pressed into a closed circuit state, whereby prior to the closing renders the electrical exploding of the cap an impossibility. The member on which the filament is mounted preferably is separately mountable on a base mounting member of one or more sections whereby a plurality of caps or upper cap-mounting filaments may be prepared simultaneously in advance to firing any one or more thereof and easily interchanged after use without the necessity of inserting a cap between each explosion. Accordingly, the positive leads of the lower base member(s) is contactable with the positive lead of the upper filament mounting member, and similarly the upper filament mounting member(s) negative lead is contactable with the lower member(s) negative lead when the upper member is mounted within the lower member(s). The lower member includes actuation switch which in a preferred embodiment has a target member such as a bull's eye mounted thereon in a position such that the striking of the target or at least of the bull's eye for example would cause the lever to assume a closed contact position thereby closing the circuit which would cause the firing of the cap. The actuation switch must include a member which secures the switch in the open position until such time as the switch is closed by a concussion from a projectile or hammer or the like, such as a BB, a dart, a ball, or the like. The switch must also however include a retaining means such that when the switch is closed to actuate the circuit, the switch remains in the closed condition until opened intentionally. It is essential that the switch remain in the closed condition firmly securing electrical contact in order that current may flow through the filament for a period of time sufficiently long to transfer enough heat to the cap firing head to explode the cap. When the cap explodes, the container mounted over the filament is popped upwardly or outwardly or at least away from the filament's mount by virtue of the heat of combustion heating the gases within the closed container.

THE FIGURES

FIG. 1 illustrates an exploded view of a typical toy device of this invention in front view.

FIG. 2 illustrates a typical mechanism similar to that of FIG. 1 for a safety switch, as well as an alter-

native mechanism of closing the switch, the FIG. being shown in cross-section.

FIG. 1b illustrates an enlarged view of the removable and replaceable filaments of the type shown in each of FIG. 1 and FIG. 1a.

FIG. 2 illustrates a side in-part exploded view of a toy device such as that of FIG. 1, additionally illustrating a light bulb which may be plugged in on the back side of the device and which lights up whenever the electrical circuit is completed. Preferably the light bulb is a flash bulb.

FIG. 3 illustrates a typical simple electrical circuit such as is employed in each of FIGS. 1, 1a, 1b, and 2.

DETAILED DESCRIPTION OF THE INVENTION

With reference to FIG. 1, a removable filament 4 is insertably mounted in contact with positive and negative leads 5 and 6, the lead 6 being illustrated as having the safety switch 7 with the lever arm 8 normally biased outwardly away from but depressible towards and against conductor lead 9. Lead 5 is continuous with contact lead 5' contactable with conductor lead 10 which is a continuing circuit of the lead 10a. Lead 9 is contactable with lead 11 which is continuous with lead 11a and 11b with actuation switch 12 being closable of the circuit between leads 11a and 11b. The switch 12 includes a conductor bridging member 16 mounted on metallic arm 14 magnetically attractable by magnet 13 such that when in a closed position, it is held in a closed position, and the arm 14 being pivotably mounted at 16. The magnet 13' is magnetically attractable of the lever arm 14a whereby when the switch is in the open position the magnet 13' holds the switch in the open position until such time as arm 14 is pressed toward the magnet 13 by virtue of typically a projectile or hammer or other article hitting target 17. The member 18 is receivable of the member 19 and normally the member 18 and the member 20 may be either the same piece or two separate pieces (18 and 20) fixedly joined together or alternatively separable.

FIG. 1a illustrates a cross sectional view of a typical embodiment in which lead 5a is continuous with lead 5a', in which the respective legs 4a and 4b of filament 4' are insertable in contact with the respective leads 5a and 6a; also whereas in FIG. 1 a wedge member 18' pressed against the lever 8, in FIG. 1a the container edge 19'' is being pressed downwardly snugly mounted around the base 19a' is pressible downwardly against switch arm 8a to bring about contact with lead 9a.

FIG. 1b illustrates in frontal view a typical preferred filament of this invention. The filament may be of any suitable resilient desired and/or conventional filament material of reasonably high electrical resistance such that heat will be produced therein, which heat will be transmittable immediately by contact with and to the cap head.

FIG. 2 is the same as that illustrated in FIG. 1, except that FIG. 2 additionally illustrates a light 20 which may be either permanently mounted or may be of a removable and replaceable nature, typically with prongs insertable into contact with leads 11aa and 11bb (not shown).

FIG. 3 illustrates the circuit of the embodiment illustrated in FIG. 1 and is self explanatory.

Note that the container 21 as illustrated has cylindrical walls 19' defining a lower opening 22 and inner space 23.

Modifications and substitutions of parts of equivalent function are within the scope and spirit of this invention. For example preferably the light bulb and a circuit therefor mountable on the mounting base for the filament 4 above the filament within the enclosure of container 21 where the heat from the flash bulb further adds to the heat of expansion of gas(es) within the enclosure when the cap is fired, plus the more exciting visible flash of light from the flash of the flash bulb.

Preferably the enclosure 21 is transparent or translucent of any conventional or desired fire-resistant composition.

To prevent a short circuit between 5 and 6 and the circuit to which the flashbulb is connected, an electrical shunt (low resistance to the current) sets off the flashbulb first allowing full current to flow through 5 and 6 of the drawing thereafter.

We claim:

1. A toy device comprising in combination: an electrical circuit means including negative and positive leads and respectively each lead having a terminal connectable to a power source; said circuit means including in electrical series a spring electrode comprising a conducting filament, a safety switch biased in an open state, and an actuation switch; said filament including at least two opposite ends removably mountable in electrically-conducting contact with respective ones of said negative and positive leads, and said filament including a body portion between the two ends shaped to provide a filament-contact surface contactable with a raised cap-portion of a heat-explodable cap.

2. A toy device according to claim 1, in which the filament ends are opposite ends of the filament and body of the filament is bent such that the ends point in an about common direction to one another defining a space therebetween at least wider than a predetermined width of said explodable cap.

3. A toy device of claim 2 in which said filament body is of an M-shape with the apex of the downwardly pointed central portion of the M being said filament-contact surface.

4. The toy device according to claim 3, including a vessel open at one end removably mountable over said filament, said vessel including a safety-switch abutting means for pressing against said openly-biased safety switch such that when said vessel is mounted over said filament the abutting means is closable of said safety switch.

5. The toy device of claim 4, in which said actuation switch includes a switch lever arm having mounted thereon structure to receive a forceful blow of a projectile and mounted in a position such that a forceful blow of a projectile is closable of said switch to a removably-secured state.

6. The toy device of claim 5, including in series in the circuit a light bulb.

7. The toy device of claim 6 including a first male member having positive and negative leads with each respective lead being receivable of one of said terminal ends such that electrical contact is obtainable, said male member being of a size in transverse cross-section such that the male member is receivable snugly into

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said container's open end and partially insertable thereinto such that said container is thereby mountable over said spring electrode; a second member providing a base support and having a first member-receiving means for removably mounting said first member on said second member, said actuation switch being mounted on said second member.

8. The toy device of claim 1, in which said filament body is of an M-shape with the apex of the downwardly pointed central portion of the M being said filament-contact surface.

9. The toy device of claim 1, including a vessel open at one end removably mountable over said filament, said vessel including a safety-switch abutting means for pressing against said openly-biased safety switch such that when said vessel is mounted over said filament the abutting means is closable of said safety switch.

10. The toy device of claim 1, in which said actuation switch includes a switch lever arm having mounted thereon structure to receive a forceful blow of a projec-

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tile and mounted in a position such that a forceful blow of a projectile is closable of said switch to a removably-secured state.

11. The toy device of claim 1, including in series in the circuit a light bulb.

12. The toy device of claim 1, including a first male member having positive and negative leads with each respective lead being receivable of one of said terminal ends such that electrical contact is obtainable, said male member being of a size in transverse cross section such that the male member is receivable snugly into said container's open end and partially insertable thereinto such that said container is thereby mountable over said spring electrode; a second member providing a base support and having a first member-receiving means for removably mounting said first member on said second member, said actuation switch being mounted on said second member.

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