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MARKING DART GAME

Filed Feb. 12, 1959

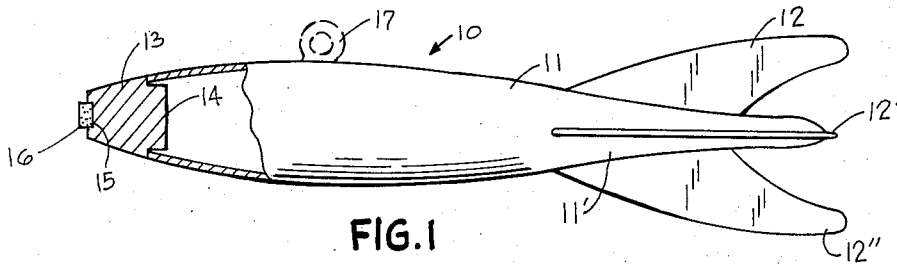


FIG. 1

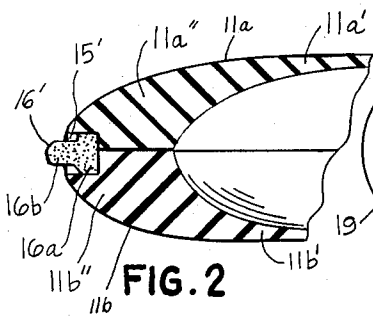


FIG. 2

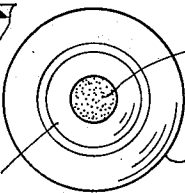


FIG. 3

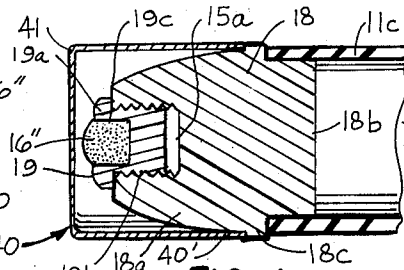


FIG. 4

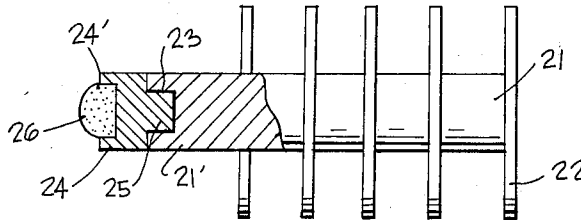


FIG. 5

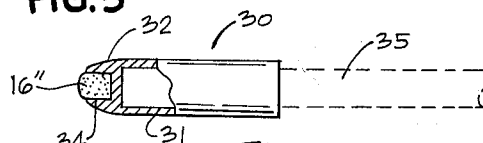


FIG. 6

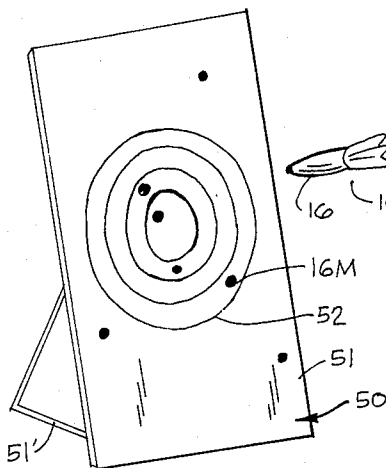


FIG. 7

FIG. 1a FIG. 1b FIG. 1c

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MARKING DART GAME

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7 Claims. (Cl. 273-106.5)

This invention relates to game apparatus and, in particular, to a game device adapted to be projected at a target with means for indicating the area of said target struck by said device. More particularly the invention pertains to a novel type of dart which may be made in various forms including that of a simulated bomb, bullet, arrow or finned projectile.

Various dart games and devices have been proposed which utilize a bullet, projectile or finned dart which is ejected from a gun, slingshot, or thrown by hand at a target. Scoring utilizing these devices is generally effected by penetration of the target which requires, if the missile is blunt-nosed, that it be travelling at high enough velocity to effect said penetration or that the missile have a sharp nose or pointed end. Such missiles are generally quite dangerous and are too hazardous for children to play with. Darts have been utilized employing suction cups to secure them to a target; however, they suffer certain shortcomings including their inability to easily secure to a target and the requirement that scoring be effected by visual means and that the score be memorized.

Accordingly, it is a primary object of this invention to provide a new and improved game device in the form of a dart or the like which is relatively simple in structure and generally not hazardous when used.

Another object of this invention is to provide a new and improved game device adapted to be thrown or otherwise projected through space at a target which has scoring means other than the penetration of part of the target.

Still another object is to provide a new and improved projectile for use in target games which, when it strikes a target, will indicate or mark said target in such a manner that it may be discriminated from the marks or indications of other projectiles, thereby simplifying the method of scoring.

Another object is to provide a new and improved dart for use in target games which has a blunt nose and is therefore relatively safe for children to play with yet which effects scoring on a target without the necessity of adhering to said target or penetrating part of said target.

Another object is to provide new and improved game apparatus which is low in cost, simple to use and relatively long lasting.

Another object is to provide a new and improved marking missile or dart which may be used against a plurality of different types of targets including common paper and the like, thereby eliminating the need to provide and replenish special targets.

Another object is to provide a new and improved dart which, when it intersects a target at a predetermined attitude relative thereto will leave a mark at the area of the intersection without the need for propelling said dart at a high velocity.

Still another object is to provide a new and improved marking projectile which may be made very light in weight out of low cost materials and may be utilized in a variety of different games and devices.

Another object is to provide a new and improved target game utilizing a plurality of missiles having target marking means, each or groups of said missiles having different marking means adapted to leave marks of identifying shape on a target.

With the above and such other objects in view, as may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangements of

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parts as will be hereinafter more fully described, and illustrated in the accompanying drawing, wherein are shown embodiments of this invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

FIG. 1 is a side view, with parts broken away for clarity, of a marking missile constructed according to an embodiment of this invention.

FIGS. 1a, 1b and 1c are end views of different marking members which are utilizable with the device of FIG. 1.

FIG. 2 is a fragmentary view in cross-section of the nose end of a modified marking missile or dart.

FIG. 3 is an end view of the nose of another construction for a marking missile part of which is illustrated in side cross-section in FIG. 4.

FIG. 5 is a side view with portions broken away for clarity of another type of marking missile in the realm of this invention.

FIG. 6 is a partially sectioned marking nose for an arrow or bullet.

FIG. 7 is an isometric view of a target and a missile in flight showing marks provided on the surface of the target by prior intersections of the missile therewith.

In FIG. 1 are shown details of a game device in the form of an elongated missile or dart adapted to be thrown or otherwise propelled through space at a target such as a flat or otherwise shaped surface on which a mark or print is made upon contact of the nose of said missile therewith to indicate the position or area of the target struck by said missile. Whereas conventional dart boards require penetration of the nose of the dart to indicate its position or to hold said dart on the target, a target utilized with the dart of FIG. 1 may be any flat surface such as a sheet of paper, plastic or cardboard which will receive and retain a conventional marking ink left as a print by a marking member secured to the nose of the missile.

The missile 10 is shown as having an elongated hollow body 11 of generally streamlined shape which tapers to a reducing cross-section or lateral shape towards the tail end 11' thereof. A plurality of flight surfaces or guide fins, three of which 12, 12' and 12'' are provided, project outward from the tail-end 11' of the missile for stabilizing it in flight. Said fins may be several or more in number and are preferably sheet-like in formation and arranged symmetrically around the body. The nose end of the missile 10 is shown as comprising a solid plug portion or member 13 which may be molded integral with the hollow body 11 or shaped separately and assembled thereto. If 13 is separately formed, it may be provided with a rear plug shaped portion 14 adapted to frictionally engage the rim and interior surface of the front end of 11 and/or be adhesively bonded thereto. The solid portion 13 is sufficiently heavy to make the missile sufficiently nose-heavy to be flight-stabilized in a predetermined manner with the nose remaining forward after launching. The fins 12, 12' and 12'' may be formed separately and assembled with the body 11 or integrally molded therewith in a single or two piece molded assembly of body half-sections. A preferable thermoplastic material of which said fins may be molded is polyethylene which is rigid enough in characteristic to provide a light weight missile body yet flexible enough when molded in thin sections to permit the fins to deflect without causing injury or damage.

Secured to the nose end of the dart 10 is a substance 16 which will hereafter be referred to as a marker or marker member. The member 16 is provided with a marking fluid and is adapted to provide an imprint on a target surface struck by the nose of the missile and abutted by said marker. While a number of substances may be utilized for the member 16, a preferable material which

will leave a clear print on a surface, even if compressed lightly thereagainst and will last for a relatively long time and be useful for thousands of impressions, is a porous, flexible plastic material containing a marking liquid entrapped in the enclosed cells thereof. A micro-porous material which is quite suitable for this purpose may be made in accordance with the teachings of Patent 2,777,824. The entrapped liquid component of the marker member feeds to the surface thereof by capillary action and may be used for the printing purposes described herein even if the missile is lightly touched against the target surface. As the liquid on the surface of the marker member is used, it is replaced by the remaining entrapped liquid which distributes itself throughout the mass of 16. While a solid marking device such as chalk, a crayon, carbon or the like may be utilized as a marking means it is not only subject to breakage and may penetrate the target, but the marking action is not as positive as the use of the proposed marking plastic material. The member 16 is shown secured in a shallow cavity 15 centrally provided in the end of the plug portion 13. An adhesive such as a plastic cement may be used to hold 16 to 13.

The notation 17 in FIG. 1 refers to an eye or hook, preferably integrally molded with the body 11 near its center of gravity which may be utilized to engage said missile if it is to be used in a free-fall flight at a target below rather than being thrown or mechanically projected in a ballistic path at a target.

In the construction of a conceived game utilizing a plurality of missiles or darts such as shown in FIG. 1 each of which is adapted to be propelled or thrown at a single target by a different player, one or both of two techniques may be employed for identifying the markings of one missile on the surface of the target and discriminating it from those marks made by the others. In one method, the cross-sectional or frontal area of the marker member 16 of one missile may be shaped differently from that of the other missiles so that the mark or print left thereby on a target surface will be characteristic of said missile and will be different from the marks left by the marking means of the other missiles. FIGS. 1a, 1b and 1c respectively show a circular marking, a triangular marking and a rectangular marking each made by a marking member 16 of the respective cross section. The forward ends of the marking members 16 may also be shaped to leave prints on surfaces they contact of most any desired shape which may include numbers, letters of the alphabet, etc. For further discriminating between the markings of different darts or missiles, each may contain a marking fluid or ink of a different color.

For use in toy target games and the like, the marking liquid entrapped in the pores in member 16 may be a non-toxic vegetable dye or the like. To further enhance the value of the game, if a permanent target board is utilized with said dart, an erasable or water soluble dye or ink or other liquid may be used for said marking liquid which may be easily wiped off the surface of the target, if it is metal or plastic coated board, by means of a damp cloth or sponge. The blunt nosed missile or dart of FIG. 1 is considerably safer than a pointed, penetration type of dart and may readily be adapted to a plurality of games employing different types of target of most any shape and size since marking liquids may be employed which will wet and leave and imprint on most common surfaces including those of plastic, paper, metal and wood.

Certain advantages in utilizing a marking missile of the type provided over conventional darts and the like, other than heretofore mentioned, are noted. Since the marker member need only be lightly urged against a target surface to leave a print thereon which is indicative of the area of intersection therewith, a dart or missile which is very simple in construction and light in weight may be utilized. In addition to permitting the production of a dart of reduced size and effecting a saving in material required, further advantages are derived in the construc-

tion of the target and in playing the game. The target may be a single sheet of cardboard or plastic and does not require a heavy base weight or hanging against a wall to prevent its movement by the missile. A common-piece of paper such as newspaper or note paper may suffice for a simple target so that the player will not be inconvenienced by the need to replenish special targets. Since the dart does not require a large force to penetrate or adhere to the target such as does a needle dart or a suction cup mounted on a missile, it may be utilized by a small child without danger. Suction cup darts will frequently not hold on a target surface unless they strike the surface squarely and are thrown with sufficient force to deform the cup. The missile of this invention, on the other hand, will mark the target if dropped from a few inches above or if thrown thereat at very slow speed. The ink of the marking member may be of such a characteristic as to provide a permanent record on a paper target or may be of a washable characteristic so that it may be wiped off a more permanent type of target member.

In FIG. 2 which shows in cross-section part of the nose end of a modified form of dart-projectile or missile, the body of the dart is made of an assembly of two body halves in the form of shells 11a and 11b each of which is preferably made by injection molding and is adapted to mate in locking assembly with the other. Each of said body portions is preferably injection molded of a thermoplastic material or the like and is shaped whereby it increases in material cross section from a shell-like wall portion which extends the major length of the body portion of the missile to the nose-portion which is solid in cross-section as illustrated. The notations 11a' and 11b' refer respectively to the thin shell body portions of the missile halves 11a and 11b and 11a'' and 11b'' respectively refer to the solid forward end-portions of said body halves which form the nose of the missile. This construction provides the dart nose-heavy so that the front-end or nose thereof will always assume an attitude in the direction the dart is thrown or propelled at the target. A solid through and through construction may also be provided which would be shaped with a tail section mounting the fins which may be considerably smaller in cross-section than the nose end of the missile.

The nose portions of the body halves are shaped with respective indentations therein at the nose-end which provide a single cavity 15' upon assembly of said body halves in which a marking substance may be mounted. The marker member 16' comprises a base portion 16a which extends to a nose portion 16b of smaller cross-section than said base portion and than the diameter of cavity 15'. The end of 16b normally projects beyond the end of the face of the nose of the missile as illustrated for leaving a print on the surface of a target. The base portion 16a may be cemented or frictionally held in the cavity 15' as the result of its compression when the two halves 11a and 11b are brought together with 16' positioned therebetween.

The annular volume between the exterior surface of the reduced cross-section portion 16b of the marker member 16' and the inside wall of the cavity 15' provides a space into which the nose end 16b of 16' may deflect or temporarily deform when the nose of the missile bears against the surface of a target. Since the porous, ink bearing plastic of which 16' is made is preferably flexible in characteristic, it may so deform and will return to the non-deformed state illustrated with one end projecting outward from the end of the cavity when the nose end of the missile is no longer abutting the target surface. The construction of FIG. 2 has a further advantage over that of FIG. 1. The marker member 16 of FIG. 1, because of its inability to deflect, will necessarily be compressed between the nose end of the missile and the target surface every time said missile strikes said target. This may not only cause said marker member to exude a great deal of its marking ink or liquid each

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time it is so compressed, but will cause a flattening effect on said marker. Depending on the velocity at which the missile is propelled at the target and the weight of said missile, such effects may be undesirable from a standpoint of expected usage. For light weight missiles which are thrown by hand or blown through a dart gun at the target, the structure of FIG. 1 may suffice. However, for missiles such as arrows, bullets and the like which are propelled at considerable velocity, the structure of FIG. 2 would result in a missile with a marking means which will outlast that of FIG. 1.

In FIGS. 3 and 4 a further construction is illustrated for a marking missile or dart and shows the nose portion of said missile having a marker member of the type described which is secured in a base member which is removably secured to the forward end of the missile so that, when said marker member wears out or if it becomes damaged, it may be easily replaced without having to discard the missile. The nose portion of the missile is referred to by the notation 18 and is illustrated as a solid plug-like tip with a tapering and generally rounded front end or conical portion 18a and a rear portion or plug 18b which is adapted to be frictionally or otherwise held in the nose-end of the cylindrical forward end 11c of the missile. The major portion of said missile body may be a cylinder, tube or rod of solid shape and may comprise the main shaft of an arrow or the like.

Extending partially into the nose member 18 is a cylindrical hole or cavity 15a which is shaped to receive and hold a plug or base 19 in which the marker member 16'' is securely mounted. The base member 19 may be removably secured to 18 by threading the exterior surface thereof and the interior surface of the cavity 15a in a manner such that 19 may be screwed in and out of said cavity and preferably providing a friction or interference fit between said threads so that 19 will not easily loosen and fall out. The member 19 is provided with a shelf or head 19a which may be grasped between the thumb and forefinger of the hand for insertion and removal of said plug from 18 without touching the marker member 16''. If the peripheral surface of 19a is serrated or otherwise shaped to be engaged and held by a correspondingly shaped tool, the member 19 may be easily handled and secured to or removed from the nose end of 18 without engagement of the surface of marker 16'' against the fingers which may cause damage thereto and the exuding of liquid held by said plastic.

The notation 19c refers to the cavity in the plug 19 in which the marker member 16'' is held. Said marker substance may fully fill out said cavity as shown and be provided with a rounded end as shown or may be designed in the manner of the marker 16' of FIG. 2 in which an annular volume is provided around the end of the marker held by 19 for deflection therein when said missile and nose abut a target surface. The notation 19b refers to the threaded external surface of the shank-end of plug 19.

Also illustrated in FIG. 4 is a protective cap 40 which may be engaged against the exterior surface of 18 or the shank 11c of the arrow and utilized to protect the marker member 16'' and prevent it from rubbing against surfaces when said arrow is in storage or not in use. The cap 40 is preferably a thin shelled cylinder of plastic or metal with a deformable rim 40' which is shown frictionally engaging and holding said cap against the rear portion of the peripheral surface of plug 18. The nose portion 18a of 18 tapers to an increasing diameter rearward. The rim 40' is adapted to frictionally engage the surface of 18a near a stepped portion or ridge 18c which limits the rearward movement of 40 so that the end-face 41 thereof will not abut the end of the marker member but will be held a distance therefrom as shown so that the marker at all times will be protected from abutting 41 or any surrounding objects and will not pick up dust or dirt.

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In FIG. 5 a modified form of marking dart is provided referred to by the notation 20 and consists of an elongated central rod portion 21 to which is secured a plurality of laterally extending discs 22 which are substantially equi-spaced along the length of 21 as shown. The disc portions 22 serve as means for guiding the body 21 along the interior of a projection tube which may be an air operated gun or blow-pipe (not shown). A cylindrical hole or cavity 23 is provided in the front-end of 21 for engaging and holding a plug 24 which serves as a mount for a marking member 26 which is shown secured in a frontal cavity 24' thereof. A stud-like portion 25 projects from the rear face of 24 and is adapted to frictionally engage in hole 23 in the forward end 21' of 21. Thus, if it is desired to change or replace the marker of the dart, the plug 24 may be disengaged by longitudinally pulling it away from 21 and replaced with another having a stud-portion such as 25 which is adapted to be frictionally held in the hole 23. A small set-screw or the like may also be utilized to hold 24 against 21 by passing thru the wall of the cavity 23 and engaging the wall of 25.

FIG. 6 illustrates a modified missile in the realm of this invention in the form of a simulated projectile, shell or bullet for use in toy guns, target guns and the like. The bullet may be fired by spring means, compressed air, explosive means or the like from a toy or target gun. The bullet is illustrated as comprising an elongated hollow body portion 31 extending to a rounded or tapered nose 32 having a marking member as described secured in a cavity therein. The other constructions illustrated elsewhere in this specification may also be applied to the mounting of said marking member 16''. The bullet body 31 may be made of polyethylene or other suitable plastic, wood or light metal. While the rear face of section 31 may be closed off with a wall, it may also be hollow permitting said bullet body to serve as a nose or tip for an elongated shaft 35 such as the shank of an arrow or other marking device.

FIG. 7 is an isometric view of one type of target and also shows a missile or dart, of the type described, in flight at said target. The target 50 consists of a flat plate 51 of plastic, plastic coated cardboard, metal sheet or the like which is held erect on a surface by means of a wire stand 51' or the like secured to the rear of 51 as shown. The notation 52 refers to plural markings, such as concentric circles arranged in a so called bull's-eye formation, provided on the front face of 51. The notation 16M refers to a plurality of prints or markings on the face of 51 left there by means of the marking member of the dart each time it strikes said surface. These are preferably of an ink which is water soluble and easily wiped off the surface of 51 when desired.

The present invention may be embodied in other specific forms and, accordingly, the above described embodiments are to be considered merely as illustrative and not restrictive, reference being made to be appended claims rather than to the foregoing specification, as indicative of the scope of the invention.

I claim:

1. A game apparatus comprising in combination with a target having an outwardly presented face capable of receiving and retaining a fluid imprint, a missile having a forwardly presented blunt impact end and adapted to be directed at said target in free flight, means for stabilizing said missile in flight and for retaining said impact end forwardly disposed during the flight of said missile, a flexible porous marking material having cells, a colored marking liquid contained within said cells of said marking material, said marking material being constructed to dispense said marking liquid from the surface of said marking material as a film imprint on a surface which is compressively abutted by said material, a recess in the impact end of said missile, a quantity of said marking material being secured within said recess, said marking

material normally outwardly protruding from the impact end of said missile and adapted to become compressed against the surface of said target whereby to leave a fluid film imprint thereon when the impact end of said missile strikes said target.

2. A game apparatus comprising in combination with a target having an outwardly presented face capable of receiving and retaining a fluid imprint, a missile having a forwardly presented blunt impact end and adapted to be directed at said target in free flight, means for stabilizing said missile in flight and for retaining said impact end forwardly disposed during the flight of said missile, a flexible porous marking material having cells, a colored marking liquid contained within said cells of said marking material, said marking material being constructed to dispense said marking liquid from the surface of said marking material as a film imprint on a surface which is compressively abutted by said material, a recess in the impact end of said missile, a quantity of said marking material secured in said recess and having a forwardly disposed portion of smaller diameter than the diameter of said recess, a portion of said marking material normally protruding outwardly from the blunt impact end of said missile and adapted to become compressed and deformed into said recess when the impact end of said missile strikes said target while leaving an imprint thereon.

3. A game apparatus comprising in combination with a target having an outwardly presented face capable of receiving and retaining a fluid imprint, an elongated missile having a forwardly presented blunt impact end adapted to be directed in free flight at said target, said missile being provided with a weighted portion near its forward end to maintain said missile nose-heavy, flight stabilizing fins provided at its rear end for maintaining the impact end disposed in the direction of said target once said missile is projected on a course directed at said target, a marking member bonded to the blunt impact end of said missile, a portion of said marking member protruding outwardly from said impact end, said marking member being made of a flexible cellular porous plastic material having a colored marking liquid contained within the cells of said porous material and capable of being dispensed from the surface of said porous material as a film imprint on said target surface when compressively abutted thereagainst.

4. A game apparatus comprising in combination with a target having an outwardly presented face capable of receiving and retaining a fluid imprint, an elongated missile having a forwardly presented blunt impact end adapted to be directed in free flight at said target, said missile being provided with a weighted portion near its forward end to maintain said missile nose-heavy, flight stabilizing fins provided at its rear end for maintaining the impact end disposed in the direction of said target once said

missile is projected on a course directed at said target, a marking member of smaller lateral area than the area defined by the impact end of said missile, a portion of said marking member protruding outwardly from said impact end, said marking member being made of a flexible cellular porous plastic material having a colored marking liquid contained within the cells of said porous material and capable of being dispensed from the surface of said porous material as a film imprint on said target surface when compressively abutted thereagainst.

5. A game apparatus comprising in combination:

(a) A target surface having an outwardly presented face capable of receiving and retaining a fluid imprint,

(b) A target contacting device in the form of a missile having an elongated body with a forwardly presented blunt impact end,

(c) A plurality of guide fins provided protruding from said body for stabilizing said missile in flight,

(d) The forward end of said body being weighted for maintaining the impact end disposed in the direction of flight once said missile is launched on a course directed at said target,

(e) A marking member bonded to the blunt impact end of said missile,

(f) Said marking member being made of a compressible, porous material having a flexible cellular structure, a colored marking liquid contained within the cells of said porous material with said material constructed to dispense said marking liquid as a film imprint on said target surface when compressively abutted thereagainst as said blunt end of said missile strikes said target.

6. A game apparatus in accordance with claim 4, including a plurality of said missiles, each missile having a marking member of different cross sectional shape adapted to leave a print on the surface of said target which print is characterized by the shape of the marking member.

7. A game apparatus in accordance with claim 1, said missile being in the shape of a simulated bullet.

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