

Feb. 24, 1953

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MARKER TYPE PROJECTILE  
Filed Nov. 24, 1950

2,629,600

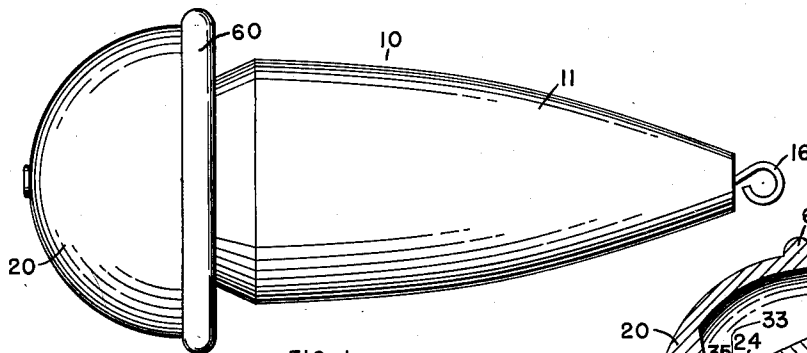


FIG. 1

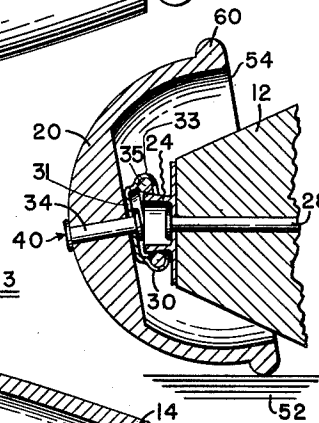


FIG. 3

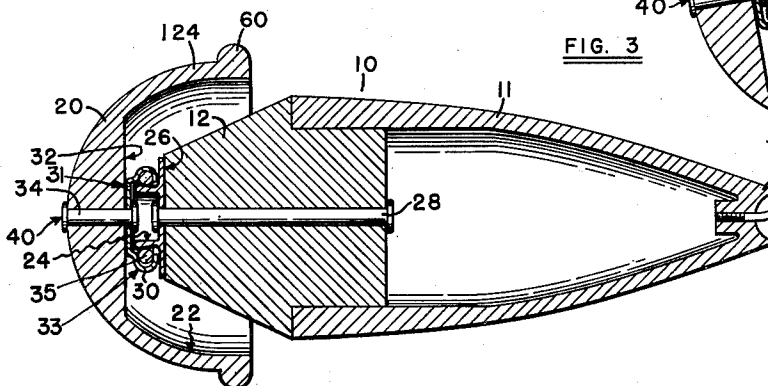


FIG. 2

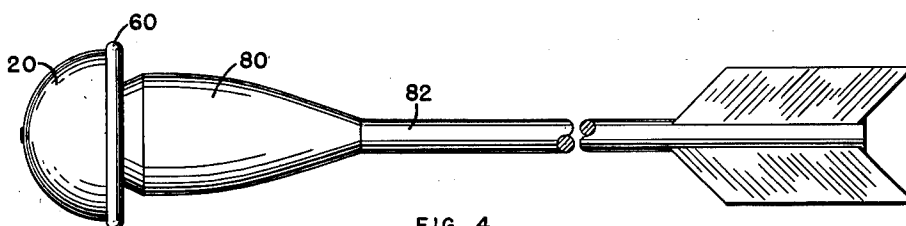


FIG. 4

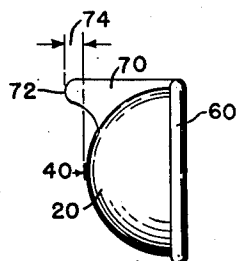


FIG. 5

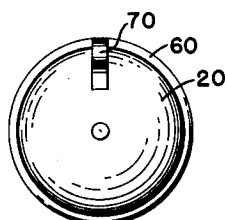


FIG. 6

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## UNITED STATES PATENT OFFICE

2,629,600

## MARKER TYPE PROJECTILE

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Application November 24, 1950, Serial No. 197,377

5 Claims. (Cl. 273-106)

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This invention relates to a projectile and more particularly to a projectile having a detachable marker element secured thereto for detachment therefrom upon impact.

An object of the invention is to provide a projectile in the form of an arrow, casting plug, or the like having a detachable head, indicator element or landing marker releasably secured thereto in such a manner as to be automatically disconnected from the projectile incident to the landing impact of the projectile at the end of its flight.

Another object of the invention is to provide a projectile having the hereinabove described characteristics which may be utilized for accurately indicating the place of impact of a projectile, and which may be simply yet effectively re-secured to the projectile without requiring the use of special equipment or tools.

A further object of the invention is to provide a projectile, and in particular a casting plug which is particularly adapted for dry casting, that is, for making practice casts upon the ground, the detachable head enabling the user of the device to clearly ascertain the locus of impact of the plug.

Still a further object of the invention is to provide a casting plug the forward end of which is provided with means for facilitating the attachment of complementary dome-shaped markers which will be automatically disengaged from the plug incident to impact thereof on said marker at the end of its free flight. The casting plug may then be retrieved by means of a reel or other suitable device, after which another marker member may be associated with the forward end of the plug for another cast. In this manner I have provided simple, inexpensive, yet highly effective means for enabling a caster to make a plurality of casts with a plug and have accurate means for indicating the place of initial impact of the plug on each of the various casts.

Another object of the invention is to provide a detachable dome-shaped marker element for the forward tip of an arrow, thereby precluding penetration of the tip of the arrow incident to its impact at the end of its free flight while positively and accurately indicating the exact locus of impact.

Still another object of the invention is to provide a projectile having the hereinabove described characteristics which may be fabricated using modern mass production methods and which will be durable and serviceable through-

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out prolonged periods of time even though subjected to rough handling and usage to which such equipment is subjected when used by the public at large.

These and other objects are attained by the means described herein and as disclosed in the accompanying drawings, in which

Fig. 1 is a side elevational view of a casting plug embodying the teachings of the present invention.

Fig. 2 is a vertical section through the casting plug of Fig. 1.

Fig. 3 is a view of the forward portion of the device of Fig. 2 illustrating the relative relationship between the detachable marker member and the body of a projectile just after impact at the end of free flight of the projectile, and illustrating a phase in the process of disengagement of the marker therefrom.

Fig. 4 is a side elevational view of an arrow embodying the teachings of the present invention.

Fig. 5 is a side elevational view of a modified type of detachable head, indicator element or landing marker comprising a detail of the present invention.

Fig. 6 is a front elevational view of the device of Fig. 5.

With particular reference now to Figs. 1 and 2, the numeral 10 denotes a projectile in the form of a casting plug comprising an elongate body portion 11, as best illustrated in Fig. 2. The body portion terminates in a weighed forward end 12, the rear end 14 being provided with an eyelet 16 for facilitating attachment of the plug to the end of a length of line.

In the preferred embodiment of the invention a substantially hollow dome-like landing marker 20 is provided for loosely receiving the forward end of the plug body wherein the inner face 22 of the side wall portion 124 of the marker is disposed in spaced relationship with adjacent portions of the forward end of the lure.

Suitable means, such as, by way of example, a two-element fastener, may be utilized for releasably securing marker 20 to the forward portion of the lure.

In Figs. 2 and 3 one element 24 of a two-element fastener assembly is secured to and carried by front edge 26 of forward end 12, such as, by way of example, by means of a rivet 28. The other element 30 of the two-element fastener assembly is secured to and carried by the central portion of the inner face 32 of dome 20 such as, by way of example, by means of a rivet 34.

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The numeral 24 denotes generally an annular, substantially continuous male plug the outer wall of which is tapered outwardly whereby the diameter at its free end is greater than the diameter at its inner end remote from said free outer end. Element 30 comprises a socket including an end wall 31 and an annular side wall 33 in which a snap ring 35 is loosely housed. The term "snap fastener" is commonly applied to fastening means 24 and 30.

When elements 24 and 30 have been engaged as illustrated in Fig. 2, snap ring 35 is disposed around the outer inclined face of plug 24 and dome 20 will be securely though releasably fastened to the forward end of plug body 10 wherein a normal to a tangent plane through top 40 of the dome will be disposed in substantial axial alignment with the longitudinal axis of body 11.

The dome will thus be securely, though detachably, fastened to the body portion whereby to remain thereon incident to all phases of a casting operation. However, when the plug lands upon a supporting surface indicated generally by the numeral 52 in Fig. 3, it will land upon head 20 which will be cocked or moved out of axial alignment with body 11 with the result that peripheral edge 54 of the dome will be moved or shifted toward the body portion, thereby effecting disengagement of fastener elements 24 and 30 incident to movement of snap ring 35 off plug 24. Head or marker 20 will be released from the plug thereby accurately indicating the locus of impact of the plug with supporting surface 52. The plug may then be suitably retrieved and another domed marker member associated with fastener element 24 of the plug, thereby enabling the caster to accurately mark the location of impact of a plurality of casts. Or, if desired, a golf type of game may be played wherein each player will have one plug and one marker head of a color different from the color of the marker heads of the other players. Instead of driving a golf ball, each player casts a plug and the locus of contact of the various plugs will be marked by the various marker heads. After each cast the players may reel in their respective plugs, thereby preparing for their next cast which will be made when they reach their respective head markers which will be attached to their plugs for the next cast.

In the preferred embodiment of the invention a peripheral rim 60 is provided adjacent and in circumscribing relationship with the rear or open end of dome 20 for thereby augmenting or emphasizing the cocking of the marker relative to the body portion incident to impact of the projectile.

With reference now to Figs. 5 and 6, domed markers 20 have been provided with a forwardly extending fin portion 70 the forward end 72 of which extends forwardly beyond top 40 of the dome by a dimension indicated by the numeral 74. This construction insures positive detachment of marker 20 even in those instances wherein the projectile lands vertically upon a supporting surface. But for fin 70, a vertical impact would fail to shift or cock the peripheral edge of the marker relative to the body portion, however impact of forward edge 72 of fin 70 will result in cocking of the dome marker 20 relative to body 10 thereby insuring positive disengagement therefrom.

In Fig. 4 I have illustrated a marker dome 20 secured to the forward or headed portion 80 of

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an arrow 82, it being understood that the structural and functional characteristics of the forward part of head 80 are identical with the functional and structural characteristics of the casting plug illustrated in Figs. 2 and 3.

If desired, the body portion and detachable marker may be fabricated from any suitable material such as by way of example, the various plastics, however such material is exemplary rather than restrictive, it being understood that other substances such as metal or wood, etc. could be used.

The overall weight and casting characteristics of a casting plug provided with my marker head are identical with the weight and casting characteristics of conventional plugs, thereby greatly enhancing the utility of my device.

It should be understood that various changes and modifications in the structural details of the device may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed is:

1. A projectile comprising an elongated body portion terminating in a forward end, a substantially dome-shaped landing marker having a peripheral edge of a diameter in excess of the maximum diameter of said body portion, and snap fastener means detachably securing the apex of said marker to the forward end of said body portion for detachment therefrom incident to the landing impact of the projectile at the end of its flight.

2. A projectile comprising an elongated body portion including a forward end, a dome-shaped detachable landing marker dimensioned to loosely receive the forward end of said body portion with its side walls spaced from the body portion, and means releasably securing the apex of said marker to said body portion for disengagement therefrom incident to the landing impact of the projectile on said marker at the end of its flight.

3. A projectile comprising an elongate body portion including a forward end, a hollow, dome-shaped head member dimensioned to loosely receive the forward end of said body portion, and complementary fastening elements secured to and carried by adjacent portions of the forward end of the body portion and apex of the head member, said elements engageable for releasably securing said head member to said body portion when said head member and body portion are in substantial axial alignment, said elements being disengageable upon movement of the head member out of axial alignment with the body portion incident to the landing impact of the projectile on said head member at the end of its flight.

4. A projectile comprising an elongate body portion including a forward end, a substantially dome-shaped landing marker dimensioned to receive the forward end of said body portion with the inner face of the side walls of the marker in spaced relationship with the forward portions of said body, and snap fastener means for detachably securing the apex of said marker to the forward end of said body, said fastening means being separable upon movement of the peripheral edge of the marker toward the body portion for releasing the marker from the projectile.

5. A projectile comprising an elongate body portion including a forward end, a substantially dome-shaped landing marker dimensioned to receive the forward end of said body portion with

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the inner face of the side walls of the marker in spaced relationship with the forward portions of said body, snap fastener means for detachably securing said marker to the forward end of said body, said fastening means being separable upon movement of the peripheral edge of the marker toward the body portion for releasing the marker from the projectile, and a fin portion projecting forwardly of the outer periphery of said landing marker terminating in a forward end spaced beyond the top of said marker.

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