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BLOW DARTS

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Fig. 1

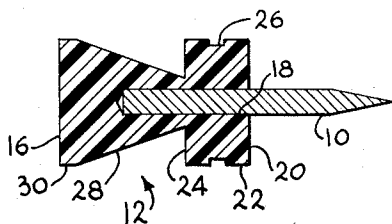


Fig. 2

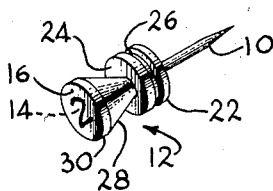
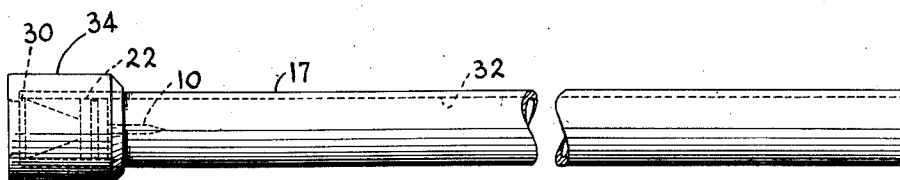


Fig. 3



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BLOW DARTS

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1 Claim. (Cl. 273—106.5)

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The present invention relates to missiles of the type generally referred to as darts and more specifically to an improved dart which is particularly adapted for oral propulsion from a blow tube.

Today, in all civilized countries, darts are used primarily, if not exclusively in recreational activities, usually by impaling them on a target-like scoreboard. Various areas of the scoreboard give competitive players higher scores depending on how close they impale the darts to a desired area thereon.

The aiming and propulsion of darts from a blow tube by oral exhalation is an art requiring a high degree of specialized skill. Not only that, but the darts themselves must have certain characteristics not to be found in the ordinary type of hand thrown dart. One of these characteristics is a general smallness in size which offers many advantages over the bulkier hand thrown types.

Indeed some of the most important of these characteristics have not hitherto been appreciated until incorporated in the improved dart which I have provided in accordance with the various objects and aspects of my invention.

Many factors affect or limit the design of what for convenience will be referred to as blow darts. Of these, lightness of weight is perhaps most important in enabling the blow dart to be orally propelled from a blow tube at a speed great enough to give accuracy in its path of flight so that it will impale itself on the target. Accuracy and speed are also affected by the external configuration of the dart, as well as its "balance," i. e. the location of its center of gravity.

Lightness of weight, of course, can obviously be attained by making blow darts very small, but such expedient has the undesirable effect of detracting from their recreational attractiveness since it becomes exceedingly difficult to determine, from a distance, their location on the target at which they have been directed. Further, such exceedingly small darts are difficult to identify, one from another, where two or more players are aiming at a common target.

The manner in which my improved dart has taken these various factors into account, as well as the objects and features of my invention, will be apparent from a reading of the following detailed description of a preferred embodiment thereof, making reference to the accompanying drawing, and the particular novelty thereof pointed out in the appended claim.

In the drawing,

Fig. 1 is a longitudinal section showing my improved blow dart, on a greatly enlarged scale;

Fig. 2 is a perspective view of the blow dart; and

Fig. 3 shows the blow dart in association with a blow tube.

The blow dart illustrated comprises, a pointed metal pin 10 and a plastic head 12 of unique configuration. The various surfaces of the head 12 have been evolved empirically and while their precise relationship to the overall aerodynamic characteristics of the blow dart, as a whole, are not fully understood, it has been found that each is vital in providing the desired characteristics.

5 Extreme smallness of size has been avoided in my blow dart by molding the head 12 from a lightweight plastic resin. The head may therefore be seen from a considerable distance and bear an indicium 14 on its exposed surface 16 for identification purposes.

10 Such a relatively large head, however, presents special problems in assuring that it may be easily and accurately propelled from a blow tube 17 such as is illustrated in Fig. 3. To this end, all portions of the head are concentrically formed about a central axis with the pin 10 press-fitted into a central bore 18 and extending beyond a flat face 20 normal to the axis of the head 12. A cylindrical portion 22 extends from the face 20 to a parallel face 24 and is characterized by a relatively shallow groove 26 in its periphery. The inner portion of the face 24 joins with a frusto-conical section 28 which terminates in a cylindrical portion 30 having the same diameter as the cylindrical portion 22. The outer end of the cylindrical portion 30 is defined by the indicia bearing face 16 which is also normal to the axis of the head 12.

15 It will be noted that the axial length of the cylindrical portion 22 is approximately one-third the axial length of the head 12, thus bringing the center of gravity of the blow dart on the pin side of the medial point on the head axis. It should also be noted that the cylindrical portion 30 has an extremely short axial length, allowing the frusto-conical section to extend for almost two-thirds of the length of the head 12.

20 The blow dart when positioned in the blow tube 17 is received by a bore 32 formed to provide a loose sliding fit with the cylindrical portions 22, 30. Upon oral introduction of a blast of air, at the blow tube mouthpiece 34, against the face 16, the blow dart is propelled at maximum speed from the opposite, discharge end of the blow tube 17. The recesses provided by the frusto-conical section 28 and groove 26 minimize any loss in efficiency while the dart is propelled along the bore 32, while the overall configuration causes the blow dart to be true and accurate in free flight.

25 Having thus described my invention, what I claim as novel and desire to secure by Letters Patent of the United States is:

30 A blow dart comprising an integral plastic head concentrically formed about a central axis and having an indicium bearing face normal to said axis and defining one end thereof, a parallel face defining the other end of the head and having a pointed metal pin carried by a central bore projecting therefrom, a cylindrical portion at the pin end of the head which extends approximately one-third the axial length of the head and has a relatively shallow annular groove formed centrally of its periphery, an intermediate annular face parallel to the end faces and defining the inner end of said cylindrical portion, a frusto-conical section beginning at said intermediate face and flaring outwardly to a second relatively short cylindrical portion terminating at the indicium bearing face, said second cylindrical portion having the same diameter as the diameter of the first-mentioned cylindrical portion.

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