Jan. 26, 1954 J. M. SEPERSKY 2,667,352

AIRFLIGHT WHIRLING DEVICE

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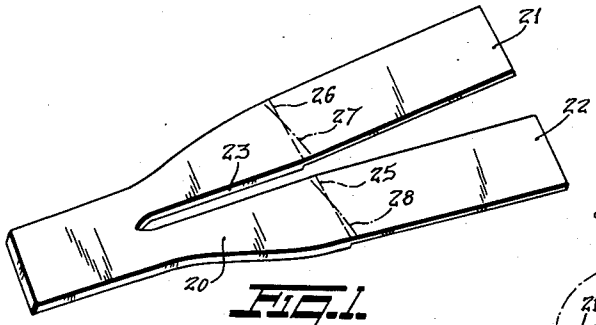


FIG. 1.

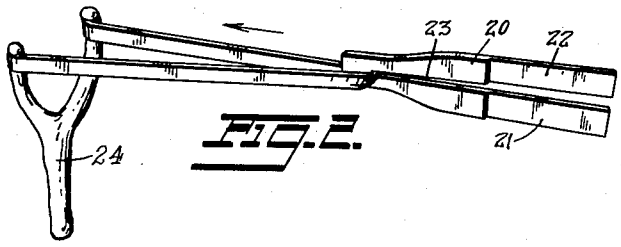


FIG. 2.

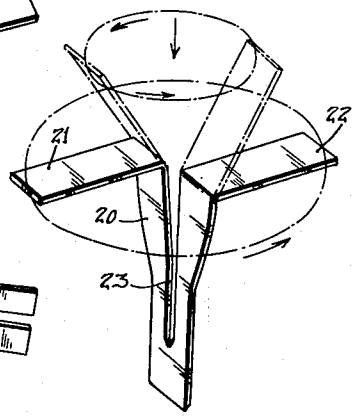


FIG. 3.

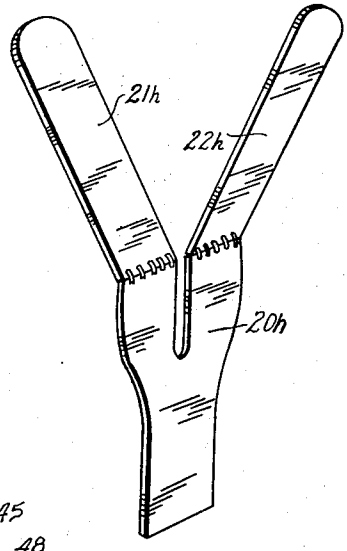


FIG. 5.

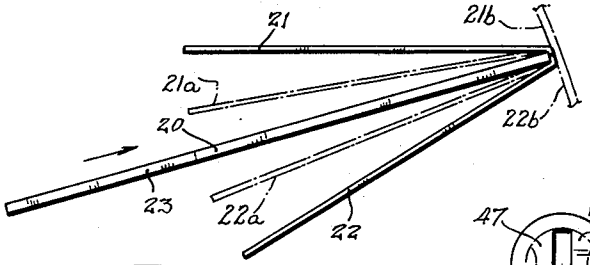


FIG. 4.

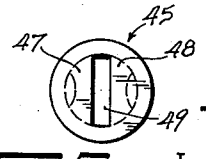


FIG. 6.

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AIRFLIGHT WHIRLING DEVICE

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3 Claims. (Cl. 273—106.5)

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This invention relates to new and useful improvements in an airflight article, and while one important utilization of the invention provides a whirling article, the invention may be applied in many various ways and for uses, as to constitute a marksmanship-training aerial target, a slowly down floating distress signal, a fireworks carrier, etc., etc.; the aim of the invention, more specifically, being to provide a novel and valuable projectile article which—after being ejected or discharged into the air from a suitable impetus-applying means, as a sling of the kind commonly known as a slingshot, or a pistol, gun, cannon, mortar, bow, rocketing source, catapult, cross-bow or other discharge device, or, for further instance, a throwing stick, with this an intermediary between the projectile article and the hand of a person using such stick flingingly, or even, for further example, the use of centrifugal force from a whirling disk or the like, and after thereafter the projected article, because losing the velocity which projected it aloft, begins to drop in response to gravity—descends relatively slowly, helicopter-lowering fashion, due to one, two or any plurality of vane-like elements included in the new article becoming properly automatically disposed on the article for such descent consequent upon the action of the relative wind, as the latter term is used in aeronautics.

Pictorial illustration of, or even verbal reference to, the many and diverse and apparently widely different embodiments of the invention within its scope of protection contemplated, would be objectionable for multifariousness of unnecessary drawings and unnecessary voluminousness of this specification. However, some typical but merely illustrative embodiments are herein shown and described.

As is also to be understood, the uses of the invention, such, but merely for example, as those above mentioned, or for advertising purposes, are without limitation; that is, the invention may be utilized for any useful purpose or purposes whatever.

As is further to be understood, the material or materials used, their manner of joinder, as, for instance, hinging, may be any suitable one or ones or any feasible expedient or expedients; and this comment applies to all parts of the new article, the said vane or vanes and the main body, the latter a single member or a plural-member structure, and the appurtenances if any, such, for example, as a rubber nose or equivalent at the gravity-drop leading end of said

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main body or other part, to avoid injury particularly to children, or, for another example, any suitable spring means which may be associated with the hinging or equivalent connection of a vane to said main body or equivalent, as for urging the vane or vanes present toward divergence and to effect such divergence at the proper time.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view showing one of the many possible now favored embodiments of the invention; one, for instance, made entirely or almost entirely, except for adhesive use in an obvious manner, of cardboard or the like, as to the main body member, and fairly stiff yet not too thick paper, as to the two vanes illustrated as here included.

Fig. 2 shows one use of the projectile article of Fig. 1; that is, as with a slingshot.

Fig. 3 in full lines is indicative of the manner of divergence and whirling of the vanes; and in broken lines shows said vanes as initially partly spread and with said whirling now being initiated or having progressed somewhat.

Fig. 4, showing side elevationally an embodiment as in Fig. 1, is illustrative of various positions of the vanes relative to the main body under different conditions.

Fig. 5 shows another of the many possible embodiments of the invention adapted to be fired from a gun, pistol or the like.

Fig. 6 is a detail view, for indicating a feature desirably characteristic of such a gun as that last referred to; this view being an end elevation of the gun or pistol barrel looking toward the muzzle end thereof.

Referring to the drawings more in detail:

In Figs. 1 to 4, **20** represents the main body, and **21** and **22** the two vanes present. Said body is bifurcated, as at **23**, for use with, for instance, a slingshot **24** as shown in Fig. 2. Here the hinging of the vanes to the main body is merely by way of oppositely made folds **25** and **26**, these folds shown as perpendicularly transverse to the direction of length of the vanes. Said folds may, however, and desirably are, oppositely canted, as indicated at **27** and **28**, to predetermine that

when the vanes diverge, they will act more analogously to the action of helicopter or autogiro vanes or "wings" in automatically spinning in a manner to cause very slow whirling drop of the projected article. Desirably, also, said lines of fold will not be crimped too tightly; that is, the natural resiliency of the paper, plastic, metal or other material used for the vanes should be depended on, where special springs are not added, to tend to diverge the vanes present, at or shortly after the projectile article reaches the apogee of its impetus-impelled trajectory and so begins to drop, its main body foremost, by gravity.

Thus, the said folds might desirably be intensified enough that normally the vanes 21 and 22 would diverge from the main body 20, for instance, as indicated in full lines in Fig. 4; they would be swung in somewhat by the relative wind, as indicated in dot and dash lines 21^a and 22^a in Fig. 4 following start of the impetus impelled flight, and then would swing out as indicated in broken lines 21^b and 22^b in Fig. 4 on the condition occurring which is referred to in the concluding portion of the immediately preceding paragraph.

In Fig. 5, the main body thereof, hereinabove described, is denoted 20^h; while the vanes of Fig. 5 are respectively marked 21^h and 22^h.

The gun or pistol barrel muzzle 45 seen in Fig. 6 is characterized by either a pair of substantially semicylindrical side walls, or, if the barrel be interiorly cylindrical, a pair of plates or blocks such as those indicated at 47 and 48 may be fixedly set in said barrel, to provide such a slot as that indicated at 49—this, for example, for receiving the main body 20^h of the projectile article of Fig. 5.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the

precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A projectile article incorporating a main body, said main body being bifurcated along a portion of its length to receive the elastic portion of a sling-shot when the article is to be projected, and vanes hingedly attached to the body and adapted to lie trailingly close to said body during flight, said vanes diverging outwardly for air engagement whereby during the drop of said article by gravity it descends slowly in helicopter-lowering fashion as by spinning in a very slow, whirling, drop.

2. The combination of claim 1, wherein said vanes are integral extensions of said main body and are of oppositely made folds.

3. The combination of claim 1, wherein said vanes are extensions of the bifurcated portion of said main body and are folded in oppositely canted manner to insure said helicopter action.

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