Aug. 15, 1961 D. K. APPLEBY 2,996,060

SLINGSHOT

Filed Dec. 12, 1957 3 Sheets-Sheet 1

Fig. 1.

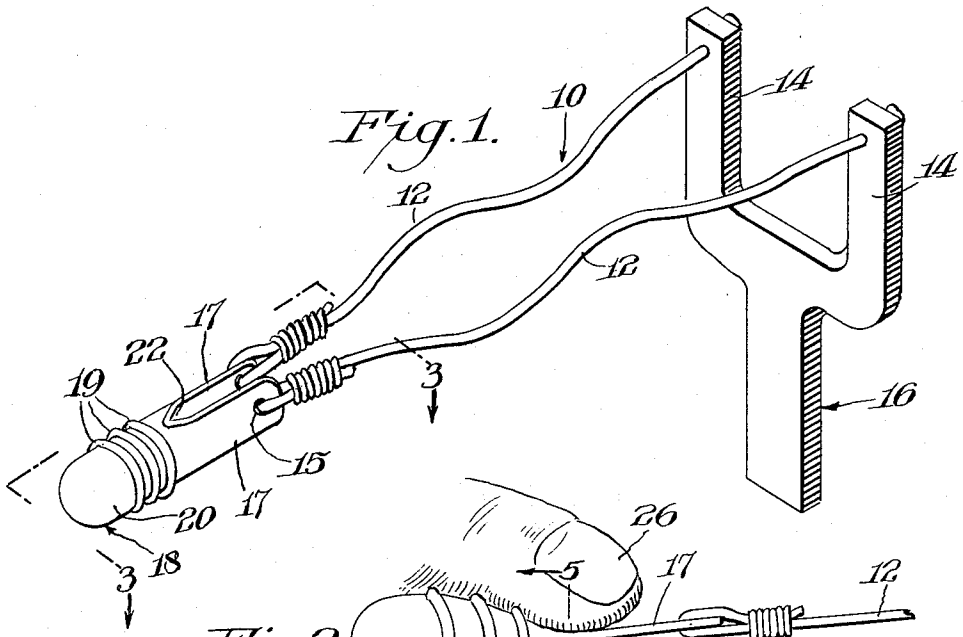


Fig. 2.

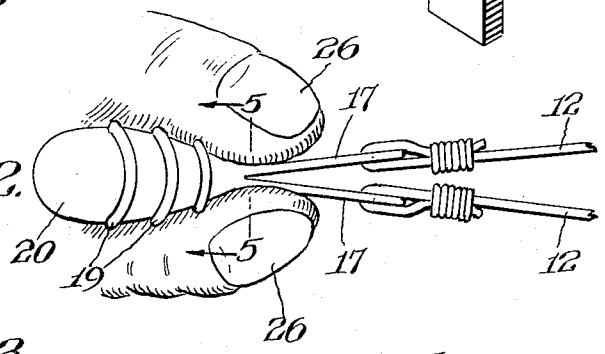


Fig. 3.

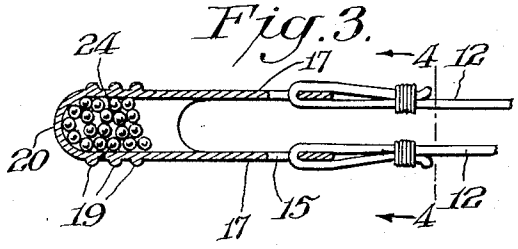


Fig. 4.

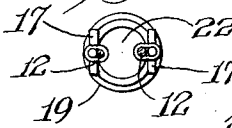
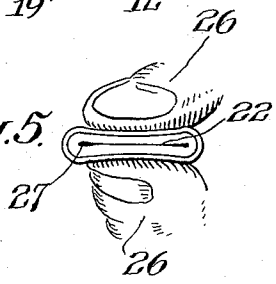


Fig. 5.



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Fig. 6.

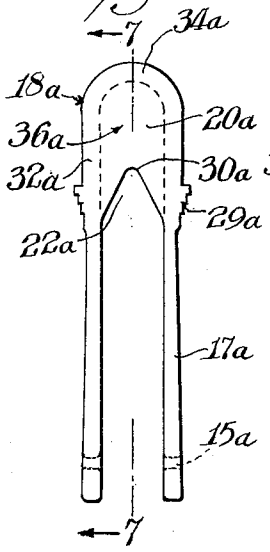


Fig. 7.

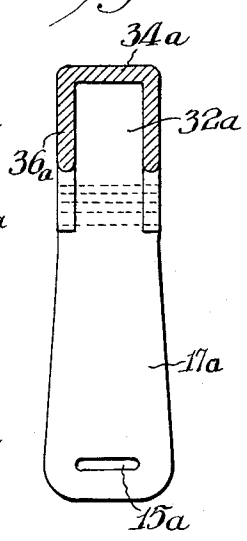


Fig. 8.

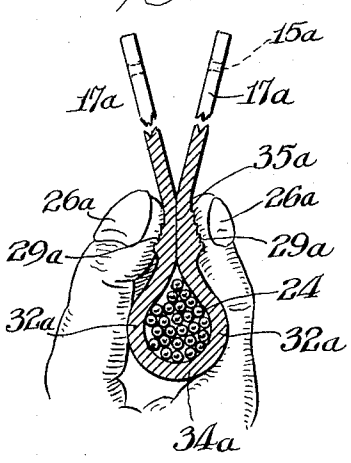


Fig. 9.

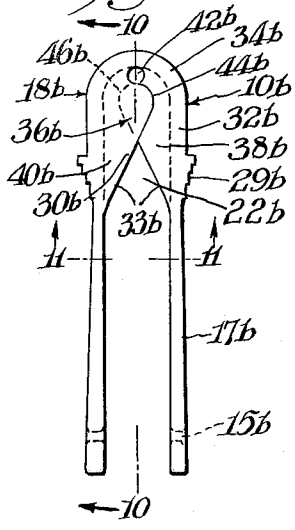


Fig. 10.

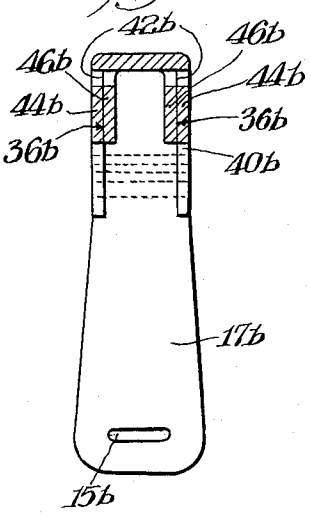
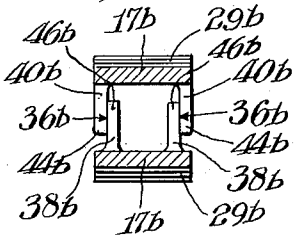


Fig. 11.



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Fig. 12.

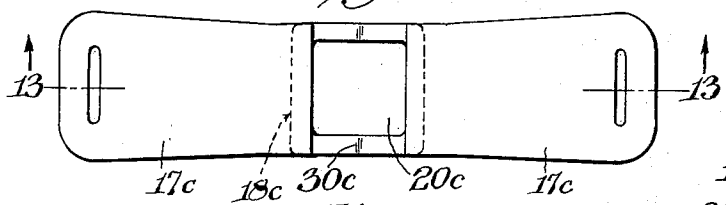
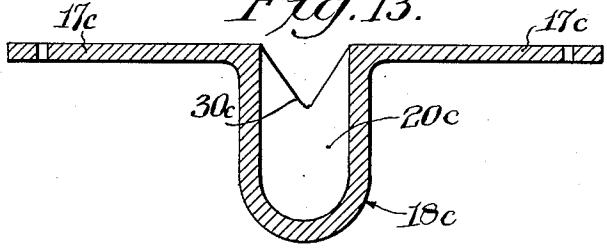


Fig. 13.



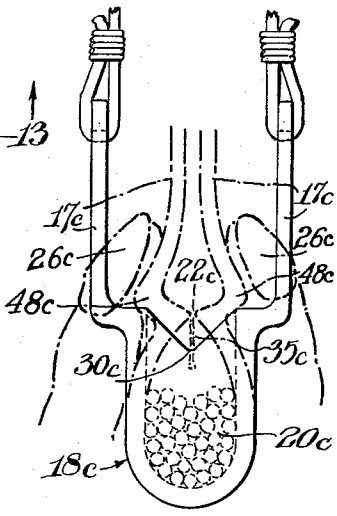


Fig. 14.

Fig. 15.

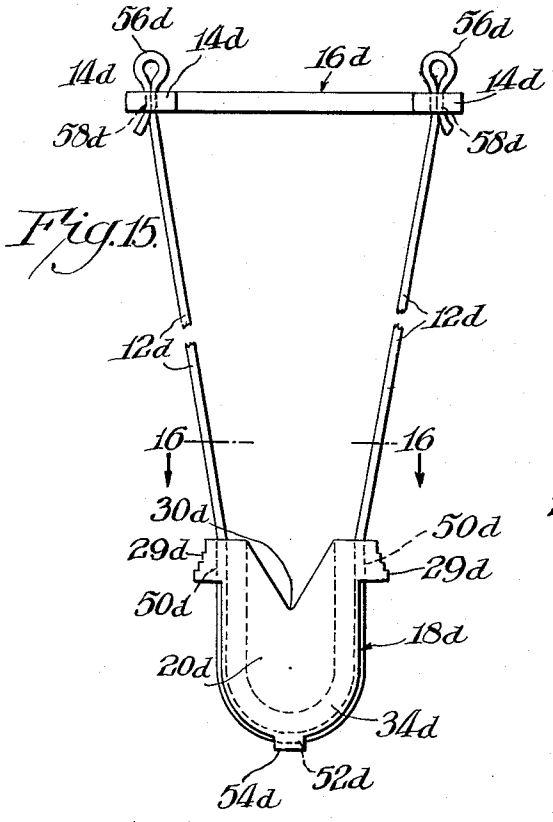


Fig. 16.

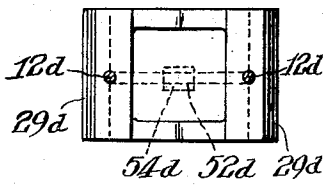
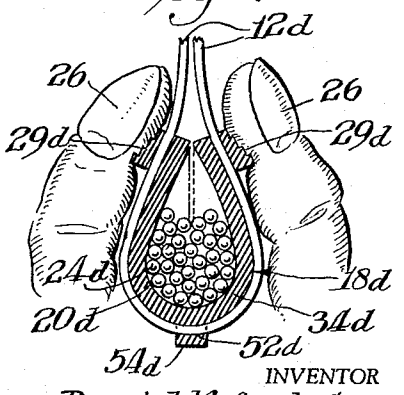


Fig. 17.



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2,996,060

SLINGSHOT

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Filed Dec. 12, 1957, Ser. No. 702,352
14 Claims. (Cl. 124—41)

This invention relates to a novel slingshot for propelling a charge of small pellets, and more particularly relates to such a slingshot which can be used for propelling a charge of birdshot.

Slingshots are a comparatively ancient form of weapon and numerous varieties are known. However, all of these known varieties are primarily intended for propelling one missile or pellet at a time. For hunting small game such as rabbits or birds it is advantageous to be able to propel a relatively concentrated charge of smaller pellets, for example birdshot, a considerable distance. Existing types of slingshots are not suitable for such applications because their pouches cannot retain and effectively discharge an appreciable quantity of these smaller pellets.

An object of this invention is to provide a slingshot which can be used for propelling a relatively concentrated and effective charge of small pellets.

In accordance with this invention a slingshot pouch is made large enough to contain a substantial number of small pellets, and its entrance is constructed and arranged in a manner which permits these pellet to be effectively sealed within the pouch by finger pressure exerted upon it when the pouch is drawn back under tension. The walls adjacent the entrance of the pouch are constructed and arranged to fly out of the path of the pellets as they are thrown through the entrance when the pouch is released. This permits the pellets to fly unimpeded out of the pouch in a substantially concentrated group.

Novel features and advantages of the present invention will become apparent to one skilled in the art from a reading of the following description in conjunction with the accompanying drawings wherein similar reference characters refer to similar parts and in which:

FIG. 1 is a perspective view of one embodiment of this invention;

FIG. 2 is a perspective view of a portion of the embodiment shown in FIG. 1 in one condition of operation;

FIG. 3 is a cross-sectional view taken through a portion of the embodiment shown in FIG. 1 along the line 3—3 and looking in the direction of the arrows;

FIG. 4 is a cross-sectional view taken through FIG. 3 along the line 4—4 and looking in the direction of the arrows;

FIG. 5 is a cross-sectional view taken through FIG. 2 along the line 5—5 and looking in the direction of the arrows;

FIG. 6 is a plan view of a modification of a portion of the embodiment shown in FIG. 1;

FIG. 7 is a cross-sectional view in elevation taken through the embodiment shown in FIG. 6 along the line 7—7 and looking in the direction of the arrows;

FIG. 8 is a cross-sectional view taken through the embodiment shown in FIG. 6 in one condition of operation;

FIG. 9 is a plan view of a portion of another modification of this invention;

FIGS. 10 and 11 are cross-sectional views taken through FIG. 9 respectively along the lines 10—10 and 11—11 and looking in the direction of the arrows;

FIG. 12 is a front view in elevation of a portion of a further embodiment of the invention;

FIG. 13 is a cross-sectional view taken through FIG. 12 along the line 13—13 and looking in the direction of the arrows;

FIG. 14 is a plan view of the portion shown in FIG. 12 in two phases of operation;

FIG. 15 is a plan view of still a further embodiment of this invention;

FIG. 16 is a cross-sectional view taken through FIG. 15 along the line 16—16 and looking in the direction of the arrows; and

FIG. 17 is a plan view of a portion of the embodiment shown in FIG. 15 in one phase of operation.

In FIG. 1 a slingshot 10, which is an embodiment of this invention, is shown in the untensioned state in which elastic means 12 made of, for example, rubber cords extend in a free and untensioned condition to join the extremities 14 of a forked stick 16 to apertures 15 in extensions 17 of the sides of a pouch 18. Pouch 18 is made of a flexible material, for example, fairly stiff leather, moulded polyethylene, or neoprene. Circumferential ribs 19, for example, three in number, extend about the outer surface, for example, of enclosed portion 20 to cause pocket or enclosed portion 20 to maintain its cupped shape and to permit the entrance 22 to pocket portion 20 to be easily deformed by finger pressure to seal pellets within the pouch. Ribs 19 when disposed upon the outer surface of pouch 18 also help provide frictional resistance to facilitate grasping of the pouch in drawing it back under tension.

Enclosed portion 20 is constructed and arranged to be large enough to contain a substantial number of pellets 24, and its entrance is constructed and arranged to permit these pellets 24 to be effectively sealed within the pouch by finger pressure exerted upon both sides of the entrance, as is shown in FIG. 2, when the pouch is grasped prior to and during tensioning of the slingshot. Entrance 22 provides a construction and arrangement for sealing pellets 24 within pouch 18, for example, by being made of flexible material which is concentrated in a relatively small area. Entrance 22, therefore, upon being grasped, in the position shown in FIG. 2 and shown in cross-section in FIG. 5, is sealed by compression to substantially line contact by pressure of fingers 26. This sealing characteristic is provided by maintaining entrance 22 sufficiently concentrated to be maintained in close enough contact to prevent any pellets from dribbling out of corners 27. Enclosed portion 20 is made large enough or deep enough to contain a substantial number ot pellets by, for example, having a length which is substantially large relative to its width, for example, approximately twice as long as it is wide as shown in full scale in the drawings.

As shown in FIG. 3 a pouch of this size accommodates a substantial number of small pellets 24, for example, lead shot of the size commonly referred to as birdshot.

FIG. 4 shows that the pouch 18 in the undeformed condition provides an entrance or exit 22 of sufficiently large unobstructed area to permit the pellets 24 to be projected therethrough in a substantially concentrated and undeviated group or charge pattern. The walls of the pouch adjacent entrance 22 are constructed and arranged, for example, parallel to each other to be maintained clear of the path of propelled shot which flies through in a concentrated group.

In FIGS. 6, 7 and 8 is shown a pouch 18*a* including substantially rectangular cross-sectional configurations in planes disposed perpendicular to its longitudinal axis. An opposite pair of sidewalls 36*a* are cut out adjacent entrance 22 in the form of a notch 30*a* to provide an entrance of appreciable size which is constructed and arranged in a manner which permits pellets 24*a* to be effectively sealed within pouch 18*a* by finger pressure applied by the fingers 26*a* to ridges 29*a* on sidewalls

32*a* as shown in FIG. 8. Notch 30*a*, for example, straddles an imaginary line (not shown) disposed substantially midway between extensions 17*a* and substantially parallel thereto to cause the other or unnotched pair of sidewalls 32*a* to meet each other in substantially perfect line contact as shown at 35*a* in FIG. 8 to seal the entrance 22*a* to the pouch 18*a* when pouch 10*a* is drawn back under tension. Pouches of larger capacity than those shown in FIGS. 1–5 are accordingly adequately sealed. Base 34*a* of enclosed portion 20*a* is curved, for example, in the form of an arc of a circle disposed in planes parallel to planes including cutout or notch 30*a* to help walls 32*a* meet in substantially line contact, as shown in FIG. 8, to seal the pouch during tensioning.

In FIGS. 9, 10 and 11 is shown another portion or pouch 18*b* of another embodiment of this invention. Sidewalls 36*b* are split and overlap with each other. Split sidewalls 36*b* include overlapping flaps 38*b* and 40*b* which meet base 34*b* at an aperture 42*b* which enhances flexure of sidewalls 32*b*. Overlapping flaps 38*b* and 40*b* are constructed and arranged to provide a notch 30*b* generally similar in function to notch 30*a* with outer surfaces 33*b* extending in a generally notched-shaped formation before pouch 18*b* is compressed and drawn back in tensioning. However, the overlapping portions of flaps 38*b* and 40*b* are constructed and arranged to include curved lobes 44*b* and 46*b* which are constructed and arranged to permit flaps 38*b* and 40*b* to slide over each other to allow opposing surfaces of the other pair of sidewalls 32*b* to meet each other in substantially line contact when pressure is applied by the fingers to ridges 29*b* on sidewalls 32*b* in a manner somewhat similar to that shown in FIG. 8. Flaps 38*b* and 40*b* are, for example, angularly shaped with acute portions disposed adjacent entrance 22*b*. These acute portions merge into curved lobes 44*b* and 46*b* disposed adjacent base 34*b*. These lobes 44*b* and 46*b* extend far enough towards each other to retain a substantial amount of shot in the unstressed condition, and are maintained small enough to avoid interference with the aforementioned sealing contact of the opposing surfaces of sidewalls 32*b*. This overlapping cutout arrangement helps entrance 22*b* of pouch 18*b* to fly open out of the way of the pellets when they are discharged through it.

In FIGS. 12, 13 or 14 is shown another portion or pouch 18*c* of an embodiment of this invention which is generally similar in configuration to the structure shown in FIGS. 6, 7 and 8. However, extensions 17*c* extend in the unstressed condition in a plane substantially perpendicular to the longitudinal axis of enclosed portion 20*c* to permit the use of a shallower mold for manufacture of pouch 18*c*. This allows a more economical molding process to be used to make pouch 18*c* from moldable materials, for example, a plastic, such as, polyethylene or neoprene. In FIG. 14 pouch 18*c* is shown in two conditions it assumes in two phases of actual use with extensions 17*c* being extended under tension in the general direction of the longitudinal axis of enclosed portion 20*c* and entrance 22*c* being sealed in line contact at 35*c*. Notch 30*c* is generally similar to notch 30*a* in FIGS. 7 and 8. The strained or bulged condition of junctions 48*c* shown held between fingers 26*c* in FIG. 14 helps entrance 22*c* fly open when pouch 18*c* is released.

In FIGS. 15, 16 and 17 is shown another pouch 18*d* of another embodiment of this invention in which elastic element 12*d* extends, for example, through an aperture 50*d* in enlarged ridges 29*d* and in back of base 34*d* through an aperture 52*d* in a projection 54*d*. Apertures 50*d* and 54*d* are restricted to a size slightly smaller than the relaxed dimensions of elastic element 12*d* to provide a resilient grip upon it and maintain the pouch in a centered position along elastic element 12*d*. A notch 30*d* similar in structure and function to notch 30*a* in FIGS. 6, 7 and 8 is also provided. The extremities 56*d* of elastic elements 12*d* are, for example, secured to a forked stick 16, for example, by doubling them over and forcing them through relatively small slits 58*d* in the ends 14*d* of forked stick 16*d*.

This mode of retention of elastic means 12*d* and mode of connection to pouch 18*d* permits the use of a single elastic means instead of the two separate elastic means previously shown. This considerably simplifies the problem of attachment and centering of an elastic means about pouch 18*d* and also reduces molding costs. In other respects, however, the operation of enclosed portion 20*d* is substantially similar to the mode of operation of the other embodiments illustrated herein.

The illustration of the tensioned phase of operation in FIG. 17 shows how the engagement of elastic elements 12*d* through ridges 29*d* provides a strained condition which helps cause entrance 22*d* to fly open when pouch 18*d* is released and the strained condition relieves itself.

A slingshot including a pouch formed in the manner described herein generally and specifically is more than a toy. It is an efficient hunting weapon for use against small game and birds. When a substantial charge of a small pellet, for example birdshot, is placed within the pouch which is then tensioned and released, this charge is propelled in an amazingly concentrated group for distances as far as 50 to 100 feet and further. At these specific distances the shot pattern is maintained in a concentration similar to that of a shotgun, and adequate concentration is maintained at even longer distances.

What is claimed is:

1. A slingshot pouch for propelling a substantial charge of relatively small pellets comprising a pocket of flexible material having an open entrance, attaching means connected to opposite sides of said entrance for connecting an elastic means to said pocket, said pocket being large enough to contain a substantial number of said pellets, and both of the walls of a forward area of said pocket adjacent said entrance which are disposed opposite to said attaching means being partially cut out symmetrically to form a notch whose vertex extends axially into the remaining portions of said walls from said entrance which permits opposite portions of the edges of said notch provided by said remaining portions of said walls and said sides to which said elastic means are connected to be pressed into intimate contact with each other to seal said entrance when said pouch is drawn back under tension and to facilitate the full and immediate resilient opening of said entrance when said pouch is released and discharges said pellets.

2. A slingshot pouch as set forth in claim 1 wherein said notch is substantially "V-shaped."

3. A slingshot pouch as set forth in claim 1 wherein said pocket incorporates substantially rectangular cross-sectional configurations in planes disposed substantially perpendicular to the longitudinal axis of said pouch.

4. A slingshot pouch as set forth in claim 1 wherein said pocket incorporates substantially cylindrical cross-sectional configurations in planes disposed substantially perpendicular to the longitudinal axis of said pouch.

5. A slingshot pouch as set forth in claim 1 wherein the base of said pouch is curved in planes substantially parallel to planes including said notched walls to facilitate the sealing and opening motion of said walls.

6. A slingshot pouch as set forth in claim 1 wherein the walls of said pouch are constructed and arranged to provide channels for passing a continuous elastic means about the base of said pouch, and said channels being restricted in size to confiine said elastic means thereby maintaining said pouch in a centered position along said elastic means.

7. A slingshot pouch as set forth in claim 6 wherein

said channels comprise channelled projections disposed about the walls of said pouch adjacent said entrance, and another channelled projection is disposed substantially at the center of the base of said pouch to cooperate in maintaining said elastic means in close contact with said pouch.

8. A slingshot pouch as set forth in claim 7 wherein the outer surfaces of said channelled projections are roughened to facilitate the transmission of closing pressure from the fingers to said walls.

9. A slingshot pouch as set forth in claim 1 wherein the walls of the pocket of said pouch are disposed substantially parallel to each other to facilitate the discharge of said pellets in a substantially concentrated group.

10. A slingshot pouch as set forth in claim 1 wherein circumferential ribs are attached to the outer sides of the walls of said pouch to stiffen them for facilitating the opening of said walls adjacent and at said entrance and to improve the frictional properties of the outside of said pouch.

11. A slingshot pouch as set forth in claim 1 wherein roughened projections are disposed upon said other pairs of walls of said pouch, and said projections being positioned substantially in line with said notches to transmit closing pressure directly to the merging portions of said other unnotched pair of walls.

12. A slingshot pouch as set forth in claim 1 wherein said walls include overlapping flaps, and said flaps being constructed and arranged to slide over each other to permit said opposite portions of the other pair of walls

to meet each other in substantial line contact to seal said pouch when it is drawn back under tension.

13. A slingshot pouch as set forth in claim 12 wherein said flaps are substantially angularly shaped, said flaps having acute angular portions disposed adjacent said entrance which merge into curved lobes disposed adjacent said vertex, said angular portions and said curved lobes extending far enough towards each other to retain a substantial amount of shot in the unstressed condition, and said overlapping portions being maintained small enough to avoid interference with the sealing action of said opposite portions of said other pair of walls when said pouch is drawn back under tension.

14. A slingshot pouch as set forth in claim 1 wherein the portions of said entrance to which said elastic means are attached extend substantially perpendicularly to the longitudinal axis of said pocket to facilitate molding of said pouch and to help said entrance fly open when said pouch is released.

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