Jan. 20, 1953 W. W. OSBORNE 2,625,925

SLINGSHOT MAGAZINE

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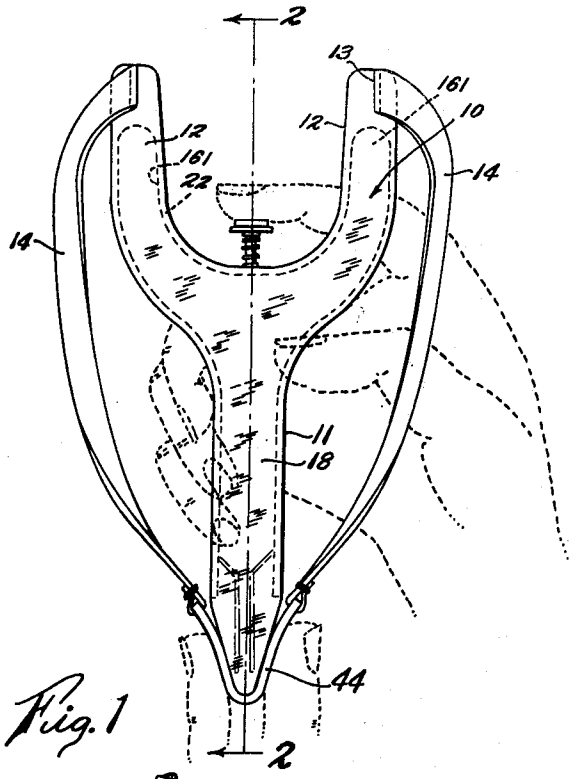


Fig. 1

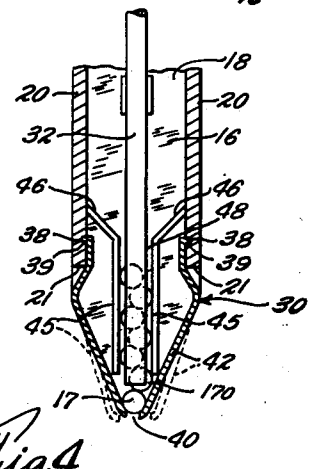


Fig. 4

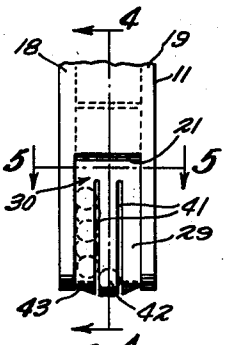


Fig. 3

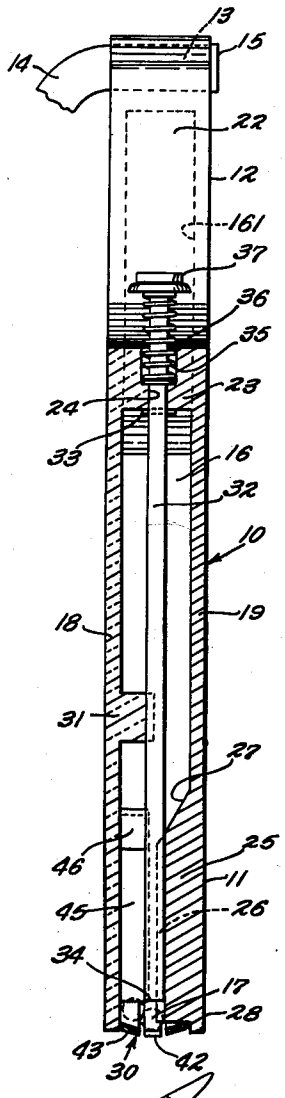


Fig. 2

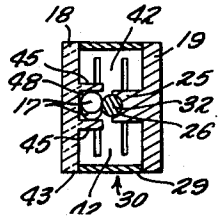


Fig. 5

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SLINGSHOT MAGAZINE

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7 Claims. (Cl. 124—20)

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The present invention relates to sling shots or elastic band catapults and has for an object the provision of a magazine type sling shot that is easily operated.

Another object of the invention is to provide a magazine type sling shot having a visible gravity feed of shot from a supply magazine to an ejection chamber in which chamber a single shot is retained for easy and positive loading into the sling leather or pocket member as the latter is grasped for shooting the sling.

Still another object of the invention is to provide a device of this kind with means that are operable by the user's hand which holds the sling shot frame and which means positively and controllably eject shot singly from the ejection chamber directly into the center crease of the sling leather while the latter is pressed together in known fashion with the thumb and finger ready for the forthwith tensioning, aiming and shooting operations.

A further object of the invention is to provide a sling shot for a selected size of spherical shot in which the loading is positive and controlled and which obviates the necessity of handling the shot with the fingers and thus eliminates the danger of dropping the shot during operation.

These and other objects are attained by the means described and exemplified in the accompanying drawings in which:

Fig. 1 is a front elevational view of a sling shot of the invention with the parts held in position for positively depositing shot directly into operative position in the sling leather, the user's hands being indicated fragmentally in dotted lines.

Fig. 2 is a cross sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a fragmental side elevational view of the lower end of the sling shot frame.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3 showing a shot in the ejector chamber aligned with the ejector rod, the control fingers being shown in full lines in shot retaining position, and in dotted lines in shot releasing position.

Fig. 5 is a view taken on line 5—5 of Fig. 3.

The sling shot of the invention comprises a hollow forked frame 10 which may be formed of suitable material or materials in order that the completed frame may be rigid but not excessively heavy. As shown the frame 10 is rectangular in cross section and has a lower leg or hand grip 11 and a pair of prongs 12, the latter being solid at the top ends and having slits 13 that are appreciably narrower than the thickness of elastic sling straps 14, the latter being inserted

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in the slits after stretching the portion of the strap to be entered so that the thickness of the strap is temporarily reduced to a sufficient degree. The straps 14 are securely retained by elastic compression within the slot and no compression on the short free ends 15.

A hollow space or chamber 16 extends from the open lower end of hand grip 11 upwardly for a suitable distance to provide ample capacity for the reception of a large number of pellets or spherical shot 17, the present device having the chamber following into the forks 12 as at 161. When chamber 16—161 is largely filled with shot 17 of a predetermined size, say BB shot, the latter may tumble about freely in the chamber but will fall by gravity downwardly into the hand grip when the sling shot is held with the hand grip in a generally downward direction as in normal use for loading and shooting the device.

The frame 10 may be made up of suitable molded or sheeted synthetic plastic material or other material such as plywood and is desirably made of two or more pieces cemented or otherwise secured together. I prefer to make the front wall 18 or at least part of it out of transparent plastic so that the user will at all times be apprised of the shot content of chamber 16. Chamber 16 is thus of rectangular cross section and is bounded by front wall 18 and an opposed rear wall 19 with edge walls 20 extending between them from the upper outside portions of forks 12 and ending at 21 somewhat short of the bottoms of walls 18 and 19. A wall 22 bounds the cup-shaped space intermediate prongs 12 and between front and rear walls 18 and 19, said wall 22 having an enlarged boss 23 with a guide bore 24 aligned with the longitudinal center of the handle grip 11 of the frame.

The bottom end portions of walls 18 and 19 which extend below the ends 21 of the edge walls 20 are each tapered to a rounded point. On the inside face of rear wall 19 is a longitudinally disposed guide boss 25 with a hemicylindrical guide groove 26, the surface of which is in the plane of the surface of bore 24. The top end 27 of boss 25 is tapered downwardly as shown, while the bottom end of said boss is shouldered as at 28 to firmly seat one side 29 of a resilient, generally V-shaped metal clip 30 hereinafter more fully described. On the inside face of wall 18, intermediate the bored boss 23 and the aforesaid grooved boss 25 is a smaller grooved boss 31. A plunger rod 32 extends reciprocably in bore 24 through the hand grip chamber 16 and is guided on opposite sides in the grooves in bosses 25 and 31. A stop pin 33 extends through

rod 32 and abuts boss 23 as a stop and serves to normally space the bottom cupped end 34 of the plunger rod sufficiently from the inside of center of clip 30 to permit a single shot or pellet 17 to occupy the space 170 between them. Space 170 forms an ejector chamber. A counterbore 35 serves to seat a coil spring 36 about the top end of plunger rod 32 which end has a shouldered head or finger piece 37 mounted thereon for holding spring 36 under sufficient compression to yieldably hold the plunger rod in the position shown in Fig. 2 and as just described so that a single shot will occupy ejector chamber 170.

The V-shaped metal clip 30, as shown particularly in Fig. 4 has its upper ends turned angularly inwardly, upwardly and then outwardly to form short transverse lugs 38 at the top which are adapted to enter internal notches 39 formed in the edge walls 20 at a short distance from the lower ends 21 of said walls, thus holding the clip removably in the position as shown in Figs. 2, 3 and 4. The clip 30, as shown herein, serves as a closure for the filling opening in the end of handle grip 11 and, by the means now to be described said clip provides a normally restricted ejection aperture 40 aligned with the end of plunger 32 and defining a seat upon which a single shot 17 is always disposed in ejector chamber 170, ready for forcible ejection by manual operation of the plunger 32. The rounded end of the clip 30 is transversely arcuate or curved as can be best seen in Fig. 3. A pair of slits 41—41 divide the arms of the clip from the bottom for a distance upwardly to form a pair of resilient fingers 42—42, the ends of which form two movable edges of aperture 40. The edges of sides 29 and 43 adjacent slits 41—41 form the remaining non-movable edges of aperture 40. The slits 41—41 are spaced apart at a distance slightly greater than the diameter of shot 17 while the ends of the fingers are normally spaced less than the diameter of a shot 17. When the plunger rod 32 is depressed on the retained shot 17 the latter presses the ends of fingers 42—42 apart thus enlarging aperture 40 and escaping from chamber 170 to the outside of the handle grip under positive manual pressure.

The pointed or wedge-shaped end of the handle grip 11 is adapted to have sling leather 44 positively conformed thereto by grasping the leather 44 in the well-known folded condition between the thumb and finger and pushing the leather over the said wedge point while maintaining a degree of digital pressure. In so doing the ejection aperture 40 is registered with the crease in the sling leather about midway the ends of the crease thereof, and the user's fingers are pressing the sides of the sling leather against the resilient fingers 42 of the clip 30. During this time the frame 10 of the sling shot is held in the other hand of the user in any desired or convenient manner, for example, the user may grasp the hand grip 11 ready to tension the sling straps 14. The straps 14 have the opposite ends of the sling leather connected thereto in conventional manner and the straps are preferably long enough to adapt the sling leather to loading position as illustrated in Fig. 1 without excessive tension, if any, on said straps. The thumb or the forefinger of the hand which grasps the frame may be used when desired to depress button 37 and plunger rod 32 down against the resistance of spring 36 and the resilient fingers 42 thus pressing the shot 17 and causing fingers 42 to yieldably spread and to thus open up the ejection aperture 40. The inside faces of the sling leather are also spread locally and in a manner that is felt by the thumb and finger of the hand that controls the sling leather. When the ends of fingers 42 pass the diameter of shot 17 between them they resiliently return to the original position. At the end of the plunger stroke the plunger occupies most of the interior of the ejector chamber 170. Upon release of pressure on rod 32 the end thereof is spring retracted from the ejection chamber and another shot 17 drops into the chamber and, if the sling leather be retained in loading position, another shot can be forcibly ejected into the leather alongside the previously deposited shot or shots while the sling leather is fully controlled. The number of shots introduced can be counted by the number of times the button 37 is forcibly depressed. If the sling leather 44 is soft the user can feel the number and location of the shots therein and carefully control the plurality of missiles to be discharged at one time. It has been found that when shooting at paper or other targets on which the hits are indicated, two or three shots discharged simultaneously will show a very closely spaced pattern.

In order that the ejection of shot may be positive and assured each time the plunger rod 32 is fully depressed, simple means have been provided to prevent a plurality of shot from bridging across the chamber 16 or failure of a shot to enter ejection chamber 170 each time the plunger is withdrawn from the latter. The said means, as can be best seen in Figs. 2, 4 and 5, consists in providing a pair of thin rigid guide fins 45 projecting from the inside face of front wall 18 and extending in parallelism from points slightly above the ejection chamber 170 to approximately the level of the notches 39 in the edge walls 20 and then diverge outwardly with branches 46 which contact or are fixed to said edge walls 20. The enlargement between branches 46 is approximately opposite the inclined top end 27 of the guide block 25 so that the several inclined surfaces 46 and 27 converge and direct shot contained in the magazine gravitationally into the parallel walled space between the fins 45 and between the inside face of front wall 18 and the adjacent longitudinal side of plunger rod 32. As is best illustrated in Fig. 4 the guide channel 48 is greater in width than the diameter of a single shot and is definitely smaller than two diameters. The shot 17 entering the channel 48 will thus guide on one of the fins 45 and on either the side of the plunger rod or the inner face of wall 18. The shot above and below a given shot in channel 48 will be staggered against a relatively opposite fin and an orderly gravitational descent of shot in the channel is assured and is free of any likelihood of bridging. Moreover the lowermost shot in the channel is free to move laterally and downwardly into the ejector chamber 170 whenever said chamber is not occupied by a previously deposited shot or by the depressed lower end of the plunger rod.

The operation of the device has been explained concurrently with the description and it will be readily appreciated that the sling shot may be built to accommodate a specified shot size including BB shot or larger or smaller shot or other pellets that are available and which do not vary greatly in size. The so termed, mung beans which are nearly spherical and are easily graded to nearly uniform size are representative of a class of lighter and cheaper pellets for which the

sling shot may be adapted particularly when intended for smaller boys.

In any event the ability to pour a large supply of pellets into the magazine without individual fingering and the ability to positively introduce the pellets singly and in counted numbers directly into the sling leather while the latter is held in approximately correct condition for use, renders the device free of difficulty in use and without any likelihood of loss of ammunition.

What is claimed is:

1. In a sling shot the combination of a hollow handle, means on the handle forming a protruding and yieldably openable narrow ejection aperture, a spring returned and manually depressible plunger rod extending through the pellet containing hollow interior of the handle and aligned axially with said ejection aperture, means limiting spring returned movement of the rod to admit a single pellet between the said ejection aperture and the adjacent end of the rod and means to gravitationally guide the lowermost several pellets in the handle singly alongside the plunger rod for successive entry between the end of the spring returned rod and said ejection aperture.

2. In a sling shot the combination of a hollow handle, a closure member removably mounted on the handle and including yieldable fingers defining a narrow expandible ejection aperture between the free ends thereof for seating a pellet, an externally operable plunger having an end inside the hollow handle movable toward and away from said seat forming aperture, and guide fins forming an internal channel along one side of said plunger for gravitationally directing pellets in a single staggered row to a position over said aperture and into the path of the plunger.

3. In a sling shot the combination of a handle including a downwardly extending hollow leg forming a hand grip and a shot magazine with a filling opening in the bottom, a pair of parallel triangular extensions on the handle at opposite sides of the filling opening, a V-shaped metal clip removably mounted between said extensions and forming a closure for the filling opening, a manually operable plunger rod extending from the top exterior of the hand grip through the hollow interior thereof for endwise movement to and from the interior bottom center of the closure forming clip, said clip having parallel slits and a transverse discharge slot connecting them forming resilient fingers defining, at their free ends, the sides of the discharge slot, said slot being normally of reduced size for seating a shot in the path of the plunger rod, the fingers yieldingly separable to permit expulsion of a seated shot under the influence of the manually operated plunger, and means gravitationally guiding shot from the magazine in a substantial single file alongside the plunger rod to a seating position over the slot in the path of the plunger.

4. In a sling shot the combination with a hollow handle and a sling leather connected therewith by elastic straps in known manner, of a pair of parallel integral projections on the handle leading to the hollow interior of the handle, a V-shaped metal clip removably insertable between said projections and forming therewith a closure for the handle and adapted to have the sling leather manually held about it, said clip including a pair of converging integral resilient fingers terminating in slightly spaced relation at the base of the V-shape of the clip, a plunger rod reciprocable in the handle for shifting the end thereof to and from the space between the fingers of the clip, means yieldably holding the end of said rod in spaced relation to said ends of the fingers for permitting gravitational entry and seating of a shot in said space, and externally operable means for moving the rod to positively push the seated shot whereby the fingers are yieldably spread and the shot is forcibly ejected between the ends of the fingers into the approximate center of the sling leather while the latter is manually held conformably about the exterior of the clip.

5. In a sling shot the combination of a hollow handle for containing pellets, a wedge-shaped hollow projection on the handle including yieldable means arranged and adapted to form a seat for a pellet and an expandible ejection aperture in said seat, a reciprocable plunger having an end in the projection movable toward and away from said seat, means limiting movement of the plunger away from the seat whereby a single pellet may be admitted to the seat beneath the end of the plunger, and means for guiding pellets singly alongside the plunger toward said end thereof.

6. In a sling shot the combination of a hollow handle, a hollow external projection on the handle adapted to receive a digitally pressed sling pocket thereon for conforming said pocket to substantially V-shape about the apex of the projection, yieldable means on the projection arranged and adapted to form a seat for a pellet in the apex of the projection and to provide an expandible ejection aperture in the center of the seat, means in the handle for directing pellets singly from a loosely massed relation in the interior of the handle toward said seat, and a reciprocable plunger guided on said means and having an end movable toward said seat for engaging a pellet on the seat and forcibly expelling it through the expandible aperture against the resistance of the yielding means and injecting the pellet into the pocket against the resistance of digital pressure on the pocket.

7. In a sling shot structure the combination of a hollow handle, a wedge-shaped hollow projection thereon including yieldable members forming at the free ends thereof a narrow expandible ejection aperture and a seat for a pellet inside the apex of the projection surrounding the said aperture, a plunger having an end movable toward and away from said seat and through the said aperture in the seat against the resistance of the yieldable members, said handle arranged interiorly to guide pellets alongside the plunger in the direction of the seat, and means limiting retractive movement of the plunger to admit a single pellet between the end of the plunger and the seat.

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