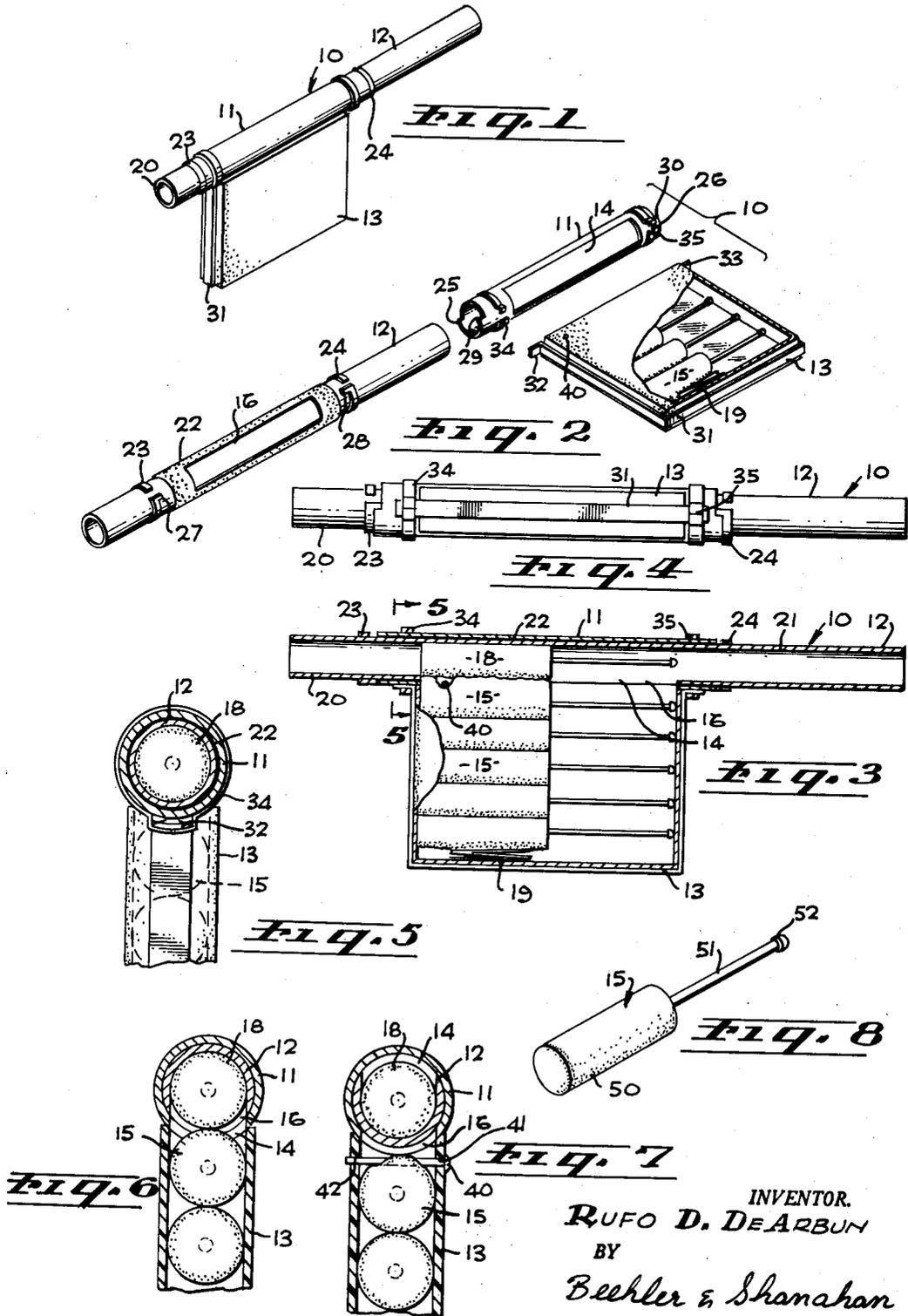


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REPEATING BLOW-GUN
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1

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REPEATING BLOW-GUN

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This invention relates to blow-guns such as those used by children or sportsmen for launching darts. More particularly, the invention relates to a repeating blow-gun which comprises a blow-tube rotatably mounted in a sleeve so that the chamber portion of the blow-tube can be rapidly reloaded with a projectile from an ammunition magazine by a half-turn rotation of the blow-tube.

The practice of launching a dart from a blow-tube by the pressure of air being expelled from the lungs of the user into a mouthpiece has been followed since prehistoric times. The device once used only by savages in the jungles is today a common toy, and with some sportsmen, a novel means of silent hunting.

However, blow-guns heretofore in common use have always fired only one shot at a time. No repeating blow-gun has ever been known to come into extended use. Indeed, it is not certain that any has ever heretofore existed.

The advantages of a repeating blow-gun will be obvious to those familiar with hunting. With a repeating device, several shots can be launched in rapid succession without removing the blow-gun from the mouth; slight delays, and reloading movements may result in loss of wounded prey, such as a bird. Also, the incorporation of a magazine filled with several rounds of ammunition in assembly with the blow-gun makes the device handier for compact transport and for placing in quick use.

On the other hand, the repeating loading mechanism for a blow-gun must combine lightness of weight with air tightness, not heretofore known. Fire arms, for example, employ a relatively massive chamber closing mechanism to insure against loss of gas pressure.

The present invention provides a simple and effective means of rapid reloading of the firing chamber of the blow-gun from an attached magazine of ammunition.

It also provides simple and effective means for reclosing the firing chamber to relatively air tight conditions for launching of the projectile.

The foregoing and other advantages are achieved in a device which is simple and inexpensive to manufacture, yet reliable and rugged in operation. In the blow-gun of the invention, each successive dart is transferred from the blow-gun magazine to firing position within a blow-tube by a rapid half-turn rotation of the blow-tube within an enclosing sleeve. A reverse half-turn rotation then serves to once again close the blow-tube to restore it to an air tight condition ready for launching the dart projectile.

The invention will best be understood from the following description of one preferred specific embodiment, read in connection with the accompanying illustrative drawings, in which:

FIGURE 1 is a perspective view of a blow-gun constructed in accordance with the invention;

FIGURE 2 is a perspective view of the principal parts of the blow-gun of FIGURE 1, slightly enlarged, and disassembled from one another;

FIGURE 3 is a longitudinal sectional view of the blow-gun of FIGURES 1 and 2;

FIGURE 4 is a bottom view of the blow-gun of FIGURES 1 to 3, as seen looking toward the bottom of the blow-gun magazine;

FIGURE 5 is a partial transverse sectional view of the blow-gun as viewed in the direction and at the section indicated by the arrows 5—5 in FIGURE 3;

FIGURES 6 and 7 are fragmentary transverse sectional views through the blow-gun and magazine, show-

2

ing the reloading and firing positions, respectively, of their relatively rotatable tubular portions of the blow-gun; and

FIGURE 8 illustrates a typical dart or projectile suitable for use in the blow-gun of the invention.

In FIGURE 1 the numeral 10 is used to indicate the blow-gun generally. The blow-gun is seen to be comprised principally of a relatively short outer sleeve 11, a blow-tube 12 rotatable within sleeve 11, and a magazine 13 suspended from the underside of sleeve 11.

FIGURE 2 also shows the principal parts of the blow-gun 10, but disassembled to reveal their constructional details. The sleeve 11 is the principal handle, usually gripped and held stationary in the left hand of the user. It may be a smooth tubular plastic, metal or bamboo, or the like.

The sleeve 11 is provided with a longitudinal side opening 14 at the bottom (but rotated to a right side position in FIGURE 2 for purposes of illustration). The side opening 14 serves as an ammunition passage for ammunition moving from magazine 13 to blow-tube 12, as will be explained hereinafter.

In FIGURE 2, the magazine 13, which is in the form of a rectangular box, has one side fragmentarily broken away to show several darts 15 positioned in its interior.

The blow-tube 12 is seen, in FIGURE 2, to have a longitudinally extended side opening 16, exactly mating with the ammunition passage 14 in sleeve 11, and providing a means for sidewise movement of a dart 15 from magazine 13, through ammunition passage 14 into the interior of blow-tube 12, when the blow-tube is rotated within the sleeve 11 to bring the two openings in alignment with each other.

The longitudinal sectional view of FIGURE 3 shows the magazine 13 fully loaded with darts 15, and an additional dart 18 within the blow tube 11. An ejection spring 19 in the bottom of magazine 13 serves to urge the darts 15 upward toward ammunition passage 14, chamber entrance 16, and the interior of blow-tube 12.

It will be seen from FIGURE 3 that the portion of the blow-tube 12 which is enclosed by the sleeve 11 constitutes the firing chamber of the blow-tube, whereas the short portion projecting from the left end of the sleeve 11 serves as a mouthpiece 20, and the longer tubular portion of the blow-tube 12 projecting from the right end of the sleeve 11 serves as the launching muzzle 21.

Preferably, an air sealing gasket means 22 is provided between the exterior surface of blow-tube 12, and the interior surface of sleeve 11, in order to make blow-tube 12 air tight when entrance 16 is closed by rotating the blow tube 12 within sleeve 11 to carry entrance 16 completely out of alignment with ammunition passage 14. In the particular embodiment illustrated, air sealing means 22 is a velvet sleeve, which permits rotation of blow-tube 12, but insures a snug fit against the interior wall surfaces of sleeve 11, and minimizes air leakage during long pressure launching of a dart from the blow-gun 10.

As seen in FIGURE 2 and also in the bottom plan view of FIGURE 4, the blow-tube 12 is provided with a pair of locating rings 23 and 24, one at each end of its firing chamber portion. Locating rings 23 and 24 seat against the corresponding ends 25 and 26 of the sleeve 11, and thus retain the blow-tube 12 in the same longitudinal position in sleeve 11 at all times, regardless of rotational operation.

The rings 23 and 24 also function as rotational stops for blow-tube 12, so that the user of the blow-gun 10 can rotate the chamber entrance 16 into precise alignment with ammunition passage 14 of the opening of the magazine 13, for reloading, by manual detection of the stop location. The rings 23 and 24 are provided with longitudinally extending shoulders 27 and 28 which mate against corre-

3

sponding longitudinal shoulders 29 and 30 notched into the adjacent ends of sleeve 11.

In the preferred embodiment illustrated, the magazine 13 is of a conveniently replaceable type, so that the user of the blow-gun 10 may carry several magazines, and quickly replace an empty magazine with a full one. The magazine 13 is in the form of a box, and has a resilient metal strap 31, which is provided with small lugs 32 and 33, which are in turn received in resilient metal attachment rings 34 and 35 on the sleeve 11, so as to snugly retain the magazine 13 on sleeve 11, as seen in FIGURE 1, with the magazine opening properly aligned with ammunition passage 14, as previously described.

The sectional view of FIGURE 5 further illustrates the breech end of the projectile 18 within the firing chamber of the blow-tube 12. Velvet gasket 22 is seen between blow-tube 12 and sleeve 11.

In FIGURES 6 and 7, the velvet sleeve 22 is omitted for purposes of clarity in illustrating the loading and firing positions of the blow-gun 10. In FIGURE 6, the blow-tube has been rotated so as to place the chamber entrance 16 on the bottom side and in open alignment with ammunition passage 14 in sleeve 11. It is seen that the darts 15 within the magazine 13 have pushed a dart 18 up into the firing chamber of blow-tube 12.

Once loading has been accomplished, as indicated in FIGURE 6, the blow-tube 12 is rotated within sleeve 11 so as to move the chamber entrance 14 out of alignment with the ammunition passage 16, for example, in a straight upward position as illustrated in FIGURE 7. The blow-tube 12 is thus closed, at the chamber entrance, and is ready for firing.

In FIGURE 7, there is also illustrated a locking pin 40, which may be inserted through holes 41 and 42 in the sides of magazine 13, in order to lock the darts 15 into the magazine 13 so as to prevent them from being expelled therefrom by the spring 19. Locking pin 40 will always be in place when magazine 13 is being carried separate from the blow-gun 10 but loaded with darts 15. Although the darts themselves do not comprise part of the novelty of this invention, some description of them is necessary in order to make clear the manner of operation of the blow-gun 10. FIGURE 8 illustrates a typical dart 15. It is seen to be comprised of a cotton wadding piston 50, an arrow 51 carried by the piston 50, and an arrowhead 52 of some type. A hunter might use a pointed arrow 52, but toys will ordinarily use a suction cup, rubber ball, or may dispense entirely with both arrow 51 and arrowhead 52, employing only a soft wadding piston 50 as the entire projectile. It will also be understood that various types of material may be employed for the piston 50. It is only necessary that it be light, resilient and capable of being moved smoothly through the repeater blow-gun mechanism and from blow-tube 12. For example, plastic foam might be used instead of cotton wadding or kapok or the like.

It will be understood from the soft and resilient characteristics of the piston 50 that two adjacent pistons can easily be forced apart and separated by the edges of the chamber entrance 16 when the blow-tube 12 is rotated from the position illustrated in FIGURE 6 to that illustrated in FIGURE 7. Also, the piston 50 is of such material that it is ordinarily an easy matter to pass the locking pin 40 through the edge of one of the darts 15 as illustrated in FIGURE 7.

While I have illustrated and described one preferred specific embodiment of my invention, it will be understood that the scope of the invention is not limited to said specific embodiment, but comprehends all variations and modifications falling within the limits defined by the following claims.

Having thus described the invention, what is claimed as new in support of Letters Patent is:

1. A repeating blow-gun, which includes: a tubular sleeve having a longitudinal side opening to serve as an

4

ammunition passage; a blow-tube closely received in said sleeve and rotatable coaxially therewith, said blow-tube having a mouthpiece extending from one end of said sleeve, and a muzzle extending from the other end of said sleeve, and a chamber portion enclosed by said sleeve, said chamber portion having a longitudinal side opening to serve as a chamber entrance capable of being rotated into matching alignment with said ammunition passage in said sleeve; annular shoulder means at each end of said chamber portion of said blow-tube for retaining said blow-tube in precise longitudinal location with respect to said sleeve; mating stop means on said sleeve and said blow-tube for rotational location of said blow-tube chamber entrance with respect to said ammunition passage in said sleeve; an ammunition magazine for holding a plurality of projectiles for said blow-gun, said magazine having an opening adapted to mate with said ammunition passage; and spring means for ejecting ammunition contained within said magazine one at a time from said magazine opening.

2. A repeating blow-gun, which includes: a tubular sleeve having a longitudinal side opening to serve as an ammunition passage; a blow-tube closely received in said sleeve and rotatable coaxially therewith, said blow-tube having a mouthpiece extending from one end of said sleeve, and a muzzle extending from the other end of said sleeve, and a chamber portion enclosed by said sleeve, said chamber portion having a longitudinal side opening to serve as a chamber entrance capable of being rotated into matching alignment with said ammunition passage in said sleeve; annular shoulder means encircling said blow-tube at each end of said chamber portion for retaining said blow-tube in precise longitudinal location with respect to said sleeve; mating stop means on said sleeve and said blow-tube for rotational location of said blow-tube chamber entrance with respect to said ammunition passage in said sleeve; an ammunition magazine for holding a plurality of projectiles for said blow-gun, said magazine having an opening adapted to mate with said ammunition passage; spring means for ejecting ammunition contained within said magazine one at a time from said magazine opening; and air sealing gasket means around said chamber entrance for minimizing loss of air pressure through said entrance when said blow-tube is rotated to cover said entrance with the interior wall of said sleeve.

3. A repeating blow-gun, which includes: a tubular sleeve having a longitudinal side opening to serve as an ammunition passage; a blow-tube closely received in said sleeve and rotatable coaxially therewith, said blow-tube having a mouthpiece extending from one end of said sleeve, and a muzzle extending from the other end of said sleeve, and a chamber portion enclosed by said sleeve, said chamber portion having a longitudinal side opening to serve as a chamber entrance capable of being rotated into matching alignment with said ammunition passage in said sleeve; locating rings encircling said blow-tube at each end of said chamber portion for retaining said blow-tube in precise longitudinal location with respect to said sleeve; mating stop means on said sleeve and said blow-tube for rotational location of said blow-tube chamber entrance with respect to said ammunition passage in said sleeve; an ammunition magazine for holding a plurality of projectiles for said blow-gun, said magazine having an opening adapted to mate with said ammunition passage; spring means for ejecting ammunition contained within said magazine one at a time from said magazine opening; magazine retainer means adapted to lock said magazine to said sleeve with said magazine opening in communication with said ammunition passage, said magazine retainer means being resiliently retractable or removal of said magazine from said sleeve; and an ammunition locking pin for insertion in said magazine to lock projectiles in said magazine.

4. A repeating blow-gun, which includes: a tubular

5

sleeve having a longitudinal side opening to serve as an ammunition passage; a blow-tube closely received in said sleeve and rotatable coaxially therewith, said blow-tube having a mouthpiece extending from one end of said sleeve, and a muzzle extending from the other end of said sleeve, and a chamber portion enclosed by said sleeve, said chamber portion having a longitudinal side opening to serve as a chamber entrance capable of being rotated into matching alignment with said ammunition passage in said sleeve; locating rings encircling said blow-tube at each end of said chamber portion for retaining said blow-tube in precise longitudinal location with respect to said sleeve, said rings also incorporating stops; mating longitudinal notches in the ends of said sleeve for rotational location against said stops; an ammunition magazine for holding a plurality of projectiles for said blow-gun, said magazine having an opening adapted to mate with said ammunition passage; spring means for ejecting ammunition contained within said magazine one at a time from said magazine opening; magazine retainer means adapted to lock said magazine to said sleeve with said magazine opening in communication with said am-

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munition passage, said magazine retainer means being resiliently retractable for removal of said magazine from said sleeve; and a sleeve of air sealing material between said blow-tube and said sleeve.

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