

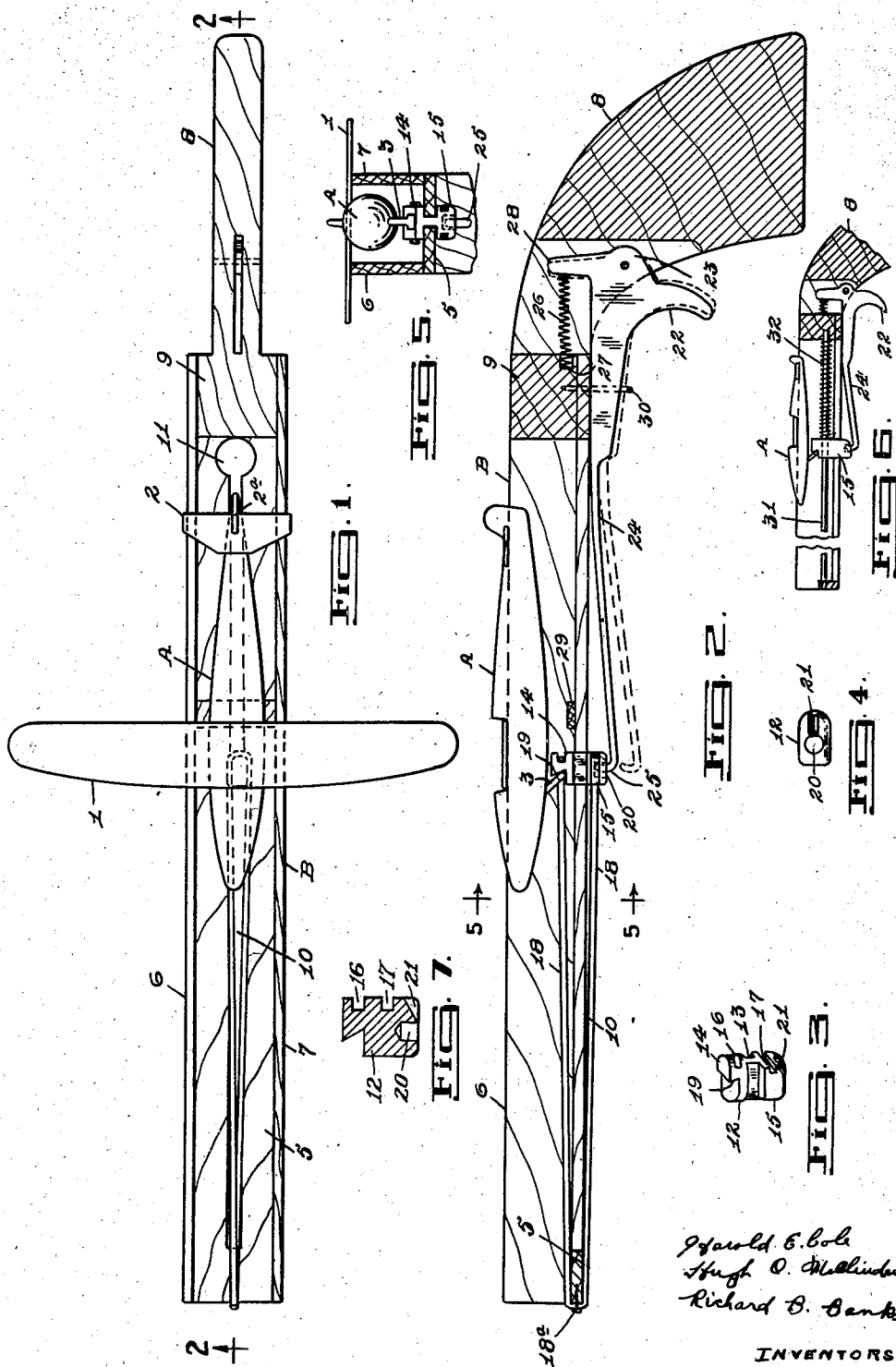
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TOY

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TOY

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1 Claim. (Cl. 46—81)

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The invention relates to improvements in toys as described in the present specification and shown in the accompanying drawings that form a part of the same.

The main objects of the invention are to provide a simple, interesting and instructive toy embodying the characteristics of aeronautics and gunnery, to provide means whereby a toy aeroplane can be launched with the speed and precision essential to accurate and prolonged flight of the plane, and generally to provide a durable, interesting and inexpensive toy.

The invention consists in the novel features of construction, arrangements and combinations of parts described in the present specification and more particularly pointed out in the claim for novelty following.

In describing the invention reference will be made to the accompanying drawings, in which:

Figure 1 is a top view of our improved toy showing a toy aeroplane in position in the launching device.

Figure 2 is a longitudinal sectional view through the launching device, taken on the line 2—2 of Figure 1.

Figure 3 is a perspective view of the expeller.

Figure 4 is a bottom view of the device shown in Figure 3.

Figure 5 is a cross sectional view through the launching device, taken on the line 5—5 of Figure 2.

Figure 6 is a longitudinal sectional view, on a reduced scale, of a modification of the invention.

Figure 7 is a central vertical sectional view through the expeller.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings, A indicates a toy aeroplane which may be constructed of wood, cardboard or other suitable material, and which is provided with a main wing 1, stabilizer 2 and fin 2a.

The body of the plane 1 is provided on its under side in the centre of gravity of the plane, with a downwardly extending lug 3 which is adapted to extend into the path of the expeller (which latter is described in detail hereinafter) whereby the plane can be catapulted into space. The lug 3 is preferably inclined rearwardly for the reasons which will be obvious as the description of the device proceeds.

B is the launching device which comprises a barrel having a bottom wall 5 and parallel side walls 6 and 7, and at its one end has a handle 8 extending outwardly therefrom and by means

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of which the launching device can be held in one hand, the said handle having an enlarged portion 9 fitting the rear end of the barrel and secured thereto. The bottom wall of the barrel is provided with a narrow slot 10 positioned in the transverse centre of said wall and extending rearwardly from a point near the discharge end of the barrel to a point near the rear end and at its rearmost end being enlarged, as at 11, to permit of the passage of the head of the spring controlled expeller 12 by means of which the plane is expelled forcefully from the barrel in the manner to be described hereinafter.

The expeller 12 consists of a metal spool-like device having a narrow flat sided neck portion 13 adapted to slide within the slot 10, a head portion 14 adapted to be projected through the enlarged portion 11 of the slot 10 for positioning within the barrel and slidable along the bottom 6 thereof, and a head 15 positioned exteriorly of the bottom of the barrel.

The heads 14 and 15 are provided on their rear sides with slots 16 and 17 respectively for the reception of an endless elastic band 18 which is looped around the rear side of one of said heads and extends forwardly around the discharge end of the bottom of the barrel and is looped around the other of said heads, said elastic member in its doubled condition being relatively shorter than the barrel whereby in its relaxed condition the expeller will be positioned near the discharge end of the barrel and upon said expeller being drawn towards the rear end of the barrel the said elastic band will be stretched to provide the elasticity necessary to cause the said expeller to be forcefully projected towards the discharge end of the barrel. The head 14 is cut away to provide a vertical forwardly facing shoulder 19 adapted, when the body of the plane is placed in the barrel, to engage the rear side of the lug 3 carried by the plane and so in the forward progress of the expeller to cause the plane to be forcefully expelled from the barrel.

The head 15 is provided in its end with a recess 20 and is further provided with an inwardly inclined guide slot 21 communicating with the said recess 20 and leading rearwardly through the wall of the head.

A trigger 22 positioned in the curve of the handle 8 has a portion 23 extended into a suitable slot in the handle and pivoted therein, and said trigger carries an arm 24 positioned exteriorly of the barrel and extending forwardly and said arm has at its forward end a finger 25 pointing inwardly towards the bottom of the barrel, said

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finger being adapted on the rearward movement of the expeller to enter the recess 20 in the head 15 through the inclined guide slot 21, whereby to hold the expeller against the influence of the elastic member 18.

The elastic member 18 is preferably threaded through a fastener 18a, or fastened to the front end of the bottom of the barrel.

A helical spring 26 positioned in a suitable slot in the handle 8 and held under compression between a shoulder 27 formed in the enlarged portion 9 of the handle and a lug 28 on that portion of the trigger which is located within the handle provides a means for influencing the forward end of the arm 24 towards the bottom of the barrel and thus serving to keep the finger 25 in position in the recess 20 in the expeller until the trigger is operated to cause withdrawal of said finger whereupon the elasticity of the extended member 18 causes same to rebound to its relaxed condition and forcibly draw the expeller towards the discharge end of the barrel.

A cross member 29 extending across the slot 19 at a point rearwardly of the finger 25 and secured to the bottom or sides of the barrel may be employed to limit rearward movement of the expeller.

30 is a U-shaped bracket secured in the lower face of the barrel and extending outwardly around the arm 24, or the forward end of the trigger, to hold the said arm against lateral movement.

In the use of this invention the user holds the launching device in one hand by grasping the handle 8 in such a way as permit of operation of the trigger, and with the other hand draws the expeller rearwardly until the spring held finger 25 of the arm 24 enters the recess 20 in the head 15 and prevents further rearward movement of the expeller. This rearward movement of the expeller causes the elastic member to be stretched, the rebounding energy being predetermined by the length of the band and the thickness of the rubber of which the band is made. After the expeller has been locked by the finger 25 the plane 45 is laid in the forward end of the barrel and is drawn backwardly until the lug 3 rests against the shoulder, or wall 19 of the head 14. The plane may then be forcibly expelled by simply operating the trigger to cause withdrawal of the finger 25 from the recess 20, upon which the elasticity in the band 18 snaps the expeller forwardly and catapults the plane outwardly into space.

While the rebounding force has been shown and described hereinbefore as being supplied by an elastic band it is of course understood that other means, such as a spring, can be employed in place thereof to operate the expeller.

As an illustration a modified form of means for

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operating the expeller is shown in Figure 6, in which the expeller is slidable on a rod 31, supported at opposite ends of the barrel in spaced relation to the bottom of the barrel, and is adapted to be propelled forwardly by means of a helical spring 32 encircling that part of said rod rearwardly of the expeller, whereby on the drawing back of the expeller into contact with the finger 25 the said spring is compressed and serves, on the release of the expeller through the operation of the trigger, to propel the expeller forwardly and thus launch the plane.

While we have illustrated and described the present preferred forms of construction for carrying out our invention, these are capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claim.

What we claim is:

In a toy of the character described, the combination in a gun including a barrel open along its top side and having a longitudinal slot in its bottom closed at the forward end of said barrel, of an expeller slidable in said slot in the bottom of said barrel and having a part located within said barrel and a part located below said barrel, that part of said expeller located below said barrel having an opening in its lower end extending at right angles to the longitudinal axis of the barrel and an inclined guide slot leading from said opening through the rear wall, a trigger having an upwardly turned finger spring-held towards said barrel adapted on the rearward movement of said expeller to enter said opening in the expeller through said guide slot, and elastic means extending from the forward end of said barrel rearwardly above and below the bottom of said barrel and connected to the respective ends of the expeller and adapted to be stretched on the rearward movement of the expeller.

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