Feb. 4, 1930. O. E. JOHNSON 1,746,157

KITE APPARATUS

Filed Oct. 17, 1928

Fig. 1

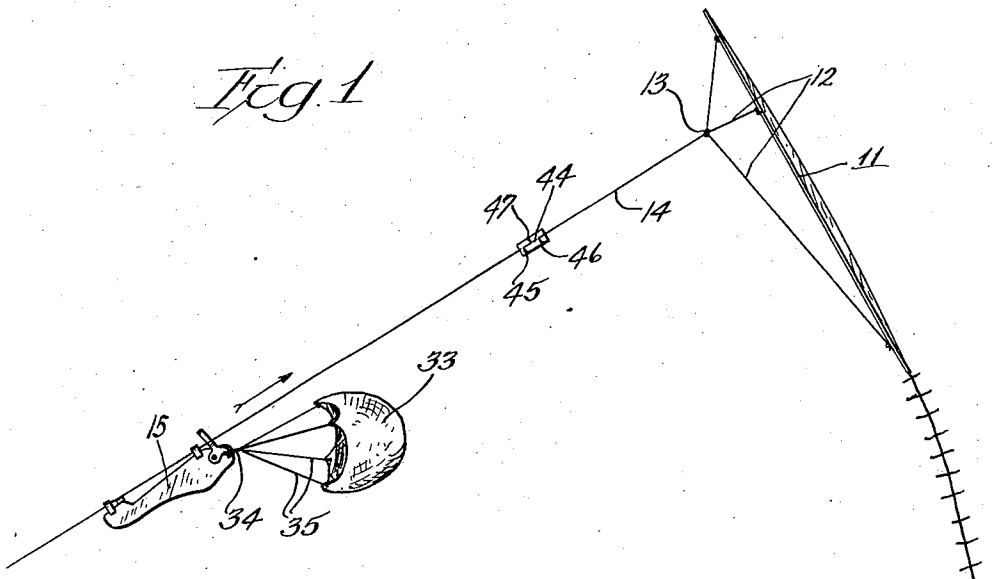


Fig. 2

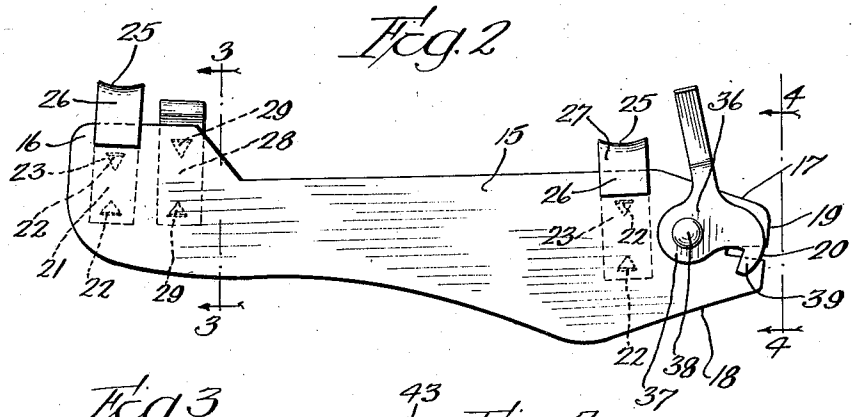


Fig. 3

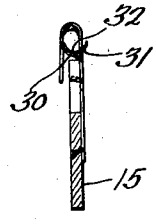


Fig. 4

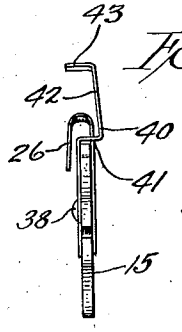
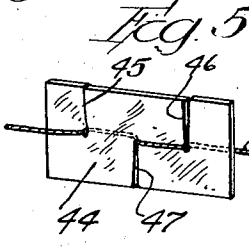


Fig. 5



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UNITED STATES PATENT OFFICE

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KITE APPARATUS

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The object of this invention is to provide a simple, effective, and economical device for use in connection with a kite, which will propel a parachute or other aeronautical device upwardly to and release the same in the vicinity of the kite.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings,

Figure 1 is a perspective view, showing the illustrative carrier constructed pursuant to the invention, in the act of propelling the parachute upwardly toward a kite for the purpose of releasing the parachute at or near the kite;

Fig. 2 is a side elevation of the improved carrier;

Fig. 3 is a vertical section of the same, taken on the line 3—3 of Fig. 2;

Fig. 4 is a front end view of the carrier taken on the line 4—4 of Fig. 2; and

Fig. 5 is a perspective view of the latch releasing member on the carrier, showing the same mounted on the kite string.

The illustrative carrier for the parachute or other aeronautical device, shown in Fig. 1, is employed in combination with a kite 11. The kite 11 may be of any ordinary construction, as, for example, an ordinary toy kite made of paper or other light inexpensive material, stretched onto a light wooden frame. At its rear, the kite is provided with the usual vertical and horizontal strings 12 attached at 13 to the long kite string 14 which extends down to the user in the act of flying the kite.

The carrier for the parachute or other aeronautical device, is shown in detail in Figs. 2 to 4, inclusive. This carrier consists of a body 15. In making up the structure for use as a toy, the body 15 may be cut from stiff cardboard, or any other similarly inexpensive and light material. While the body 15 of the carrier may be of any convenient form or shape, it is preferably provided at its rear end with an upwardly projecting portion 16, and at its front end with the top downwardly and bottom upwardly converging edges 17 and 18 terminating in the front edge 19 of somewhat smaller dimension than the lateral cross-sectional dimension in the interior of the carrier body. Extending inwardly from the front edge 19 of the carrier body 15 is a short slot 20, the purpose of which will appear hereinafter.

The carrier 15 functions to propel a kite or other aeronautical device upwardly on the kite string 14 and to release said device in the vicinity of the kite. As soon as the parachute, for example, has been released, the carrier will travel down the kite string by gravity and return to the user. In the illustrative embodiment, the carrier is provided with an extremely simple and efficient structure for applying it to the kite string and for effecting the release of the parachute near the kite.

Adjacent its rear end, the carrier is provided with a rear clip 21 constructed preferably of a strip of light sheet metal, such as ordinary light gauge tin plate. The strip of tin 21 is provided with a pair of small triangular prongs 22, which may be punched out from the body 23 of the strip and bent substantially perpendicularly thereto to provide a simple means for securing the clip to the body 15 of the carrier. In applying the clip to the carrier, the prongs are forced into the body thereof, by the application of a suitable force of pressure, and the strip is held in place by said prongs so that its bottom portion 23 or the main body is held in engagement with one side of the carrier body 15. At its upper end, the main body portion 23 of the clip is bent downwardly along the line of bend 25 to provide a substantially vertically depending end 26. This structure provides a rear hook for the clip 21 by which the rear end of the carrier body 15 may be suspended from the kite string 14. Preferably, the bend 25 of the clip is inwardly curved, as shown in Fig. 2, or otherwise formed, to provide a single point contact of the inside surface of the bend with the kite string 14 and thus reduce friction and allow the carrier to slide easily relatively to the kite string.

The front portion of the body 15 of the carrier is provided with a clip 27 formed simi-

larly to the clip 21 and secured to said body preferably in the same manner. Both clips 21 and 27 have their curved bends 25 located a sufficient distance above the top edge of the body 15 of the carrier, so as to avoid engagement of the cord with the carrier body and prevent any impediment to the free travel of the carrier on the kite string. The depending hook portions 26 of the clips 21 and 27 extend down and overlap the face of the carrier body opposite to that face at which the main body portions 23 of said clips are secured.

In order to prevent the carrier 15 from being lifted accidentally off the kite string to which it is attached, as, for example, by a strong up current of air acting on the parachute, which is effecting the propulsion of the carrier toward the kite, or from becoming otherwise dislocated from the kite string, there is provided a retaining member 28 located adjacent to the rear clip 21 and conveniently in advance of said rear clip. The retaining member 28 may be formed of a suitable strip of thin sheet metal, such as ordinary light gauge tin, just as the clips 21 and 27. It comprises a main body portion 28, secured by prongs 29 to one face of the carrier body 15 in the same manner as the clips 21 and 27. Above the top edge of the carrier body 15, the retaining member is outwardly curved in one direction, as shown at 30 in Fig. 3, and then bent back upon itself and downwardly curved, as shown at 31, to provide a groove 32 for supporting the kite string 14. The bottom of the groove 32 is preferably arched or curved upwardly, as shown in Fig. 2, to provide a single point contact of the bottom of the kite string with the groove. The groove 32 is located between the clip bends 25 of the pair of clips and the open ends of the hook portions 26 thereof. Hence, the bottom of the groove 32 will engage the string and, in case of any tendency arising to lift the carrier off the kite string, prevent dislocation of the carrier.

The slot 20 at the front of the carrier body receives one end of a string connected to a parachute 33 or other suitable aeronautical device, effective when the carrier is released to impart an upward movement of the carrier toward the kite 11. In the illustrative instance, a parachute is employed provided with a loop 34 at the end of its attached strings 35, which may have the usual arrangement whereby the strings extend from the common junction point to various corners of the parachute body. The loop 34 of the parachute is inserted in the groove 20 and the parachute is retained in position at the front end of the carrier body 15 by means of a movable latch member 36 mounted on the carrier body preferably in advance of the front clip 27.

The latch 36 comprises a main body portion 37, which is pivoted by a stud or pin 38 to the carrier body. When the carrier is used as a toy and it is desired to make the parts as cheaply as possible, the pivot for the latch 36 may be effectively provided by an ordinary headed pin fastener of the type employed in fastening papers together. The prongs and fastener may be passed through the body of the carrier and their free ends spread apart and bent back against the body thereof to hold the latch in position. By giving the fastener a couple of turns, the cardboard surrounding the pins will be sufficiently cut away to permit the required freedom of movement of the latch on its pivot.

The latch member 36 may be made of sheet tin, for example, the same as employed for the other metal parts of the device, and is formed forwardly of its main body portion 37 with a depending hook 39, adapted to engage the loop 34 of the parachute, and to block the entrance to the groove 20, so as to retain the parachute in position at the front end of the carrier.

Extending upwardly from the main body portion of the latch member 36 is a release arm 40, formed conveniently by bending an upwardly projecting narrow strip of the latch first horizontally, as shown at 41, next upwardly, as shown at 42, and then rebending the strip horizontally to provide an upper horizontal portion 43, extending above and overlying the bottom horizontal portion 41. When the arm 40 is moved rearwardly, in a counter-clockwise direction with reference to Fig. 2, the hook 39 is lifted away from the entrance to the slot 20, thereby releasing the looped end of the parachute and freeing the parachute from the carrier.

The above described movement of the arm 40 is effected when the carrier arrives at or near the kite 11. For this purpose, a latch releasing member 44 is mounted on the string 14 in the vicinity of the kite. In the form shown, the latch releasing member may be constructed economically from a square of ordinary cardboard provided in one edge with a pair of slits 45 and 46, and in the opposite parallel edge with an intermediate slit 47 located between the slits 45 and 46. The several slits 45 and 46 preferably extend to the longitudinal central axis of the latch release member and the kite string may be inserted first into one slit 45, next drawn through the slit 47, and passed along the opposite side of the cardboard member and finally inserted into the slit 46. This operation will retain the latch releasing member in fixed position at any desired point on the kite string 14 in the vicinity of the kite 11.

In the working of the device, the user applies the parachute to the slot in the forward end of the carrier 15, the latch 36 is then rotated forwardly until the hook engages within the loop at the string end of the parachute to retain the parachute in position at the

front end of the carrier. The carrier is applied to the kite string 14 by passing the string into the hooks 26 of the rear and front clips 21 and 27 and into the groove 32 of the retaining member. This operation is, of course, effected preferably while the kite is flying. On release of the carrier by the user, the up draft acting on the parachute 33 will move the carrier upwardly along the kite string until the latch releasing member 44 pushes the arm 42 backwardly. This lifts the hook 39 and permits the parachute 33 to escape from the carrier, whereupon the carrier will slide back along the kite string to the point at which it is held in the vicinity of the ground.

In the embodiment shown, the device is intended primarily for use as a toy. The parachute may be constructed of paper or any suitable inexpensive material, and ordinary cotton string may be employed for the stringing of the parachute. The device adds greatly to the pleasure of kite flying and provides a novel and inexpensive arrangement for releasing parachutes or other aeronautical devices in the vicinity of the kite flying in the air.

The invention, however, is not limited in every aspect to use as a toy. It may be employed for advertising purposes, for example, or signalling.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof. Moreover, it is not indispensable that all features of the invention be used conjointly, as they may be advantageously employed in various subcombinations and other combinations.

I claim:

1. The combination with a kite and kite string, of a latch releasing member positioned on the kite string in the vicinity of the kite, and a parachute carrier adapted to be propelled by the parachute along said kite string and adapted to release the parachute, said parachute carrier including, an elongated body, clip members attached at front and rear to a side of said body, said clip members having hooks for hooking over and engaging a kite string, a retaining member also secured to said body and provided with a grooved portion disposed on the opposite side of the string from the hooks, the carrier body having a slot at its front end for receiving the string of a parachute, and a parachute retaining latch mounted at the front end of said carrier, said retaining member having a hook for engaging the parachute string, and holding it in position in said slot, and a projecting latch releasing arm engageable with said releasing member on the kite string for releasing said hook and free said parachute from the carrier.

2. The combination with a kite and kite string, of a latch releasing member positioned on the kite string in the vicinity of the kite, and an aeronautical device carrier for propelling the aeronautical device along said kite string and releasing the aeronautical device, said aeronautical device carrier including, an elongated body, clip members attached at front and rear to a side of said body, said clip members having hooks for hooking over and engaging a kite string, a retaining member also secured to said body and provided with a grooved portion disposed on the opposite side of the string from the hooks, the carrier body having a slot at its front end for receiving the string of an aeronautical device, and an aeronautical device retaining latch mounted at the front end of said carrier, said retaining member having a hook for engaging the aeronautical device string, and holding it in position in said slot, and a projecting latch releasing arm engageable with said releasing member on the kite string for releasing said hook and freeing said aeronautical device from the carrier.

3. A carrier of the class described, including, an elongated body, front and rear string engaging clips provided with hooks for receiving a kite string, said clips being formed of sheet metal strips provided with punched and bent prongs driven into the body of said carrier, a sheeet metal retaining member similarly secured to the body of said carrier, and provided with a grooved portion cooperable with said clip members for retaining the carrier on the kite string, the carrier body having at one end a slot for receiving an aeronautical device, and a sheet metal latch pivoted adjacent said slot, said latch being provided with a hook for engaging said aeronautical device and retaining it in position on the carrier and with an integral latch releasing arm adapted to effect rotation of the latch and release said hook to free the aeronautical device from the carrier.

4. A carrier of the class described, including, an elongated body formed of light weight material, front and rear string engaging clips provided with hooks for receiving a kite string, said clips being formed of sheet metal strips provided with punched and bent prongs driven into the body of said carrier, a sheet metal retaining member similarly secured to the body of said carrier, and provided with a grooved portion cooperable with said clip members for retaining the carrier on the kite string, the carrier body having at one end a slot for receiving an aeronautical device and retaining it in position on the car-

rier and with an integral latch releasing arm adapted to effect rotation of the latch and release said hook to free the aeronautical device from the carrier.

5. A carrier of the class described, including an elongated body formed of light weight material, front and rear string engaging clips provided with hooks for receiving a kite string, said clips being formed of sheet metal strips provided with punched and bent prongs driven into the body of said carrier a sheet metal retaining member similarly secured to the body of said carrier, and provided with a grooved portion cooperable with said clip members for retaining the carrier on the kite string, and releasable means mounted on the carrier body for holding an aeronautical device.

6. A carrier of the class described, including an elongated body formed of light weight material, front and rear string engaging clips provided with hooks for receiving a kite string, said clips being formed of sheet metal strips provided with punched and bent prongs driven into the body of said carrier, a sheet metal retaining member similarly secured to the body of said carrier, and provided with a grooved portion cooperable with said clip members for retaining the carrier on the kite string, and releasable means mounted on the carrier body for holding an aeronautical device.

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