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AERIAL TOY

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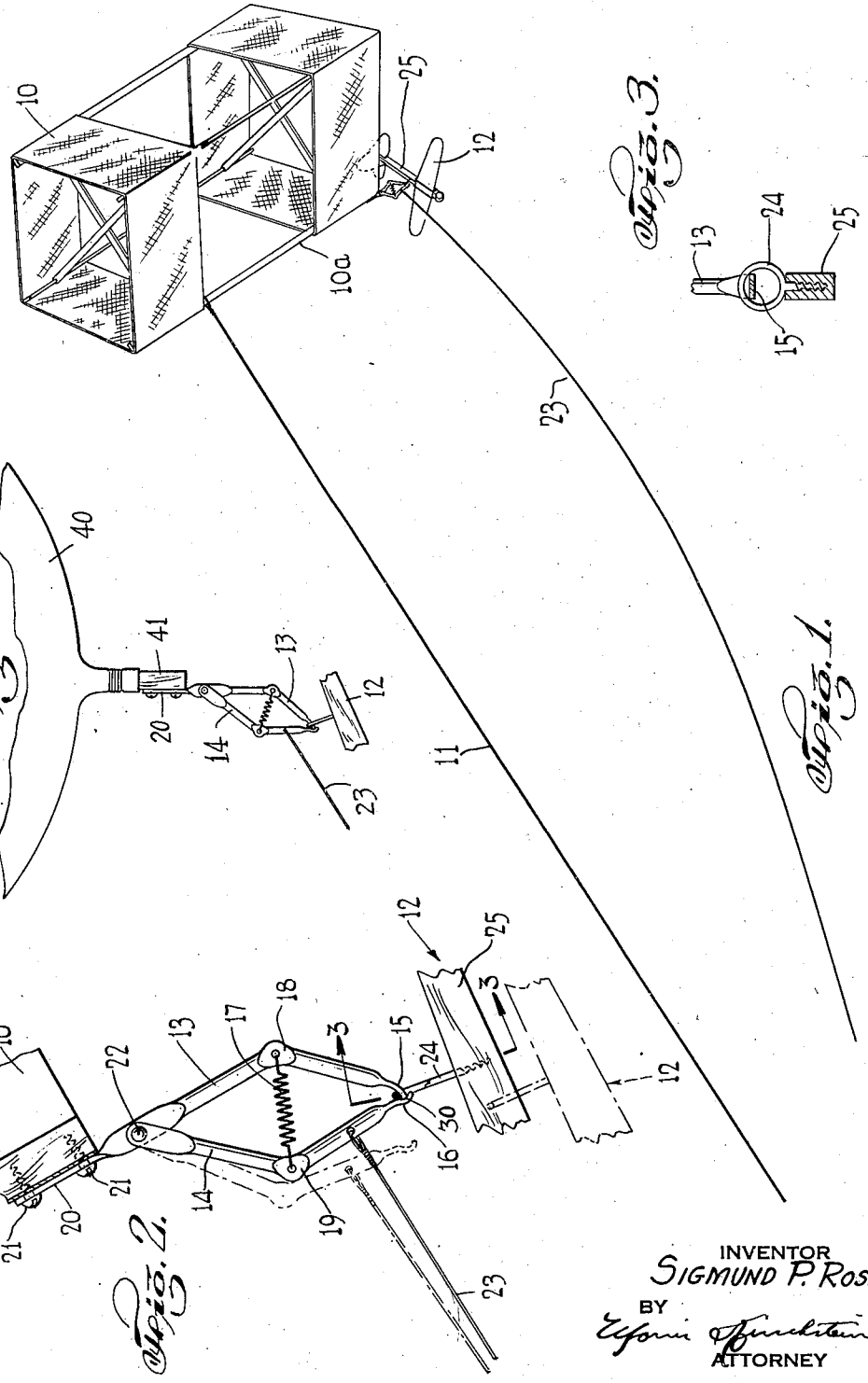


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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AERIAL TOY

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9 Claims. (Cl. 244—155)

1

This invention relates generally to aerial toys and forms the subject matter of my application Serial Number 314,391, filed January 18, 1940, now abandoned. More particularly, my invention relates to the class of toys which includes kites, balloons and the like.

One of the objects of my invention is to provide an aerial toy of the character described in which a kite or balloon device is employed for raising an object aloft, and which toy shall be so constructed and arranged that the said object may be separated or released from the kite or balloon to fall to the ground from any desired height while still maintaining the kite or balloon aloft.

Another object of my invention is to provide a kite or balloon toy of the character described which shall have novel means adapted to releasably hold and carry aloft a miniature glider, and in which the effective operation of the said novel holding means may be controlled from the ground.

Still another object of my invention is to provide an aerial toy of the character described which shall comprise relatively few and simple parts, which shall be inexpensive to manufacture, which shall be highly attractive and appealing as a toy novelty, and which at the same time shall be efficient to a high degree in operation and use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the claims.

In the accompanying drawings, in which is shown one of the various possible embodiments of this invention,

Fig. 1 is a perspective view of an aerial kite toy constructed in accordance with my invention and illustrating a manner of its use;

Fig. 2 is an enlarged view of a detail of a portion of the toy shown in Fig. 1;

Fig. 3 is a cross-sectional view taken substantially along the line 3—3 of Fig. 2; and

Fig. 4 is a perspective view similar to Fig. 1, but illustrating my invention as applied to a balloon.

Referring now in detail to the drawings, there is illustrated in Figs. 1 to 3 an aerial toy embodying my invention and comprising a kite of any suitable type, such as for example the box kite

2

10 shown, to which is attached a flying string 11 in the customary manner. Means is provided in association with the kite or air borne means 10 to releasably hold any suitable object, such as a miniature glider 12. Such means may comprise a pair of pivotally interconnected arms 13, 14 having downwardly converging portions whose free ends 15 and 16 are normally held in closed position, that is in overlapping but abutting or clamping relation by the action of the resilient spring 17 which is normally compressed and maintained under tension between spaced elbows 18 and 19 centrally located in the arms 13 and 14. One of said arms 13 may be provided with an extending portion 20 which is permanently attached by suitable securing means such as screws 21 to one of the struts 10a of the kite 10. The second angulary bent arm 14 is pivoted as at 22 to the fixed or angularly bent arm 13. Attached to the pivotally mounted arm 14 is a release string 23, the purpose of which will hereinafter be described.

The glider is releasably held to the kite or airborne means by any suitable means, such as an eye member 24 in the top of the body 25 of the glider. The eye member 24 has a diameter sufficiently large to permit end 15 of one of the arms to be threaded therethrough to be retained thereon by the end 16, so that when said arms are in closed position and the kite 10 is raised aloft, the glider 12 will adjust itself to flying position.

In use, the free ends 15 and 16 of the arms 13 and 14 are manually spread apart against the closing force of the spring 17, and end 15 of the arm 13 is then inserted through the eye 24 and the arms allowed to close by action of the spring 17. The kite 10 is next flown aloft in the usual manner from a tensioned flying string 11. While the kite is being carried up, the release string 23 attached to the pivoted arm 14 is allowed to freely unreel while being continually maintained in sufficiently slack condition so as not to overcome the closing force of the spring 17, as long as it is desired to hold the glider to the kite.

When the person flying the kite from the ground wishes to release the glider and permit it to begin its free descent, he tugs at the release string 23, or causes the slack in said string to be taken up by suitably manipulating the strings 11 and 23 from the ground. This will exert an opening pull on the pivoted arm 14, which will overcome the closing action of the spring 17 and cause the free ends of the arms to spread apart

and assume the relative position shown by the dotted lines in Fig. 2, thus releasing the eye member and permitting the glider to drop away from the kite, as illustrated by the lower dotted position of the glider in Fig. 2.

In order that the kite may not interfere with the glider after it begins its free descent, I prefer to locate the releasable holding means on a portion of the kite which will be lowermost when the kite is being flown aloft, as clearly shown in Fig. 2, or to so position the holding means relative to the kite that the glider will be carried clear of the kite by the pressure wind supporting the kite as soon as the glider is released.

It is noted that due to the angular relationship of the arms 13 and 14, the glider 12 will always be disposed at the junction of the ends 15 and 16, so that as soon as the arm 14 is pivotally moved by a tug at the release string 23, the eye member 24 will be promptly released from its held position.

To prevent the undesired or accidental release of the glider 12 from its held position, one of the ends of the arms, such as for example the ends 16 of the arm 14, may be slightly recessed at 30 to receive the end 15 of the arm 13 therein, as clearly shown in Fig. 2 of the drawings.

In Fig. 4 I have shown my invention as applied in connection with a different form of aerial device, namely a balloon 40. In this form of my invention, the same type of releasable holding means is employed, which is fixed to a relatively rigid portion 41 of the balloon. In this form only the release string 23 need be employed, the balloon being permitted to rise to any desired height, after which the release string is tugged to actuate the release device to permit the glider to sail to earth. The balloon may then be held captive or retrived by means of the release string 23.

While my invention has been described in connection with a miniature glider, it is to be understood that any other articles, such as pamphlets, balloons, parachutes or the like, may be raised aloft and released in the same manner as the glider, and my invention extends to such use.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In combination, a holding mechanism comprising a companion pair of arms having abutting but separable ends adapted to releasably hold an object; ground captive airborne means directly attached to said mechanism for raising the latter aloft; means for normally holding said ends in abutting relationship to preclude removal of said object from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to one of said arms for operating the latter to separate said ends preparatory to the release of said object from said mechanism.

2. In combination, a holding mechanism comprising a companion pair of arms having abutting but separable ends adapted to releasably hold an object; ground captive airborne means directly attached to said mechanism for raising the latter aloft, resilient means secured to said arms for normally holding said ends in abutting relationship to preclude removal of said object from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to one of said arms for operating the latter to separate said ends preparatory to the release of said object from said mechanism.

3. In combination, a holding mechanism comprising a companion pair of elbows having abutting but separable lower ends adapted to releasably hold an object; one of said elbows being rigidly attached to said air-borne means, and the other elbow of said pair being pivotally secured to said rigidly attached elbow; ground captive airborne means directly attached to said mechanism for raising the latter aloft; spring means interposed and secured to said elbows for normally holding said ends in abutting relationship to preclude removal of said object from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to one of said arms for operating the latter to separate said ends preparatory to the release of said object from said elbows.

4. In combination, a holding mechanism comprising a pair of arms having abutting and separable ends adapted to releasably hold an object; means movably securing one of said arms relative to the other, ground captive airborne means directly attached to said mechanism for raising the latter aloft; spring means attached to said arms for normally holding said ends in abutting relationship to preclude removal of said object from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to said movable arm for operating the latter to separate said ends preparatory to the release of said object from said mechanism.

5. In a device of the character described for removably holding a glider; a holding mechanism comprising a companion pair of arms having abutting but separable ends adapted to releasably hold said glider; ground captive airborne means directly connected to said mechanism for raising the latter aloft; spring means for normally urging said ends in abutting relationship to preclude removal of said glider from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to one of said arms for operating the latter against the resistance of said spring means to separate said ends preparatory to the release of said glider from said mechanism.

6. In a device of the character described for removably holding a glider; means on said glider and characterizing an opening; a holding mechanism comprising companion arms, means pivotally connecting one of said arms relative to the other, said arms having converging and normally closed ends, one of which is removably projectible into and through said opening; ground captive airborne means directly connected to said mechanism for raising the latter aloft; spring means cooperating with at least one of said arms for holding said ends in closed relationship to preclude removal of said glider from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to said pivotally connected arm for operating the latter against

the resistance of said spring means to separate said ends preparatory to the release of said glider from said mechanism.

7. In a device of the character described for removably holding a glider; an eye member secured to said glider, a holding mechanism having means comprising a pair of normally closed but separable ends, one of which is removably projectible into said eye member, means movably holding one of said ends relative to said glider, ground captive airborne means directly connected to said mechanism for raising the latter aloft; spring means for normally holding said ends in closed relationship to preclude removal of said glider from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to mechanism for separating said ends against the resistance of said spring means preparatory to the release of said glider from said mechanism.

8. In a device of the character described for removably holding a glider; a holding mechanism comprising a fixed arm and a pivoted arm having normally closed ends adapted to releasably hold said glider; ground captive airborne means directly connected to said mechanism for raising the latter aloft; spring means interposed between said arms for normally holding said ends in a closed relationship to preclude removal of said glider from said ends; and ground control means comprising a normally slack manually actuated release string having an upper part connected to said pivoted arm for operating the latter away

from said fixed arm and against the resistance of said spring means to separate said ends preparatory to the release of said glider from said mechanism.

9. In a device of the character described for removably holding a glider; an eye member fixed to said glider, a holding mechanism comprising a fixed arm and a movable arm carried by said fixed arm and having converging but separable normally closed ends adapted to releasably sustain said eye member; ground captive airborne means directly connected to said mechanism for raising the latter aloft; coiled spring means interconnecting said arms for normally holding said ends in closed relationship to preclude removal of said eye member from said ends, and ground control means comprising a normally slack manually actuated release string having an upper part connected to said movable arm for operating the latter against the resistance of said spring means to separate said ends preparatory to the release of said glider from said mechanism.

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