M. E. WRIGHT.

TOY PARACHUTE.

APPLICATION FILED APR. 5, 1911.

994,490.

Patented June 6, 1911.

Fig. 1.

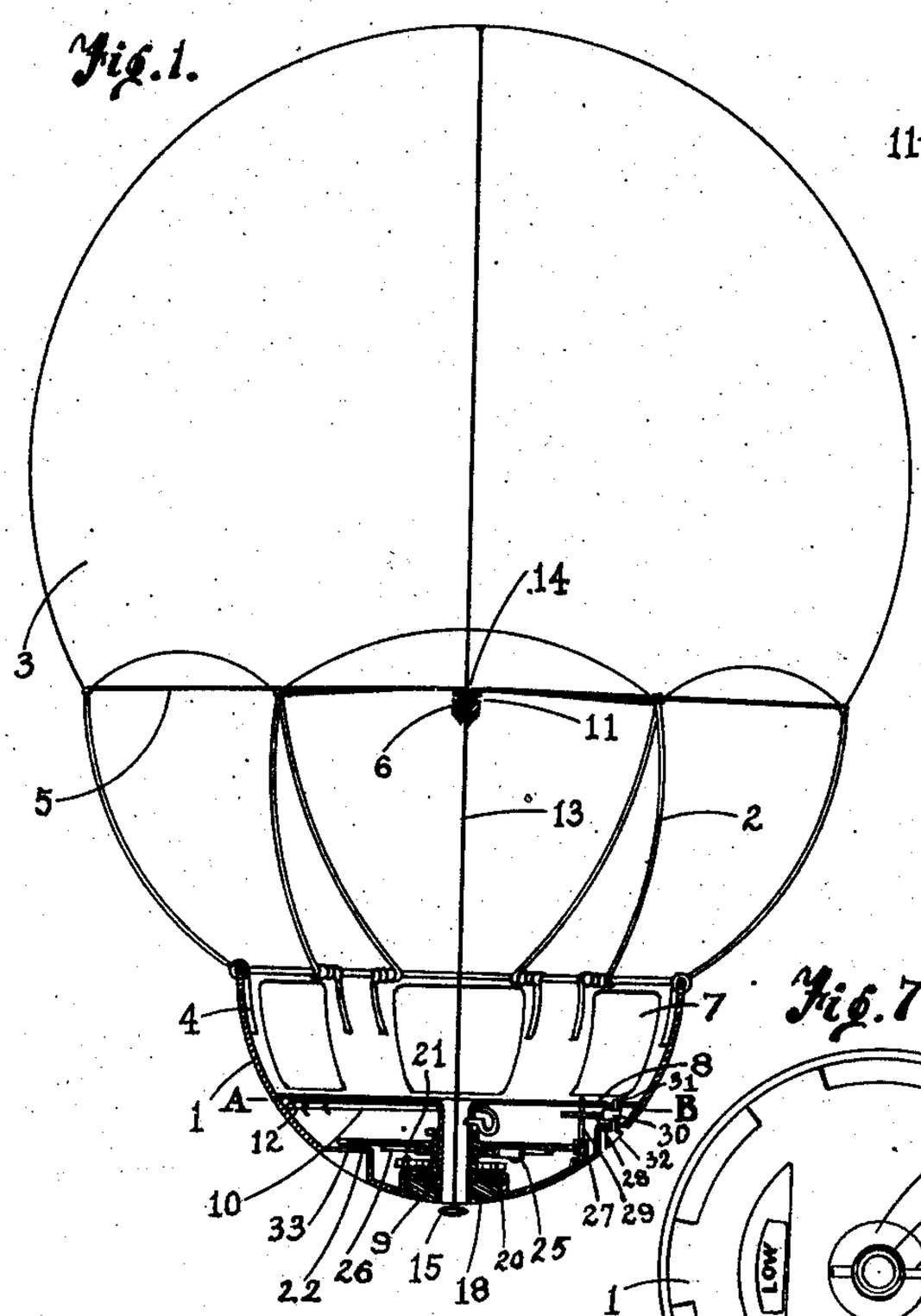


Fig. 2.

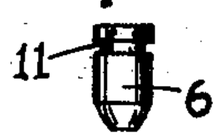


Fig. 3.

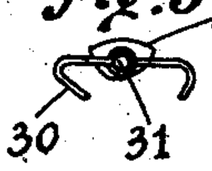


Fig. 4.

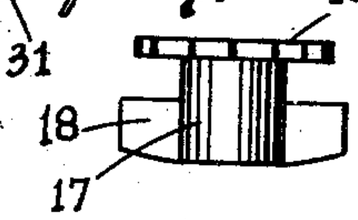


Fig. 5.

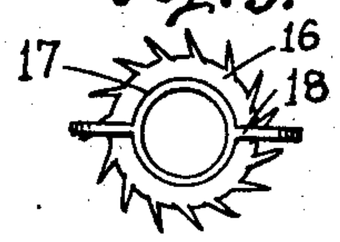


Fig. 6.

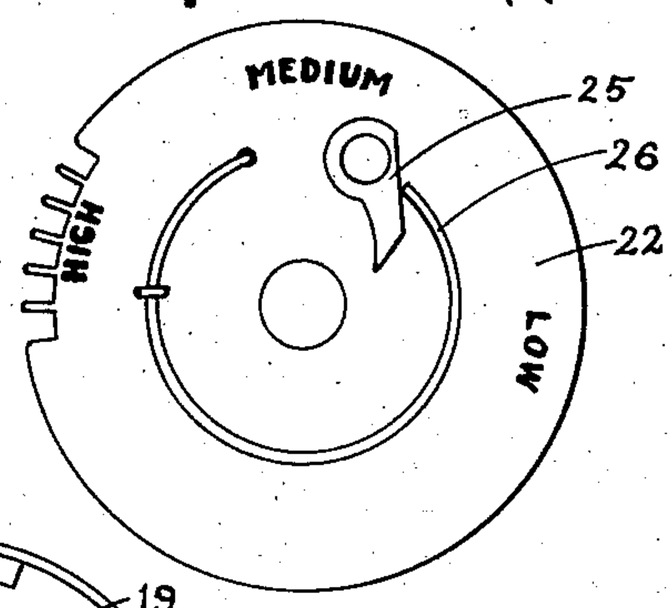


Fig. 7.

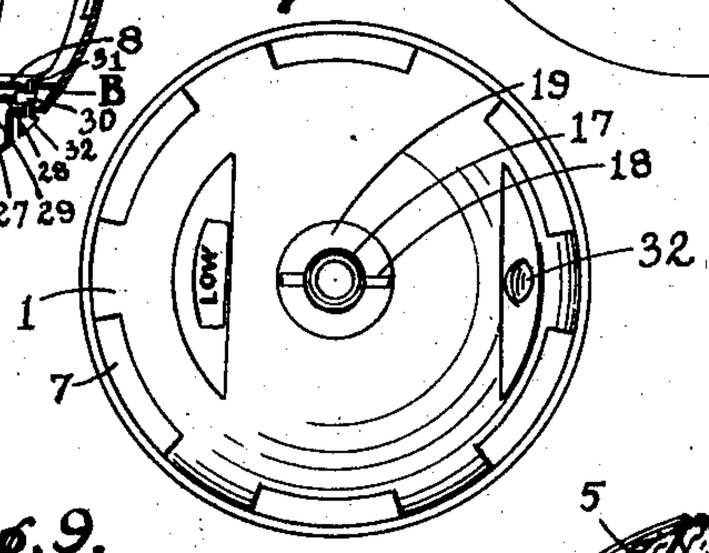


Fig. 8.

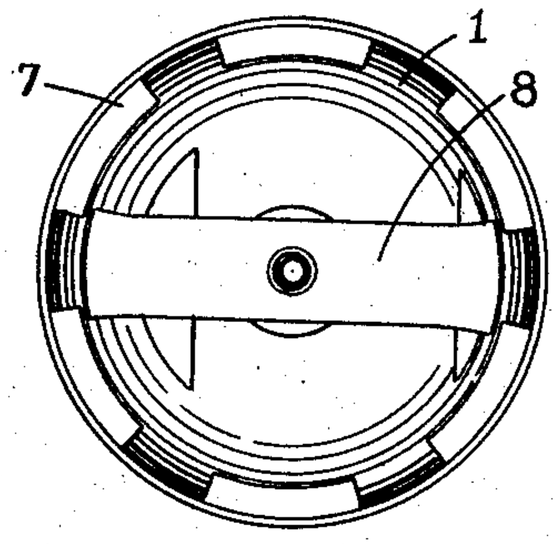


Fig. 9.

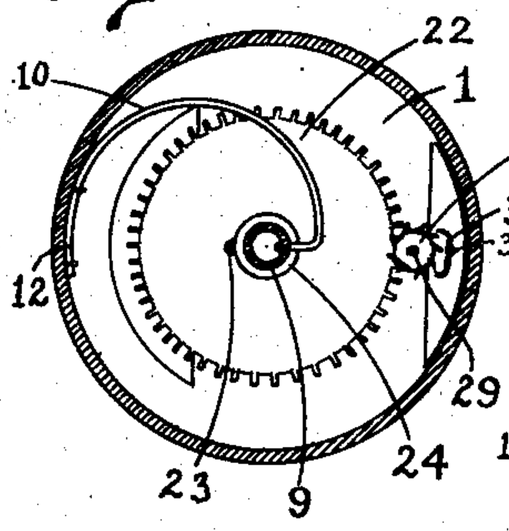
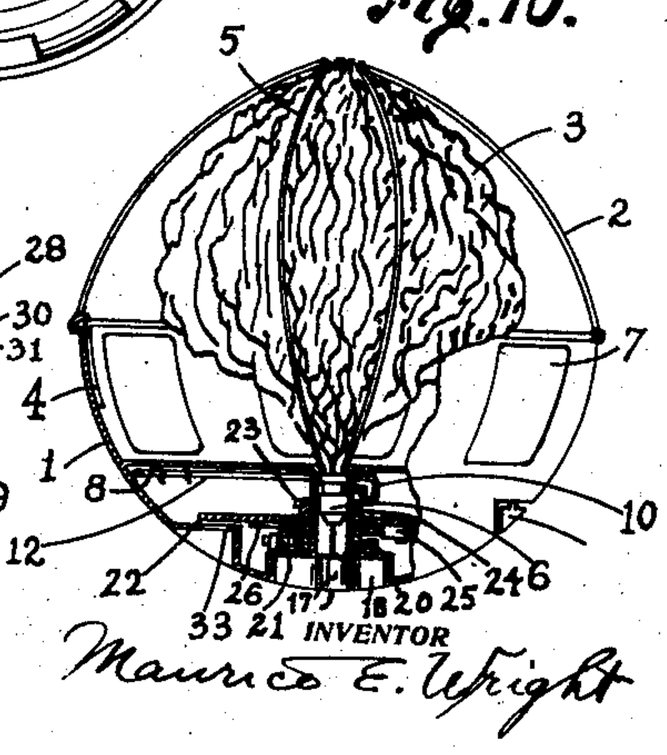


Fig. 10.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MAURICE E. WRIGHT, OF SAN DIEGO, CALIFORNIA.

TOY PARACHUTE.

994,490. Specification of Letters Patent. Patented June 6, 1911.

Application filed April 5, 1911. Serial No. 619,082.

To all whom it may concern:

Be it known that I, MAURICE E. WRIGHT, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented a new and useful Toy Parachute, of which the following is a specification.

My invention relates to a toy parachute, and is designed as an improvement on the toy parachute shown and described in United States Patent No. 974,733, issued to me on the 1st. day of November, 1910.

The purposes of the invention are the provision of a device having new and novel arrangement of parts, and adapted to be hurled in the air when collapsed, and so constructed as to open within a predetermined time, means being employed whereby the operator may gage with accuracy and precision the opening or distending of the sail, so that the parachute will descend slowly after reaching the limit of its upward flight.

In prior constructions the atmospheric resistance at the beginning of the descent of the parachute, has been utilized to open the sail, the distention being more or less imperfect in accordance with the inclination of the axis from the vertical position, and the parachute frequently falling a considerable distance before being affected by the air. To obviate these and other defects I provide a device having a sail and spring wire supporting filaments therefor, which are connected by flexible cords, to a central member normally engaging with a trigger-catch within the basket, the parachute being normally held closed by the action of said trigger-catch, and adapted to be distended upon the release of the trigger by a spring-operated revolving mechanism within the basket. I further provide a device which, when folded, assumes the form of a ball, thus making a convenient arrangement of the toy to be thrown from the hand, my invention comprising the combination and arrangement of parts, substantially as herein described and claimed, and of which a convenient embodiment is shown in the accompanying drawings.

Of the drawings, Figure 1 is a vertical sectional view with the sail portion distended. Fig. 2 is a detail view of the central member adapted to engage with the trigger catch. Fig. 3 is a detail view of the escapement lever. Fig. 4 is a detail view of the winding wheel having ears on the hub for manual operation. Fig. 5 is a plan view of the device as shown in Fig. 4. Fig. 6 is a detail view of the spur-wheel carrying the indicating marks. Fig. 7 is a bottom plan view of the basket. Fig. 8 is a top plan view of the interior of the basket. Fig. 9 is a sectional detail view of the basket and trigger mechanism on a plane taken on the line A—B. Fig. 10 is a partially sectional view of the parachute folded.

Referring more particularly to the drawings in which like characters denote similar parts of the device, basket 1 is provided with spring filaments 2, having sail 3, secured thereto and inner ends 4, bearing against the interior of the basket, the spread of filaments 2 being limited by flexible cords 5, connecting with member 6. Filaments 2 are arranged in pairs, each pair being connected at the sail supporting end, thereby securing greater durability. Basket 1, preferably made of light sheet metal, has perforations 7, to reduce weight, and bridge 8 transversely arranged inside to support the releasing mechanism. Tube 9 extends from the bridge to the bottom of the basket, and is pierced for trigger 10, which normally extends within the tube and is adapted to engage with groove 11 in member 6. Trigger 10 is a semicircular spring having end 12 secured to the basket. A flexible cord 13 extends from the center of the sail portion, through hole 14, in member 6, and through tube 9, and has a retaining button 15, which may be grasped by the fingers in closing the device preparatory to hurling in the air.

A releasing mechanism for trigger 10 is provided, comprising a ratchet wheel 16 having hub 17 and ears 18, on the hub, whereby the same may be operated by the fingers, wheel 16 being revolubly mounted on tube 9, with hub 17 and ears 18 flush with the bottom of the basket, the ears operating in depression 19, and are thereby protected from injury. Spiral spring 20 is secured to hub 17 and to pin 21, in the bottom of the basket. Spur-wheel 22, revolubly mounted on tube 9, adjacent to wheel 16, has cam 23 on hub 24 for releasing the trigger, and is provided with pawl 25 on the underside, spring 26, being secured to the spur-wheel and holding the pawl in engagement with wheel 16, whereby the spur-wheel may be actuated by spring 20, a control for the speed of rotation being provided comprising lantern wheel 27 and escapement wheel

28, mounted on shaft 29, the lantern wheel engaging with the spur-wheel, and the escapement wheel with pallet 30, mounted on shaft 31, having an extension 32 on the outside of the basket, to be pressed by the finger of the operator while winding the actuating spring. An aperture 33 is provided in the wall of the basket for viewing the indicating marks used in timing the opening of the device.

The method of operation is as follows: The releasing mechanism is wound by turning wheel 16 one or more turns while pressing the extension which controls the vibrating pallet. The pallet is then released until the word "High" is exposed under aperture 33. Or should it be desired to throw the parachute to a comparatively low height, the mechanism may be allowed to further unwind until the desired indicating mark is exposed. The mechanism is then held from further unwinding while the button on cord 13 is drawn out until member 6 is engaged by the trigger. The device will then have the appearance of a ball, the sail fabric being folded inside of the supporting filaments, having been drawn in by the cord which also operates to close the device. The parachute being closed is then thrown in the air. During its travel through the air the trigger releasing mechanism is unwinding and spur-wheel is revolved until the cam on the hub thereof engages the trigger and throws it out of engagement with member 6, thereby releasing the same and permitting the parachute to open under the tension of the spring supporting filaments. The weight of the basket and the mechanism contained therein maintains the sail portion uppermost, allowing the same to become inflated and causing a slow descent of the parachute. The advantages of this arrangement are obvious as the opening of the device may be timed with accuracy and precision and is positive in action. The releasing mechanism is incased by the basket and is therefore protected from injury and there are no exposed parts which may be liable to injury or to injure the hands of the operator.

From the foregoing description it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but, while the elements shown and described are well adapted to serve the purposes for which they are intended it is to be understood that the invention is not limited to the precise construction as set forth, but includes within its purview such changes as may fall within the scope of the appended claims and such changes as may be made without departing from the spirit of the invention.

I claim as my invention:

1. In a toy parachute, a sail portion, spring supporting filaments carrying the sail portion, a basket carrying the supporting filaments, means for folding and locking the supporting filaments in a closed position, mechanism for releasing said means, and means for timing the release mechanism to open the sail portion, substantially as set forth.

2. In a toy parachute, a sail portion, spring supporting filaments carrying the sail portion, arranged in pairs, each pair being connected at the sail supporting end, a central member adapted to engage with the trigger catch, flexible cords connecting the central member and the sail supporting ends of the spring filaments, a trigger adapted to engage with the central member, and means for releasing said trigger within a predetermined time, substantially as set forth.

3. In a toy parachute, a sail portion, spring filaments supporting the sail portion, a basket carrying the spring filaments, means within the basket for locking the sail portion in a collapsed position, and mechanism for releasing the locking mechanism within a predetermined time, the basket and its contained mechanism being heavier than the sail portion, substantially as set forth.

4. In a toy parachute, a sail portion, spring filaments adapted to hold the sail portion in a distended position, means for locking the sail portion in an inoperative position, mechanism for releasing said means, and a basket containing the locking mechanism and releasing means thereby protecting the same from injury, substantially as set forth.

5. In a toy parachute, a sail portion, means for locking the sail in a collapsed condition, and a spring-operated mechanism adapted to the positive and accurate release of said locking means, and the positive distention of the sail portion, substantially as set forth.

6. In a toy parachute, a sail portion, spring filaments supporting the sail portion, a basket carrying the spring filaments on its upper edge, and having the lower ends of the spring filaments bearing against the interior of the basket, a central member adapted to engage with a trigger catch, flexible cords connecting the central member and the spring filaments, and means for locking the sail portion in a collapsed position, comprising a bridge within the basket, a central tube extending from the bridge to the bottom of the basket, a spring trigger catch having one end secured to the wall of the basket and the other end entering the central tube, and a flexible cord connected to the center of said sail portion and extending through the central member and the central tube, being adapted to draw the spring filaments into a closed position, and simultaneously draw the sail fabric within the

spring filaments and the central member into engagement with the spring trigger catch, substantially as shown.

7. In a toy parachute, a sail portion, spring filaments supporting the sail portion, a basket carrying the spring filaments, means for locking the sail portion in a closed position, and means for releasing said locking means, comprising a spur-wheel revolving about a dissident axis, a hub on the spur-wheel, a cam on the hub adapted to engage with and trip the locking means during one revolution of the spur-wheel, a ratchet wheel revolubly mounted on the same axis as the spur-wheel and adjacent thereto, a hub on the ratchet wheel, ears on the hub of the ratchet wheel whereby the same may be manually operated, a spiral spring connected to the hub of the ratchet wheel, a pin in the wall of the basket to which the opposite end of the spiral spring is attached, a pawl on the spur-wheel engaging with the ratchet wheel, and a spring on the spur-wheel holding the pawl in an operative position, substantially as set forth.

8. In a toy parachute, a sail portion, spring filaments supporting the sail portion, a basket carrying the spring filaments, means for locking the sail portion and its supporting filaments in a closed position, means for releasing the said locking means, comprising a spur-wheel and a ratchet-wheel adjacent thereto, revolubly mounted on dissident axes, the wheels being adapted to rotate independently of each other, means for causing the spur-wheel and ratchet wheel to rotate in unison, a spring actuating the ratchet wheel, means for manually operating the ratchet wheel to place the releasing means in an operable position, and means for timing the release of the locking means with accuracy and precision, comprising an escapement wheel, a pallet arranged in vibrating contact with the escapement wheel, an extension integral with the pallet and extending through the wall of the basket, a shaft for the escapement wheel, a lantern wheel on the shaft in engagement with the spur-wheel, and indicating marks on the spur-wheel arranged to be successively exposed beneath an aperture in the wall of the basket, whereby the spur-wheel may be rotated to the desired position for releasing the locking means within the predetermined time, before locking the device in a closed position preparatory to hurling in the air, substantially as set forth.

9. A toy parachute, comprising a sail portion, means for supporting the sail portion in a distended position, means for locking the sail portion in a closed position, means for releasing the said locking means, means for placing the said releasing means in an operable position, an escapement wheel arranged to limit the speed and determine the time of release, and indicating marks arranged on the releasing means, whereby the release may be set for a predetermined time, substantially as set forth.

In testimony whereof, I affix my signature, in presence of two witnesses.

MAURICE E. WRIGHT.

Witnesses:
J. W. MASTER,
N. S. PAUNÉ.