Dec. 6, 1927.

1,652,137

T. R. ARDEN

TOY

Filed April 19, 1926

Fig. 1.

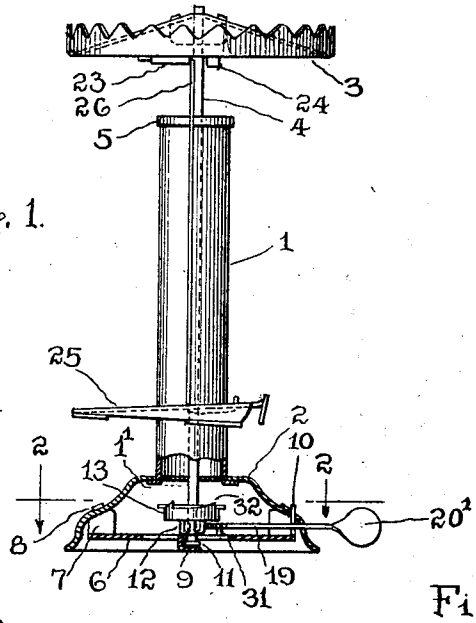


Fig. 2.

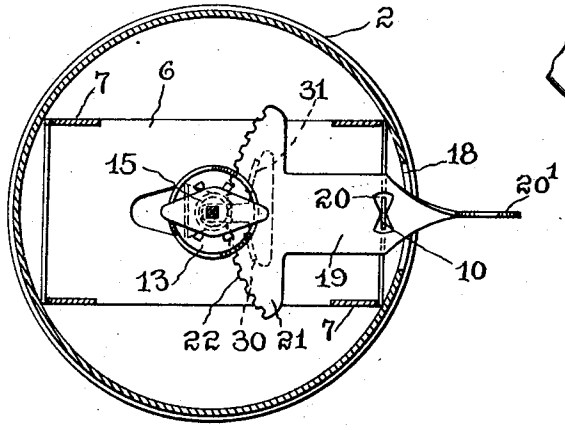


Fig. 3.

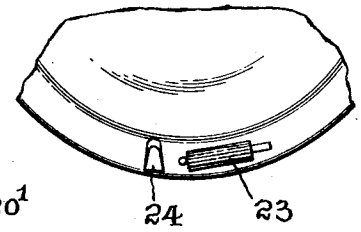


Fig. 4.

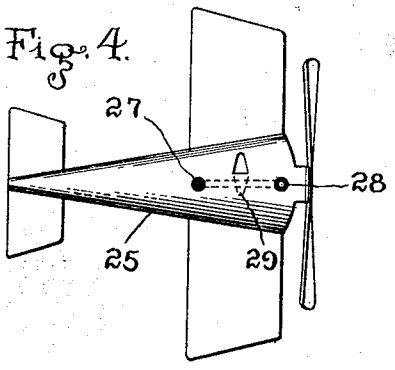
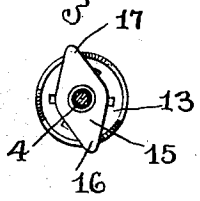


Fig. 5.



INVENTOR

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BY

ATTORNEY

Patented Dec. 6, 1927. 1,652,137

UNITED STATES PATENT OFFICE.

THOMAS RAYMOND ARDEN, OF FOREST HILLS, NEW YORK, ASSIGNOR TO JULIUS CHEIN, OF NEW YORK, N. Y.; ELIZABETH H. CHEIN EXECUTRIX OF SAID JULIUS CHEIN, DECEASED.

TOY.

Application filed April 19, 1926. Serial No. 102,887.

My invention is for an improvement in toys and relates more particularly to aerial swings.

The objects of my invention are to provide an amusing and instructive toy, a simple and efficient means to lock the swings to the rotating top, and a novel driving means for the spindle which supports the top and swings.

I accomplish these objects by the device illustrated in the accompanying drawings, in which

Figure 1 is a side view of the toy with parts broken away.

Figure 2 is a sectional view of the device on the line 2—2 of Figure 1.

Figure 3 is a detail of the swing locking means.

Figure 4 is a detail of one of the swings, and

Figure 5 is a detail of the ratchet and dog.

Similar characters of reference refer to similar parts throughout the several views.

The aerial swing which is made of sheet material includes a standard 1 having a hollow base 2 and a top structure 3. The top structure is rigidly mounted on a spindle 4 which is square in cross section. The standard 1 is a hollow cylinder and has a cap 5 thereon. The spindle 4 is loosely journaled in central openings in the cap 5 and base 2.

The base 2 is fixed to the standard by means of lugs 1^1 thereon which pass thru slots in the base and are bent over locking the base and standard together. The base 2 forms in conjunction with a plate 6, a casing which supports and contains the spindle driving mechanism. The plate 6 is held rigidly in the base 2 by spacers 7, 7 and lugs 8, 8. A tongue support 9 is cut and bent downwardly from the plate 6 to lie under the center of the standard as shown in Figure 1. The plate 6 has a T-shaped slot therein, the lower edges 30, 31 of the cross bar of the T being bent upwardly to form a support. The vertical stem of the T-slot is in alignment with the spindle openings in the cap 5 and base 2 and is positioned above the tongue support 9 so that the spindle 4 extends therethrough and rests upon the tongue 9. The end of the spindle 4 has a head 11 thereon to prevent its being raised through the T slot. A lug 10 is bent upwardly from one end of the plate 6 and passes through a slot in the base 2 whereby the lug is held firmly in place.

Loosely journaled on the spindle 4 and resting on the plate 6 is a gear pinion 12 and circular ratchet 13, the pinion and ratchet being fixed together as a unit. A dog or pawl 15 is mounted on the spindle 4 and the ends thereof engage the teeth of the ratchet 13. The dog is feathered on the spindle, i. e. is fixed to rotate with the spindle 4 but is freely slideable longitudinally thereof. The dog is substantially diamond shaped, the ends 16, 17 engaging the teeth 32 of the ratchet 13. A slot 18 is cut in the side of the base 2 adjacent the lug 10. An operating lever 19 has a substantially figure-of-eight shaped slot 20 cut therein by which the lever is pivoted on the lug or pin 10. The sides of the slot 20 in the lever 19 serve as stops to limit the rotation of the lever around the pin 10. The end of the lever 19 which extends outside of the base 2 is bent to form a handle 20^1. The opposite end of the lever 19 carries a segmental rack 21 having teeth 22 which engage the teeth on the pinion 12. The rack rests upon the supports 30, 31.

The top structure 3 has seats or eyelets depressed therefrom 23. Adjacent one end of each eyelet 23 is a stop member 24 also cut from the top 3 and bent to lie in the vertical plane of the eyelet. Supported and hanging from the eyelets or seats 23 are the swings 25. The supporting means for the swings is preferably a malleable wire 26, one end of which is bent at right angles and is journaled in the eyelet 23, the other end of the wire being bent U-shaped and passed thru spaced openings 27, 28 in the swing. A lug or ear 29 is punched downwardly from the body of the swing which is preferably stamped from sheet material to resemble an aeroplane. The lug 29 is bent over on the wire 26 and against the underside of the swing to fix the swing and wire 26 together.

In assembly, the wire supports 26 are journaled in the eyelets 23 before the top 3 is mounted on the spindle 4. When the top 3 is mounted on the spindle 4 the swings and supports are locked in position and cannot be removed from the top structure. This

results from the fact that the wire 26 must be rotated in the eyelet 23 until it lies substantially parallel to and across the top 3 in order that it can clear the lug 24 to be withdrawn from the eyelet. The standard 1 makes such movement impossible when the toy is assembled.

Rotation of lever 20 in a clockwise direction will rotate the pinion 12 and ratchet 13. The teeth 32 of the ratchet will engage the pawl 15 and rotate it and the spindle 4. When the movement of the rack 21 is halted the ratchet will also cease rotation. The pawl 15 will then ride up on the teeth 32 sliding on, and rotating with, the spindle 4 which will continue to rotate. The rack 21 may now be rotated counterclockwise to its original position, the ratchet 13 rotating beneath the spinning pawl 15 when the spindle may again be driven by clockwise rotation of the rack 21.

Having thus described my invention what I claim is:

1. In a toy aerial swing, the combination of a casing, a spindle freely journaled to rotate in said casing, a unitary pinion and ratchet loosely journaled on said spindle, a rack engaging said pinion and a pawl feathered on said spindle to releaseably engage said ratchet whereby movement of said rack in one direction will drive said spindle thru said pawl.

2. In a toy aerial swing, the combination of a rotatable top structure of sheet material, means to rotate said top structure, an eyelet cut and depressed from the top structure, a swing supporting wire journaled in said eyelet, and a stop member cut from the top and bent to lie in the vertical plane of the eyelet, adjacent the eyelet to retain said wire in said eyelet when the toy is assembled.

3. In a toy aerial swing, the combination of a casing, a spindle freely journalled to rotate in said casing, a pinion and ratchet loosely journalled on said spindle, a rack engaging said pinion, a pawl feathered on said spindle to releasably engage said ratchet whereby movement of said rack in one direction will drive said spindle thru said pawl, swings supported from said spindle and means to lock the swings to said spindle.

4. In a sheet metal toy the combination of a standard, a base, a plate forming a casing in conjunction with said base, said standard being fixed to said base, a cap on the standard having a central opening therein, an opening in said base, a spindle loosely journaled in said openings and extending through the plate, a pinion loosely journaled on the spindle in said casing, a ratchet on the spindle, lever means having a toothed segment thereon journaled in said casing and engaging the pinion whereby the spindle may be rotated, a dog fixed to rotate with said spindle and slideable thereon to engage said ratchet and a top structure on said spindle outside said standard.

5. In a device of the character described, the combination of a rotatable spindle, a unitary pinion and ratchet loosely journalled on the spindle, a pawl on the spindle and rotatable therewith and adapted to engage the ratchet, a segmental rack engaging the pinion and a lever adapted to move the rack to rotate the spindle.

6. In a device of the character described, the combination of rotatable spindle, a pinion and ratchet loosely journalled thereon, a pawl rotatable with the spindle, teeth on the pawl adapted to engage the ratchet when rotated in one direction only, a segmental rack engaging the pinion, a lever on the rack, a figure-of-eight slot in the lever having sides adapted to limit movement of the lever by contact with a pin in the slot, and a pin in the said slot to form a pivot for the lever.

7. In a device of the character described, the combination of a lever pivoted intermediate its ends, a segmental rack thereon, a ratchet adapted to be rotated by said rack, a pawl detachably engaging said ratchet and rotatable therewith in one direction only, a spindle secured to said pawl and rotatable therewith and a structure carried by the spindle.

In testimony whereof, I have signed my name to this specification this 29th day of March, 1926.

THOMAS RAYMOND ARDEN.