

June 11, 1935.

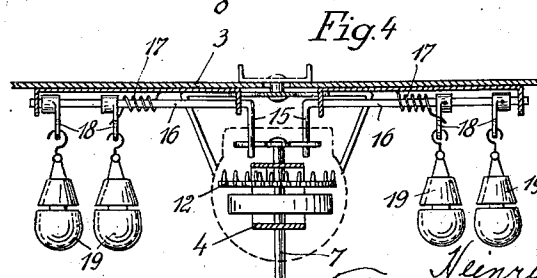
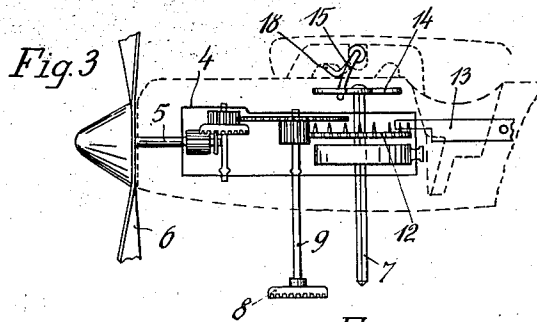
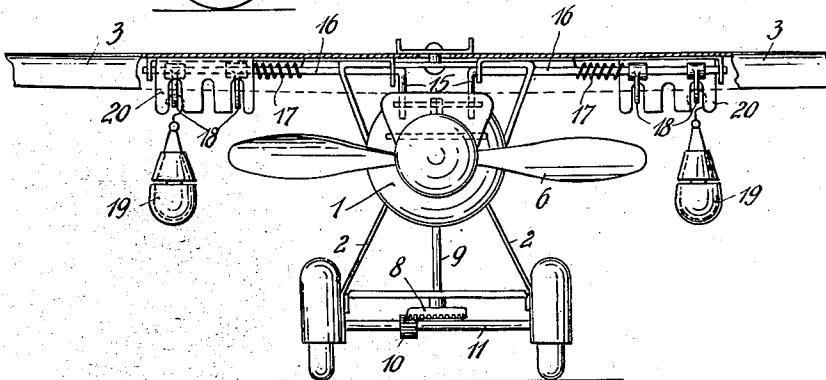
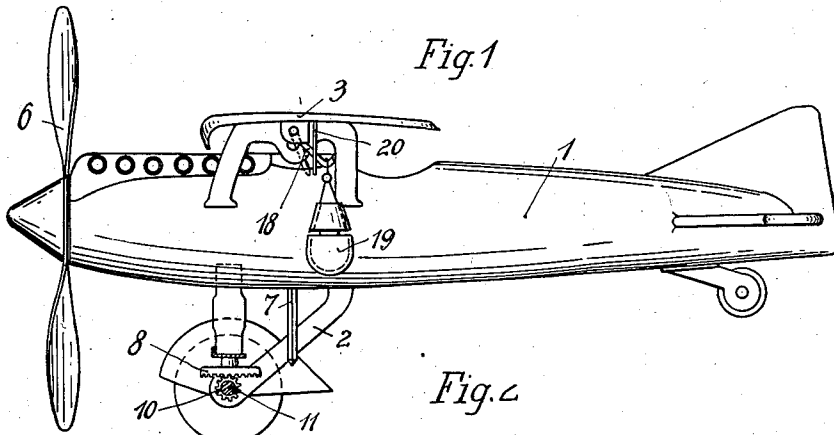
H. BURKHARD

2,004,235

TOY AIRPLANE

Filed March 16, 1934

2 Sheets-Sheet 1



Inventor:

Heinrich Burkhard
By Frank Appleman Atty.

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H. BURKHARD

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Fig. 5

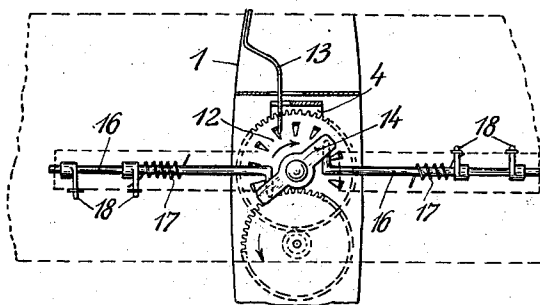


Fig. 6

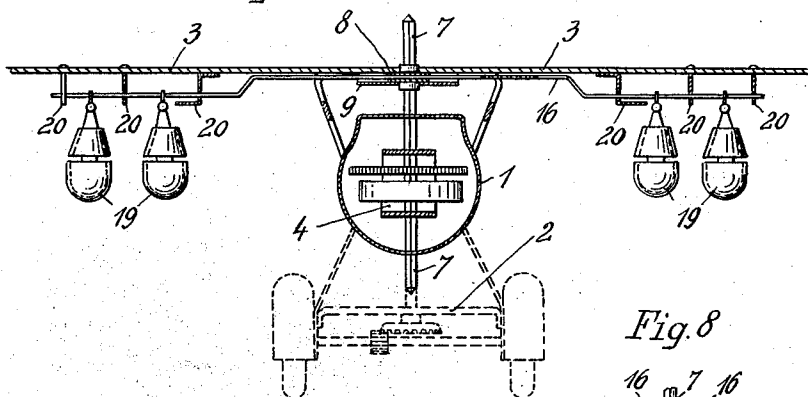


Fig. 7

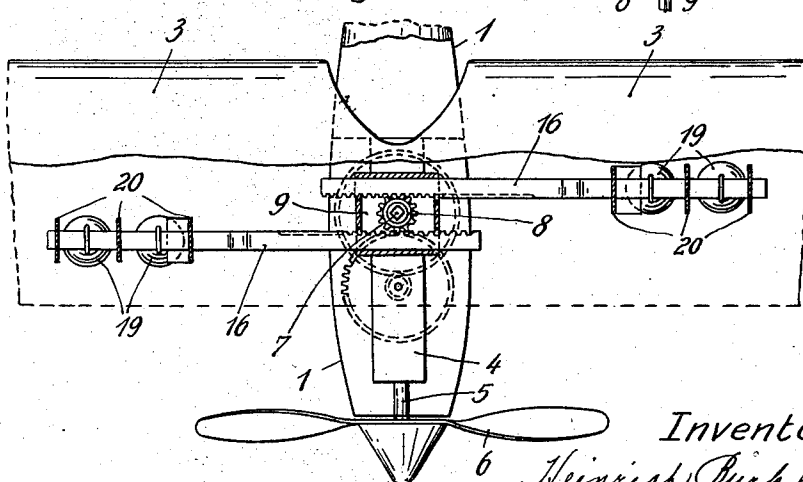
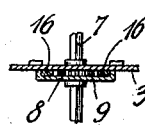


Fig. 8



Inventor:

Heinrich Burkhard,
By *Pauls Appelmann,*
att'y.

UNITED STATES PATENT OFFICE

2,004,235

TOY AIRPLANE

Heinrich Burkhard, Nuremberg, Germany, assignor to Tipp & Co., Nuremberg, Germany

Application March 16, 1934, Serial No. 715,990
In Germany December 13, 1933

9 Claims. (Cl. 46—50)

This invention relates to toys and more particularly to toys having the shape of an airplane. The toy-airplane which forms part of my present invention is operated by means of a clockwork which is mounted within the body or fuselage of the airplane and serves for driving a propeller as well as for properly actuating a bomb suspension device to be released in such a manner that bombs may be dropped at intervals from the toy-airplane and caused to explode when falling on the ground.

My present invention consists more particularly in a special construction and arrangement of said bomb suspension device and the clockwork-operated releasing means for the bombs. According to my invention the bomb suspension and release device consists of small supporting rods arranged in longitudinal direction preferably underneath both wings or supporting surfaces of the toy-airplane and mechanically controlled by one of the axles of the clockwork in a manner to release at intervals the bombs suspended from said rods. A further feature of my invention consists therein that the hooks or suspension devices proper for the bombs are supported by the aforementioned rods and released by means of the stem which serves for winding-up the clockwork.

By so constructing my present toy-airplane I principally attain a simplified arrangement and motion of the bomb suspension and release device, at the same time ensuring flying motion of the toy-airplane when suspended by means of a string. According to my invention, furthermore, the bomb suspension and release device is so operated that bombs suspended on either side at an even distance from the center-line of the airplane are simultaneously released so that the bombs will in no case impose on the airplane an uneven load which would disturb its equilibrium during operation.

In the accompanying drawings I have represented two forms of construction of my novel toy-airplane, one being shown in Figs. 1, 2, 3, 4 and 5 and the other in Figs. 6, 7 and 8. Fig. 1 is a longitudinal side-view and Fig. 2 a partly broken away front-view of my new toy-airplane, Fig. 3 a detail view of the clockwork and driving mechanism for the propeller and the running wheels on the carriage of the airplane, Fig. 4 a transverse section through the airplane as seen from the front thereof and Fig. 5 a top-view on Fig. 4. Fig. 6 is a partial front-view of and transverse section through the aforementioned second form of construction of airplane with the

wings broken away, Fig. 7 a top-view on Fig. 6 partly in section and Fig. 8 a detail-view, partly in section, of the bearings and driving members for the bomb supporting rods.

In both forms of construction of my new toy-airplane a spring-operated clockwork is mounted within the body proper or fuselage of the airplane. The latter is equipped with a carriage 2 and a pair of wings or supporting surfaces 3, the horizontally directed axle 5 of said clockwork carrying the propeller 6 fast thereon. The square-headed stem 7 serves for winding-up the clockwork. One of the axles 9 which form part of the clockwork extends towards below, as shown in Figs. 2 and 3, while a canting wheel 8 fast on the prolonged axle 9 is in mesh with the pinion 10 on the driving axle 11 for the running wheels on the carriage 2. The running wheels may thus be driven in addition to the propeller 6 so that the toy-airplane which may, for instance, be suspended in known manner by means of a string may also be operated as a wheel-driven vehicle.

In the construction shown in Figs. 1, 2, 3, 4 and 5 a driving wheel 12 equipped with teeth, pins or the like is mounted fast on the winding stem 7 of the spring-operated clockwork, a resilient tongue 13 fixed to the body or fuselage of the airplane co-operating with said wheel 12 to alternately slide past the teeth or pins thereon, whereby a rattling noise will be produced simulating, for instance, the firing of machine guns. The stem 7 carries at its upper end a double wing or arm 14, the bent-off ends 15 of two rods 16 which are under action of retracting springs 17 being engaged by said wings or arms 14. Said rods 16 are mounted on either side of the airplane underneath the wings 3 in longitudinal direction thereof and equipped with noses 18 from which the bombs 19 are suspended. The bombs 19 are preferably of two-part construction and consist of two members between which an explosive in the form of a fulminating powder body may be placed and caused to explode and produce a detonation when the bombs are falling on the ground. The noses 18 pass through slots in abutment members 20, as may be seen from Figs. 1 and 2 and retain the suspension means proper for the bombs, whenever said noses upon rotation of the wings or arms 14 on the winding stem 7 are rotated backward into releasing position to cause the bombs to be released and fall on the ground.

In the construction shown in Figs. 6, 7 and 8 the winding stem 7 extends towards and projects

somewhat above the surface of the wings 3 and passes through a gear-wheel 8 mounted on the under side of the wing 3, a bridge-member 9 being further provided supporting said gear-wheel 8. The bridge-member 9 further serves as a support and guide for two thrust-rods 16 preferably of the form of rails and positioned parallelly to each other underneath the surface of the wings 3. The thrust-rods 16 are further mounted to permit displacement relatively to each other and enclose with their toothed inner ends the driving wheel 8 which is positively driven by the winding stem 7 for the clockwork. At their outer ends the thrust-rods 16 are guided in guideways 20 fixed on the underside of the wings 3. The bombs 19 are suspended from said thrust-rods 16 and when the latter are shifted towards the inside by action of the wheel 8 driven by the clockwork, said bombs are stripped off said thrust-rods by the abutment members 20.

The control of the wheel 8 which effects displacement of the thrust-rods 16 carrying the bombs is preferably derived from the winding stem 7 of the clockwork. If the clockwork is wound-up, the thrust-rods 16 will alternately be shifted towards the outside, permitting to hang the bombs onto said rods intermediate the abutment members 20; on the other hand, during running-off of the clockwork the winding stem 7 rotates in opposite direction, thus moving the suspension rods gradually towards the inside and releasing the bombs to drop onto the ground.

In both herein-described forms of construction of my new toy-airplane the winding-up and running-down motion of the winding stem for the clockwork is used as driving force for the bomb suspension rods, so that further transmitting and connecting members which would be necessary, if the driving motion for said rods were derived from some other axle of the clockwork, may be dispensed with.

I claim:

1. In a toy airplane, a body having wings, a motor, bombs supporting and releasing means under the wings including rods extending longitudinally of the wings and movable into and out of position to effect release of bombs, said rods being operatively connected with the motor and continuously moved in a releasing direction during operation of the motor.

2. In a toy airplane, a body having wings, a spring motor carried by said body and having a winding stem rotated in one direction when winding the spring of the motor and in an opposite direction when the motor is in operation, bomb supporting and releasing means under said wings including rods extending longitudinally of the wings and movable into and out of position to effect release of bombs, and means carried by said stem and continuously actuated during operation of the motor to impart movement to the rods in a direction to effect release of bombs.

3. In a toy airplane, a spring motor having a rotatable winding stem, bomb supporting means movable into and out of a supporting position, and actuating means for the bomb supporting means carried by and turning with the stem.

4. In a toy airplane, a body having wings, a spring motor carried by said body and having a vertically disposed winding stem rotated in one direction when winding the spring of the motor and rotated in an opposite direction when the motor is in operation, rods extending longitudinally under the wings, brackets depending

from the wings and slidably supporting the rods, said brackets being spaced from each other longitudinally of the rods whereby a plurality of bombs may be loosely suspended from each rod between the brackets and ejected from the rods by contact with the brackets when the rods are slid inwardly, inner end portions of said rods extending in overlapped relation to each other, and a gear rotating with said stem and disposed between the overlapped ends of said rods in engagement therewith to shift the rods longitudinally when the stem is rotated.

5. In a toy airplane, a body having wings, a spring motor carried by said body and having a vertically disposed winding stem rotated in one direction when winding the spring of the motor and rotated in an opposite direction when the motor is in operation, rods extending longitudinally under the wings and rotatably mounted, bomb engaging hooks carried by said rods, abutment plates depending from said wings in operative relation to said hooks for ejecting bombs from the hooks when the rods are rotated in one direction, springs yieldably resisting rotation of the rods in the said direction, crank arms projecting from inner ends of said rods, and a cross head carried by said stem for engaging the crank arms during rotation of the stem by operation of the motor and imparting rotation to the rods in a bomb releasing direction.

6. In a toy airplane, the combination of wings, with a spring-driven clockwork comprising a plurality of axles, and a bomb suspension and release device consisting of a pair of rods each mounted along one of said wings and operatively connected with one of said axles of said clockwork, each of said rods being adapted to successively release a series of bombs suspended thereon upon actuation of said clockwork.

7. A toy airplane as specified by claim 6, in which the bomb suspension and release device consists of a pair of rods each mounted rotatably on one of said wings and controlled by a retracting spring, a driving connection between said rods and said clockwork, suspension hooks for bombs, and abutment members adapted to release said suspension hooks during rotation of said rods from said clockwork by means of said driving connection.

8. A toy airplane as specified by claim 6, in which the bomb suspension and release device consists of a pair of rods each mounted rotatably on one of said wings and controlled by a retracting spring, a driving connection between said rods and said clockwork, suspension hooks for bombs, abutment members adapted to release said suspension hooks during rotation of said rods from said clockwork by means of said driving connection, said driving connection including a crank at the free inner end of either of said rods, said crank projecting into the path of rotation of an arm driven by said clockwork to temporarily impart a bomb releasing motion to said rods.

9. A toy airplane as specified by claim 6, in which the bomb suspension and release device consists of two rods, each mounted longitudinally displaceably along one of said wings, a driving connection between said clockwork and said rods for imparting thereto an alternate outward and inward motion to drop bombs suspended from said rods during said inward motion by causing said bombs to abut against guide members fast on said wings.

HEINRICH BURKHARD. 75