A. D. CONVERSE.

TOY AEROPLANE.

APPLICATION FILED DEC. 9, 1919.

1,353,147. Patented Sept. 21, 1920.

Fig. 1.

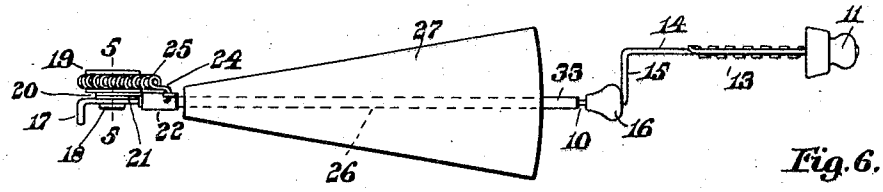


Fig. 6.

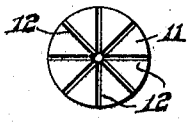
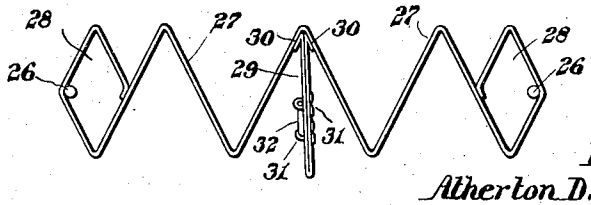


Fig. 2.

Fig. 4.

Fig. 5.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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TOY AEROPLANE.

1,353,147. Specification of Letters Patent. Patented Sept. 21, 1920.

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To all whom it may concern:

Be it known that I, ATHERTON D. CONVERSE, a citizen of the United States of America, and a resident of Winchendon, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Toy Aeroplanes, of which the following is a specification.

This invention relates to toys and particularly to devices of this class which may be caused to sail through the air like an aeroplane.

The invention consists of certain novel features of construction and arrangement of parts which will be understood readily by reference to the description of the drawings and to the claims to be hereinafter given.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described, except as required by the scope of the appended claims.

Of the drawings:

Figure 1 represents a side elevation of a toy aeroplane embodying the principles of the present invention, the wings of which are shown in folded position ready for use.

Fig. 2 represents an inverted plan of the same with the wings thereof expanded.

Fig. 3 represents a vertical section on line 3, 3, on Fig. 2, showing the expansible wings partially folded.

Fig. 4 represents a sectional detail showing the means of securing the central vertical plate of the expansible wings to the supporting rod.

Fig. 5 represents an enlarged sectional detail on line 5, 5, on Fig. 1, and

Fig. 6 represents an end view of the slotted member for positioning the rear plane.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings, 10 is a supporting rod having secured to its rear end a member 11 provided with a plurality of diametrical slots 12 in the front face thereof.

These slots 12 are adapted to receive the rear edge of a plane 13 thereby retaining said plane 13 in adjusted position about the axis of the rear portion 14 of the rod 10.

This rear portion 14 is offset from the body portion of the rod 10 by a vertical connecting portion 15 thus giving room for the hand of the operator at the rear of the gripping member 16.

This gripping member 16 surrounds the body portion of the rod 10 with its rear face abutting the vertical connecting portion 15 thereby preventing further rearward movement thereof.

The plane 13 is slidably mounted upon the rear portion 14 so that its rear edge may be disengaged from one of the slots 12 mounted about the axis of said rear portion 14 and then moved to the rear with its edge in another of said slots 12 thus locking the plane 13 in adjusted position.

At the forward end of the rod 10 is a downwardly extending hook 17 adapted to be inserted into the ring of a resilient firing member of any well-known construction.

Immediately to the rear of the hook 17, the rod 10 has a loop formed therein in which is mounted a headed pivot member 18 as shown in Fig. 5 of the drawings.

Beneath the upper head of the pivot member 18 is a cup-shaped washer 19 and beneath this cup-shaped washer are the ears 20 and 21 of sockets 22 and 23, each of which is provided with an outwardly extending ear 24 between which ears 24 is interposed a helical spring 25 passing partially around the cup-shaped washer 19 in the concaved groove in the periphery of the flange thereof.

Each socket 22 and 23 has secured therein, one end of a rod 26 between which rods 26, 26 is a folding fan-shaped member 27, the outer portions of which have pockets 28 in which said rods 26 are positioned.

Centrally disposed, relatively to the fan-shaped member 27, is a vertical plate 29 secured at its upper end to the fabric of the fan-shaped member 27 by means of the flanges 30.

This plate 29 is secured to the rod 10 by means of a plurality of staples 31 surrounding said rod and extending through said

plate 29, the rod 10 being provided with an offset portion 32 bearing against a side wall of the plate 29 to retain said plate 29 perpendicular to the supporting body rod 10 at all times.

The bars 26 have extensions 33 projecting beyond the rear edge of the fan-shaped member 27, said member 27 forming wings on opposite sides of the vertical plate 29.

When it is desired to use the toy, the member 27 is folded into the position shown in Fig. 1 of the drawings with the rearwardly projecting extensions 33 adjacent to the gripping member 16 thereby providing means whereby the hand, while positioned beneath the rear portion 14 of the rod 10, may securely grip the member 16 retaining it against the vertical portion 15 and at the same time hold the extensions 33 close together thus keeping the wing member 27 folded while the operator is stretching the resilient firing device.

When the firing device has been stretched sufficiently to throw the aeroplane a required distance, the operator releases his grip from the extensions 33 and member 16 and the toy will be projected through the air at considerable speed, the wings of the folding member 27 immediately expanding as soon as the extensions 33 are released.

The vertical plate 29 and the side wings formed by the folding member 27 will prevent the toy from rotating or tumbling, causing it to continue on a direct course according to the position of the rear plane 13.

The course to be taken by the toy may be varied by changing the angle of the rear plane 13 in an obvious manner.

The outward movement of the bars 26 about the pivot 18 is limited by the fabric of the folding member 27 and requires no other limiting members.

This makes a simple and effective toy for the amusement of children.

The operation and many advantages of the invention will be readily understood without further description.

Having thus described my invention, I claim—

1. In a device of the class described, the combination of a metal rod having its forward end bent downwardly to form a hook; an expanding fan-shaped member secured to said rod and adapted to be folded against said rod; means whereby said fan-shaped member may be retained in folded position when about to be projected; and means for expanding said fan-shaped member when projected.

2. In a device of the class described, the combination of a rod having a downwardly extending engaging hook at its extreme forward end; an expanding fan-shaped member secured to said rod and adapted to be folded against said rod; means whereby said fan-shaped member may be retained in folded position when about to be projected; and means for expanding said fan-shaped member when projected.

3. In a device of the class described, the combination of a rod having a hook at its forward end; two bars pivotally connected to said forward end; a helical spring secured to the outer sides of the pivoted bars and extending around the front of the pivot for said bars; a folding fan-shaped member between said pivoted members; a plate extending downwardly from the center of said fan-shaped member and secured to said rod; and a gripping member on said rod at the rear of said fan-shaped member in position to coact with the rear ends of said bars.

4. In a device of the class described, the combination of a rod having a hook at its forward end; two bars pivotally connected to said forward end; a cup-shaped washer on the pivot member; a helical spring secured to the outer sides of the pivoted bars and bearing on the periphery of said washer; a folding fan-shaped member between said pivoted members; a plate extending downwardly from the center of said fan-shaped member and secured to said rod; and a gripping member on said rod at the rear of said fan-shaped member in position to coact with the rear ends of said bars.

5. In a device of the class described, the combination of a rod having a hook at its forward end; two bars pivotally connected to said forward end; a helical spring secured to the outer sides of the pivoted bars and extending around the front of the pivot for said bars; a folding fan-shaped member between said pivoted members; a plate extending downwardly from the center of said fan-shaped member and secured to said rod by a plurality of staples; and a gripping member on said rod at the rear of said fan-shaped member.

6. In a device of the class described, the combination of a rod having a hook at its forward end; two bars pivotally connected to said forward end; a helical spring, the opposite ends of which are connected to ears on the outer sides of said bars and adapted to move said bars away from each other about the pivoted connection; a folding fan-shaped member between said pivoted members; and a plate secured to and extending downwardly from the center of said fan-shaped member and secured to said rod.

7. In a device of the class described, the combination of a rod having a hook at its forward end and a plane at its rear end; two bars pivotally connected to said forward end; resilient means in front of the pivotal connection with the ends thereof secured to the outer sides of said bars and adapted to spread said pivoted bars when released; a

folding fan-shaped member between said pivoted bars; a plate extending downwardly from the center of said fan-shaped member and secured to said rod; and a gripping member on said rod at the rear of said fan-shaped member.

8. In a device of the class described, the combination of a rod having a hook at its forward end and a plane at its rear end; means for varying the angle of said plane; two bars pivotally connected to said forward end; resilient means for spreading said pivoted bars; a folding fan-shaped member between said pivoted bars; a plate extending downwardly from the center of said fan-shaped member and secured to said rod; and a gripping member on said rod at the rear of said fan-shaped member.

9. In a device of the class described, the combination of a rod having a hook at its forward end and a slotted non-revoluble head on its rear end; a plane slidable on said rod and adapted to be positioned on said rod with its rear edge in a slot of said head; two bars pivotally connected to said forward end; resilient means for spreading said pivoted bars; a folding fan-shaped member between said pivoted bars; and a plate extending downwardly from the center of said fan-shaped member and secured to said rod.

10. In a device of the class described, the combination of a rod having a hook at its forward end and a head on its rear end having a plurality of diametral slots therein; a plane slidable on said rod and adapted to be positioned on said rod with its rear edge in either slot of said head; two bars pivotally connected to said forward end; resilient means for spreading said pivoted bars; a folding fan-shaped member between said pivoted bars; and a plate extending downwardly from the center of said fan-shaped member and secured to said rod.

11. In a device of the class described, the combination of a rod having a hook at its forward end and a head on its rear end having a plurality of diametral slots therein; a plane slidable on said rod having a pointed forward end and adapted to be positioned on said rod with its rear edge in a slot of said head; two bars pivotally connected to said forward end; resilient means for spreading said pivoted bars; a folding fan-shaped member between said pivoted members; and a plate extending downwardly from the center of said fan-shaped member and secured to said rod.

12. In a device of the class described, the combination of a rod having a hook at its forward end and an upward and rearwardly extending portion at its opposite end; a plane slidable on said rearwardly extending portion and adapted to be locked from rotation thereon; two bars pivotally connected to said forward end; resilient means for spreading said pivoted bars; a folding fan-shaped member between said pivoted members; and a plate extending downwardly from the center of said fan-shaped member and secured to said rod.

13. In a device of the class described, the combination of a rod having a downwardly extending hook adapted to be engaged by a projecting device; an expanding fan-shaped member secured to said rod; rigid members secured to the opposite sides of said fan-shaped member and projecting beyond the rear edge thereof, said members being in the same plane with the body of said rod; a gripping member on said rod slightly to the rear of the ends of said rigid members when the fan-shaped member is folded; and means for expanding said fan-shaped members when said rigid members are released.

14. In a device of the class described, the combination of a rod having a downwardly extending hook adapted to be engaged by a projecting device; an expanding fan-shaped member secured to said rod and adapted to be folded, said member having pockets extending lengthwise of the opposite sides thereof; rigid members secured to said fan-shaped member in said pockets and extending beyond the rear edge of said fan-shaped member; means on said rod immediately in the rear of the ends of said rigid members when said fan-shaped member is folded whereby said rod may be firmly gripped and said fan-shaped member retained folded when the device is about to be projected; and means for expanding said fan-shaped member when said rigid members are released.

15. In a device of the class described, the combination of a rod having a downwardly extending hook adapted to be engaged by a projecting device; a foldable fan-shaped member having a plurality of broad folding central sections and provided with three narrower sections at opposite sides folded to form diamond shaped pockets with the edges secured to the outer broad sections; rigid members secured in the outer folds of said pockets and extending outwardly therefrom; means on the rod coacting with the projecting ends of said rigid members whereby the device may be firmly gripped when about to be projected; and means for expanding said fan-shaped member when said rigid members are released.

Signed by me at 746–7 Old South Bldg., Boston, Mass., this 1st day of December, 1919.

ATHERTON D. CONVERSE.

Witnesses:
WALTER E. LOMBARD,
NATHAN C. LOMBARD.