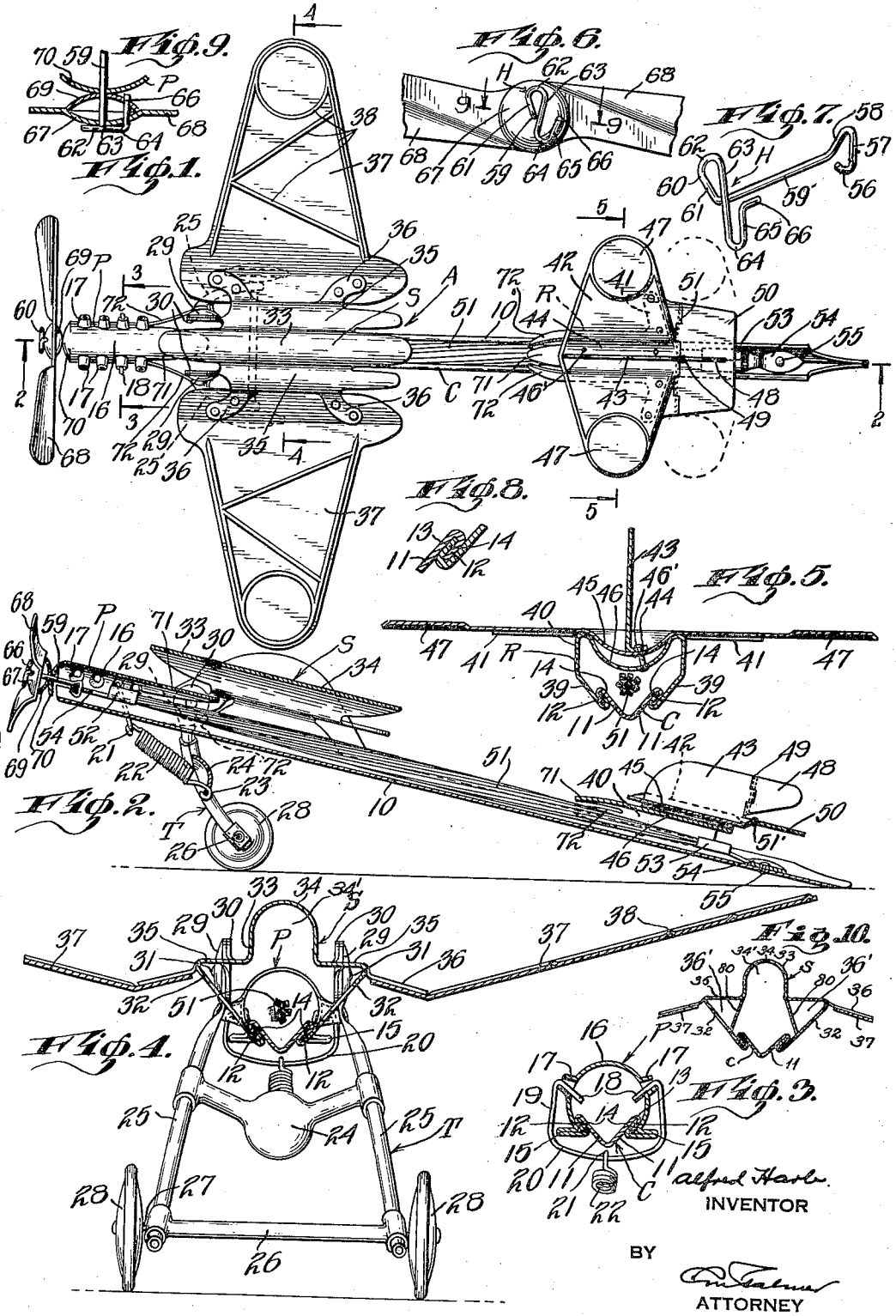
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TOY AIRPLANE

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Alfred Harb
INVENTOR

BY

ATTORNEY

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TOY AIRPLANE

Alfred Harb, Nyack, N. Y.

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The present invention is directed to flying machines and more particularly is concerned with an improved serviceable toy airplane and the objects, advantages, and features thereof will be apparent from a careful consideration of the following detailed disclosure viewed in the light of the accompanying drawing wherein:

Fig. 1 is a plan view of the toy airplane according to my invention.

Fig. 2 is a longitudinal sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse sectional view taken along the line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 1.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 1.

Fig. 6 is a fragmentary front view of the propeller showing the improved hook for operatively sustaining the revolvable elastic power means.

Fig. 7 is a perspective view of the hook.

Fig. 8 is an enlarged sectional view of the frictional connection utilized to slidably and adjustably sustain the propeller, and front and rear wing mounts on the chassis

Fig. 9 is a sectional view on the line 9—9 of Fig. 6 and

Fig. 10 is a sectional view of a stabilized cabin according to another form of the invention.

Illustrative of the embodiment disclosed, the knock down toy airplane according to the invention is generally denoted A and comprises an elongated substantially V shaped channeled one piece body or chassis C having the inclined but diverged sides 11 provided with outwardly and downwardly turned flanged or hooked tracks 12 spaced from companion sides 11 and defining therewith longitudinally disposed grooves 13. These tracks and grooves are utilized to slidably but frictionally guide the hollow propeller carrier P, the hollow front wing mount S, and the hollow rear wing carrier R, longitudinally of the channeled body C.

For this purpose it will be observed that the propeller carrier P, the rear tail carrier R, and the front wing or intermediate carrier S each includes turned over flanges 14. In case of the propeller carrier P, flanges or hooks 14 extend upwardly and outwardly and are integral with the laterally projecting lugs 15 (Fig. 3) forming an integral part of casing 16 of the propeller carrier or mount P and this casing includes a plurality of struck out tapered and hollow and alined nipples 17 through a pair of which bent terminals 18 of sides 19 of a wire bail or loop 20 are threaded and appropriately rotatably sustained and it will be noted that one end 21 of a helicoidal spring 22 is disconnectably fastened to the swingable loop 20 while another end 23 of spring 22 is appropriately threaded into a transverse brace 24 sustained by swingable legs 25 of a pivoted truck generally denoted T having a lower fixed brace 26 provided with fixed shaft extensions 27 for rotatably supporting wheels 28. However it should be observed that the upper ends of legs 25 include concavo-convex ears 29 rotatably held against bearings 30 by suitable upset fulcrum pins 31 secured to these bearings which form a part of the front wing carrier or mount S.

The inclined flanges 14 of the hollow mount S and the rear wing hollow carrier R are also frictionally and slidably guided within channels 13 and on track 12 and in the case of hollow mount S (Fig. 4), flanges 14 are integral with the inclined sides 32 of the irregularly shaped casing 33 provided with the longitudinally arranged dome shaped wind chute 34 integral with laterally extending shoulders 35 provided with laterally projecting lugs 36 fixedly carrying the front wings 37 each appropriately reinforced by the several ribs 38.

In the case of the rear wing mount R (Fig. 5), the inclined hooked flanges 14 are integral with and spaced from the inclined sides 39 of the hollow casing 40. Thus as in the case of the propeller mount P and the front wing mount S, a suitable slidable but frictional connection defined by the interhooking and overlapping flanges 12 of the channeled member or body 10 and the several flanges 14 of the mounts P, S and R and consequently each of the latter may be adjustably moved and set longitudinally of the channeled supporting member 10. It follows that each and every of these aerofoil mounts may be readily slidably removed from the channeled member 10. It should be noted however that casing 40 of the rear mount R is provided with flanges 41 to which the rear wing 42 is fixedly secured.

Extending upwardly from the rear wing 42 is the steering fin 43 having flange 44 secured to central depressed portion 45 of the wing 42 and the central part 46 of casing 40 by suitable pins 46'. Wing 42 is preferably stamped out of relatively thin aluminum stock and is suitably embossed as at 47 to provide rigidity and it will be observed that fin 43 includes a rear tail portion 48 or rudder which can be swung and set frictionally relative to the fixed fulcrum pin 49 carried by fin 43. Hence the rudder 48 may be ad-

justed and set to properly steer the plane either towards the left or right. The rear wing 42 is also provided with a reduced tail or rubber 50 which may be hinged and frictionally set in respect to fixed fulcrum pin 51'. Rudder 50 may be considered as the steering means to direct the plane in a vertical direction. If rudder 50 or elevator steering means is tilted slightly upwardly the plane will elevate. On the other hand if the steering elevator is set to a downwardly inclined position the plane will move in a downward direction.

Associated with the channeled body 10 in the longitudinal groove thereof is a motor 51 taking the form of a plurality of sensibly resilient but relatively durable elastic cords, the ends of which are attached to the front and rear connectors 52 and 53 each provided with a lug 54. The lug 54 of the rear connector 53 is fixedly fastened by a rivet 55 to the chassis or channeled member 10 while lug 54 of the front connector 52 is also perforated to threadably receive first the rear curved portion 56 and subsequently the rectilinear portion 57 of the hook generally denoted H which includes a downwardly directed and inclined part 58 merging with a rectilinear shank or shaft 59 integral with a loop shaped driving head or connector broadly designated 60 disposed substantially normal to shank 59 and comprising the rectilinear curved part 61, the intermediate curved part 62, the rectilinear part 63 disposed laterally of shank 59, the curved part 64, the rectilinear part 65 and the rearwardly extending projection or nose 66. In other words parts 61 to 65 may be considered as spaced loop shaped arms disposed transversely of shaft 59 and constituting abutment means against the stop 67 struck out of propeller 68.

If shaft 59 be rotated, the propeller is rotated and if the latter be rotated, shaft 59 is rotated. This action results in the connection between the connector or hook H and the propeller. During the unwinding of the motor 51 shaft 59 drives the propeller by reason of pin or nose 66 passing into an opening in portion 67 of the propeller and the spacer 69 which is also caused to rotate, and the latter is held yieldingly against bearing 70 by the elastic motor 51. Conversely, if the propeller is rotated to wind up the motor 51, such action causes hook H or connector to rotate bodily and of course the spacer 69 rotates relative to bearing 70. Thus on winding of the motor the rear eye of the connector or hook H characterized by parts 56, 57 and 58 rotate the front connector 52 and the latter twists the cords of the elastic motor to the desired tension.

With sufficient energy stored up in motor 51, the airplane may be allowed to fly upon releasing of the propeller. Thus the motor starts to lose its energy although the propeller is rapidly rotating. During such rotation the longitudinally disposed bore of the dome or wind channel 34 of the front wing mount S allows air currents to pass therethrough in respect to obtaining increased lifting power and stabilizing the flying action of the plane and the same of course may be said of the vents defined by nipples 17 and it will be observed that the rear end of propeller mount P and the front end of the rear wing mount R each includes a top fin 71 and the side fins 72 and if desired side fins 72 of the mount P may be diverged sufficiently to frictionally straddle legs 25 adjacent the spaced rotatable ears 29 (Fig. 1) thereof to set the truck T in a desired tilted position against the energy of the spring 22 which cushions the shock imparted to the wheels 28 on landing of the plane.

The stabilized cabin S according to Fig. 10 is along the lines of the stabilized casing 33 illustrated in Fig. 4 and differentiates therefrom in the provision of a pair of spaced but fixed partitions 80 dividing the cabin or casing 33 into three longitudinally disposed and separate compartments of which the central compartment 34' may be considered as the wind channel or chute while the side compartments 36' if desired may have their outer ends closed as is well understood to simulate passenger cabin means.

In the broader aspects of the invention, I do not desire to be understood as limiting the embodiment thereof to details herein shown illustratively as a wide variety of modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In a toy airplane, an elongated chassis including spaced sides each having a track disposed longitudinally thereof, a propeller mount comprising a casing having means frictionally and slidably cooperating with the tracks of said sides, a front wing mount slidably and frictionally guided by said tracks, a rear tail mount slidably and frictionally guided by said tracks, a propeller, a loop shaped member connected to said propeller and having shaft means rotatably guided by said propeller mount, and an elastic motor connected to said shaft means and said elongated chassis.

2. In a toy airplane, an elongated chassis including spaced sides each having a depending track disposed longitudinally thereof, a propeller mount comprising a casing having upstanding means frictionally and slidably cooperating with the tracks of said sides, a front wing mount having upstanding means slidably and frictionally guided by said tracks, a rear tail mount having upstanding means slidably and frictionally guided by said tracks, a propeller, a loop shaped member connected to said propeller and having shaft means rotatably guided by said propeller mount, and an elastic motor connected to said shaft means and said elongated chassis.

3. In a toy airplane, an elongated chassis including spaced sides each having an inclined and overhanging track disposed longitudinally thereof, a hollow propeller mount comprising a casing having diverged means frictionally and slidably cooperating with the tracks of said sides, a hollow front wing mount having diverged means slidably and frictionally guided by said tracks, a hollow rear tail mount having diverged means slidably and frictionally guided by said tracks, a propeller, a loop shaped member connected to said propeller and having shaft means rotatably guided by said propeller mount, and an elastic motor connected to said shaft means and said elongated chassis.

4. In a toy airplane, an elongated substantially V shaped chassis including spaced sides each having an inclined and overhanging track disposed substantially the entire length of said chassis, a hollow propeller mount comprising a casing having diverged means frictionally and slidably interhooking with the tracks of said sides, a hollow front wing mount having diverged means slidably and frictionally interhooking with said tracks, a rear tail mount having diverged means slidably and frictionally interhooking with said tracks, a propeller, a loop shaped member connected to said propeller and having shaft

means rotatably guided by said propeller mount, and an elastic motor connected to said shaft means and said elongated chassis.

5. In a toy airplane, a chassis having spaced tracks disposed longitudinally of said chassis, a propeller mount slidably guided by said tracks, shaft means rotatably guided by said mount, a propeller mounted on said shaft means, and a loop extending from said shaft means and having an offset portion to interlock with said propeller to permit rotation of said propeller upon rotation of said shaft.

6. In a toy airplane, a chassis having spaced tracks disposed longitudinally of said chassis, a propeller mount slidably guided by said tracks, shaft means rotatably guided by said mount, a propeller mounted on said shaft means, and a loop extending from said shaft means and disposed substantially normal thereto and having a portion disposed laterally of said shaft means and provided with a rearwardly disposed portion to interlock with said propeller to permit rotation of the latter upon rotation of said shaft means.

7. In a toy airplane, a chassis having spaced tracks, disposed longitudinally of said chassis, a hollow propeller mount slidably guided by said tracks, shaft means rotatably guided by said mount, a propeller mounted on said shaft means, a loop extending substantially normal to said shaft means and integral therewith, spacer means mounted on said shaft means and interposed between said propeller and mount, and means extending laterally of said shaft means and integral with said loop but projecting rearwardly thereof to interlock with said propeller and spacer means to drive both of the latter upon rotation of said shaft means.

8. In a toy airplane, an elongated chassis having spaced tracks, a truck including spaced swingable legs and having wheels rotatably carried by said legs, a propeller mount slidably guided by said tracks longitudinally of said chassis, and cushioning means operatively interposed between said track and mount.

9. In a toy airplane, a chassis having spaced tracks, a truck including spaced swingable legs and having wheels rotatably carried by said legs, a hollow propeller mount slidably guided by and movably interlocking with said tracks longitudinally of said chassis, and elastic means operatively connected to said truck and mount.

10. In a toy airplane, an elongated chassis having spaced depending tracks, a truck including spaced swingable legs and having wheels rotatably carried by said legs, a hollow propeller mount slidably guided by and movably interlocking said tracks longitudinally of said chassis, and a spring operatively interposed between said track and mount.

11. In a toy airplane, an elongated chassis having sides including tracks, a propeller mount movably and slidably guided by said tracks longitudinally of said chassis, and a front wing mount slidably and removably guided by said tracks longitudinally of said chassis.

12. In a toy airplane, an elongated chassis having diverged sides including depending tracks, a propeller mount removably and slidably interlocking with and guided by said tracks longitudinally of said chassis, and a hollow front wing mount slidably interlocking with and removably guided by said tracks longitudinally of said chassis.

13. In a toy airplane, a substantially V shaped chassis including a longitudinally disposed groove; a rear wing mount, a front wing mount, and a propeller mount each slidably guided by said chassis longitudinally thereof; a propeller, shaft means carried by said propeller and rotatably supported by said propeller mount, and an elastic motor disposed at least in part within said groove and connected to said rotatable shaft means and fixedly anchored to said chassis.

14. In a toy airplane, a substantially V shaped chassis including a longitudinally disposed groove and depending tracks; a rear wing mount, a front wing mount, and a propeller mount each having means slidably guided by said tracks longitudinally of said chassis; a propeller, shaft means carried by said propeller and rotatably supported by said propeller mount, and an elastic motor disposed at least in part within said groove and connected to said rotatable shaft means and fixedly anchored to said chassis.

15. In a knock down toy airplane, a substantially V shaped chassis including a longitudinally disposed groove and depending side tracks; a hollow rear wing mount, a hollow front wing mount, and a hollow propeller mount each having spaced and diverged means slidably guided by said tracks longitudinally of said chassis; a propeller, shaft means carried by said propeller and rotatably supported by said propeller mount, an elastic motor disposed at least in part within said groove and connected to said rotatable shaft means and fixedly anchored to said chassis, and loop means integral with and extending substantially normal to said shaft means and including a rearwardly disposed portion removably interlocking with said propeller to drive said shafts means upon rotation of said propeller.

16. In a toy airplane, an elongated chassis having sides comprising tracks disposed longitudinally of said chassis, and an hollow aerofoil mount slidably guided by said tracks.

ALFRED HARB.