May 14, 1957 W. G. DASHER 2,791,867

TOY FLYING CAR

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Fig. 1.

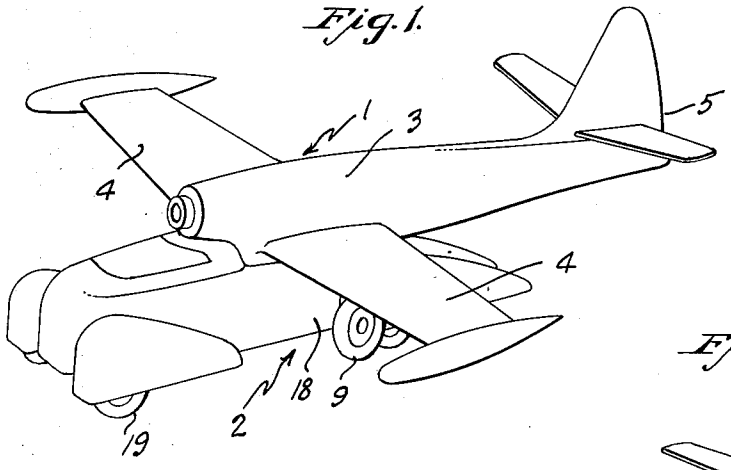


Fig. 2.

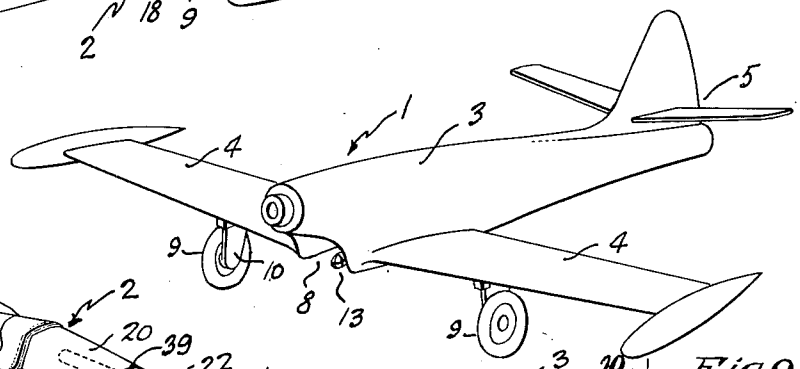


Fig. 3.

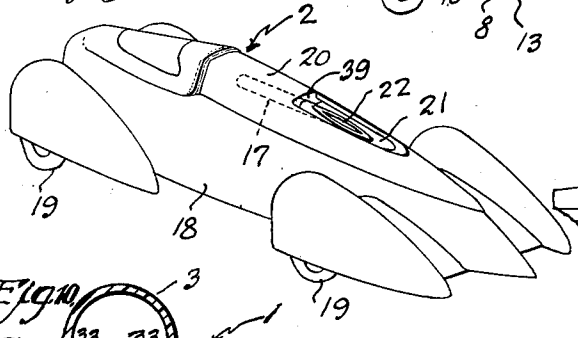


Fig. 9.

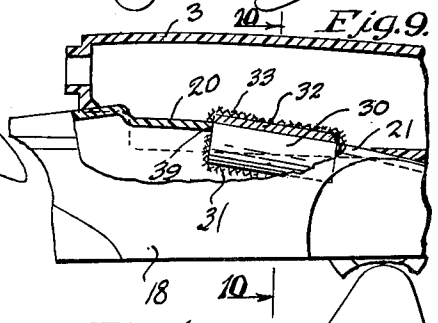


Fig. 10.

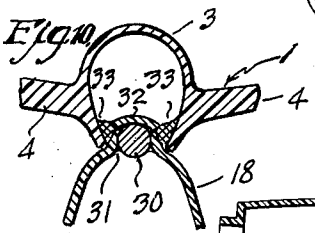
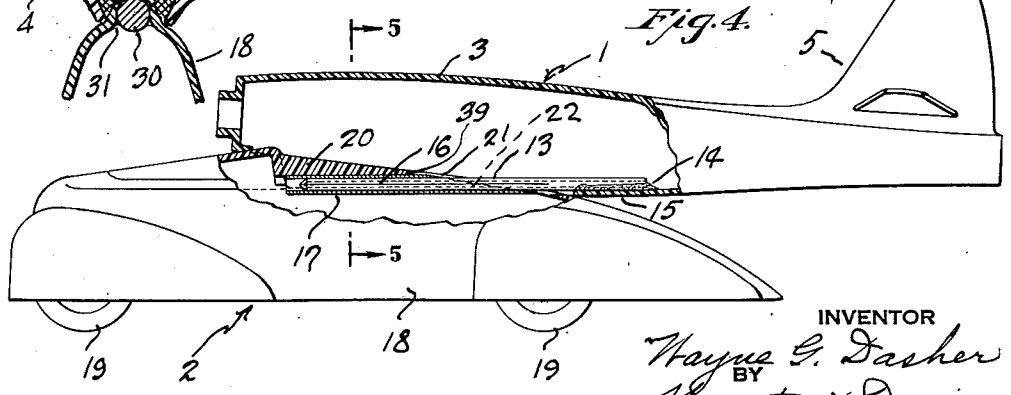


Fig. 4.



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Fig. 5.

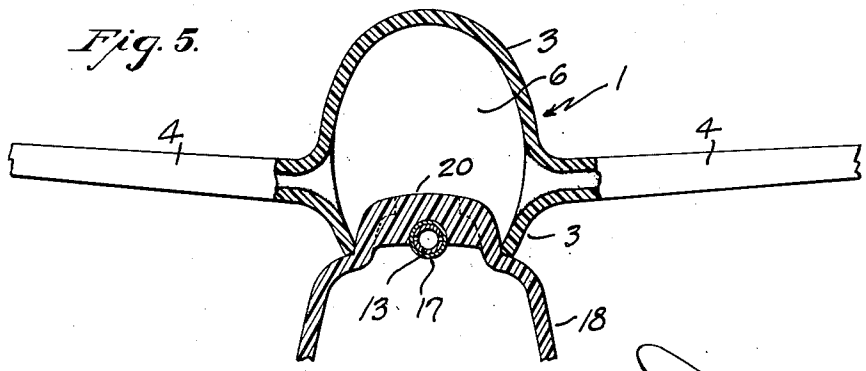


Fig. 6.

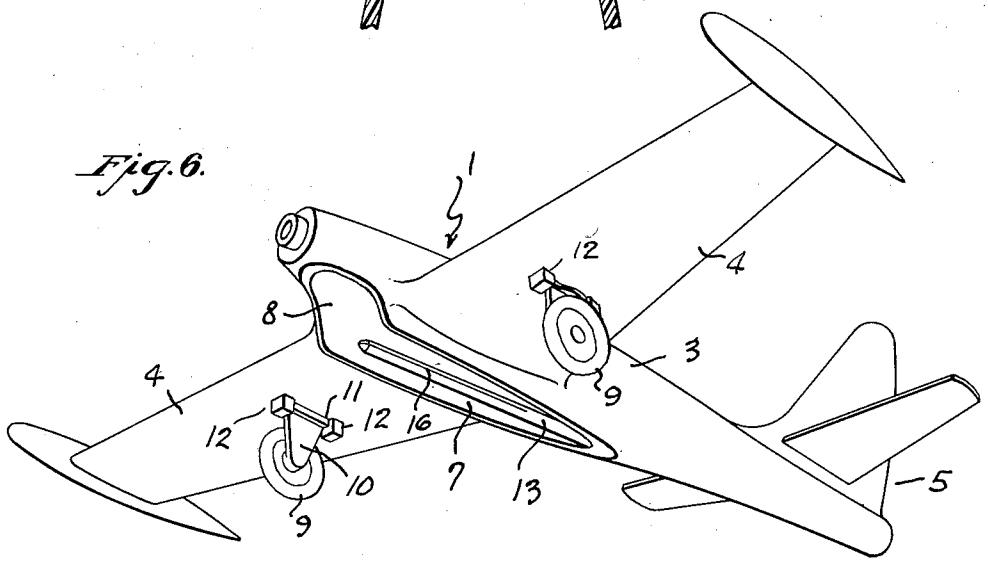


Fig. 7.

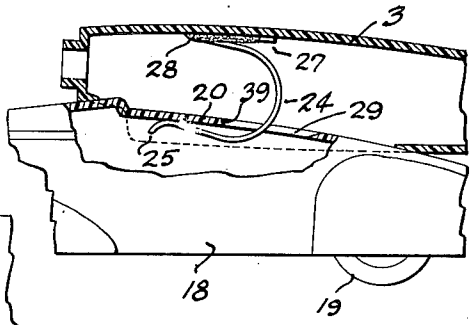
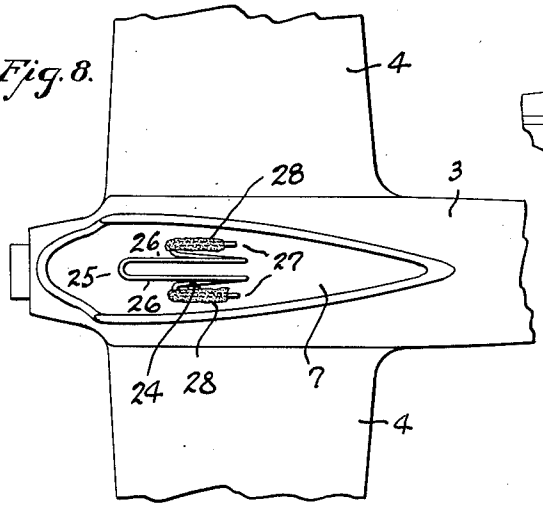


Fig. 8.



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Fig. 11.

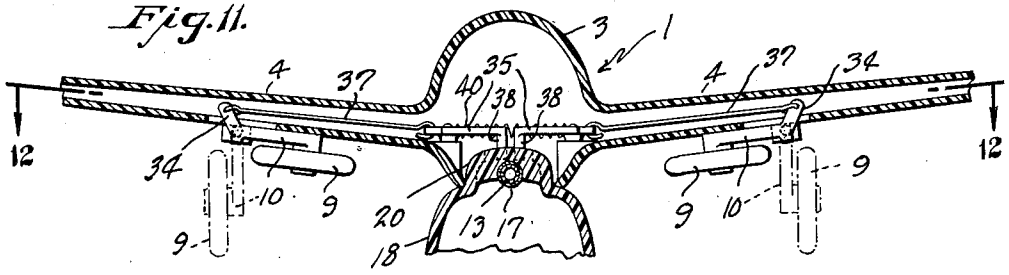
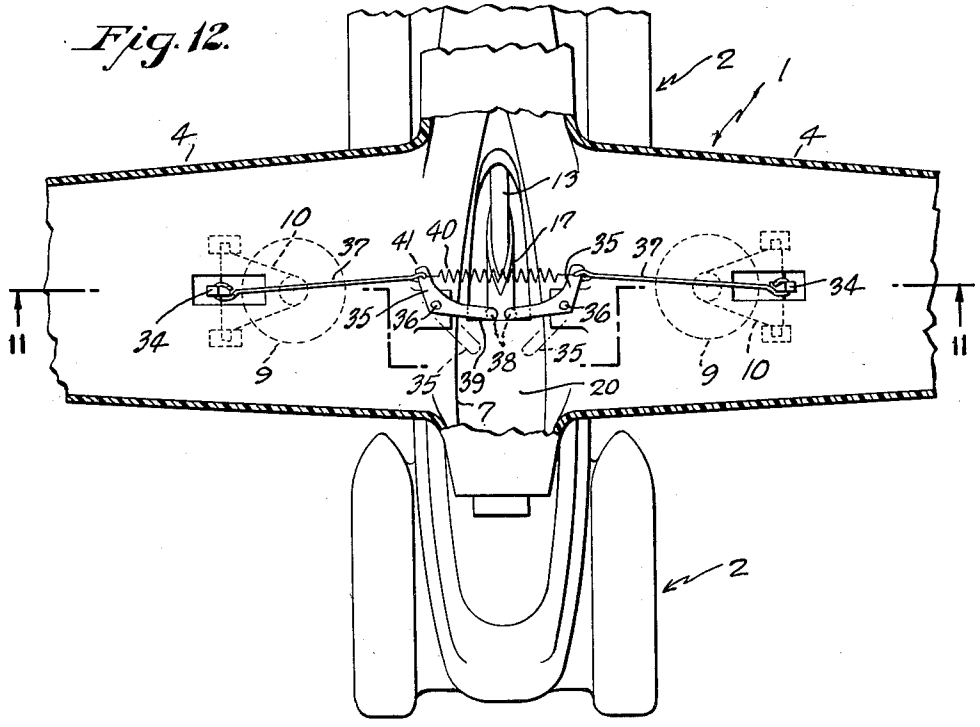


Fig. 12.



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United States Patent Office 2,791,867 Patented May 14, 1957

2,791,867

TOY FLYING CAR

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Application June 1, 1953, Serial No. 358,725

1 Claim. (Cl. 46—17)

This invention relates to a toy flying car, and has for an object to provide a toy of this character comprising a toy airplane and a toy wheeled car in the form of a toy automobile, with simple and effective means for detachably securing them together so that they may be used either separately as different toys or easily secured together as a single combination toy, and either with the airplane considered as carrying the car or the car carrying the airplane.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawings forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In these drawings:

Fig. 1 is a perspective view showing the toy comprising the airplane and car connected together;

Fig. 2 is a perspective view of the top of the airplane disconnected from the car;

Fig. 3 is a similar view of the car separated from the airplane;

Fig. 4 is a partial side elevation and a partial section of the airplane and car connected together showing one form of improved means for detachably securing them together;

Fig. 5 is a transverse section on an enlarged scale taken substantially on line 5—5 of Fig. 4, the retracting means for the wheels being omitted;

Fig. 6 is a perspective bottom view of the airplane separated from the car;

Fig. 7 is a partial side elevation and partial section of the airplane and car showing a modified form of the means for securing them together;

Fig. 8 is a bottom view of a portion of the airplane of Fig. 7 showing one portion of the securing means;

Fig. 9 is a partial side elevation and partial section of the plane and car showing another means of securing them together;

Fig. 10 is a transverse section substantially on line 10—10 of Fig. 9;

Fig. 11 is a transverse vertical section showing means for retracting the landing wheels taken substantially on line 11—11 of Fig. 12, and

Fig. 12 is a horizontal section taken on substantially line 12—12 of Fig. 11. This retracting means for the wheels is not shown in Figs. 1 to 10 in order to simplify the drawings, and because it is shown clearly in Figs. 11 and 12.

In the type of device shown, the toy comprises an airplane member 1 of any suitable or desired type of plane and a wheeled car member 2 resembling any desired type of motor car or automobile. They may be made of any suitable size and of any suitable material, preferably of molded plastic material so that they will be of light weight, and they may be of any desired colors.

The airplane member 1 comprises the usual fuselage

or body portion 3 with oppositely extending wings 4 at the opposite sides thereof, and any suitable type of tail assembly 5. On the under side of the fuselage or body is provided a longitudinally extending open bottomed recess, in the form shown comprising a hollow section 6 and a longitudinal slot 7 forming the open bottom of this recess, and the top of the recess over the slot may or may not be covered with a transversely curved wall, in addition to the top wall of the fuselage, although it is preferred to omit such wall to reduce weight. This recess is also preferably open at the front, as shown at 8 in Fig. 6, for assembly purposes with the car, as will presently be described. There may also be mounted on the under side of the wings landing wheels 9, and these may be carried by a suitable supporting bracket 10 pivoted at 11 in supporting lugs 12 mounted on the under side of the wings to permit the wheels to be swung between an upright or dropped landing position, or to a retracted position against the under surfaces of the wings. Means for shifting the wheels between these positions is shown in Figs. 11 and 12. Mounted within the recess 7 is one member of the cooperating securing means for detachably securing the car and the airplane together. In the form shown in Figs. 1 to 6 this comprises a longitudinally extending pin, tube or rod 13 secured by any suitable means, such as cement or any other securing material 14 (Fig. 4) for mounting its inner, or in this case, the rear end, on the top of the rear wall 15 of the fuselage just back of the recess 7 so that the forward portion of this pin or bar is located in and extends forwardly in the recess. The forward portion of this pin or rod is longitudinally split as indicated at 16 to provide a resilient split pin to be frictionally received in an open-ended tube or sleeve 17 carried by the car 2 to detachably secure the airplane and car together.

The car 2 may be of any design or form desired, and comprises the usual body member 18 carried on suitable wheels 19, and on top of the body is a longitudinally extending raised transversely curved rib 20 which is shaped and is located to fit and seat in the recess 7, as shown in Figs. 4 and 5. In the top wall of this rib is a longitudinally extending opening 21, and the tube 17 has a tapered rear end 22 located in or just below this opening, the forward end portion of the tube being secured to the inner or under side surface of the top wall of the rib 20 forwardly of the opening 21, and by any suitable securing means, such, for example, as suitable cement or the like. In assembling the two members comprising the airplane 1 and the car 2, the plane may be slid forwardly onto and along the top of the car, with the rib 20 in the under open side of the recess 7, until they come to a nested position as indicated in Figs. 1, 4 and 5; or the car could be backed into this position under the airplane. During this movement the free end of the split pin or rod 13 is inserted in the open end 22 of the tube or sleeve 17 to the position shown in Fig. 4, thus securing the two members 1 and 2 securely together, with the longitudinal rib 20 on the car snugly and firmly seated and fitted in the open under side of the recess 7. The child can now play with the toy as a combination flying car. The two members can be easily disconnected by merely shifting them longitudinally in the opposite direction so as to withdraw the pin or bar 13 from the sleeve 17 to thus permit use of the two members separately and independently. Thus this device really provides two different types of toys in one, and a third type by the combination of the two.

A modified form of securing means for detachably securing the car member and the plane member together is shown in Fig. 7 and 8. In this case a depending spring hook member 24 is mounted in the fuselage of the airplane and in the open bottomed recess 7. In the form

shown it comprises a resilient or spring wire bent at substantially its midsection at 25 into a loop with parallel sides 26 forming the curved open portion of the hook, and the opposite free ends 27 are bent backwardly and secured to the top of the recess 7 by any suitable means such as cement or the like 28. Thus the free end of this hook is in the lower part of the recess 7 and preferably faces forwardly as indicated. To cooperate with this hook to detachably secure the car and the airplane members together the top of the rib 20 of the car member is provided with a longitudinally extending opening 29 corresponding to the opening 21 previously described, but in this case the tube 17 is omitted, and in sliding the two members 1 and 2 together to cause the rib 20 to seat and fit in the recess 7 in the fuselage, the free end 25 of the hook passes into this opening and under the top wall of the rib 20 in front of the opening 29, as shown in Fig. 7, and the resilient action of the spring hook 24 pressing against the bottom surface of this wall effectively secures the two members 1 and 2 together. To detach the two members, all that is necessary is to slide them relatively in the opposite longitudinal direction to thus withdraw the hook 24 through the opening 29.

Still another means of securing the airplane member 1 and the car member 2 together is shown in Figs. 9 and 10. In this case in the opening 21 in the top of the rib 20 of the flying member is mounted a permanent magnet 30 of any suitable shape and secured to the car member by any suitable means, such, for example, as cement 31. It is preferably located so that the top of this magnet is substantially level with the top of the rib 20. Mounted in the open bottom side of the recess 7 in the airplane member is a block or piece of magnetic material 32, such, for example, as soft iron, and if the magnet 30 is in the form of a bar with a transversely rounded top surface the underside of the member 32 may be similarly curved, as shown in Fig. 10, so that the magnet will seat in this member when the two members 1 and 2 are assembled, as previously described. The member 32 may be mounted in the fuselage at the open lower side of the recess 7 by any suitable securing means, such for example as a cementing material 33. With this securing means the two members, the airplane member 1 and the car member 2, may be of the same construction and shape as in the other forms and may be assembled and disassembled in the same manner, except in this case the magnet 30 and the soft iron or similar magnetic material 32 forms the cooperating securing means for detachably holding the two members together.

As previously indicated, the retracting means for the landing wheels 9 is not shown in Figs. 1 to 10 in order to simplify the drawings, but is shown in additional Figs. 11 and 12. It is illustrated as used with the form of securing means between the plane and car shown in Figs. 1 to 6, but is to be used with the other forms of securing means also. In the form shown a lever arm 34 is secured to the pivoted bracket 10 and projects into the hollow wing 4. Pivotally mounted at opposite sides of the opening is a pair of bell crank levers 35 pivoted at 36, one arm being connected to the arm 34 by a wire link 37 and the other arm projecting over the opening 7 and provided with a depending projection or lug 38 depending into the opening sufficiently so that when the

plane and car are slid together to make the connection between them these depending lugs 38 will be engaged by the front edge or shoulder 39 of the opening 21 in the curved rib 20 of the car, or the front edge of opening 29 in the form of Fig. 7, and will shift these lugs backwardly. This will swing the levers 35 on their pivots and through links 37 will shift lever arms 34 outwardly and swing the brackets 10 and wheels 9 to the retracted position at the under side of the wings, as shown in full lines Fig. 11 and dotted lines Fig. 12. A light tensioned spring 40 connects the levers 35 and tends to draw their free ends 41 together to swing the brackets 10 and wheels 9 to the lowered or landing position as shown in the dotted lines of Fig. 11 and full lines Figs. 1, 2 and 6. Due to this spring 40 the wheels will be automatically shifted to the lowered or landing position as the car and plane are separated, thus removing the shoulder 39 from engagement with the lugs 38.

From the above it will be understood this device forms a very attractive and interesting toy in which the two main elements comprising the airplane member 1 and the wheeled car member 2 may be used separately and independently as two separate toys, or they can be readily assembled to be used in combination as a flying car, or the plane considered as a carrier for the car or the car as a carrier for the plane.

Having thus set forth the nature of my invention, I claim:

A toy of the character described, comprising a toy airplane, a toy wheeled car, longitudinally extending cooperating guide means at the under side of the airplane and top of the car interfitting on relative longitudinal movement of the airplane and the car to locate them in a given relative position, cooperating securing means on the airplane and car made effective by said relative movement to secure them together, landing wheels pivotally mounted at the under side of the wings of the airplane to swing between an upright lowered position and a raised or retracted position at the under side of the wings, levers pivotally mounted on the airplane connected one to each wheel and each provided with a depending lug, a shoulder on the car in position to engage said lugs and swing the levers to shift the wheels to the raised or retracted position by relative movement of the airplane and car in securing them together, and spring means to shift the wheels to the lower or landing position as the airplane and car are given relative movement in the opposite direction to release them.

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