Nov. 27, 1928. 1,693,189

T. R. ARDEN

TOY AIRPLANE

Filed Aug. 18, 1927 3 Sheets-Sheet 1

Fig. 1.

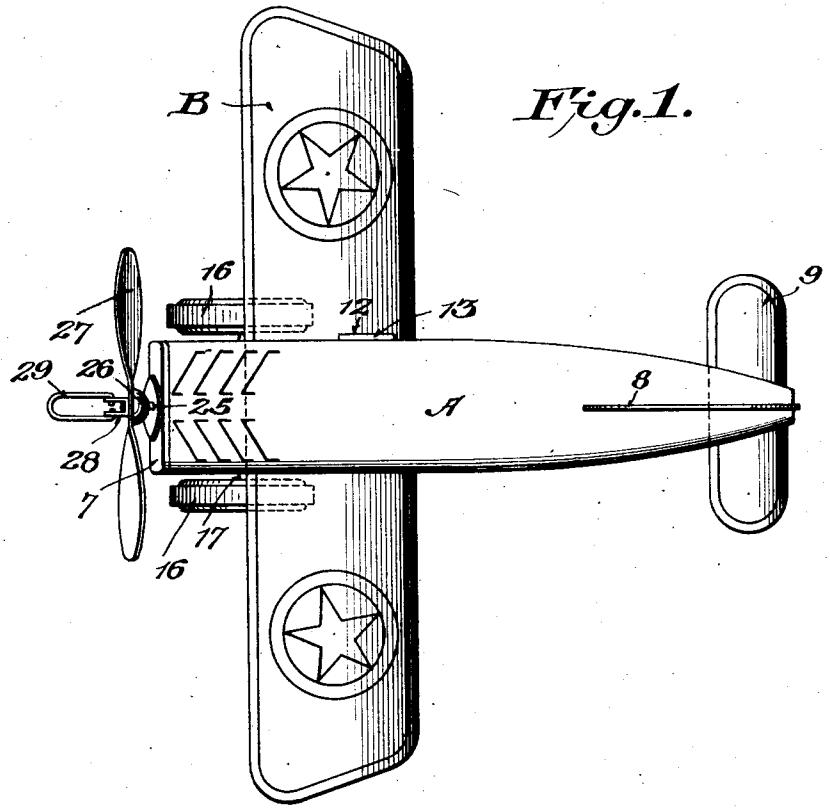
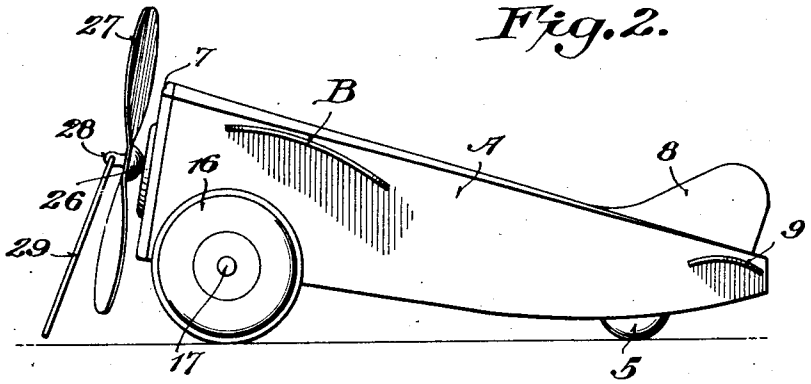


Fig. 2.



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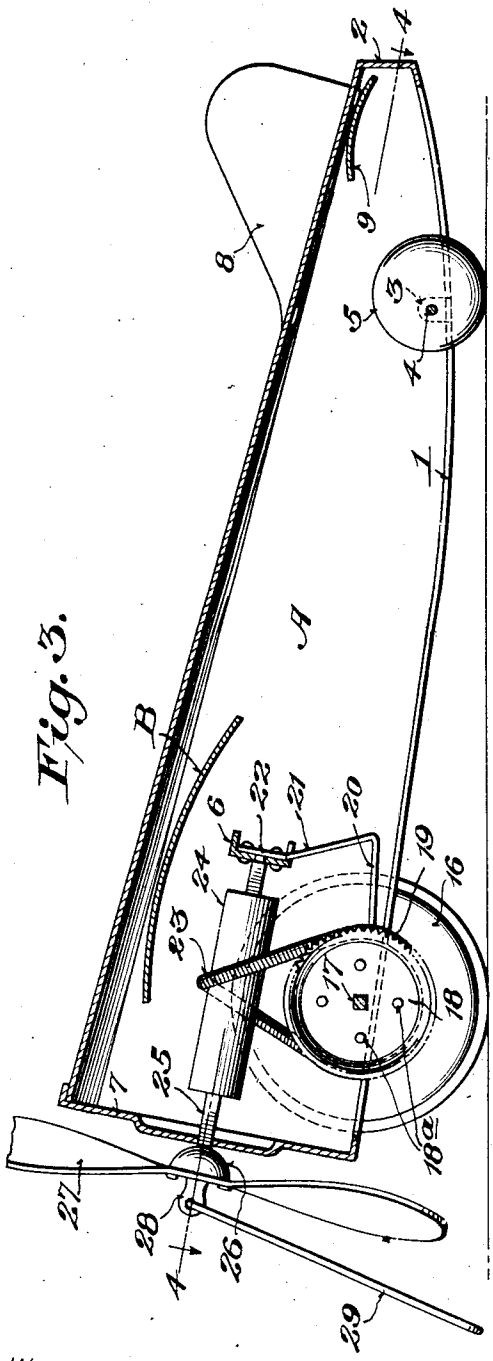

Fig. 3.

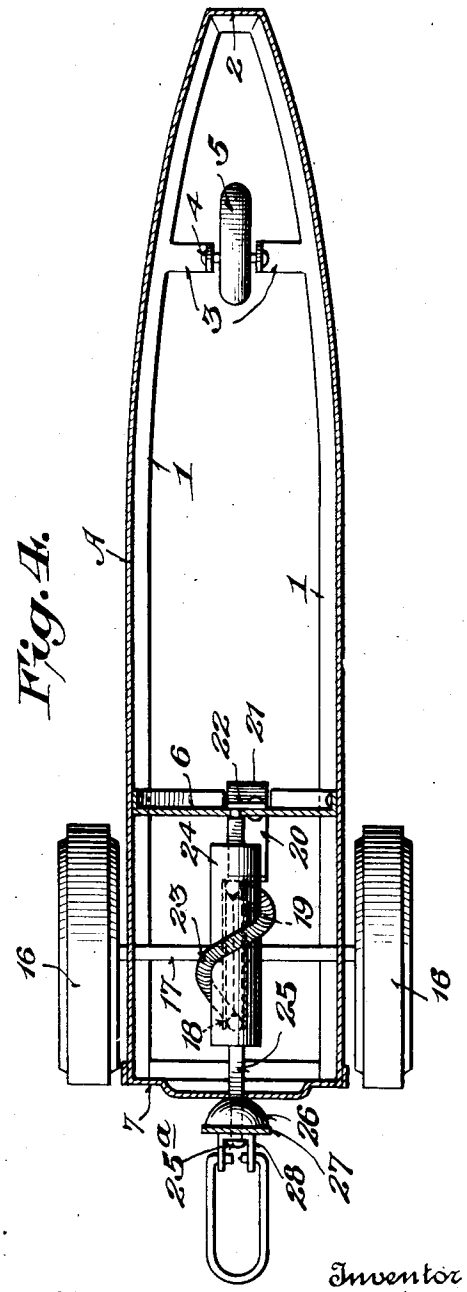

Fig. 4.

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Fig. 5.

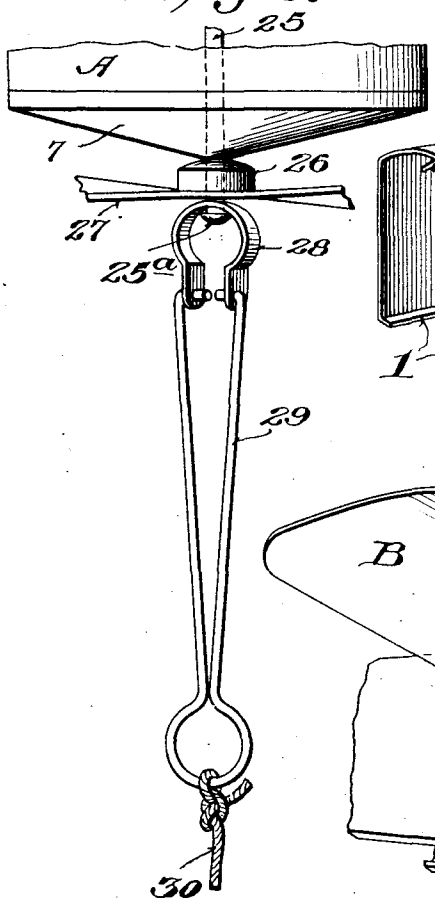


Fig. 6.

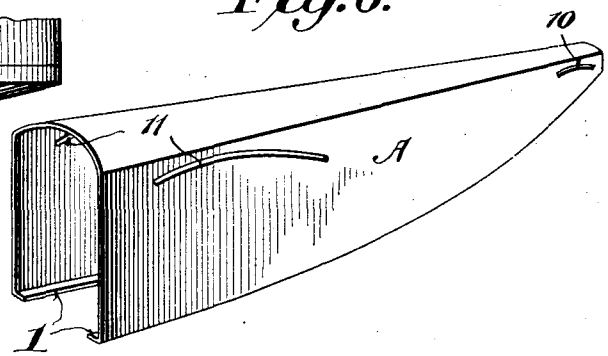


Fig. 8.

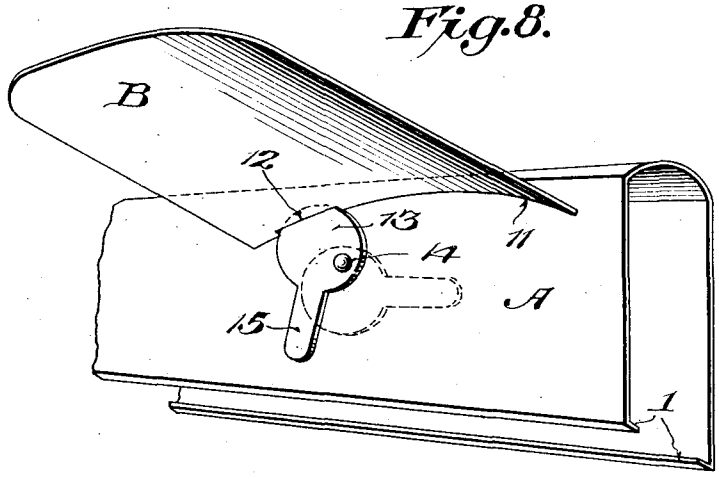
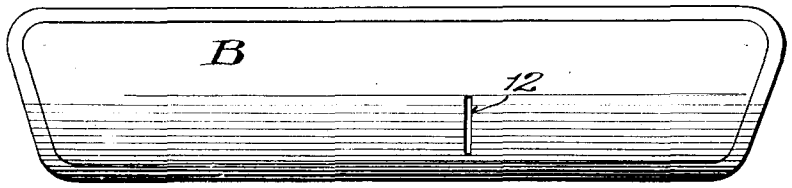


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS RAYMOND ARDEN, OF BALDWIN, NEW YORK, ASSIGNOR TO AMERICAN FLYER MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TOY AIRPLANE.

Application filed August 18, 1927. Serial No. 213,898.

This invention relates to toy airplanes and more particularly to a novel and practical construction simulating the appearance and effect, while stationary or in motion, of modern airplanes used in commercial aviation.

A primary object of the invention is to provide a novel, useful and attractive toy having a minimum number of parts which materially enhances production and assembly and also provides a toy of low cost.

Another object of the invention is to provide a toy consisting of parts which may be readily assembled and taken apart in a simple, novel and practical manner without the use of solder or the like.

A further object of the invention is to provide novel means for attaching a pulling string or other flexible connection to the toy in such a way that it is not likely to become entangled in the propeller if the toy is rolling when the pulling tension on the cord is relaxed.

A still further object of the invention is to provide novel and practical means for operating the propeller and also producing a noise simulating the sound of an airplane motor.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a top plan view of the complete toy.

Figure 2 is a side elevation thereof.

Figure 3 is a vertical longitudinal sectional view.

Figure 4 is a horizontal longitudinal section taken on the line 4—4 of Fig. 3.

Figure 5 is an enlarged detail view of the pulling bail.

Figure 6 is a detail perspective view of the fuselage.

Figure 7 is a detail plan view of the main wing member.

Figure 8 is a detail perspective view of the fuselage and main wing member illustrating the manner of locking the same together.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying the invention into effect it is proposed to provide a fuselage member designated generally as A and preferably made of metal, the same simulating in appearance the lines of a fuselage of a standard airplane. The said body A is of generally transversely arched formation and provided with the rolled edge portions 1 to give strength and stiffness to the body and at the same time provide a smooth surface. The rear end of the fuselage is closed as indicated at 2 and the bottom flanges 1 near the rear end are provided with the inwardly extending portions 3 connected by a fastening 4 which receives an eccentrically mounted skid wheel 5 by which the tail of the plane is supported.

The side walls of the fuselage are connected at their intermediate portion by a transverse brace member 6 (Fig. 4) and the front end of the fuselage is closed by a cover plate or cap 7 which is clenched, seamed or otherwise suitably fastened to the fuselage.

The rear of the fuselage A is provided with a vertical rudder or stabilizer 8 and also with a horizontal stabilizer 9, the said stabilizer being fitted to the body by passing the same through the curved slots 10. This stabilizer is held in the slots 10 due to the binding and twisting effect exerted on the sides of the fuselage A when the fastening 4 which constitutes the axle for the skid wheel 5 is placed in position.

The main wing is designated generally as B and preferably consists of a single stamping of sheet metal or other sheet material which is bent transversely to enter the slots 11 in the opposite side walls of the fuselage. As shown in Fig. 7, the said wing B is provided with a transverse keeper slot 12 which is adapted to receive the eccentric cam locking member 13 pivoted to the side wall of the fuselage as indicated at 14 and has an offset operating finger 15. When the wing B is inserted in the slots 11—11 in the opposite sides of the fuselage, the keeper slot 12 will be

exposed at one side of the fuselage as indicated in Fig. 8 and by turning the cam lock 13 from the dotted to the full line position shown, the main wing B will be locked in the fuselage body against longitudinal separation, that is, against withdrawal from the slots 11—11.

The front of the fuselage A is mounted to ride or roll on the main wheels 16 carried by an axle 17 the said axle being journaled in the opposite side walls of the fuselage and carrying therewith a pulley 18. One of the edges of the pulley may be serrated, roughened or provided with teeth as indicated at 19 thereby to operate in conjunction with the free end 20 of a noise making spring 21 which is suitably secured as at 22 to the transverse member or cross brace 6. When the plane is pulled along the ground or other surface the pulley 18 will be operated, and as a result the spring being vibrated by the serrated edge 19 of the pulley will produce a noise simulating the explosions of an airplane motor. If it is desired to stop the noise feature of the device the spring 21 may be merely bent back sufficiently to cause the free end thereof to clear the teeth on the pulley.

The pulley 17 is preferably in the form of two disks having out-turned flanges, the said disks having out-turned flanges, and being secured together by the rivets or other fastenings 18ª, and one of the flanges being serrated as previously described. This formation of the pulley provides a valley or groove for receiving a suitable belt 23 which is preferably in the form of a coil spring or its equivalent which passes over a roller 24 carried by a shaft 25 whose forward end is journaled in the cap 7 while the rear end is journaled in the brace 6. It will therefore be apparent that as the plane is drawn over the ground or other surface the pulley 18 will operate the roller 24 and thus in turn rotate the propeller shaft 25.

The forward end of the propeller shaft has mounted thereon a bearing spacer 26 or its equivalent which carries therewith the propeller 27. The spacer 26 is keyed or otherwise fitted to the shaft 25 so that it will rotate therewith, and thus while the plane is being pulled the propeller will be rotated.

One of the distinctive features of the invention resides in the provision of a novel pulling connection for the plane. The front end of the propeller shaft is preferably upset or headed after the fashion of a rivet as indicated at 25ª and confines between said head and the propeller 27 a swivelled bail 28 which in turn has a loop 29 connected thereto whose forward end is adapted to receive the pulling string 30. This arrangement is very advantageous since it provides for pulling the airplane in such a manner that the cord 30 will not become entangled with the propeller, and at the same time provides for exerting the pulling force directly along the center line of the toy so as to enable the same to follow a straight path when it is being pulled. That is to say, the loop 29 is formed in such a manner and in such proportions as to provide a large and convenient loop for receiving the cord, and when in relaxed or dropped position the cord will be kept clear of the propeller, thus providing a novel and practical means for satisfactorily attaching and safeguarding the cord for pulling the airplane along the ground.

It will of course be understood that the body as well as the wings of the airplane may be decorated in any suitable manner to provide an attractive toy, and also by reason of the construction and arrangement employed that the toy may be readily packaged and set up by the purchaser in a quick and expeditious manner. That is to say, by reason of the ease of which the main wing B may be removed and replaced it is possible to place the entire toy within a box conforming generally to the shape of the fuselage; or on the other hand make it more convenient to carry or store the toy; but when it is desired to use the same it is an easy matter to insert the wing B in the fuselage and lock it in place by the cam 13.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. A toy airplane including a metal fuselage having arcuate slots in opposite side walls thereof, a metallic main wing adapted to be placed in said slots and also having a transverse keeper slot, and a shiftable member carried by the fuselage and adapted to engage in said keeper slot of the main wing.

2. A toy airplane including a transversely arched sheet material fuselage member having pairs of slots in the opposite side walls thereof, a main wing adapted to be inserted in one pair of slots, means for releasably locking said wing to the fuselage to prevent accidental displacement from the slots, and a horizontal stabilizer member passing through the other of said slots and held therein by frictional engagement with the edges of the slots.

3. A toy airplane including a fuselage body, an interior brace, an axle carried by the body, traction wheels mounted on the axle, a propeller shaft having one end mounted in the brace, a pulley on said axle and having one edge thereof serrated, and a resilient member carried by the brace and engaging with the serrated edge of the pulley, and a driving connection between said

pulley and the propeller shaft whereby the propeller shaft will be rotated simultaneously with the movement of said resilient member over the serrated edge to produce a noise simulating the sound of an airplane motor.

4. A toy airplane including a fuselage, a propeller shaft mounted in the fuselage, means for operating the propeller shaft when the toy is pulled along a surface, and a pulling connection for the toy comprising a swiveled bail connected with the propeller shaft and a member of greater length than the propeller blades connected to said bail.

5. A toy airplane adapted to travel over the ground or other surface including a propeller shaft and means for pulling the toy through the propeller shaft, said means comprising a member swiveled to the end of the propeller shaft and a member of greater length than the propeller blades hinged to the swiveled member to which the pulling cord may be connected.

6. In a toy airplane the combination with a body having a longitudinally disposed propeller shaft mounted therein, of means for pulling said toy through the propeller shaft comprising a member swiveled to the end of the propeller shaft and an elongated looped wire member hinged to said swiveled member, and a cord adapted to be attached to the end of said looped wire member.

7. A toy airplane including a metal body simulating a fuselage and having opposite side walls provided with slots, a metallic wing insertible in said slots and having keeper means thereon, and a locking cam eccentrically pivoted to the fuselage and adapted to have a locking engagement with said keeper means.

8. A toy airplane including a body stamped from sheet metal and bent into transversely arched formation to simulate a fuselage, a cap member constituting the front wall for the fuselage, a wheeled axle mounted in the lower front walls of the fuselage, a pair of inwardly and upwardly extending arms at the rear bottom end of the fuselage, and a tail skid wheel eccentrically mounted in the upturned portions of said arms.

9. A toy airplane including in combination, a body simulating a fuselage, and having side walls provided with slots, a main wing insertible in said slots and also having a keeper slot arranged transversely thereof, and a cam pivoted to the fuselage and adapted to be moved into and out of locking relation with said keeper slot in the wing.

10. A toy airplane adapted to travel over the ground or other surface including a propeller shaft, and means for pulling the toy carried by the propeller shaft, said means comprising a member swiveled on the said propeller shaft to which a pulling cord may be connected.

In testimony whereof I hereunto affix my signature.

THOMAS RAYMOND ARDEN.