Dec. 9, 1930. F. A. BERG 1,783,949

AIRCRAFT TOY BOMBER

Filed Dec. 13, 1926 4 Sheets-Sheet 1

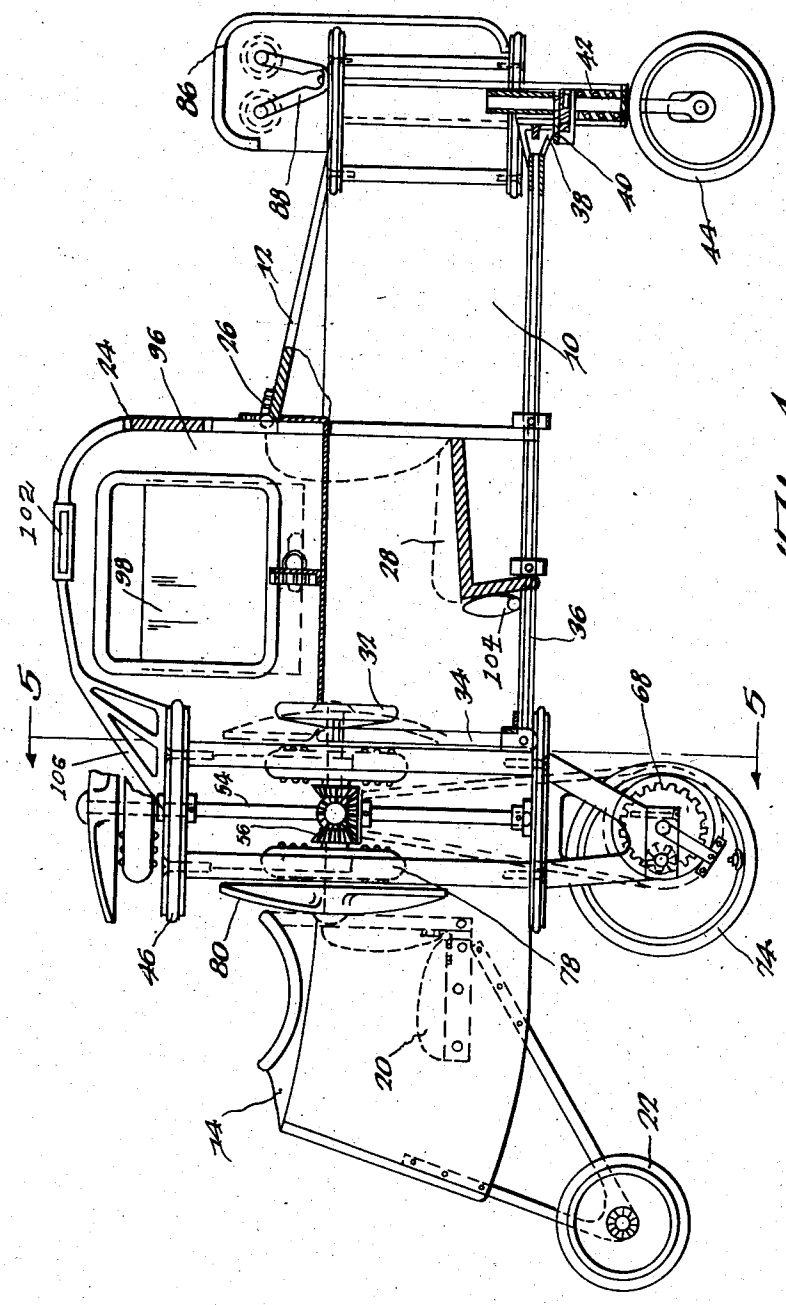


Fig. 1

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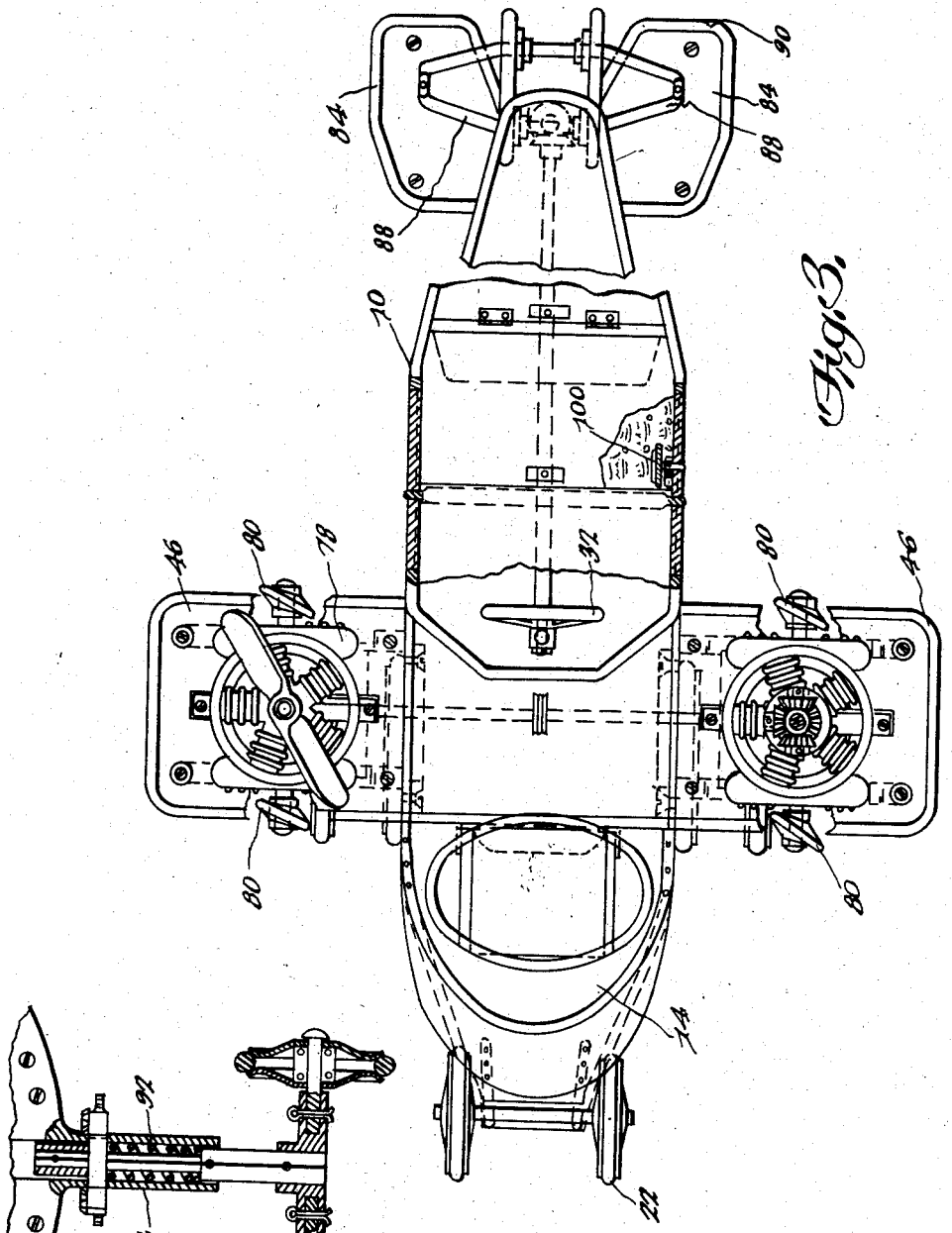


Fig. 3.

Fig. 4.

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AIRCRAFT TOY BOMBER

Filed Dec. 13, 1926 4 Sheets-Sheet 3

Fig. 5.

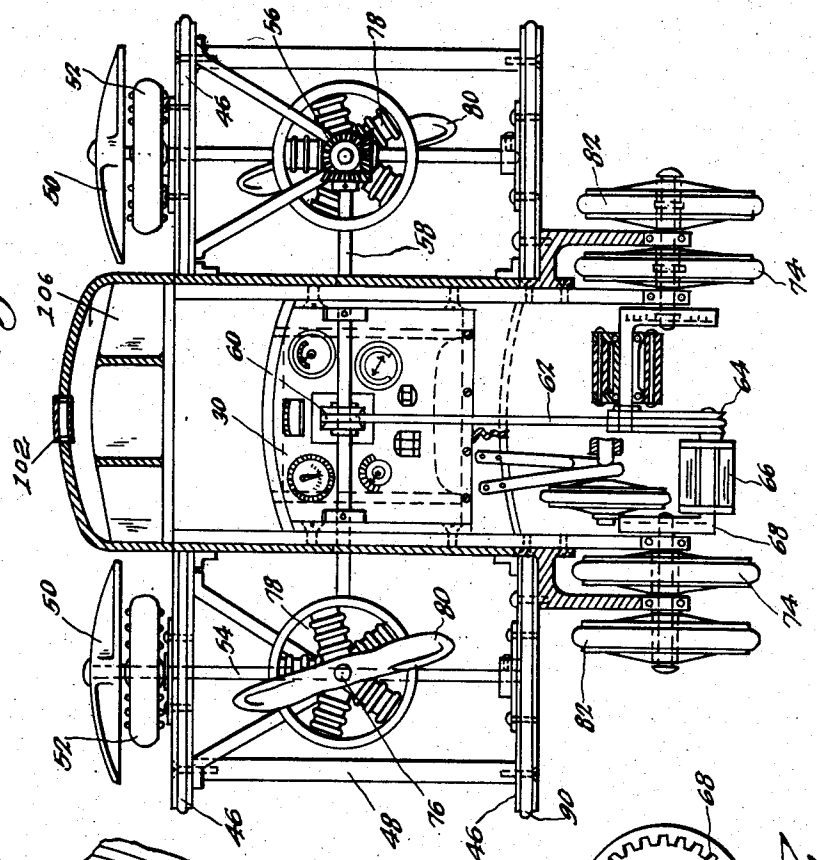


Fig. 7.

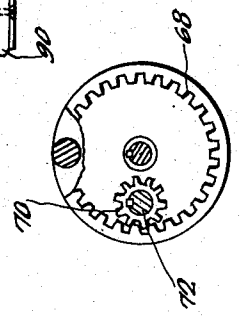
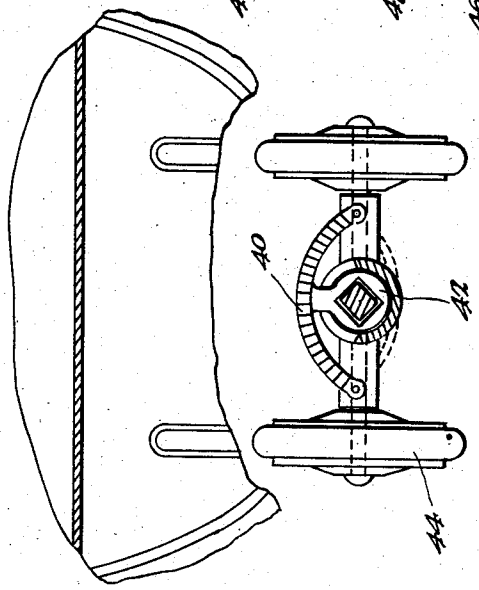


Fig. 6.



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Dec. 9, 1930. F. A. BERG 1,783,949

AIRCRAFT TOY BOMBER

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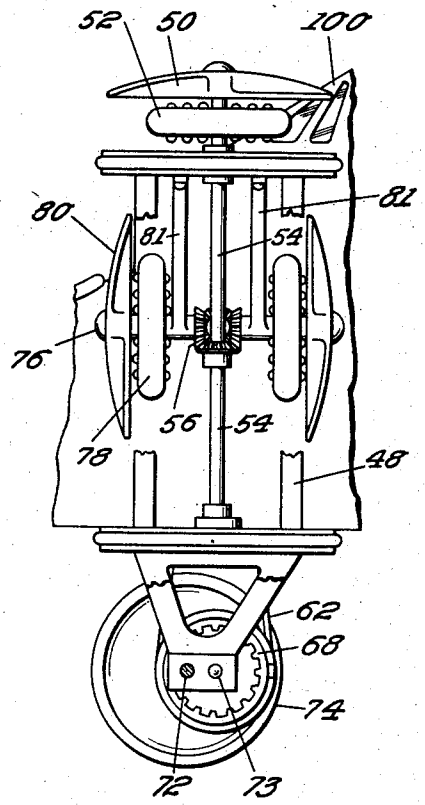


Fig. 8.

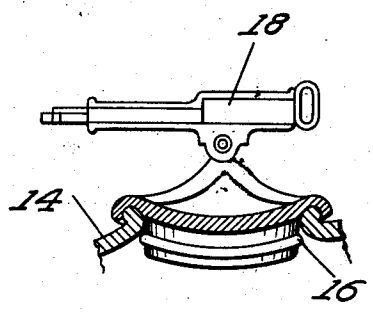


Fig. 2.

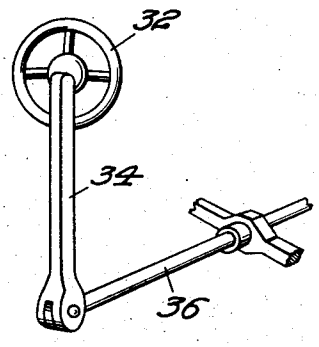
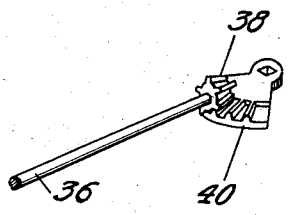


Fig. 9.



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Patented Dec. 9, 1930 1,783,949

UNITED STATES PATENT OFFICE

FREDERICK A. BERG, OF CHICAGO, ILLINOIS

AIRCRAFT TOY BOMBER

Application filed December 13, 1926. Serial No. 154,567.

This invention relates to improvements in aircraft toy vehicles, and has for one of its principal objects the provision of a toy vehicle or the like for children, which closely simulates in form, appearance, and operation a sedan helicopter bomber plane.

One of the important objects of this invention is to provide, in a toy aircraft vehicle, means for accommodating at least one extra passenger besides the operator thereof, which means can also be converted into a gun carriage, if desired.

Still another and further important object of this invention is to provide a toy airplane or the like made to closely simulate the modern vehicle of the helicopter type, so as to acquaint the child with the construction and operation of such vehicles, the toy device of this invention being provided with actual moving parts and adapted to be propelled along the ground.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawings and following specification.

The invention, in a preferred form, is illustrated in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is a side elevation, partly in section, of the improved toy aircraft vehicle of this invention.

Figure 2 is a detail view illustrating the removable gun carriage adapted to be applied to the vehicle.

Figure 3 is a top plan view of the aircraft, parts being broken away to show the interior construction.

Figure 4 is a vertical sectional view of the two-wheel steering dolly.

Figure 5 is a vertical sectional view, taken on the line 5—5 of Figure 1.

Figure 6 is a top plan view of the rear portion of the aircraft, parts being broken away.

Figure 7 is a detail view of the gears comprising a portion of the propelling apparatus.

Figure 8 is a fragmentary side elevation of the propeller and wheel actuating mechanisms, parts being shown in section and parts broken away.

Figure 9 is a detail perspective of the steering mechanism.

As shown in the drawings:

The reference numeral 10 indicates generally a body or fuselage comprising the frame and main portion of the toy aircraft of this invention. This preferably consists of a pair of complementary frame members curved longitudinally and outwardly to provide the conventional form, A plate 12 is provided over the rear portion of the frame 10 to form a back, and a plate 14 is provided over the cowl, this plate having an elliptical opening therein adapted for the reception of the gun carriage 16 which supports an imitation gun 18.

The opening for the reception of the gun carriage 16 is sufficient to admit of the body of a child, and a seat 20 is provided beneath the opening so as to accommodate said child. A pair of emergency landing wheels 22 is provided at the front of the fuselage in order to care for the additional extra weight at the front if a child is seated therein, and prevent excessive forward tipping of the same.

A cover for the operator is provided in the form of a hood or top as shown at 24, which is hinged at 26 so as to provide for a ready entrance of a child into the body of the apparatus. A seat 28 is provided for the support of the operator, and immediately in front of this seat is an instrument board 30 having imitation indicators, gages, etc., thereon, and a steering wheel 32 is provided for the proper steering of the apparatus. This steering wheel is mounted upon a vertical shaft 34 the lower end of which is con-

nected to and operates a longitudinally extending rotatably mounted shaft 36, the steering wheel being adapted to rock the shaft 34 from side to side to rotate the shaft 36, which in turn rotates a bevel gear 38 which cooperates with a segmental gear 40 mounted on the dolly 42 at the rear of the device, which segmental gear 40 turns the steering wheels 44.

Main planes 46 are mounted across the forward portion of the machine extending for equal distances on either side thereof, and are suitably supported by struts or the like 48. Each of these planes supports a rotatable helicopter propeller 50 at its top, these propellers being rotatable with dummy motors 52 mounted on shafts 54, which in turn are operated by a system of gears 56 controlled from a central shaft 58, which extends horizontally across the machine and is rotated by a pulley 60 mounted thereon, the said pulley being driven by a belt 62 which in turn is operated from a pulley 64 mounted to rotate in conjunction with pedals 66 provided for the feet of the operator.

These pedals 66 are directly connected to gear wheels 68 which in turn are mounted upon a shaft 73 as best shown in Figures 5 and 7, which in turn operate internal pinions 70 mounted on shafts 72 which operate the driving wheels 74, the same being made to simulate landing gear wheels.

The gears 56 also operate horizontal forwardly and rearwardly extending shafts 76, upon which they are rigidly attached and which in turn propel motors 78 and driving propellers 80 both of which are mounted on shafts 76. The shafts 76 are suspended between the main planes 46 by means of supports 81. There are two of these motors 78 with their associated propellers 80, at each side of the machine, as shown in the drawings.

Additional driving wheels are provided as shown at 82, attached to the landing gear wheels 74 in such a fashion that they may be removed if desired so as to acquaint the child with the operation of removing and attaching certain parts of the device.

The empennage for the vehicle comprises one or more substantially horizontal tail plates or elevators 84 extending rearwardly and laterally from the main frame members 10, and also a plurality of vertical tail plates or rudders 86 at the rear of the vehicle, which are fastened in position by means of suitable crossbars and braces 88.

The outer edges of the tail plates and also of the planes, and, in fact, the outer edges of all portions of the fuselage, are provided with suitable grooves or recesses in which are secured cables or members 90 of rubber, felt or the like, so as to prevent scratching or marring of any articles of furniture with which the vehicle might contact.

The rear steering mechanism or dolly is provided with a helical spring 92 mounted in a cylindrical housing 94 so as to provide for a resilient support of this member while at the same time allowing of a free steering movement, and the fuselage is provided with doors 96 on either side, having windows 98 therein which may be moved upwardly or downwardly by means of handles 100 provided for this purpose in the interior of the compartment. A ventilator is provided, as shown at 102, for the seat and top, and the same is additionally secured in position by means of braces or brackets 106, as best shown in Figure 1.

It will be seen that herein is provided a toy aircraft vehicle which will constitute a very interesting and instructive piece of apparatus for children of practically all ages and will acquaint the users with the main features of helicopter planes of this type, while at the same time affording an article of general mechanical interest and valuable educational features.

I am aware that many changes may be made and numerous details of construction varied throughout a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon otherwise than as necessitated by the prior art.

I claim as my invention:

1. An aircraft toy vehicle, comprising a body and means for seating a plurality of persons therein, and propeller means for said vehicle adapted to be operated by one of said persons, and a concealed seat for a passenger in the vehicle, said seat positioned beneath an opening in the fuselage for a removable gun mounting.

2. A toy aircraft vehicle, including driving wheels in the form of landing gear, pinions for driving the wheels, internal gears associated with said pinions, pedals directly connected with the gears for rotating the same, a pulley mounted betwen the pedals, a series of dummy motors and propellers on the plane, and driving connections between the pulley and said motors and propellers.

3. An aircraft toy vehicle, comprising wheels, and pedal means for manually operating the same, a plurality of planes, radial engines and propellers on said planes rotating horizontally, radial engines and propellers on said planes rotating vertically, and shaft and gear means for operating all of said radial engines and propellers by the operation of said manual operating means.

4. An aircraft toy vehicle having supporting wheels, pedals for manually operating the same, a plurality of superposed planes on the vehicle, tractor propellers and radial engines, pusher propellers and radial engines, and helicopter propellers and radial engines mounted on said planes, shaft and gear drive means for operating all of said propellers and

radial engines simultaneously, and pulley and cable means connecting the pedals and the shaft and gear drive means.

5. An aircraft toy vehicle, having a fuselage and including superposed planes with pusher propellers and tractor propellers, and a top swingingly mounted on the fuselage, said top including a forward extension adapted to contact with the upper planes when the top is in closed position.

In testimony whereof I affix my signature.

FREDERICK A. BERG.