July 18, 1961 F. PETTIT 2,992,512

LIFTING AND TRANSPORTING TOY

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Fig. 1.

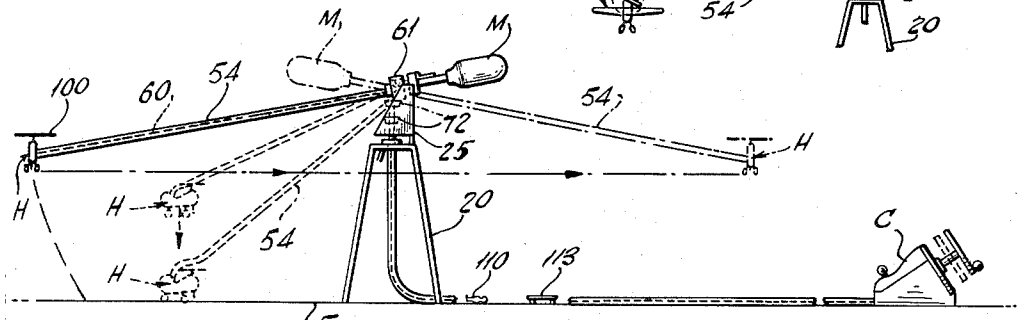


Fig. 1a.

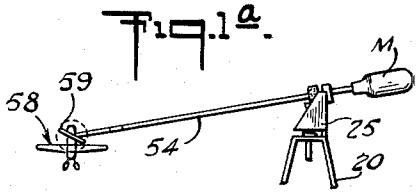


Fig. 3.

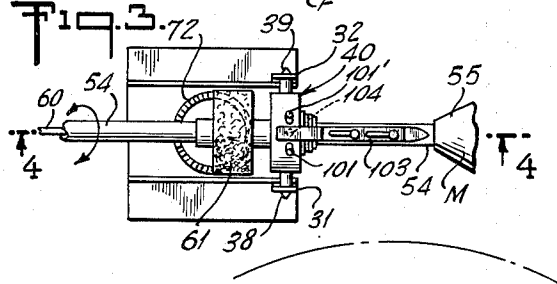


Fig. 4.

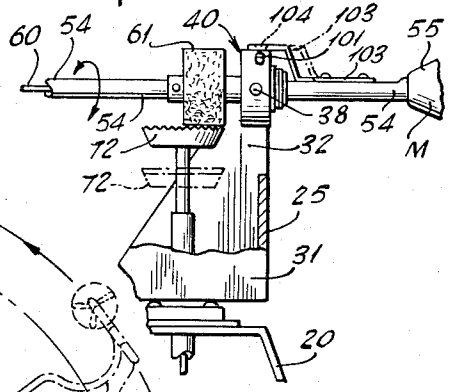


Fig. 2.

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LIFTING AND TRANSPORTING TOY

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Fig. 5.

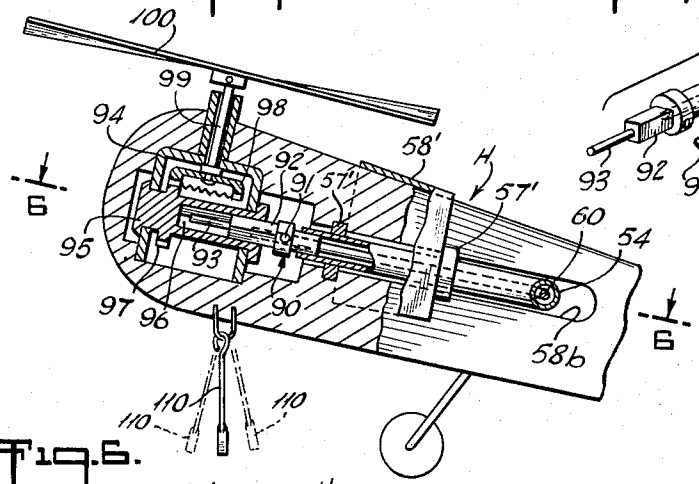


Fig. 7.

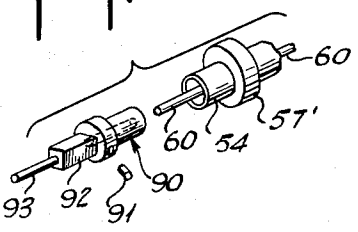


Fig. 6.

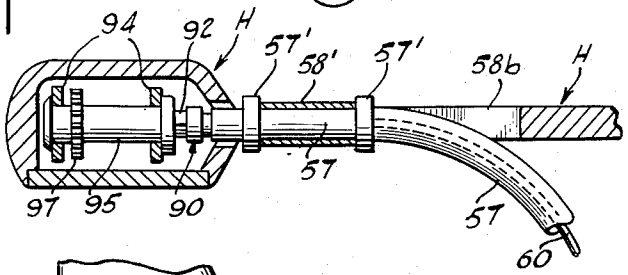


Fig. 9.

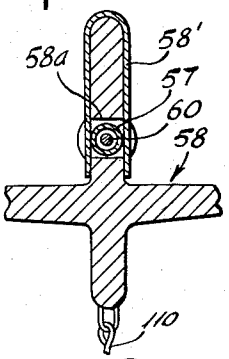
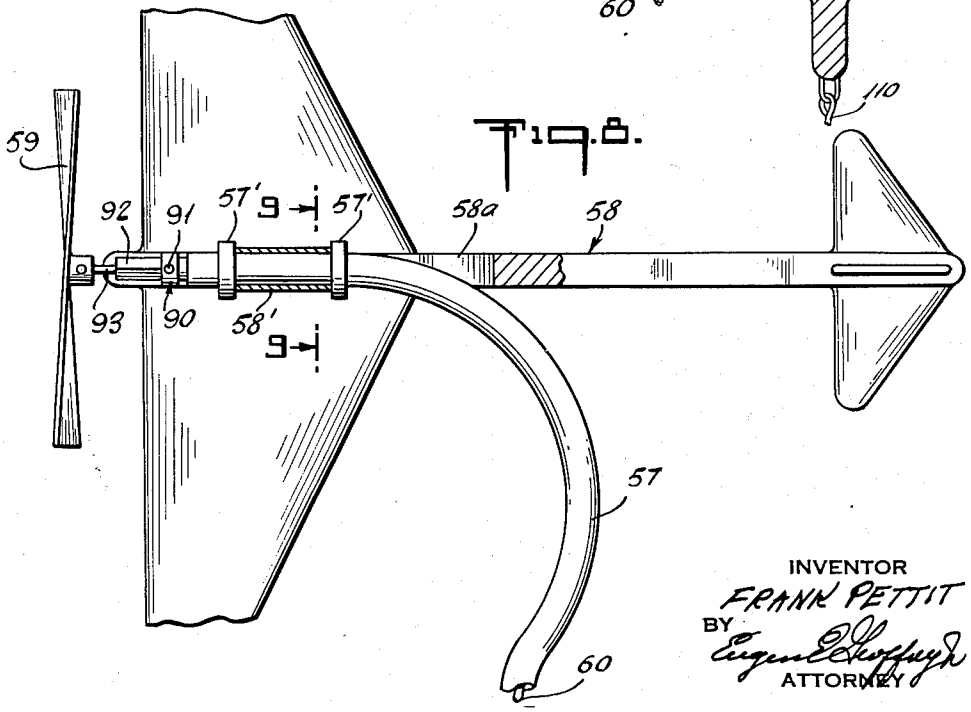


Fig. 8.



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LIFTING AND TRANSPORTING TOY

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Fig. 10.

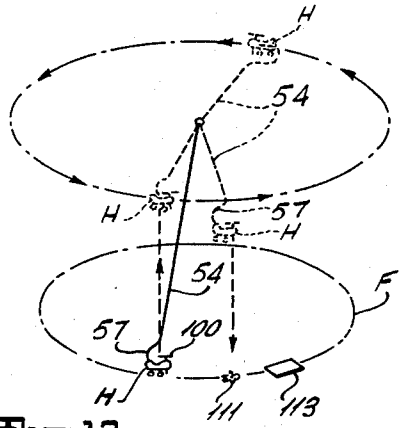


Fig. 11.

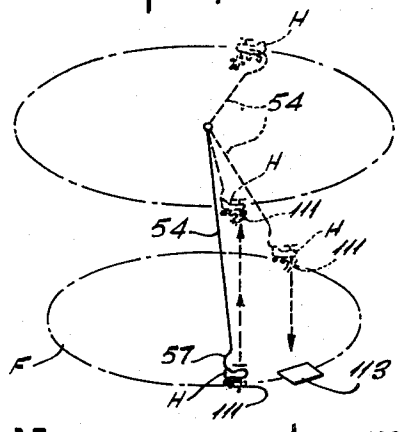


Fig. 12.

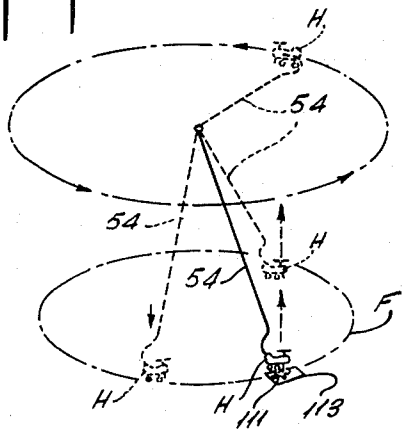


Fig. 13.

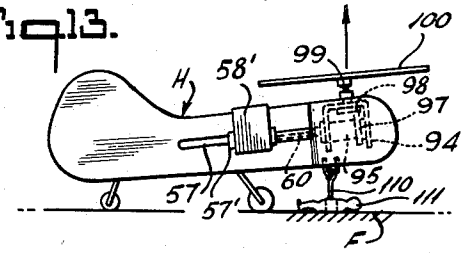


Fig. 14.

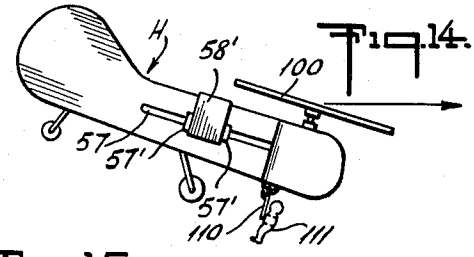


Fig. 16.

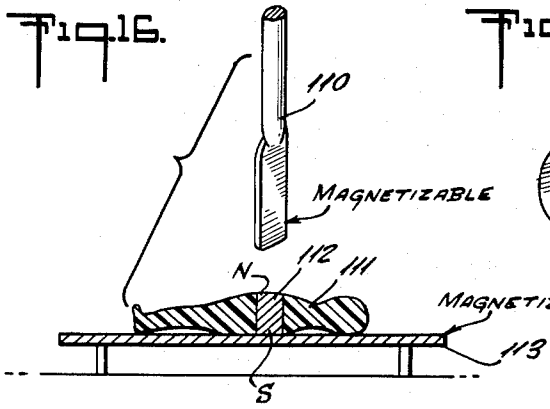
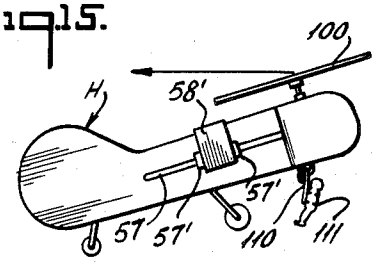


Fig. 15.



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United States Patent Office 2,992,512 Patented July 18, 1961

2,992,512

LIFTING AND TRANSPORTING TOY

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Filed June 20, 1958, Ser. No. 743,459
1 Claim. (Cl. 46—242)

This invention relates to toys and more particularly directed to an improved toy for lifting, transporting and depositing loads and constitutes a continuation in part of my Patent No. 2,901,251, granted on August 25, 1959, entitled Airplane Toys.

One object of the present invention is to provide a toy of the type described with means for effecting the lifting of a load from a toy landing field or other surface transporting this load to a receiving device. Typically, the load may be a toy manikin and the receiver may be a litter. The load is provided with a magnet; the lifting device such as a toy airplane with a magnetizable member adapted to pick up the load and the receiver, or litter, is a larger mass and magnetizable so that it will attract and hold the load when the toy airplane is flown away.

The accompanying drawings show, for purposes of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In the drawings:

FIGURE 1 is a side elevational view of the airplane toy showing the movable parts in various positions when using a toy helicopter;

FIGURE 1*a* is a fragmentary view of the toy when arranged for operating a conventional airplane;

FIGURE 2 is a top plan view of the helicopter equipped airplane of FIGURE 1;

FIGURE 3 is a fragmentary plan view of the turntable and associated parts at an enlarged scale;

FIGURE 4 is a fragmentary elevational view with parts in section on the line 4—4 of FIGURE 3;

FIGURE 5 is an enlarged longitudinal, vertical sectional view through a toy helicopter showing a propeller drive;

FIGURE 6 is a horizontal sectional view on the line 6—6 of FIGURE 5;

FIGURE 7 is a perspective view of a coupling device;

FIGURE 8 is a horizontal sectional view through a toy airplane of conventional type, showing a propeller drive;

FIGURE 9 is a transverse, vertical sectional view on line 9—9 of FIGURE 8;

FIGURES 10, 11 and 12 are diagrammatic views illustrating the maneuvering of the toy helicopter;

FIGURE 13 is an enlarged side elevational view of the helicopter and magnetic load showing the picking up of the load when the toy helicopter is hovering over it;

FIGURES 14 and 15 are side elevational views of the toy helicopter in flight, FIGURE 14 showing it moving forward and FIGURE 15 showing it moving backward; and

FIGURE 16 is a fragmentary view illustrating the deposit of the load on the magnetizable platform.

The airplane toy shown herein utilizes many of the parts shown in my Patent 2,699,334, granted January 11, 1955. The toy is in the form of a round-about having a supporting tower of pylon **20** adapted to rest on a landing field F. At the top of the pylon or tower is a turnable **25** which may be the same as the turntable **25** of the above patent. The turntable is rotatably mounted on the pylon and is connected to a controller C similar to the controller in said patent, whereby the current for operating the motor may be controlled and the stunting operations of the toy may be effected. The turntable **25** has

side brackets **31** and **32** provided with aligned holes or openings to receive the pivot members **38** and **39** of the assemblage **40** which revolves with the turntable about the vertical axis thereof. This assemblage is not shown in detail but may be made as indicated in the aforesaid patent.

The assemblage **40** is arranged to carry a tube **54**, one end of which is secured to the housing or stator **55** of a motor M. The other end of the tube **54** is bent through 90 degrees as indicated at **57**, and is provided with spaced collars **57'**, **57'**. It is passed laterally into a slot **58***a* in the body of a conventional airplane **58** (FIG. 9) or into a slot **58***b* in the body of a helicopter H (FIG. 5), and secured in place by a clip **58'**. As here shown, the tube **54** carries a resilient cylinder **61** adapted to be engaged by a vertically reciprocable and manually rotatable annular member **72** to effect angular movement of the cylinder **61**, the motor stator and the airplane about the axis of the tube **54** as shown in said patent.

The rotor of the motor M is connected to a flexible shaft **60** which traverses the tube **54** and is secured to a coupling **90** by screw **91** (FIG. 7). This coupling has a squared portion **92** and a rod-like end **93**, for connection with the propeller **59**, of the conventional airplane.

The helicopter body H (FIG. 5) carries a yoke **94** in which is mounted a shaft **95** having a squared opening **96** to accept the squared portion **92** of the coupling **90** so as to be driven thereby. The shaft **95** has a gear **97** in mesh with a gear **98** which drives an upwardly extending shaft **99** and propeller **100**.

The operation of flying the helicopter type of toy instead of the more conventional type of airplane may be substantially the same as that for flying the airplane as discussed in the above patent, except that considerable skill is required to avoid turning the helicopter too far in either direction from the hovering position. In order to prevent turning the tube **54** and parts carried thereby through too great an angle, the assemblage **40** is provided with two spaced pins **101**, **101'** and the tube **54** carries a slider **103** adapted to be shifted between the full line and dotted line positions indicated in FIGURE 4. When it is in the dotted line position, the slider **103** will not engage the pins **101**, **101'** and the toy may be manipulated to execute complete loops, as described in the above patent. When, however, the slider **103** is pushed to the full line position of FIGURES 3 and 4, it enters between the pins **101**, **101'** limits the angular movement of the tube **54**, and of the airplane. This arrangement is particularly desirable for the purpose of limiting the maneuvering of the toy helicopter between angles such that the helicopter moves forward and angles such that it moves backward.

In order to facilitate maintaining the adjustment such that the toy helicopter will hover, the assemblage **40** and the slider **103** are provided with cooperative means such as a bump on one part and a dent, indicated by the dotted circle **104**, in the other part so located that the helicopter is held at the angle to hover, raise, lower or land depending on motor speed.

In order that the toy may be utilized to simulate transportation or operations, the body of the airplane, whether helicopter or the more conventional type of airplane, is provided with a magnetizable, pendant member **110**, hinged to be freely attractable out of the hanging position. A load, such as a toy figure or manikin **111**, is placed on the field F in such a position that when the toy airplane is lowered close to the field, it can be maneuvered to bring the freely hanging magnetizable member **110** close enough to the figure **111** to be within the field of the magnet **112** (FIG. 16) carried by this

figure. The magnet will swing the magnetizable member **110** and if the toy airplane is low enough the member **110** becomes magnetically coupled with the manikin. When the airplane is now flown, the load is carried by the plane, whether helicopter or conventional plane.

At another suitable location on the field F, where the plane can lower onto it is placed a litter or stretcher **113** made of magnetizable material, and, inasmuch as this litter or stretcher has greater attraction for the magnet **112** than the small member **110**, the magnetic figure **111** is attracted to the litter and held by it so securely that when the helicopter or airplane flies away, it leaves the toy figure behind, thereby having executed a rescue operation.

FIGURES 10, 11 and 12 illustrate some of the maneuvers through which the toy helicopter may be passed.

In FIGURE 1 the helicopter is shown in full lines in a random landed position on the field.

If the adjustment is for hovering, the plane may be raised vertically, as shown in FIGURE 10, then tilted forward and caused to circle about the center of the pylon and maneuvered to a position where it can then be caused to hover and the speed reduced to lower it on to the magnetic load, such as a figure or manikin, a mail bag, or other such object. Having taken hold of the magnetic load as shown in FIGURE 11, propeller speed may be increased and the airplane raised, caused to circle the pylon and then brought to a position where it can be lowered to deposit the load on to the litter. This is shown in FIGURE 13.

FIGURE 14 illustrates the operation of flying away after completing the rescue operation and again landing on the field.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claim, I wish it to be understood that the particular forms shown are but a few of the forms and, various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

In a toy for raising, transporting and lowering loads, an elongated pendant member formed of a magnetizable material, said member having at least an end portion of small area and little mass, means for raising and lowering said member with said end portion extending downwardly, a load including a magnet for magnetically coupling the load to said member to support the load during said raising, transporting and lowering operations and a receiver of substantially larger mass and area than said member for receiving and magnetically holding said load with greater force than that afforded by the attraction of the load to the member whereby said load upon being moved onto said receiver by said pendent will be magnetically attracted to said receiver with substantially greater magnetic force than that exerted between the load and said pendent member.

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