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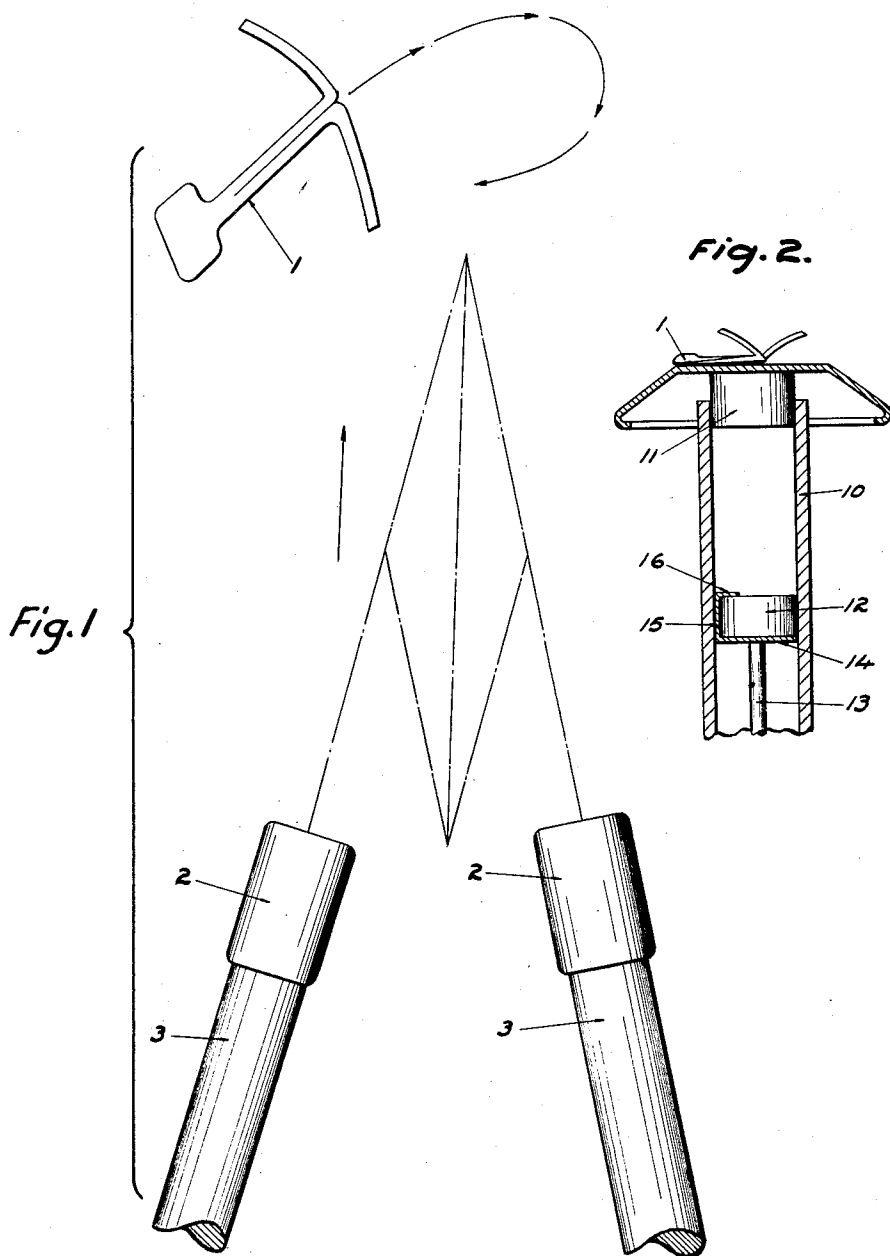
H. H. WEIL

2,018,585

ELECTROSTATIC FLYING TOY

Filed Jan. 14, 1935

2 Sheets-Sheet 1



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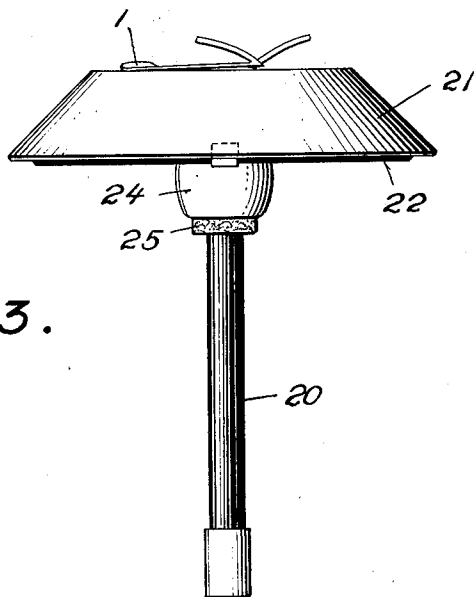
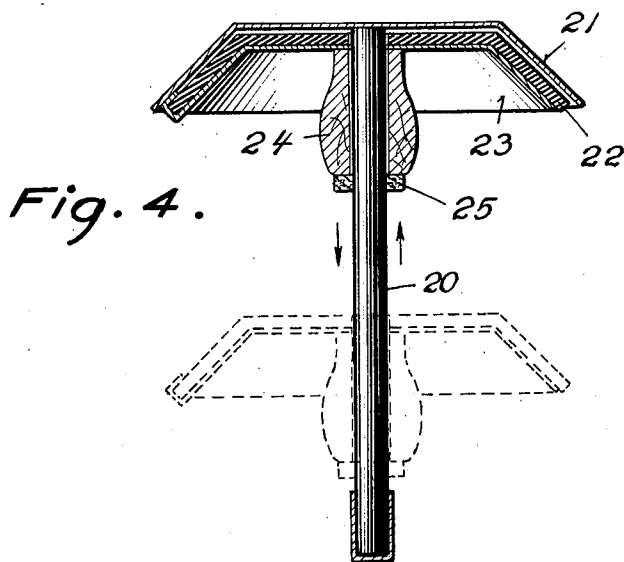
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UNITED STATES PATENT OFFICE

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ELECTROSTATIC FLYING TOY

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2 Claims. (Cl. 46—49)

This invention relates to a toy electrostatic based upon the known phenomena of floating flat bodies in an electric field.

According to the invention the toy comprises for example a small aeroplane bird or the like which is cut out of a thin light foil or sheet of preferably an electric conductor, e. g. an aluminium sheet and a rigid hollow rod of non-conducting material, preferably hard rubber or ebonite which at one end is provided with a metallic covering or the like.

When a rod of this kind is rubbed with, for example, a cat's skin it becomes electrified in the known manner and the metal covering is charged with negative electricity. If the toy aeroplane is now thrown into the air and touched by the metal covering, then the aeroplane is also charged with negative electricity, assuming a characteristic position corresponding to the field and one can thereafter hold the aeroplane floating by means of the rod and can control it and produce various movements, such as looping, spiral diving, etc. after which it always returns into the balanced position.

By employing two rods one can augment the repelling forces so that they are caused to act in accordance with the law of the parallelogram of forces.

The invention is illustrated in the accompanying drawings in which:

Figure 1 shows a small glider aeroplane of hammered aluminium foil which is manipulated by two ebonite rods 3 provided with metal ferrules 2 at one end.

Fig. 2 shows a modification.

Fig. 3 shows a further modification in elevation.

Fig. 4 is a sectional elevation of Fig. 3.

Figure 2 shows a modified constructional form of the rod or electrophorus with a special arrangement for the charge. Here 10 denotes an ebonite tube which at the end is provided with a metal block 11. For charging this metal block, a plunger 12 of insulating material having a handle 13 is provided which fits inside the tube 10. The plunger 12 is provided on its underside with a metal covering 14 which by means of a lug 15 is in conductive connection with a small metal piece 16 on the upper side of the plunger 12, which metal piece can be brought into contact with the metal block 11. When the plunger 12 is removed and rubbed with a cat's skin and again inserted in the tube 10 so that the metal piece 16 comes into contact with the metal block 11, it charges the latter. By moving the plunger

12 backwards and forwards out of and into contact with the metal block 11, the latter can be further charged.

By placing the toy aeroplane or the like upon the metallic top surface of the block 11, it will be clear that the excitation of the said block results in the production of an electrostatic field and the repulsion of the aeroplane which thereupon rises in the air in a charged condition without there being any tendency to stick to the block.

By manoeuvring the charged stick or sticks in a rectilined manner within the vicinity of the floating aeroplane glider it is easily possible to keep the latter floating for an almost indefinite period and to cause it to make a loop action, a spiral dive and to imitate other aeroplane stunts. Owing to the shape of the floating member, it is possible to manoeuvre it so that its movement is the result of the characteristic position of surfaces in an electric field and the electric attraction or repulsion, these two effects being combined with the action of the air currents, which is not possible with other forms of floating members.

Several players may perform together and further one player may govern several aeroplanes.

The aeroplane may be folded in its long axis preferably at the front end only which in some cases improves the manoeuvring of the toy.

A further modified form of electrophorus or manipulating rod is shown in Figures 3 and 4, in which the former is an elevation and the latter a sectional elevation. In these figures, 20 is a stem of conducting material the end of which is fitted with a shaped metal plate 21 forming a kind of aerodrome. This plate rests upon a similar shaped ebonite plate 22 protected by a metal cover 23 on the lower side, both being attached to a handle 24 which carries an exciting member 25 whereby the rod 20 and the top plate upon which the aeroplane is first placed, will become charged, and the latter rise in the air as soon as the ebonite plate is withdrawn from the top plate.

The several parts may, if desired, bear advertising matter or the like.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An electrostatic toy comprising a member formed of light thin material, in combination with a rod of non-conducting material, said rod being provided at one end with a metal covering, a handle surrounding the rod and slidable there-

on, and an exciter carried by said handle in contact with said rod, whereby movement of said handle charges said rod, and whereby said member may receive an electrical charge from the metal covering and thereafter may be held floating and maneuvered in the air by means of the charged rod.

2. An electrostatic toy comprising a member formed of a light thin material, in combination with a rod of non-conducting material, said rod

having on one end a metal plate for holding said member, a handle surrounding the rod, a plate of insulating material on said handle, and an exciter on said handle, whereby upon separation of the plates they become electrified so that said member may receive a charge from the metal plate, whereby the member may be held floating and maneuvered by means of the charged rod.

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