

Oct. 22, 1929.

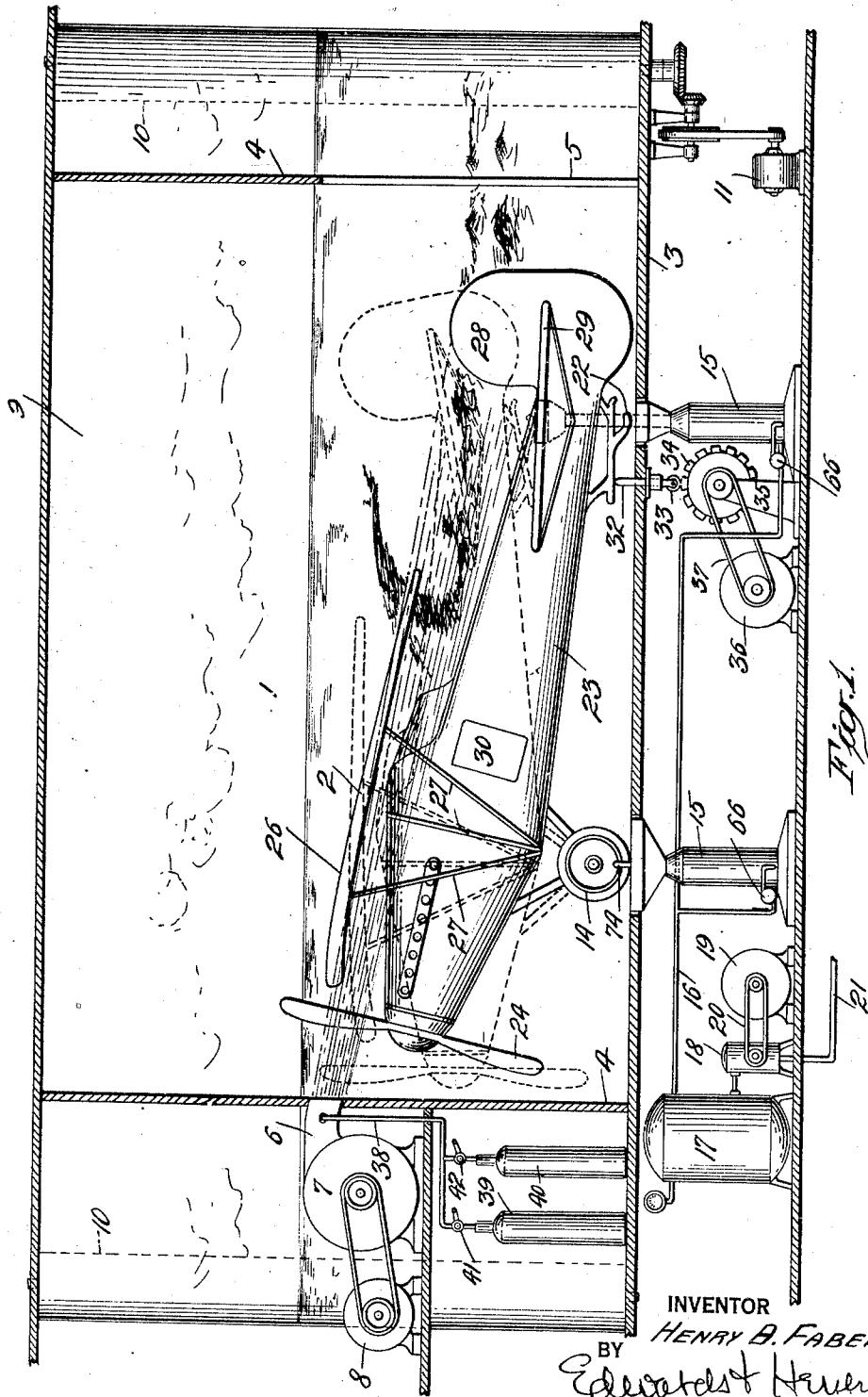
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1,732,597

AMUSEMENT APPARATUS

Filed Nov. 5, 1927

4 Sheets-Sheet 1



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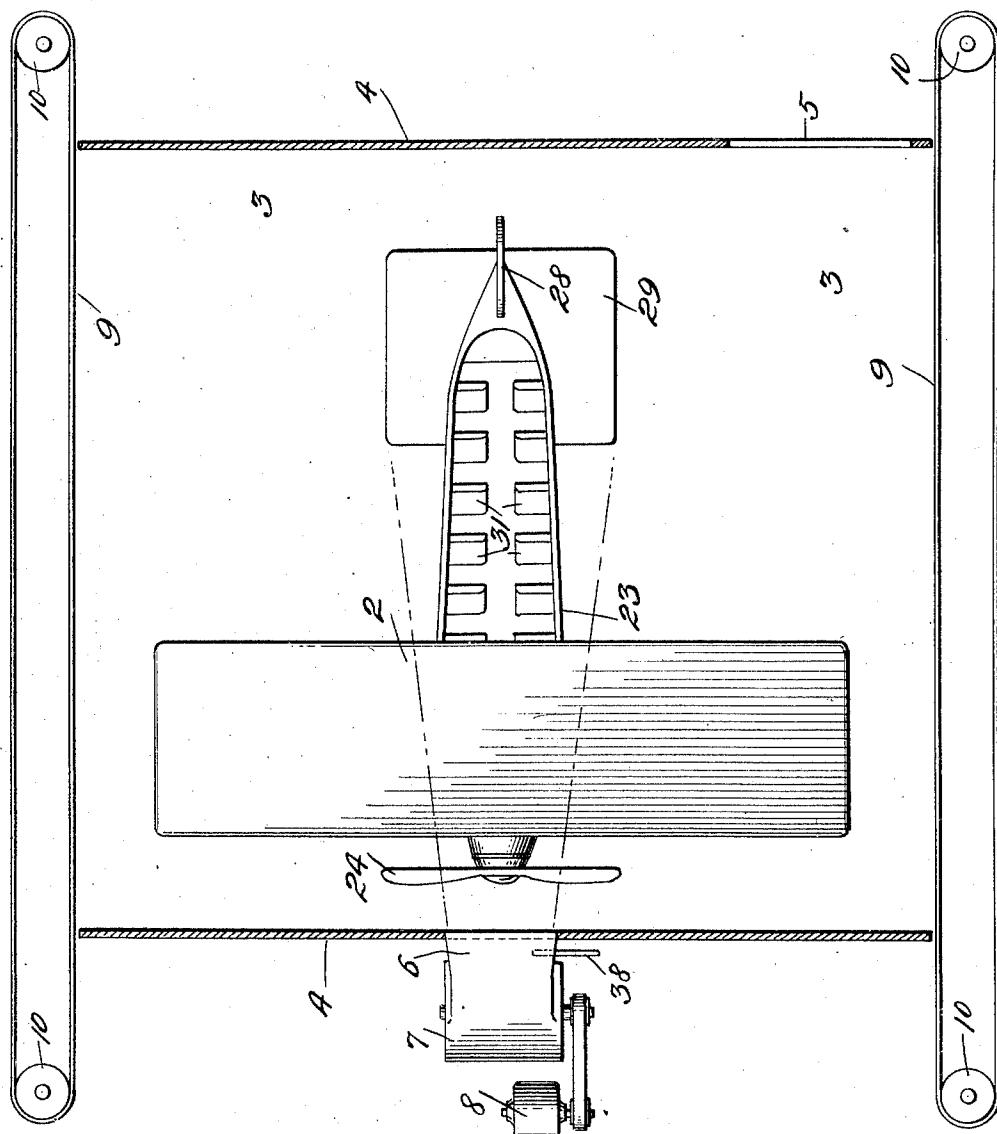


FIG. 2.

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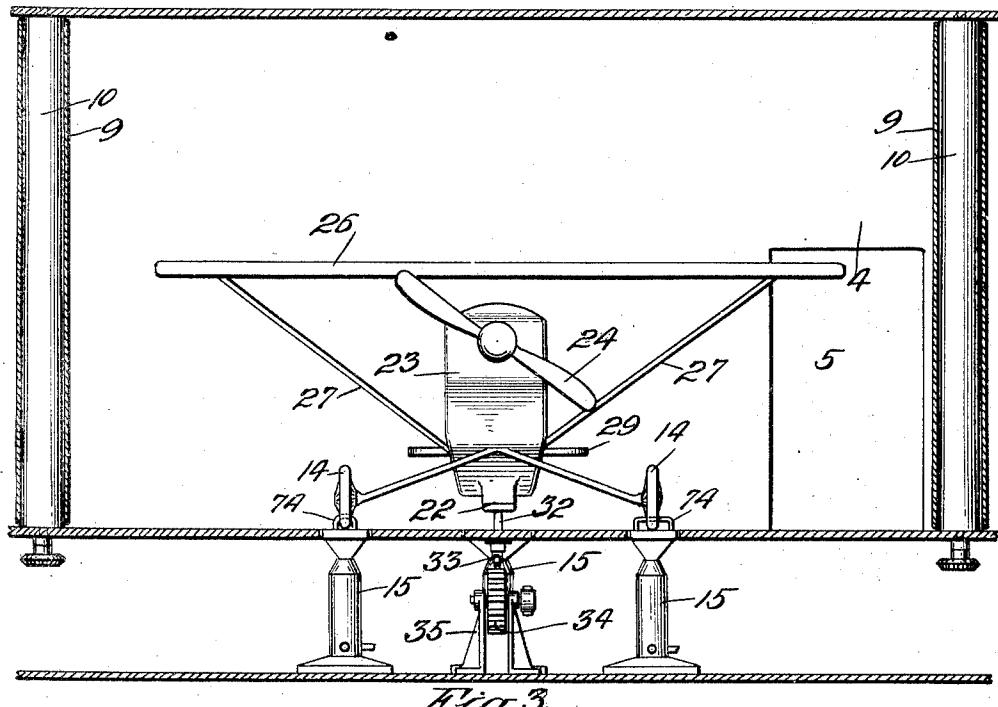


Fig. 3.

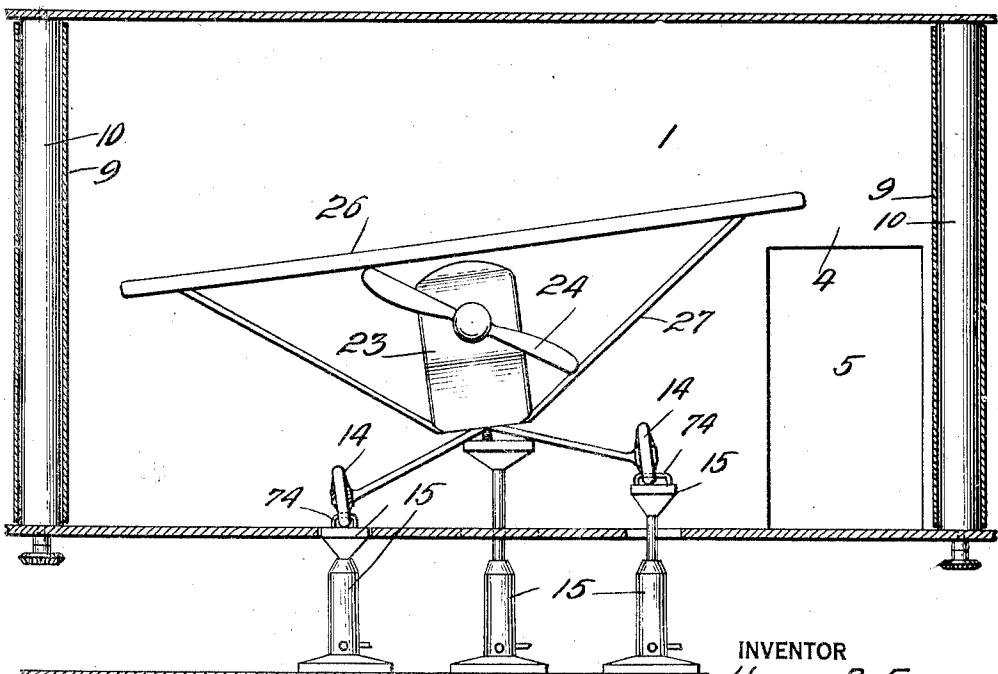


Fig. 4.

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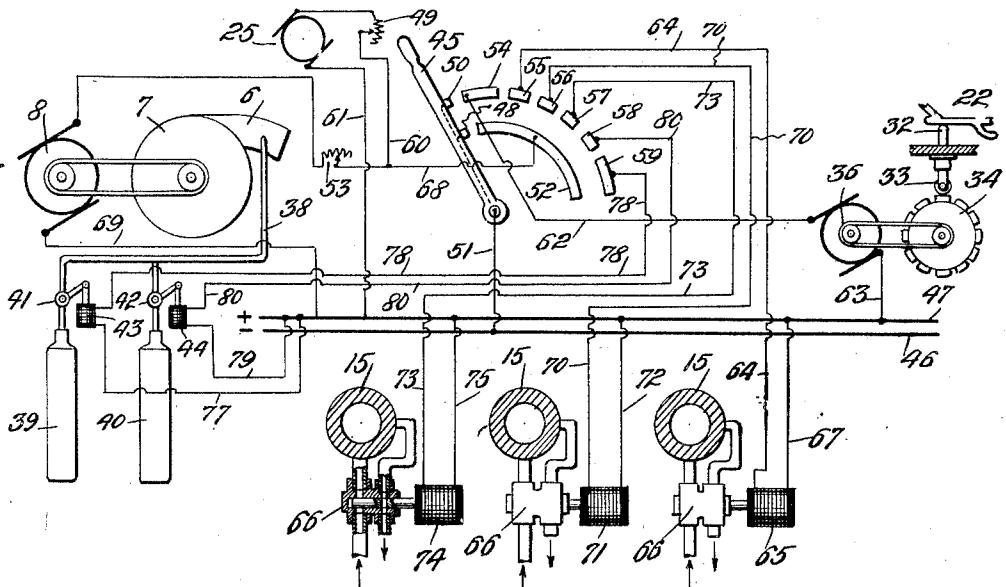


Fig. 5.

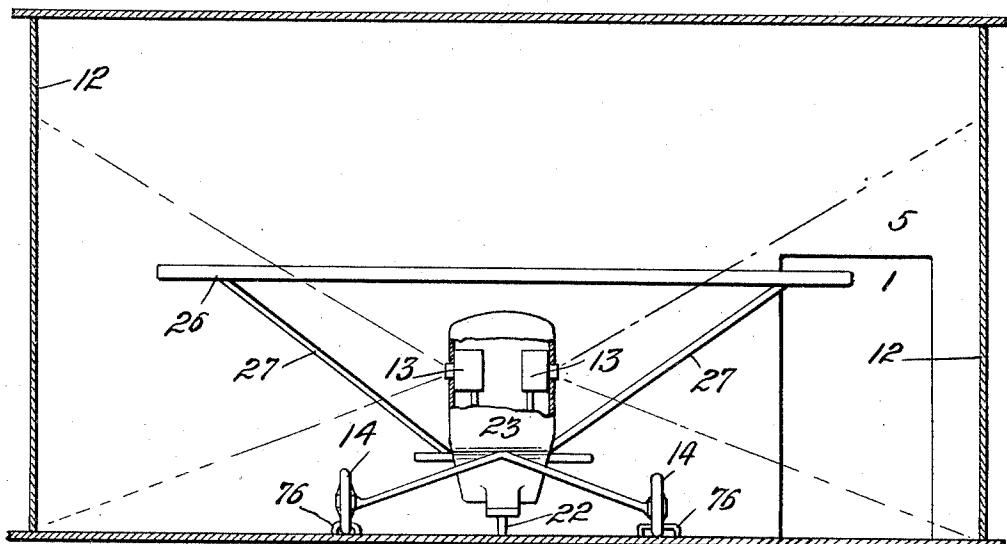


Fig. 6.

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UNITED STATES PATENT OFFICE

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AMUSEMENT APPARATUS

Application filed November 5, 1927. Serial No. 231,303.

The object of my invention is to make an apparatus which may be made to simulate an aeroplane in motion, in a realistic manner, so that sensations derived by a passenger in an aeroplane while flying over land or sea, either or both, are felt by the passengers in my apparatus. This object is accomplished by my invention, some embodiments of which are hereinafter more particularly set forth.

For a more detailed description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which

Figure 1 is a side elevation, partially in section, of an apparatus embodying my invention.

Figure 2 is a plan view of the same, with parts removed to more clearly reveal the structure.

Figure 3 is a transverse section of the same, and

Figure 4 is the same as Figure 3, except for the tilting of the apparatus for reasons which will appear below.

Figure 5 is a diagrammatic view showing the controls, and

Figure 6 is a cross section of a modification.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved apparatus 1 has a dummy aeroplane 2 with plenty of seats and this is placed in a room 3 with end partitions 4 of any suitable kind, and one of these may be pierced at 5 for entrance or exit and the other of which may be pierced so as to receive the nozzle 6 of an air blast machine or fan 7 which may be driven by a motor 8 or other suitable device, as will appear below. The side walls 9 of the room 3 may be movable and in the form of scenery, mounted on rollers 10 and driven by a suitable motor 11, as shown in Figures 1 to 4 inclusive, or these side walls 12 may be fixed and made suitable to receive an image from a moving picture machine 13, of the conventional kind. When this embodiment of my invention is used, it is preferable to color the pictures so as to make them as realistic as possible.

The dummy aeroplane 2 is provided with wheels 14 which simulate the usual wheels on aeroplanes and these are mounted on the rams 15 so that they may be raised or lowered through suitable controls, as desired, and these rams are supplied with power through the conventional pipes 16 which run from a liquid tank 17 supplied with liquid under pressure from a pump 18 which is driven by a motor 19 by means of a belt 20, in the conventional way. The rams 15 are connected to a return pipe 21 in the usual manner. One ram 15 raises or lowers the spade 22 at the rear of the fuselage 23.

The aeroplane 2 also carries a dummy propeller 24 which is mounted to revolve at the front and is driven by a motor 25 so as to simulate the rotation of an ordinary aeroplane propeller and this motor also drives the sound making apparatus so as to simulate an internal combustion motor of the kind usually used in aeroplanes. Dummy wings 26 are mounted in the conventional manner, as indicated, on top of the fuselage 23 and struts 27 connect these wings with the fuselage and hold the wings rigidly in place. If desired, these struts 27 may give the dummy wings 26 all the support they receive. At the rear of the fuselage 23 are fixed dummy rudders 28 and 29, the former being the horizontal rudder and the latter the vertical,

that is, the former simulates the rudder for causing horizontal movement and the latter for vertical movement. Entrance is had to the fuselage 23 by means of a step ladder, not shown, and door 30 so that the passengers and pilot may readily enter or leave and the passengers put themselves in suitable seats 31 and the pilot in one of these seats reserved for him. The spade 22, in addition to being under the control of the rear ram 15, is also, when in its lowest position, subject to vibration from a vibrator 32 which consists of a pin mounted in a suitable support so that it can move vertically, as shown in Figure 1, and at the lower end of this is a roller 33 which runs on a roughened cam 34 which rotates in suitable bearings 35 when driven by a motor 36 and it is connected to the motor in any suitable manner, as by a belt 37 so

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that the motor and cam 34 function together.

The nozzle 6 has an inlet pipe 38 which is connected to two tanks 39 and 40 through suitable valves 41 and 42 which are electrically controlled through magnets 43 and 44, as will appear below. The pipe 38 extends well to the bottom of both tanks and one, such as the tank 39, may have sea water therein and the other liquid air so that by manipulating the valves 41 and 42 it is possible to get a little sea water into the air blast from the nozzle 6 to produce the tang incidental to flying over the sea, and the liquid air tank or carbonic acid gas, (CO₂) 40 in a similar way supplies something which will produce cloud effects with a chill when the valve 42 is manipulated. Other conditions being equal, when the valve 41 is closed, flying over land effects are produced and when the valve 41 is open flying over sea effects are produced and when the valve 42 is opened cloud effects are produced so that land and sea effects may be simulated either in clear or in cloudy weather.

The controls are for the most part shown in Figure 5 with certain omissions so as to avoid confusing the drawings, it being understood that the motor 11 may have independent control from any suitable means, not shown, and if the modification shown in Figure 6 be employed, the moving picture control from the projectors 13 may be governed by the operator.

Assuming this, the diagram is as follows. The control lever 45 is mounted at any suitable place in the fuselage and convenient to the pilot. It corresponds to the joy stick which governs the flight of an ordinary aeroplane. It is insulated and supplied with electricity from a suitable source, as a negative wire 46 or bus-bar which in turn receives electricity from any suitable source, the other wire or bus-bar 47 being connected to the same source, in the conventional manner. The handle 45 has two contacts 48 and 50 which are connected to the wire 46 by means of a suitable conductor 51 and other suitable conductors, not shown, but usual in such constructions. The contact 48 is adapted to engage a fixed segmental contact 52. 49 and 53 are rheostats, as will appear below. The contact 50 engages a number of contacts successively, 54, 55, 56, 57, 58 and 59.

When the lever 45 is thrown so as to make contacts, it makes two simultaneously, one with the segment 52 and another with the segment 54 through the contacts 48 and 50 respectively. As soon as this occurs the motor driving the propeller blade and noise making mechanism begins to function so that all passengers in the car will get the sensations due to the start of an aeroplane. This is because the segment 52 is connected by a wire 60 through the rheostat 49 with the motor 25 and another wire 61 runs to the bus-bar 47. It

will also be noted that when the contact 48 is on the segment 52 and the wire 68 becomes energized, the motor 8 becomes energized through this wire and the rheostat 53 and the wire 69 which runs to the bus-bar 47 and then the blower 7 is driven and an airblast issues from the nozzle 6. The intensity of the airblast may be varied by manipulating the handle of the rheostat 53 and in like manner the intensity of the propeller rotation may be varied, if desired, by manipulating the handle of the rheostat 49. The handles of both rheostats are, like the lever 45, within easy reach of the pilot. When the contact is first made between the parts 48 and 52, as above described, a similar contact is made between the parts 50 and 54, and as soon as this occurs, a circuit is established through the bus-bar 46, through the contact 50 to the segment 54 and thence through a wire 62 and through the motor 36 and wire 63 to the bus-bar 47 thereby completing the circuit and energizing the motor, which in turn drives the cam 34 so as to raise and lower the spade 22, as above described, and thereby impart an up and down movement to the spade which simulates the movement which the spade of an aeroplane has when leaving the ground. This movement jars the fuselage and the passengers therein and gives them all the sensations which they would enjoy if in an aeroplane which were leaving the ground. At the same time the scenery begins to move either because of independent control of the motor 11 or because the moving picture machines 13 are made to function, so by sight, sound and feeling the passengers are made to feel that they are in a real aeroplane and about to leave the ground. After this has gone on a few seconds, long enough to let the passengers thoroughly enjoy the sensations, but not be tired of them, the lever 45 is further shifted and then a contact is made with the segment 55 which through its wire 64 energizes the magnet 65 which controls a valve 66 which governs the rear ram 15. A wire 67 connects the magnet 65 with the bus-bar 47. As soon as this occurs and the ram 15 becomes active, the spade 22 is elevated so as to give the fuselage the proper position for ordinary flying. The passengers will feel the elevation at the rear, just described, and notice the cessation of vibration due to the cam 34 and thereafter they will feel that they are in the air and, of course, the scenery which they will view will change to correspond with this.

Once flight is simulated in a straight line, turns are in order and these are simulated by banking the apparatus by throwing the lever 45 so that the contact 50 engages segments 56 and 57, the lever being rocked over them slowly and occasionally and generally brought back to the beginning of segment 55. Assuming that the segments 56 and 57 are so engaged, the circuits are as follows, beginning 130

with the contact 56. From here a wire 70 runs to a controlling magnet 71 and from there a lead wire 72 runs to a bus-bar 47. The magnet controls a valve 66 on a ram 15 which raises or lowers a wheel 14 which rests thereon. In a similar manner the segment 57 has a wire 73 which connects it to a magnet 74 which is connected to the bus-bar 47 through a wire 75 and the magnet 74 controls a valve 66 which governs the ram 15 under the other wheel 14 and these parts function as above described. All valves 66 release when their magnets are deenergized.

Both rams 15 under the wheels 14 are connected thereto by yokes 76 to prevent a wheel from leaving its ram when it is elevated. One of these yokes is longer than the other to permit a lateral movement.

The foregoing describes dry flying, that is, flying over land in clear weather. To simulate flying over salt water, brine is admitted to the airblast through the pipe 38 and from the brine cylinder 39 and through the valve 41 which is controlled by the magnet 43 which is connected to the bus-bar 47 by a wire 77 and to the segment 59 by a wire 78. The valve 41 is opened when the magnet 43 is energized and not otherwise so that by connecting the contacts 50 and 59, as above described, brine vapor is added to the airblast and the effect of flying over water is simulated.

So much for clear flying over land and sea. The difference between day and night flying is a matter of lights or no lights with transitions of dim lights simulating sunset and sunrise. Such light controls are obvious and require no explanation. If desired, thunder and lightning may be simulated by well known theatrical apparatus, not shown. The same is true of rain, sleet and snow, should these be simulated. With cloud effects it is different. There are no known simulations of cloud and fog effects suitable for the purposes of this apparatus and so it is necessary to provide for them as follows.

The tank of liquid air 40 has a valve 42 controlled by the magnet 44, as above set forth. This magnet is connected to the bus-bar 47, by a wire 79 and to the segment 58 by a wire 80. By connecting the contacts 50 and 58, cloud effects may be simulated with a corresponding chill.

The details of scenery and attendants will vary according to the trip simulated. If, for example, the New York-Paris aeroplane trip be simulated, the attendants will be Americans at the beginning and Frenchmen at the end and the scenery will correspond. The sensations of the passengers will be starting over land flying, straight and curved, over water flying, storms, clouds, day, night, day, over land flying, landing, and thereafter the willing attendants, speaking French, will hasten the passengers to the exit after these

sensations have been enjoyed in brief, rapidly succeeding periods.

While I have shown and described some embodiments of my invention, it is obvious that it is not restricted thereto, but that it is broad enough to cover all structures that come within the scope of the annexed claims.

What I claim is:

1. In an amusement apparatus of the class specified, means simulating an aeroplane including passenger carrying parts, means for blowing a blast of air on the passengers and means for moving the passengers in a manner simulating flight.

2. In an amusement apparatus of the class specified, means simulating an aeroplane including passenger carrying parts, means for blowing a blast of air on the passengers and means for simulating leaving the ground for flight.

3. In an amusement apparatus of the class specified, means simulating an aeroplane including passenger carrying parts, means for blowing a blast of air on the passengers, means for moving the passengers in a manner simulating flight and means for simulating leaving the ground for flight.

4. In an apparatus of the class described, means resembling an aeroplane for carrying passengers, means for moving the passenger carrying means so as to simulate leaving the ground, flight and landing.

5. In an apparatus of the class described, means simulating an aeroplane with provision for passengers, means for moving the passenger carrying means so as to simulate flight and means for changing the scenery observed by passengers so as to promote the illusion of flight.

6. In an amusement apparatus of the kind specified, means simulating an aeroplane and provided with provision for carrying passengers, means for simulating flight connected with said passenger carrying means and means for projecting brine vapor against the passengers so as to simulate overwater flying.

7. In an amusement apparatus of the kind specified, means simulating an aeroplane and provided with provision for carrying passengers, means for simulating flight connected with said passenger carrying means and means for producing cloud effects with a corresponding chill for the passengers.

8. In an amusement apparatus of the character specified, means resembling an aeroplane with provision for carrying passengers, means for producing vibrations in the apparatus corresponding to the vibrations of an aeroplane just before leaving the ground and following means for causing said vibrations to cease and to give the passenger carrying part a position corresponding with the position of an aeroplane in air.

9. In an apparatus of the kind specified, means simulating an aeroplane for carrying

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passengers, means for imparting wind upon passengers so as to give them one of the sensations of flight and means for simulating straight flying and means for simulating 5 curved flying or banking.

In testimony whereof, I have hereunto set my hand this 1st day of October, 1927.

HENRY B. FABER.

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