

Nov. 25, 1958

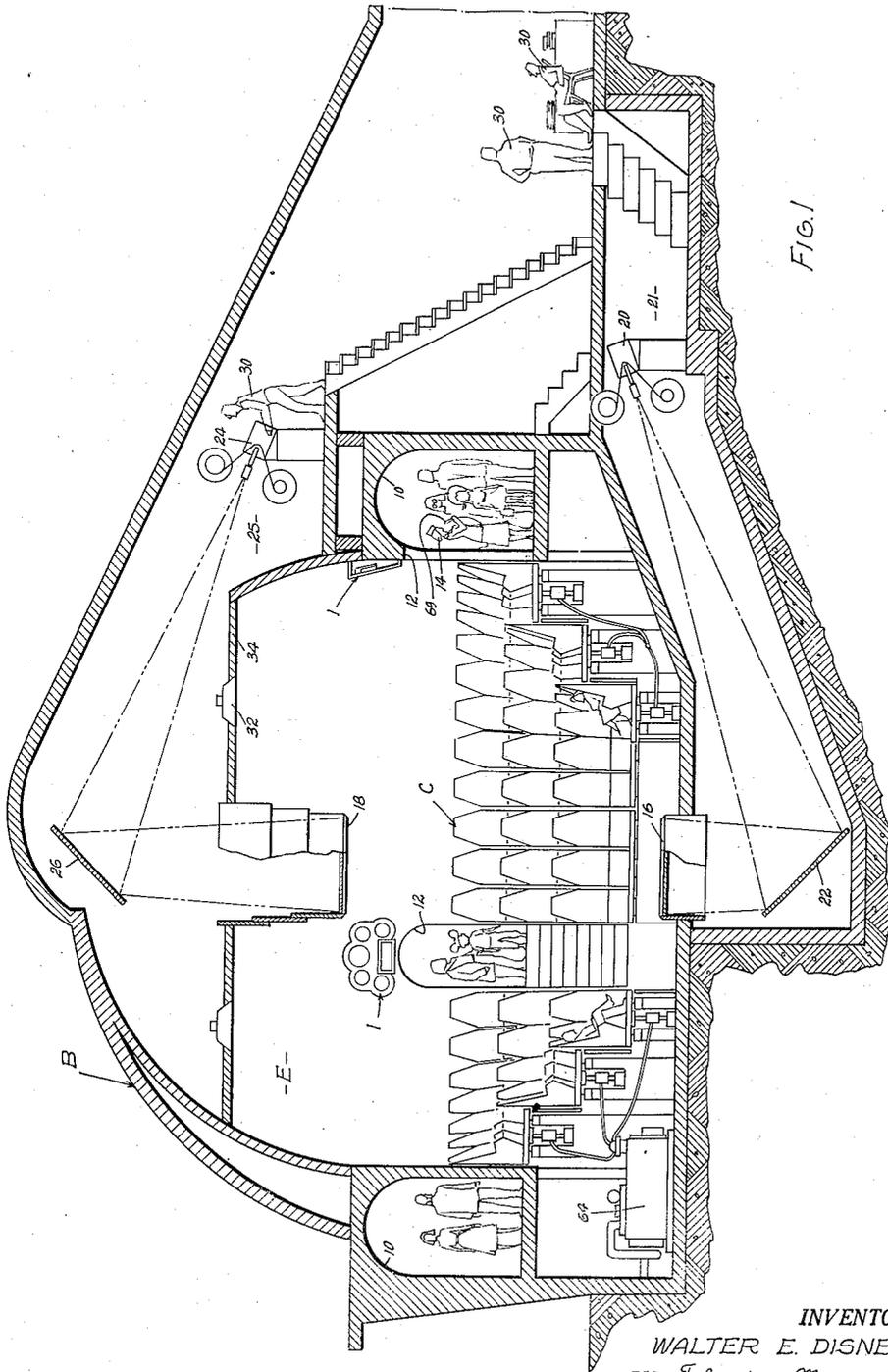
W. E. DISNEY

2,861,806

ROCKET SHIP AMUSEMENT APPARATUS

Filed July 17, 1956

2 Sheets-Sheet 1



INVENTOR:
WALTER E. DISNEY
BY Fulwider, Mattingly
and Huntley
ATTORNEYS.

Nov. 25, 1958

W. E. DISNEY

2,861,806

ROCKET SHIP AMUSEMENT APPARATUS

Filed July 17, 1956

2 Sheets-Sheet 2

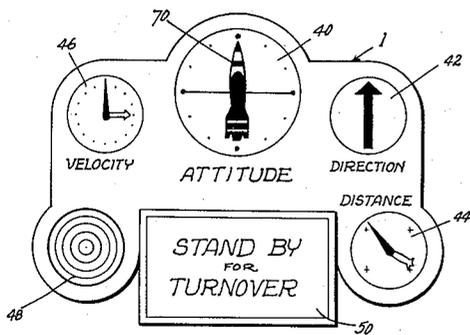


FIG. 2

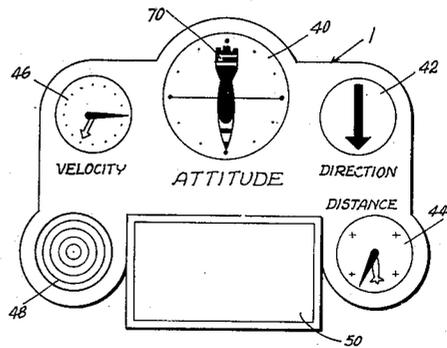


FIG. 3

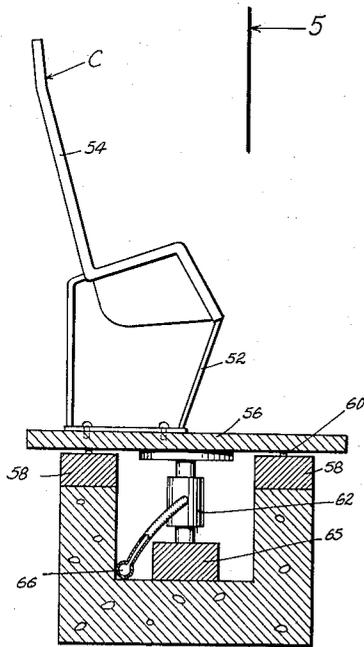


FIG. 4

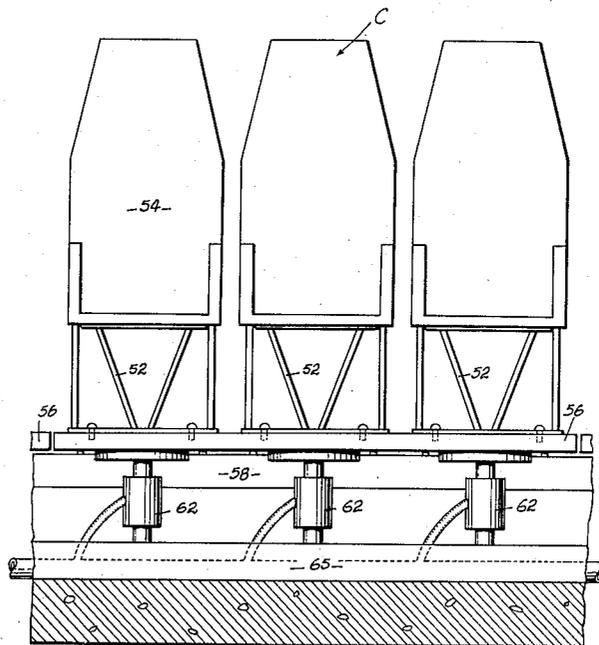


FIG. 5

INVENTOR:
WALTER E. DISNEY
BY *Fulwider, Mattingly
and Huntley*
ATTORNEYS.

1

2,861,806

ROCKET SHIP AMUSEMENT APPARATUS

Walter E. Disney, Los Angeles, Calif., assignor to Disneyland, Inc., Anaheim, Calif., a corporation of California

Application July 17, 1956, Serial No. 598,448

9 Claims. (Cl. 272-18)

The present invention relates generally to the field of amusement devices and more particularly to an amusement device which is especially designed and constructed to simulate a trip by rocket ship to another planet.

It is a major object of the present invention to provide an amusement device which simultaneously accommodates a number of passengers in an enclosure simulating the interior of a rocket ship. A combination of coordinated sensory perceptible means are provided within this enclosure for realistically simulating a trip from the earth to another planet.

Another object is to provide rocket ship amusement apparatus of the aforescribed nature which is economical to operate, such apparatus requiring a minimum number of employees for a maximum number of passengers.

Yet another object is to provide rocket ship amusement apparatus of the aforescribed nature which is completely safe and foolproof in operation.

A further object of the invention is to provide rocket ship amusement apparatus which is extremely compact, such apparatus occupying a comparatively small amount of space for the number of passengers accommodated.

An additional object is to provide rocket ship amusement apparatus which affords an audience both amusement and education.

These and other objects and advantages of the present invention will become more apparent from the following detailed description, when taken in conjunction with the appended drawings, wherein:

Figure 1 is a side elevational view showing a preferred form of rocket ship amusement apparatus embodying the present invention;

Figures 2 and 3 are front views of a simulated instrument panel employed with said apparatus;

Figure 4 is a side view taken partly in vertical section and showing the seating arrangement employed with said apparatus; and

Figure 5 is a vertical sectional view taken on line 5-5 of Figure 4.

Referring to the drawings and particularly Figure 1 thereof, the preferred form of rocket ship amusement apparatus embodying the present invention is shown housed in a building B. The interior of this building B is formed with a generally annular enclosure E simulating the interior of a rocket ship and containing a plurality of audience-receiving chairs C. The audience or "passengers" are conducted to the enclosure E through passageways 10, the passengers entering the enclosure E through any of a plurality of doorways 12. Preferably, the passageways 10 will simulate the approach to an actual rocket ship. To this end, the exterior of the building B may be formed with a realistic ramp (not shown) similar to those employed at conventional airports for conducting passengers to and from awaiting aircraft. To further assist in achieving a feeling of realism, the passengers will be conducted to their chairs by a woman 14 dressed in a conventional airline stewardess uniform.

The lower central portion of the enclosure E is pro-

2

vided with a bottom viewing screen 16. The upper central portion of the enclosure is formed with a top viewing screen 18. Both of these viewing screens 16 and 18 will be visible to the occupants of the chairs F. A lower motion film projector 20 is mounted at one side of the bottom viewing screen 16 in a projection chamber 21. An inclined mirror 22 disposed below the bottom viewing screen is employed to reflect the light from the projector 20 onto the underside of this screen. A similar upper motion film projector 24 is mounted at one side of the top viewing screen 18 in an upper projection chamber 25. A second inclined mirror 26 disposed above the upper viewing screen 18 is employed to reflect the light from the projector 24 onto the upper surface of the top viewing screen. The aforescribed film projectors 20 and 24 and the mirrors 22 and 26 are hidden from the sight and sound of the audience by the walls, floor and ceiling defining the enclosure E. This is also true with regard to the operators 30 of the film projectors. One or more speakers 32 forming part of a conventional sound reproducing system are mounted in the ceiling 34 of the enclosure E for use in conjunction with the film projectors 20 and 24 in a manner to be set forth hereinafter.

One or more simulated instrument panels I are disposed within the enclosure E. One of these instrument panels is shown in detail in Figures 2 and 3. Preferably, each indicator panel will be identical and will provide simulated indicia useful on an actual rocket ship trip. By way of example and referring particularly to Figures 2 and 3, each of the instrument panels I may be formed with an attitude indicator 40, a direction indicator 42, a distance indicator 44, a velocity indicator 46, a simulated or actual speaker 48 and a passenger warning screen 50. The method whereby the indicator panels I aid in obtaining realism will be set forth hereinafter.

Referring now to Figures 4 and 5, the chairs C have an appearance simulating chairs which might actually be utilized in a rocket ship. Each chair includes a metal framework 52 upon which is mounted a body-supporting seat 54 formed of a suitable molded plastic material. A plurality (as for example, three) of these chairs C are affixed to a single floorboard 56. Each of these floorboards 56 is independent of the other floorboards. As indicated in Figure 1, three series of concentrically arranged, upwardly and radially outwardly stepped floorboards 56 are provided. The front and rear portions of each of the floorboards rest upon rigid frame members 58 of the building B. Bumper elements 60 are interposed between the underside of the floorboards and the frame members 58. A plurality of vibration-imparting units 62 are interposed between the intermediate portion of the floorboards 56 and a rigid frame member 65. These vibration-imparting units 62 are adapted to impart vertical vibrations to the floorboards 56 when they are supplied with pressurized air. A conventional air compressor 64 is provided within the building B for supplying air to a supply pipe 66 connected to each of the units 62. The floorboards 56 hide the vibration-imparting units 62, air compressor 64 and supply pipe 66 from the audience. The exact construction of the vibration-imparting units 62 is not essential to the present invention and although they are described herein as being air operated, electrically operated vibrating-imparting units of conventional design could be substituted therefor.

In the operation of the aforescribed rocket ship apparatus, the passengers will first be escorted to their seats by the stewardess 14. Conveniently, the stewardess will be furnished with a microphone 69 connected to the speakers 32 in a conventional manner for issuing seating orders to the passengers. After the passengers have all been seated, the stewardess may relay this information to an imaginary captain. The lights within the enclosure

will then be dimmed. Thereafter, the sounds issuing from the speakers 32 will preferably be supplied from a transcription system that is coordinated with the film projectors 20 and 24 in order that these sounds will conform with the visual indications appearing on the viewing screens 16 and 18. The voice of the imaginary captain will then come over the speakers 32 informing the passengers as to take-off procedure, the route to be followed by the rocket ship in its flight and so forth. The imaginary captain may conclude this speech with the information that he will again talk to the passengers after the rocket ship has passed through the sonic barrier. Next, a warning such as "Stand By For Take-Off" may appear on the warning screen 50.

By this time the motion picture projectors 20 and 24 will be in operation and projecting pictures upon the top and bottom viewing screens 16 and 18. At the moment of take-off the bottom viewing screen may display bright-colored rocket flashes. A picture of the sky will meantime appear on the top viewing screen 18. Thereafter, the pictures shown upon the bottom viewing screen will portray the appearance of the earth's surface as a rocket ship rapidly departs therefrom. The picture on the top viewing screen should simultaneously be coordinated with the view on the bottom viewing screen so as to provide an impression that the rocket ship is rising into space. By way of example, the underside of a cloud may first appear on the top viewing screen as if the rocket ship were approaching it. Next, the interior of a cloud would appear on both screens, and finally the top of the cloud would appear on the bottom viewing screen. In this manner the impression that the rocket ship has gone through the cloud would be realistically portrayed to the audience.

At the same time that the motion picture projectors are affording the audience a visual impression of a rocket ship taking off from the earth and climbing out of the atmosphere, suitable sounds simulating those of an actual rocket ship take-off will be provided the audience by means of the speakers 32. In order to convey an even more realistic impression of a rocket ship in flight, the chairs C and floorboards 56 will preferably be vibrated in accompaniment to the rocket sounds issuing from the loud speakers 32. This vibration would simulate the vibration which a passenger in an actual rocket ship would feel due to the rocket blasts. Although the chairs C could be vibrated independently of the floorboards 56, it is preferable that the arrangement described hereinabove be employed. This arrangement, is not only economical of construction, but it also affords a more realistic impression than would result from merely vibrating the chairs while the floorboards remain stationary.

At the same time that the audience is receiving the visual impression of flight from the top and bottom viewing screens, the audible impression of flight from the speakers 32, and the feeling of vibration from the vibrating chairs and floorboards, the various indicators on the instrument panel I will be operated so as to simulate actual rocket ship flying conditions. Preferably, once the rocket ship has simulated passing through the sonic barrier the roar of the rockets issuing through the speakers 32 will diminish. At this time the imaginary captain's voice may again come through the speakers and describe the imaginary flight in detail. Thus, assuming that the rocket ship is undertaking a flight to the moon and return, the captain can point out details of the earth and the moon appearing on the viewing screens 16 and 18. When the rocket ship has simulated an approach to the moon the captain will tell the passengers that the rocket ship is to be turned over on its longitudinal axis for its passage around the moon. At this time he may call the passengers' attention to the attitude indicator 40 on the instrument panel I. A pointer 70 shaped like a rocket ship is pivotally secured to the center of this attitude indicator 40. At the proper moment the captain will inform the passengers that the rocket ship is to turn

over under the influence of the ship's gyro system. The pointer 70 will then rotate from its upright position of Figure 2 to its inverted position of Figure 3. At the same time, the viewing screens 16 and 18 will provide a visual indication that the rocket ship has turned over. Thus, assuming that earth initially appears in the lower viewing screen 16 and the moon in the top viewing screen 18, as the rocket ship simulates a turn-over, the positions of the earth and moon in the screens will reverse. Thus, at the completion of the simulated turn-over, the earth will appear in the top viewing screen 18 while the moon appears in the bottom viewing screen 16. Just prior to the simulated turn-over, the words "Stand By For Turn-Over" may be flashed onto the warning screen 50, as indicated in Figure 2. The turn-over operation may be accompanied by a whirring sound from the speakers 32 simulating the noise of the ship's gyro system.

In order to assist in achieving realism, as the rocket ship simulates a trip around the dark side of the moon, the captain may inform the passengers that flares are to be fired from the rocket ship towards the moon so as to light up its dark side. Thus, while an imaginary crew member shouts orders describing the firing of these flares and heard by the passengers over the speakers 32, one of the viewing screens will show the dark side of the moon as it would appear while being illuminated by these flares. At the completion of the travel around the moon, the captain will inform the passengers that the rocket ship is to return to the earth. The above-described simulated turn-over operation will then be repeated. Thereafter, the rocket ship will simulate a return to the earth, with the simulated descent of the rocket ship towards the earth being the reverse of that described hereinabove with regard to the take-off procedure.

From the foregoing description it will be apparent that the preferred form of rocket ship amusement apparatus will provide an entertaining, realistic and educational diversion for the audience. This is achieved by the combined use of coordinated visual, audible and vibratory means for conveying a feeling of actual flight to the audience. The positioning of the motion picture film projectors 20 and 24 at one side of the enclosure, together with the inclined mirrors 22 and 26 results in a compact building structure affording a maximum audience seating capacity for a minimum amount of space. The utilization of a sound transcription system in combination with the film projector apparatus permits the use of a minimum number of operators with a consequent low cost of operation. In this regard, if two of the enclosures E are constructed in a single building, the same number of operators may then be employed as where a single enclosure is provided. A further reduction in operating costs will result.

While there has been shown and described hereinabove what is presently considered to be the preferred form of the present invention, various modifications and changes may be made thereto without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. Amusement apparatus, comprising: an enclosure simulating the interior of a rocket ship and including a plurality of audience-receiving chairs; a bottom viewing screen disposed in the lower portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper portion of said enclosure and visible to the occupants of said chairs; motion picture film projecting means for directing continuous pictures upon said screens, the pictures projected upon said lower screen simulating the view from the rear of an actual rocket ship during flight and the pictures projected upon said upper screen simulating the view from the front of an actual rocket ship during flight; sound reproducing means for directing realistic sounds simulating those of an actual rocket ship during flight to said en-

5

closure; and means for periodically imparting vibration to said chairs.

2. Amusement apparatus, comprising: an enclosure simulating the interior of a rocket ship and including a floorboard whereon are mounted a plurality of audience-receiving chairs; a bottom viewing screen disposed in the lower portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper portion of said enclosure and visible to the occupants of said chairs; motion picture film projecting means for directing continuous pictures upon said screens, the pictures projected upon said lower screen simulating the view visible from the rear of an actual rocket ship during flight and the pictures projected upon said upper screen simulating the view visible from the front of an actual rocket ship during flight; sound reproducing means for directing realistic sounds simulating those which would be made by an actual rocket ship during flight to said enclosure; and means for periodically imparting vibration to said floorboard and chairs.

3. Amusement apparatus, comprising: an enclosure simulating the interior of a rocket ship and including a plurality of audience-receiving chairs; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; a lower projection chamber hidden from said enclosure and disposed at one side thereof; a motion picture film projector in said lower projection chamber; an inclined mirror disposed below said bottom viewing screen for reflecting the light from said lower motion film projector upon the underside of said bottom viewing screen; a top projection chamber disposed to one side of said top viewing screen and hidden from said enclosure; a second motion film projector in said top projection chamber; a second inclined mirror disposed above said top viewing screen for reflecting the light from said second motion film projector upon the upper surface of said top viewing screen; sound reproducing means coordinated with said upper and lower motion film projectors for directing realistic sounds simulating those heard on an actual rocket ship during flight to said enclosure; and means for imparting vibration to said chairs in coordination with the visual and audible sensations produced by said motion film projectors and said sound reproducing means.

4. Amusement apparatus, comprising: an enclosure simulating the interior of a rocket ship and including floorboards whereon are mounted a plurality of audience-receiving chairs; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; a lower projection chamber hidden from said enclosure and disposed at one side thereof; a motion picture film projector in said lower projection chamber; an inclined mirror disposed below said bottom viewing screen for reflecting the light from said lower motion film projector upon the underside of said bottom viewing screen; an upper projection chamber disposed to one side of said top viewing screen and hidden from said enclosure; a second motion film projector in said upper projection chamber; a second inclined mirror disposed above said top viewing screen for reflecting the light from said second motion film projector upon the upper surface of said top viewing screen; sound reproducing means coordinated with said upper and lower motion film projectors for directing realistic sounds simulating those heard on an actual rocket ship during flight to said enclosure; and means for imparting vibration to said floorboards and chairs in coordination with the visual and audible sensations produced by said motion film projectors and said sound reproducing means.

5. Amusement apparatus, comprising: a building structure having a frame; a generally annular enclosure

6

formed in said building structure and simulating the interior of a rocket ship; a plurality of concentrically arranged, upwardly and radially outwardly stepped floorboards in said enclosure loosely supported on said frame; one or more audience-receiving chairs secured to each of said floorboards; vibration-imparting units interposed between each of said floorboards and said frame for effecting vibration of said floorboards; a bottom viewing screen disposed in the central lower portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the central upper portion of said enclosure and visible to the occupants of said chairs; motion picture film projecting means for directing continuous pictures upon said screens, the pictures projected upon said lower screen simulating the view from the rear of an actual rocket ship during flight and the pictures projected upon said upper screen simulating the view from the front of an actual rocket ship during flight; and sound reproducing means coordinated with said motion picture projecting means for directing realistic sounds simulating those of an actual rocket ship during flight to said enclosure.

6. Amusement apparatus, comprising: a building structure having a frame; a generally annular enclosure formed in said building structure and simulating the interior of a rocket ship; a plurality of concentrically arranged, upwardly and radially outwardly stepped floorboards in said enclosure loosely supported on said frame; one or more audience-receiving chairs secured to each of said floorboards; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; a lower projection chamber formed in said building structure, said chamber being hidden from said enclosure and disposed at one side thereof; a lower motion picture film projector in said lower projection chamber; an inclined mirror below said bottom viewing screen for directing light from said lower motion film projector upon the underside of said bottom viewing screen; an upper projection chamber formed in said building structure, said chamber being disposed at one side of said top viewing screen above said lower projection chamber and isolated from said enclosure; an upper motion film projector in said upper projection chamber; a second inclined mirror disposed above said top viewing screen for reflecting light from said top motion film projector upon the upper surface of said top viewing screen; sound reproducing means coordinated with said upper and lower motion film projectors for directing realistic sounds simulating those heard on an actual rocket ship during flight to said enclosure; and vibration-imparting units interposed between said floorboards and said frame for imparting vibration to said floorboards in coordination with the audible and visual impression produced by said motion film projectors and said sound reproducing means.

7. Amusement apparatus, comprising: a generally annular enclosure simulating the interior of a rocket ship and including concentrically arranged, upwardly and radially outwardly stepped floorboards whereon are mounted a plurality of audience-receiving chairs; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; a lower projection chamber hidden from said enclosure and disposed at one side thereof; a motion picture film projector in said lower projection chamber; an inclined mirror disposed below said bottom viewing screen for reflecting the light from said lower motion film projector upon the underside of said bottom viewing screen; an upper projection chamber disposed to one side of said top viewing screen and hidden from said enclosure; a second motion film projector in said upper projection

chamber; a second inclined mirror disposed above said top viewing screen for reflecting the light from said second motion film projector upon the upper surface of said top viewing screen; sound reproducing means coordinated with said upper and lower motion film projectors for directing realistic sounds simulating those heard on an actual rocket ship during flight to said enclosure; means for imparting vibration to said floorboards and chairs in coordination with the visual and audible impressions produced by said motion film projectors and said sound reproducing means; and an instrument panel in said enclosure and visible to said audience, said panel having a plurality of indicators providing simulated indicia useful on an actual rocket ship flight and coordinated with the visual and audible impressions created by said motion film projectors and sound reproducing means.

8. Amusement apparatus, comprising; a building structure having a frame; a generally annular enclosure formed in said building structure and simulating the interior of a rocket ship; a plurality of concentrically arranged, upwardly and radially outwardly stepped floorboards in said enclosure loosely supported on said frame; one or more audience-receiving chairs secured to each of said floorboards for effecting vibration of said floorboards; vibration imparting units interposed between each of said floorboards and said frame; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; motion picture film projecting means for directing continuous pictures upon said screens, the pictures projected upon said lower screen simulating the view from the rear of an actual rocket ship during flight and the pictures projected upon said upper screen simulating the view from the front of an actual rocket ship during flight; sound reproducing means coordinated with said motion picture projecting means for directing realistic sounds simulating those of an actual rocket ship during flight to said enclosure; and an instrument panel in said enclosure and visible to said audience, said panel having a plurality of indicators providing simulated indicia useful on an actual rocket ship flight and coordinated with the visual and audible impressions created by said motion film projectors and sound reproducing means.

9. Amusement apparatus, comprising: a building structure having a frame; a generally annular enclosure formed

in said building structure and simulating the interior of a rocket ship; a plurality of concentrically arranged, upwardly and radially outwardly stepped floorboards in said enclosure loosely supported on said frame; one or more audience-receiving chairs secured to each of said floorboards; a bottom viewing screen disposed in the lower central portion of said enclosure and visible to the occupants of said chairs; a top viewing screen disposed in the upper central portion of said enclosure and visible to the occupants of said chairs; a lower projection chamber formed in said building structure, said chamber being hidden from said enclosure and disposed at one side thereof; a lower motion picture film projector in said lower projection chamber; an inclined mirror below said bottom viewing screen for reflecting the light from said lower motion film projector upon the underside of said bottom viewing screen; an upper projection chamber formed in said building structure, said chamber being disposed at one side of said top viewing screen above said lower projection chamber and isolated from said enclosure; an upper motion film projector in said upper projection chamber; a second inclined mirror disposed above said top viewing screen for reflecting the light from said top motion film projector upon the upper surface of said top viewing screen; sound reproducing means coordinated with said upper and lower motion film projectors for directing realistic sounds simulating those heard on an actual rocket ship during flight to said enclosure; vibration-imparting units interposed between said floorboards and said frame for imparting vibration to said floorboards in coordination with the audible and visual impressions produced by said motion film projectors and said sound reproducing means; and an instrument panel in said enclosure and visible to said audience, said panel having a plurality of indicators providing simulated indicia useful on an actual rocket ship flight and coordinated with the visual and audible impressions created by said motion film projectors and sound reproducing means.

References Cited in the file of this patent

UNITED STATES PATENTS

844,676	Hagen	Feb. 19, 1907
874,328	Gordon	Dec. 17, 1907
1,789,680	Gwinnett	Jan. 20, 1931
1,917,611	Starr	July 11, 1933