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SATELLITE TOY, DISPLAY ARTICLE, OR THE LIKE

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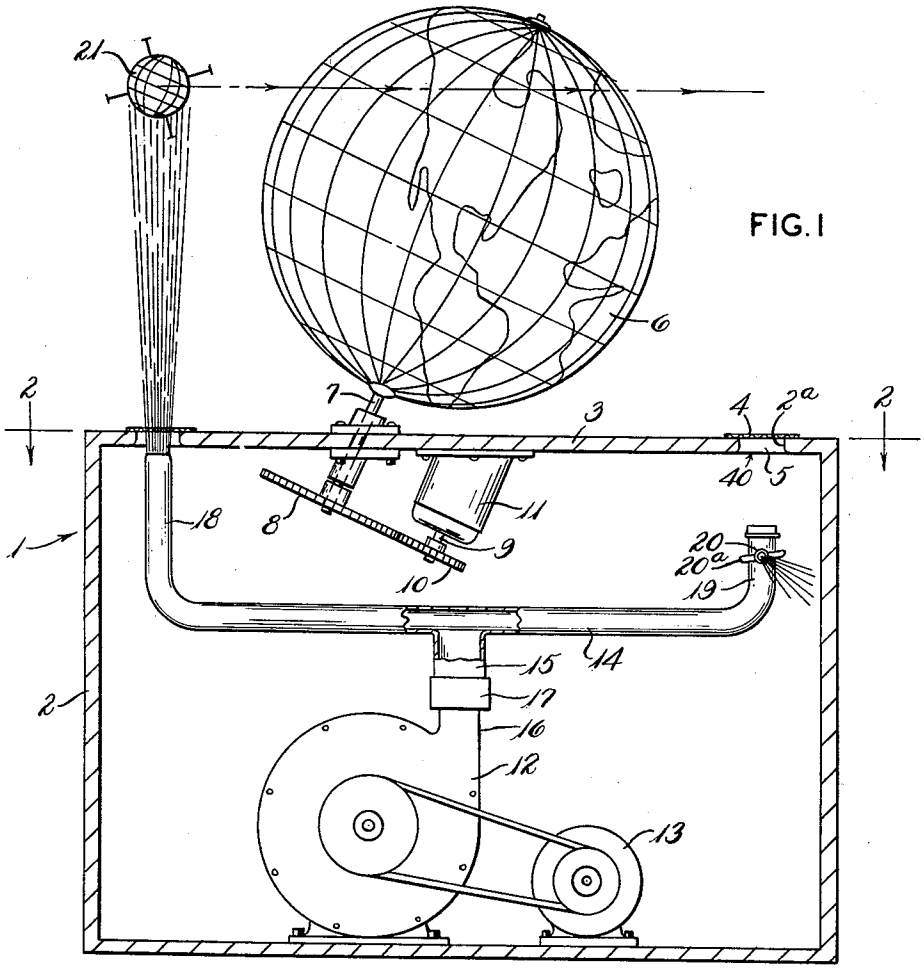

FIG. 1

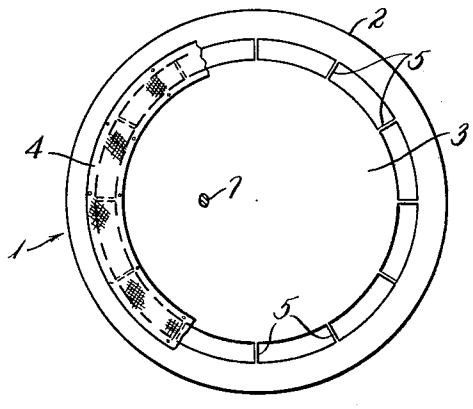

FIG. 2

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SATELLITE TOY, DISPLAY ARTICLE, OR THE LIKE

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This invention relates to satellite toys or display articles, and particularly relates to a relatively uncomplicated article by which a light weight sphere can be maintained seemingly floating up in the air to be circulated positively around a globe, or other central object by a positively controlled air stream and movement thereof.

Heretofore there have been various types of toys proposed for propelling satellites or rockets up in the air to provide entertainment for the person using or playing with the toy. Likewise, other attempts have been made to provide some type of toys or educational devices wherein satellites have been portrayed for circulation around the globe, for example, and one type of such toy is illustrated by Patent No. 2,890,537.

It is well recognized today that people are space minded, and are very interested in displays, toys or other articles utilizing the space or satellite theme.

Accordingly, it is the general object of the present invention to provide a novel and improved satellite toy or display article characterized by the provision of a controlled air stream or blast for lifting a sphere representing a satellite up into the air and for positively moving such sphere around a central object such as a globe, or the like.

A further object of the invention is to provide an improved toy or display article that can be used for creating scientific interest in space, satellites and the like, and where the display article is of relatively uncomplicated construction and is easily controlled for operation or use thereof.

A further object of the invention is to provide a toy or display article which would be very attractive for display purposes for attracting attention to a display window, and which article could function automatically for a long time.

The foregoing and other objects and advantages of the present invention will be made more apparent as the specification proceeds.

Attention now is particularly directed to the accompanying drawings wherein:

FIG. 1 is an elevation of a toy or display apparatus embodying the principles of the invention, a portion of the apparatus being broken away and shown in vertical section; and

FIG. 2 is a horizontal section of reduced size taken on line 2—2 of FIG. 1.

When referring to corresponding numbers shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

The present invention, generally speaking, relates to a satellite display or toy article comprising a stationary enclosure having an annular opening in its top, a top member for the enclosure and smaller in diameter than the annular opening, securing means for positioning the center top member on the enclosure to provide an annular section of minimum resistance to air flow therethrough, an air pump means positioned within the enclosure and having a vertically directed outlet, a light weight, tubular air duct with a downwardly extending connecting section engaging the outlet and journalled thereon, which air duct has a pair of upstanding end sections positioned in balanced relation to the connecting section of the air duct, one of the end sections extending to a point adjacent and below the annular section provided by the securing means

to blast an air stream upwardly therethrough, jet means carried by the other of the end sections and extending substantially horizontally therefrom for rotating the air duct about the said connecting section thereof, and a light weight sphere adapted to be pushed upwardly from the top member by the air stream passing through the annular portion of the securing means so that the sphere can be made to describe a circular path around the top member of the enclosure and with the position of the sphere in relation to the end section of the air duct being controllable by varying the air blast provided.

Attention now is particularly directed to the structure and details thereof shown in the accompanying drawings. A satellite display or toy **1** of the invention is indicated and it includes a suitable enclosure **2**. This enclosure **2** has an annular opening **2***a* provided in its top, and a suitable center top member **3**, smaller than the opening **2***a*, is secured to the enclosure **2** at the top thereof as by sections of screening **4**, for a purpose to be described hereinafter in more detail. This screen **4** may be of metal or plastic construction, as desired, and the screen may be secured to the upper, or lower, or both surfaces of the top member **3** and adjacent portions of the enclosure **2**, as desired. The opening provided in the top of the enclosure **2** is of annular form so that the screen **4** provides an annular connecting section **40** between the top member **3** and the remainder of the enclosure. The screen **4** and its connection with the top member **3** may be reinforced, as by relatively thin, vertically extending connecting or reenforcing bars **5** extending between portions of the enclosure **2** and parts of the top member **3**.

The top member **3** may position a suitable article thereon, such as a globe **6**, that is carried by a shaft **7** suitably journalled on and supported by the top member **3** and extending therethrough. The shaft **7** preferably carries a worm wheel **8** at the lower end thereof and it engages a driven shaft **9** by an end gear **10** thereon. Such shaft **9** is driven by and extends from an electric motor **11** that is secured to the top member **3** on the lower surface thereof. Any conventional power source may be connected to this motor for rotating the globe **6** at a desired rate.

As another feature of the invention, the satellite or display toy **1** of the invention preferably includes an air pump **12** which normally would be secured to the enclosure **2** at the base thereof. This pump **12** may be driven from a battery or by an electric motor **13** positioned adjacent the blower **12**. Any suitable source of energy may be connected to the motor **13** to drive it and the blower **12** at a desired rate. A further important element of the invention resides in a tubular air duct **14** which has a downwardly extending connecting section **15** protruding therefrom. This connecting section **15** is suitably journalled on a vertically upwardly extending outlet **16** preferably provided as an integral part of the housing for the blower **12**. A conventional thrust bearing **17** may be positioned between the connecting section **15** and the outlet **16** for journalling the air duct thereon for convenient rotation in a horizontal plane.

The air duct **14** has a pair of upstanding end sections **18** and **19** provided thereon and usually formed integrally therewith. The end section **18** preferably extends up vertically of the apparatus and terminates immediately adjacent but below the screen means **4** and the annular connecting section **40**. The length of the air duct **14** and the position of the end section **18** is so regulated that it will move in a circle below and adjacent the screen means **4** at all times so that an air blast can be propelled upwardly of the display or toy of the invention for a purpose to be described hereinafter. Rotary action of the air duct **14** is obtained by means, such as an adjustable conventional jet nozzle **20**, that is secured

to the end section 19, which has a closed upper end, and extends therefrom. Such jet nozzle 20 preferably is in a substantially horizontal plane and extends from the end section 19 and the annular orbit thereof in a direction substantially tangent to such annular path. The opening in the nozzle 20 is controlled by a handle 20*a*. The nozzle may be of the type used on lawn sprinklers, or a radiator drain nozzle where a controllable size jet discharge opening is provided.

The satellite display or toy of the invention is completed by a member such as a light weight sphere 21. This sphere 21 may be made from a suitable light material such as styrafoam, or the like, and the air stream passing from the end section 18 is adapted to raise such sphere 21 from resting on the screen 4 and maintain it at a desired vertical position with relation to the globe 6. The drive of the blower 12 may be controlled as to the pressure produced, through the motor 13, for adjusting the position of this sphere 21 with relation to the globe.

The action of the jet nozzle 20 can be varied for controlling the air blast produced to vary the rotary speed of the air duct 14 in the apparatus. Thus the rotation of the air duct 14 might be, for example, something between one and five revolutions per minute to provide the satellite or sphere 21 with its annular path of movement around the globe 6.

It naturally will be realized that the globe 6 can be rotating upon its shaft 7 when desired so that a relative annular movement between the sphere 21 and the globe can be obtained to form a substantially life-like exhibit or portrayal of a satellite in its movement or orbit around the world.

It will be realized that a direct drive may be provided for the air pump or blower 12 to furnish the desired compressed air stream used in the invention. In some cases the same motor may be coupled to both the blower 12 and the shaft 7. These motors and air pump or blower may be quite small as only very little power is required to operate the display or toy 1. The size of the enclosure 2 is exaggerated in the drawings and it may be much smaller than the globe 6 used, for example.

To simplify the apparatus, the valve or nozzle 20 may be replaced by an aperture of desired size in the end section 19 where no adjustment in the jet drive action is required.

It is believed that the satellite display or toy 1 of the invention can be made in a very attractive form by suitably coloring the globe 6, or portions thereof, and the sphere 21 could be made of a contrasting color whereas the enclosure 2 naturally could be decorated in any desired manner or with any suitable advertising display medium thereon. This display or toy will create appreciable interest in people seeing the article and the purposes of the invention thus are thought to be achieved by the creation of interest in the display and the data or means associated therewith.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. A satellite display type of an article comprising an enclosure having an annular opening in its top, an annular center top member for said enclosure smaller than said opening, means including circumferentially spaced bars and screen means securing said center top member to said enclosure in spaced relation thereto to provide minimum resistance to air flow therethrough, a globe carried by said top member, said securing means providing an annular opening around said top member, a driven air pump positioned within said enclosure and having a vertically directed outlet, a light weight tubular air duct with a downwardly extending connecting section engaging said outlet and journalled thereon, said air duct having a pair of upstanding end sections provided thereon in balanced relation to said connecting section, one of said end sections extending to a point adjacent and below said securing means and said annular section to blast an air stream upwardly therethrough, jet discharge means carried by the other of said end sections which has a closed end and extending substantially horizontally in a direction substantially tangent to the annular path of said other end section to rotate said air duct, and a light weight sphere adapted to be pushed upwardly from said top member by said air stream whereby said sphere can be made to circle around said globe.

2. A satellite display type of an article comprising a stationary enclosure having an open top, an annular top member for said enclosure, means securing said center top member to but spaced from said enclosure to provide minimum resistance to air flow therethrough, said securing means providing an annular opening around said top member and including screen means covering said annular opening, an article carried by said top member, a driven air pump positioned within said enclosure, a tubular air duct with a downwardly extending connecting section journalled in said enclosure and connected to the outlet of said pump, said air duct having a pair of upstanding end sections provided thereon in balanced relation to said connecting section, one of said end sections extending to a point adjacent and below said securing means and said annular section to blast an air stream upwardly therethrough, jet means carried by the other of said end sections and extending substantially horizontally in a direction substantially tangent to the annular path of said other end section to rotate said air duct, and a light weight sphere adapted to be pushed upwardly from said top member by said air stream whereby said sphere can be made to circle around said article.

3. A satellite display type of an article comprising a stationary enclosure having an open top, a top member for said enclosure, means securing said top member to said enclosure, a globe journalled on said top member, drive means carried by said top member and engaging said globe to rotate it, said top member having an annular section therein with minimum resistance to air flow therethrough, compressed air supply means, a light weight tubular air duct with a downwardly extending connecting section journalled in said enclosure and with said connecting section connected to said air supply means, said air duct having a pair of upstanding end sections provided thereon in balanced relation to said connecting section, one of said end sections extending to a point adjacent and below said annular section to force an air stream upwardly therethrough, jet discharge means carried by the other of said end sections which otherwise is closed and extending substantially horizontally in a direction substantially tangent to the annular path of said other end section to rotate said air duct, and a light weight sphere adapted to be pushed upwardly from said top member by said air stream whereby said sphere can be made to circle around said globe.

4. A satellite display type of an article comprising a stationary enclosure having an open top, a top member for said enclosure, means securing said top member to said enclosure, said top member having an annular section therein with minimum resistance to air flow therethrough, air supply means, a light weight tubular air duct with a downwardly extending connecting section journalled in said enclosure and with said connecting section connected to said air supply means, said air duct having a pair of upstanding end sections provided thereon in balanced relation to said connecting section, one of said end sections extending to a point adjacent and below said annular section to force an air stream upwardly therethrough, jet discharge means carried by the other of said end sections which otherwise is closed and ex-

tending substantially horizontally in a direction substantially tangent to the annular path of said other end section to rotate said air duct, and a light weight sphere adapted to be pushed upwardly from said top member by said air stream whereby said sphere can be made to move in a circle with said air duct.

5. A satellite display type of an article comprising an enclosure having an open top area, a top member for said open area, means including a plurality of circumferentially widely spaced narrow members securing said top member to said enclosure, said top member having an annular section therein with minimum resistance to air flow therethrough, air supply means, a light weight tubular air duct with a center connecting means journalled in said enclosure and with said connecting means operatively connected to said air supply means, said air duct having a pair of end sections provided thereon in balanced

relation to said connecting means, one of said end sections having an open upper end extending to a point adjacent and below said annular section to force an air stream upwardly therethrough, adjustable, jet discharge means carried by the other of said end sections which otherwise is closed, said jet discharge means extending substantially horizontally in a direction substantially tangent to the annular path of said other end section to rotate said air duct, and a light weight sphere adapted to be pushed upwardly from said top member by said air stream whereby said sphere can be made to circle around with said air duct.

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