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W. E. QUILLEN
ELECTROSTATIC TOY ANIMATOR

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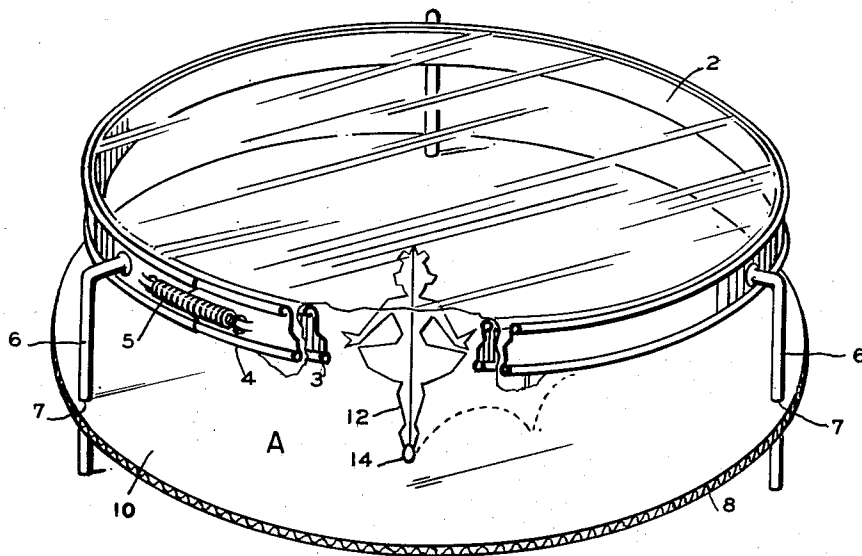


FIG. 1

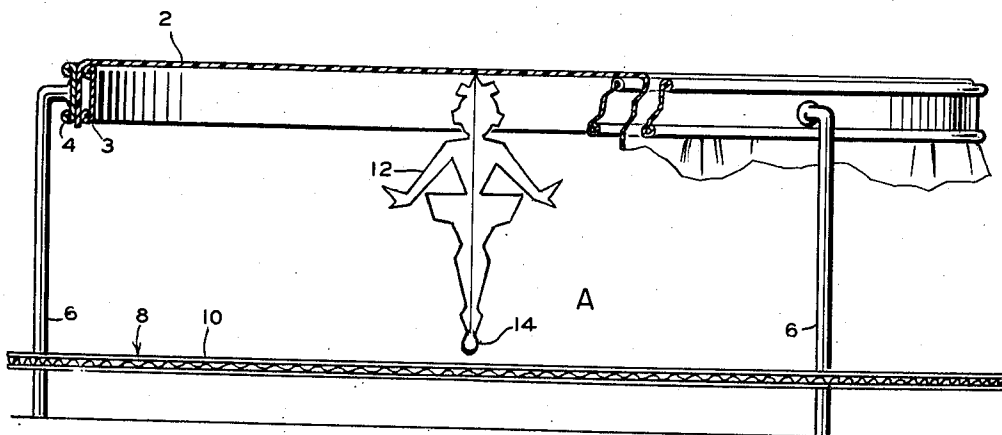


FIG. 2

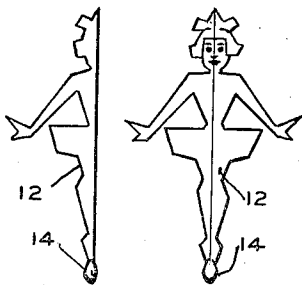


FIG. 3

FIG. 4

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ELECTROSTATIC TOY ANIMATOR

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4 Claims. (Cl. 46—45)

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This invention relates to toy animators.

One of the objects of the invention is to provide a toy in which small figures of paper, pith, or cellophane may be animated by static electricity and made to perform antics in a new and improved manner;

Another object is to provide a toy animator operated by static electricity generated on a sheet of acetate film tightly stretched over concentric rings and supported by a tripod on which a grounding plate may be easily and accurately adjusted;

Another object is to provide a static electrical toy of the type above mentioned in which access to the area of animation may be freely and easily had at all times during its operation;

A still further object is to provide a toy of the class above mentioned in which the distance between the charged diaphragm of acetate and the grounding plate may be easily and quickly varied to suit different sizes of figures.

Other objects will appear hereinafter.

I attain the foregoing objects by means of the construction, design, and combination of parts shown in the accompanying drawing in which—

Figure 1 is a perspective view of the complete toy;

Figure 2 is a side elevation thereof with parts broken away to show interior construction and drawn on a slightly larger scale;

Figure 3 is a side elevation of one of the figures used;

Figure 4 is a front elevation thereof;

Similar numerals refer to similar parts in the several views.

As shown in the drawing, the diaphragm 2 is composed of transparent acetate film of the type commonly used in wrapping parcels and packages. It is known that this has a very high dielectric coefficient and is therefore suitable for the generation of static electricity by friction. The edges of this diaphragm are clamped between the concentric rings 3 and 4. The inner ring 3 is solid while the outer ring 4 is expansible, this being obtained by a spring 5 which draws the abutting ends together.

On the outer surface of ring 4 there are three depending legs 6. These legs are of any suitable height and are intended to support the device on a table or the like on which it is to be used.

A ground plate 8 composed of cardboard, has a diameter slightly larger than that of the outer ring, and is pierced at three points by holes 7 so as to admit the three legs 6. These are sprung outwardly somewhat so as to frictionally engage

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the outer edges of holes 7 in the plate. The top surface of the grounding plate 8 is covered with a metallic paint 10 such as aluminum paint to give it a slight amount of conductivity.

5 An exemplary form of a figure to be animated is shown in Figures 3 and 4. It is intended that this can be cut out of any soft unglazed paper and be of any convenient size and shape. The figure is indicated by numeral 12. At the bottom of the figure a blob 14 of wax containing a small amount of metallic powder is affixed. The purpose of this is to weight one end of the figure so that the other end will be drawn up toward the diaphragm when it is charged with static electricity. The figure may be stiffened by a vertical fold, as shown in Figures 3 and 4.

In operation, the device, having been placed on a table or the like, is charged with static electricity by being rubbed briskly either with dry fingers or dry silk or leather. When a charge has been impressed on diaphragm 2 the figures may be easily placed between it and the grounding plate. The distance between this plate and the diaphragm is then varied to suit the height of the figures when they stand erect as shown in Figure 1. Since figures may be cut at will, as from printed figures in comic strips and the like, their height will vary greatly and it is therefore essential that the critical distance be provided between the type of the figure when erect and the under surface of diaphragm 2. By varying the ground plate on the legs, this distance can easily be secured. When this is done the figures will hop up and down and move about beneath the diaphragm according to the vagaries of the static charge residing on the diaphragm.

Heretofore certain devices of this nature have been made but all had a common defect in that they provided a casing around the perimeter of the grounding plate. This casing detracted from the use of the devices in that the moving figures were inclined to lodge against or hang up in corners or otherwise, and since it was difficult to reach into the case without disturbing the static charge the users quickly tired of the toy and it was discarded.

It is pointed out that the three legs of this device do not afford a vertical surface against which the figures may easily lodge and if they do, a mere touching of them with the finger will disperse the charge so that they will again go back into the animation area indicated by the letter A.

Should diaphragm 2 become loose or worn it may be easily replaced by removing ring 3, fitting

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a new film of dielectric over it and then replacing it within ring 4 by forcing it upward from below. The plate 8 is removed during this operation, but is easily replaced and then again adjusted to the right distance relative to diaphragm 2.

From the foregoing it will be readily understood that I have a form of static electric toy which is easily and cheaply made and which overcomes the troubles and annoyances heretofore experienced with these devices.

I claim:

1. An animator toy comprising a pair of concentric rings, a sheet of transparent dielectric material stretched across the inner ring of said pair and secured in place by the outer ring of said pair of rings, legs attached to the perimeter of the outermost of said rings, and a ground plate having a conductive upper face removably attached to said legs.

2. An animator toy operative by static electricity, including in combination, a rigid inner diaphragm supporting ring, a resiliently contracting outer ring concentrically positioned around said inner ring, a diaphragm of thin transparent dielectric material tightly stretched over said diaphragm supporting ring and clamped over the periphery thereof by said outer ring, a plurality of legs attached to the periphery of said outer ring and depending therefrom, and a ground plate having a conductive upper surface and perforations mating with said legs positioned beneath said diaphragm in parallel relation thereto with said legs extending through said perforations and frictionally engaging the edges thereof to afford support for said plate.

3. An animator toy comprising a pair of concentric rings, a sheet of transparent dielectric material stretched across the inner one of said

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rings and extending over its peripheral edge, and clamped in place by the outer ring, legs attached to the perimeter of the outermost of said rings, a ground plate having a conductive upper face removably attached to said legs, and a toy figure of light dielectric material adapted for free movement between said sheet of dielectric material and said ground plate.

4. An animator toy operative by static electricity, including in combination, a rigid inner diaphragm supporting ring, a resiliently contracting outer ring, concentrically positioned around said inner ring, a diaphragm of thin transparent dielectric material tightly stretched over said diaphragm supporting ring and clamped over the periphery thereof by said outer ring, a plurality of legs attached to the periphery of said outer ring and depending therefrom, and a ground plate having a conductive upper surface and perforations mating with said legs positioned beneath said diaphragm in parallel relation thereto with said legs extending through said perforations and frictionally engaging the edges thereof to afford support for said plate, and a figure to be animated cut from thin paper, stiffened by a vertical fold crease, and weighted at one end.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
164,723	Decker	June 22, 1875
1,573,122	Rank	Feb. 16, 1926
2,182,957	Blanck	Dec. 12, 1939
2,418,922	Berndt et al.	Apr. 15, 1947