Sept. 24, 1968 R. J. BYRNES 3,402,496

ANIMATION FOR ADVERTISING DISPLAYS

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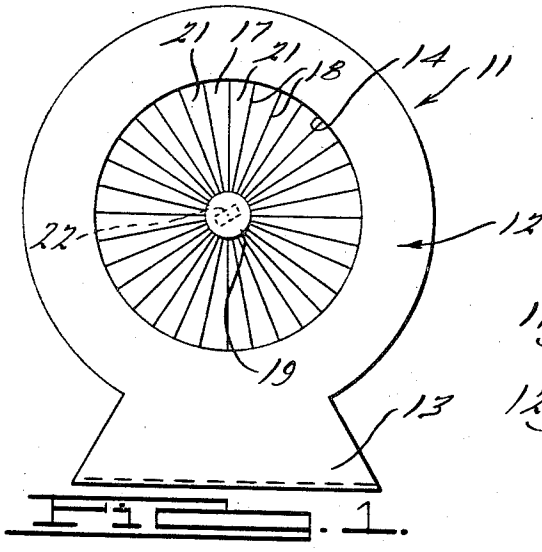


FIG. 1.

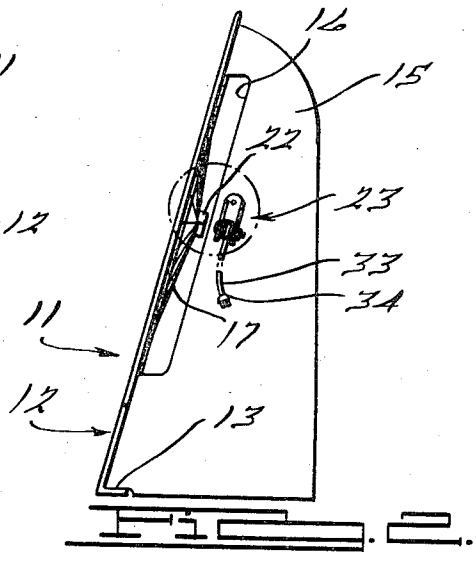


FIG. 2.

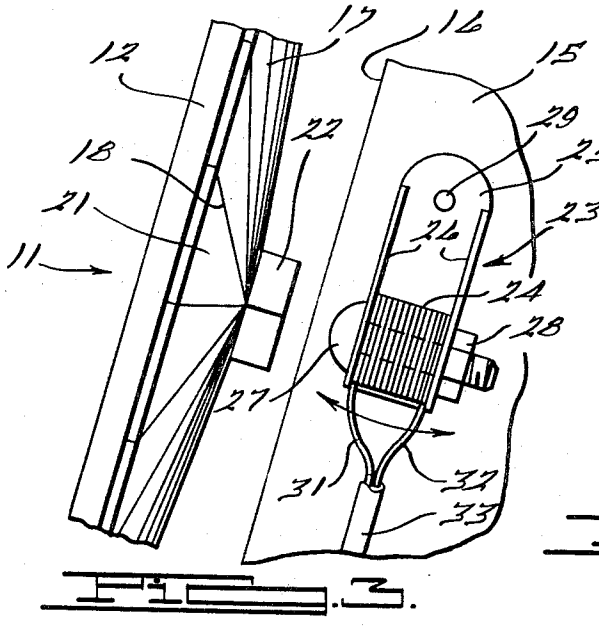


FIG. 3.

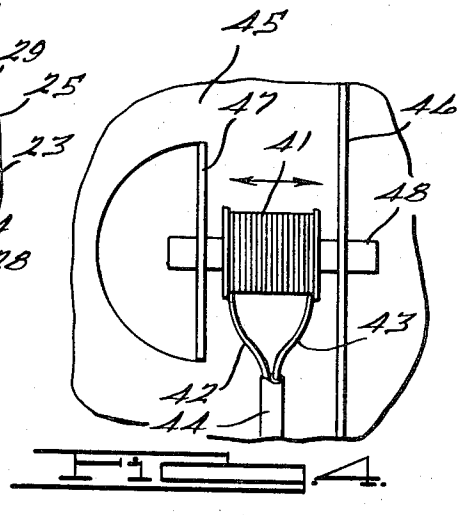


FIG. 4.

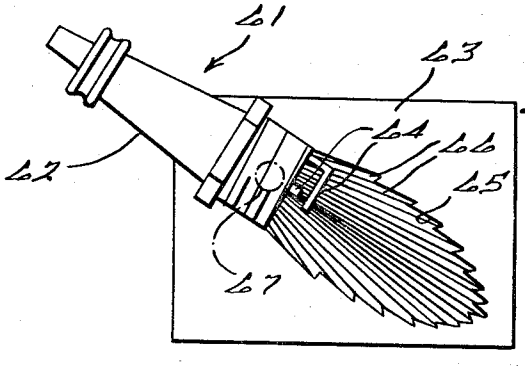


FIG. 5.

INVENTOR.
Robert J. Byrnes
BY
Harness, Dickey & Pierce
ATTORNEYS

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ANIMATION FOR ADVERTISING DISPLAYS

Robert J. Byrnes, 9298 Niver, Allen Park, Mich. 48101

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ABSTRACT OF THE DISCLOSURE

An animated advertising display embodying a face plate having an opening across which a flexible sheet is positioned. The flexible sheet is formed with an uninterrupted section from which slits extend to form a plurality of separate strips connected together at the central portion. A permanent magnet is affixed to the central portion and an electric coil is carried by the face plate in spaced relation to the permanent magnet. The passing of an alternating electric current through the electric coil causes vibration of the permanent magnet and oscillation of the flexible strips resulting in an attractive display.

This invention relates to an animated display and more particularly to a display embodying an improved form of animation.

Sales displays for advertising are well known as are their desirable attributes. In addition to conveying the desired message, these displays must attract attention so that the viewer will read the display material. Motion of one or more components of the display is a feature that is commonly used to attract attention. This motion or animation should be performed by means of a relatively simple device, however, to maintain low display cost.

It is, therefore, the principal object of this invention to provide an improved animated display.

It is a further object of this invention to provide an improved method of animation for a display device.

An animated display embodying this invention includes a support member and a plurality of flexible strips carried by the support member. A first actuating means is affixed to the flexible strips and a second actuating means is carried by the support member and juxtaposed to the first actuating means. One of the actuating means comprises a permanent magnet and the other actuating means comprises an electric coil. An alternating current is caused to flow through the electric coil for creating alternate attraction and repulsion between the actuating means thus vibrating the flexible strips.

Other objects and advantages of this invention will become more apparent as this description proceeds, particularly when considered in conjunction with the accompanying drawings, wherein:

FIGURE 1 is a front elevational view of an advertising display embodying this invention;

FIGURE 2 is a side view of the display shown in FIGURE 1;

FIGURE 3 is an enlarged view of the encircled area in FIGURE 2;

FIGURE 4 is a view, in part similar to FIG. 3, showing an alternative adjustable support for an actuating element; and

FIGURE 5 is a front elevational view, similar to FIGURE 1, showing another embodiment of the invention.

Referring now in detail to the drawings and in particular to the embodiment shown in FIGURES 1 through 3, an advertising display embodying this invention is identified generally by the reference numeral **11**. The display **11** is comprised of a face plate **12**, which may be formed from cardboard or any other suitable relatively rigid material. The face plate **12** is generally of keyhole shape and has an underturned flange **13** formed at its lower end and a circular aperture **14** formed in its upper face.

A supporting easel **15**, which may also be formed from cardboard or the like, is hinged to the rear surface of the face plate **12** in any known manner and may be locked in a perpendicular position with respect to the face plate **12** to serve as a supporting leg for it. The easel **15** has a generally rectangular cutout portion **16** formed behind the aperture **14** of the face plate **12** for a reason which will become more apparent as this description proceeds.

A sheet of Mylar or some other relatively strong, flexible material **17** is affixed to the face plate **12** on its rear side across the opening **14**. The Mylar sheet **17** is held in place so that it assumes a somewhat conical form (FIGS. 2 and 3). A plurality of generally radially extending slits **18** extend from a center portion **19** of the Mylar sheet **17** radially outwardly to form interconnected flexible strips **21**. The strips **21** are connected together at the center portion **19** and at their periphery.

The Mylar is preferably of a thickness of 1 to 3 mils and, as has been noted, other similar materials may be used. Preferably the material should be flexible and yet strong enough to resist tearing or fatigue failure under high intensity vibrations.

A first actuating member in the form of a permanent magnet **22** is affixed to the rear side of the Mylar center portion **19**. Juxtaposed to the permanent magnet **22** is a second actuating element, indicated generally by the reference numeral **23**. The actuating element **23** is comprised of a wound coil of wire **24** supported by means of a cardboard bracket **25** having outturned flanges **26**. The coil **24** is retained in the bracket **25** by means of a bolt **27** that passes through the flanges **26** and coil **24** and a nut **28**. The bracket **25** is pivotally supported upon the easel **15** by means of a pivot pin **29**. The terminals **31** and **32** of the coil **24** are connected by means of an electrical cord **33** and plug **34** to any suitable source of alternating current.

When the plug **33** is inserted into a receptacle providing a source of alternating current, the alternating current will flow through the coil **24** generating an alternating magnetic field. This field will alternately attract and repel the permanent magnet **22** causing a vibrating motion of the Mylar center portion **19**. This vibrating motion is transmitted to the flexible strips **21** so that they will rapidly oscillate. The strips will oscillate with respect to each other and create a simulation of movement which will readly attract one's eyes to the display. In addition, the vibration can create a sound that will also draw attention to the display **11**. The intensity of the vibration may be adjusted by pivoting the bracket **25** about the pivot pin **29** to change the distance betwen the coil **24** and permanent magnet **22**.

Another form of adjustable mounting is shown in FIGURE 4. In this embodiment a coil of wire **41** has a pair of terminals **42** and **43** that are connected by means of an electrical cord **44** to a suitable source of alternating current. The coil **41** coacts with a permanent magnet and flexible strips as in the previous embodiment. In this embodiment an easel **45** is provided with a pair of outwardly extending flanges **46** and **47** in which apertures are formed. A core **48** around which the coil **41** is wound extends through the apertures in the flanges **46** and **47**. The core **48** may be slid through the flanges **46** and **47** to vary the spacing between the coil **41** and the permanent magnet with which it coacts.

In either of the described mounting arrangements, the supporting core member of the coil may be formed with an elastomer cushion adjacent the permanent magnet for sound deadening in the event of contact between the magnet and the core. The coil in either embodiment may be held in a fixed position and the core adjusted with respect to the permanent magnet.

It is to be understood that various type display legend may be employed in cooperation with the animation device disclosed. In addition, displays may be provided on opposite sides of the coil so as to simulate movement on each side of the display. That is, one coil may actuate two sheets of flexible strips or magnets. The flexible strips may be colored in the same color, different colors or lines or other legend may be formed upon the strips.

An example of an illustrative display embodying the disclosed feature of the animation is shown in FIGURE 5. In this display, indicated generally by the reference numeral **61**, a spark plug illustration or likeness **62** is formed on the face plate **63**. Adjacent the terminals **64** of the spark plug **62**, a flame-shaped cutout portion **65** is formed in the face plate **63**. A flexible sheet in which strips **66** are formed is supported on the rear side of the face plate **63** behind the cutout **65**. In this embodiment, an actuating device of the type previously disclosed is supported in the area identified generally by the reference numeral **67** behind the face plate **63**. The vibrating motion will give the effect of flame emanating from the spark plug terminals **64**.

While it will be apparent that the preferred embodiments of the invention disclosed are well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modificaton, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. An animated display comprising a support member, a sheet of flexible material carried by said support member, said sheet being formed with a plurality of slits radiating from an uninterrupted portion to form separate flexible strips connected at said uninterrupted portion, a permanent magnet affixed to said uninterrupted portion, and electric coil supported by said support member and juxtaposed to said uninterrupted portion and to said permanent magnet, and means for passing an alternating electric current through said electric coil for creating alternating magnetic fields for successively attracting and repelling said permanent magnet and for vibrating said flexible sheet, the vibration of said flexible sheet effecting oscillatory movement of said flexible strips for attracting visual attention to said display, said electric coil being supported upon a core, the distance betwen said core and said permanent magnet being adjustable in a direction substantially parallel to the axis of said core.

2. An animated display as set forth in claim **1** wherein the electric coil is adjustably carried by the support member by means of a bracket to which said coil is affixed, said bracket being pivotally carried by said support member.

3. An animated display as set forth in claim **1** wherein the electric coil is adjustably carried by the support member, said coil being supported upon a core, said support member having a pair of out-turned flanges formed with apertures therein, said core being slidably supported at each end thereof within the apertures of said flanges.

4. An animated display comprising a relatively rigid face plate defining an opening, a sheet of flexible material affixed to said face plate and extending across said opening, said sheet being formed with a plurality of slits radiating from an uninterrupted portion to form separate flexible strips connected at said uninterrupted portion, a permanent magnet affixed to said uninterrupted portion, a supporting easel hingedly connected to said face plate for angular disposition relative to said face plate for supporting said face plate, said easel extending at least in part adjacent said sheet and being juxtaposed to said uninterrupted portion, an electric coil supported by said easel and juxtaposed to said uninterrupted portion of said sheet and to said permanent magnet, and means for passing an alternating electric current through said electric coil for creating alternating magnetic fields for successively attracting and repelling said permanent magnet and for vibrating said flexible sheet, the vibration of said flexible sheet effecting oscillatory movement of said flexible strips for attracting visual attention to said display.

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EUGENE R. CAPOZIO, *Primary Examiner.*

R. CARTER, *Assistant Examiner.*