Dec. 25, 1928. 1,696,827

M. M. WILLIAMS

ANIMATED DISPLAY DEVICE

Filed Sept. 9, 1926

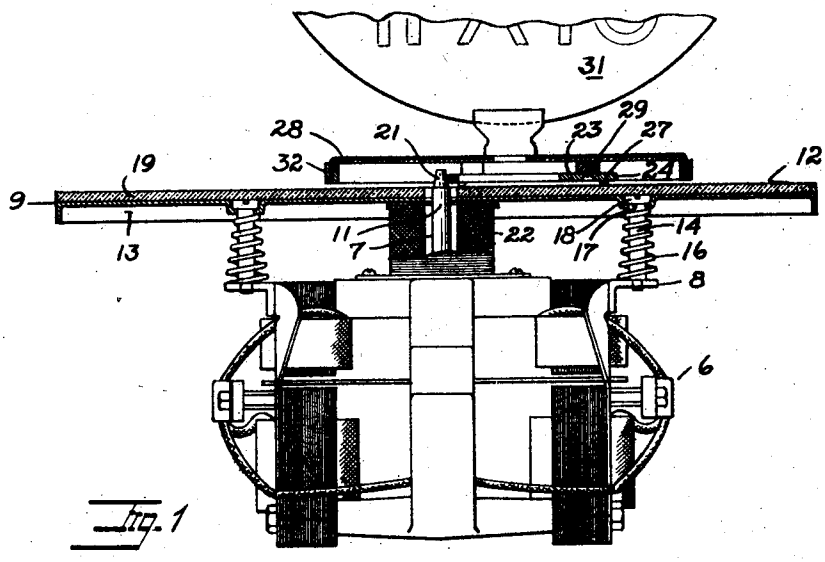


Fig. 1

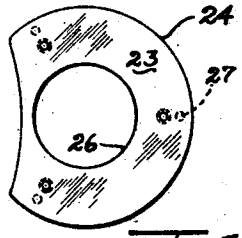


Fig. 3

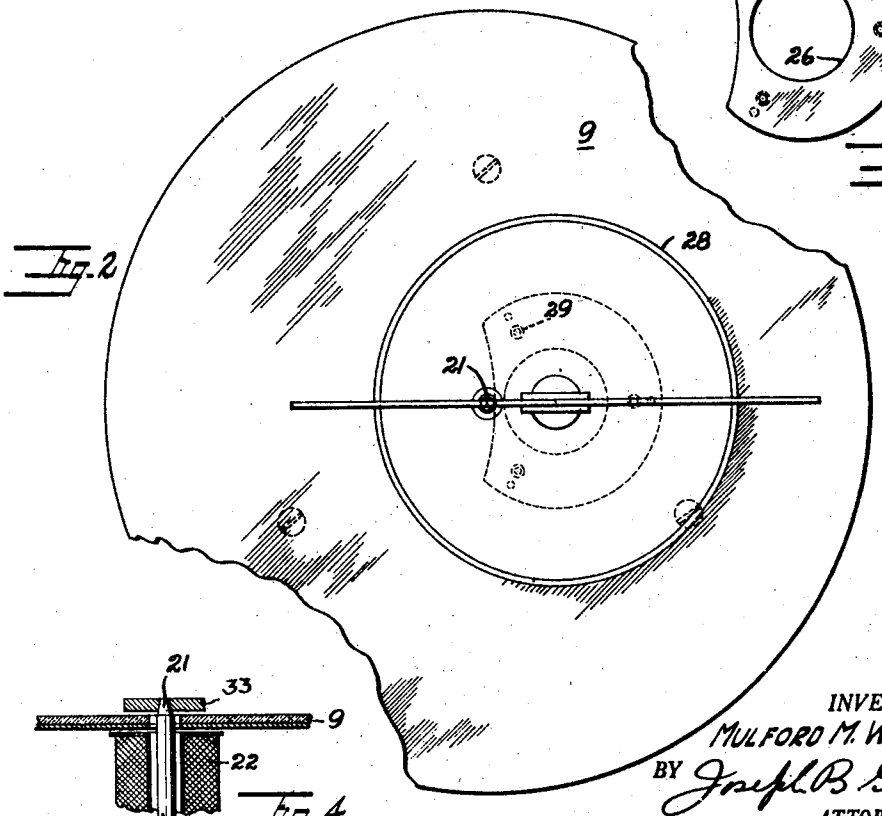


Fig. 2

Fig. 4

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UNITED STATES PATENT OFFICE.

MULFORD M. WILLIAMS, OF OAKLAND, CALIFORNIA, ASSIGNOR TO ALEXANDER N. PRENTICE, OF OAKLAND, CALIFORNIA.

ANIMATED-DISPLAY DEVICE.

Application filed September 9, 1926. Serial No. 134,377.

My invention relates to a device for effecting a movement of articles on display.

An object of the invention is to provide a particularly compact device of the character described for effecting the movement of articles of considerable size and weight.

Another object of the invention is to provide a device of the character described whereby a stoppage of the movement of the displayed articles does not effect the motion producing portion thereof.

A further object of the invention is to provide a device of the character described having the actuating means thereof readily concealable.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of my invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that I do not limit myself to the showing made by the said drawings and description, as I may adopt variations of the preferred form within the scope of my invention as set forth in the claims.

Referring to said drawings,

Figure 1 is a side view, partly in section, of a preferred embodiment of the device.

Figure 2 is a plan view of the device as shown in Figure 1.

Figure 3 is a plan view of an operative portion of the device.

Figure 4 is a fragmentary side sectional view of the device showing a speed changing attachment applied thereto.

As herewith particularly illustrated, the device of my invention comprises a motor 6 of the disc armature type having a vertical shaft 7 extending upwardly therefrom. Mounted on the motor frame 8 is a platform 9, here shown of circular outline, such platform preferably presenting a relatively frictionless upper surface 12 and being perforated to permit the extension of the upper end 11 of the shaft therethrough. In the embodiment of the invention here shown, the platform 9 comprises a lower section 13 resiliently and adjustably mounted on the motor frame by means of screw posts 14 and cooperating springs 16, the posts 14 extending through perforations 17 provided in the section 13 whereby such section will be held resiliently pressed against the under sides of the post heads 18, thereby providing a vibration absorbing mounting for the platform. The upper section 19 of the platform is preferably formed of some substance capable of providing the smooth surface 12, it being noted that such section may be conveniently formed of glass.

The upper shaft end 11, it will be noted, is here shown provided with a reduced and slightly tapered portion 21 at its extremity and extends through a helix 22 which is here shown mounted on the motor frame and disposed adjacent and below the platform 9. The shaft 7, it will now be noted, is preferably formed of steel whereby it may be magnetized upon the flow of an electric current through the helix 22, so that with the motor operating and the helix energized, the shaft 7 will constitute an axially rotating magnet with one of its poles substantially in the plane of the surface 12, suitable electrical connections with a source of current being provided for effecting such rotation and magnetization.

It will now be noted that with the shaft 7 magnetized and rotating as described, a member including a magnetic substance and placed on the surface 12, would be attracted to and be frictionally held against the revolving shaft portion 21, and by virtue of its frictional engagement with the rotating shaft, will be caused to present successive portions of its periphery against such shaft. It will, of course, be evident that the nature of the movement of a magnetic member with respect to the shaft will be determined by both the shape and length of the periphery presented by it against the shaft, and that an innumerable number of members having differing peripheries might be so presented to thereby effect as many movements. As here shown, the magnetic member 23 provided presents an outer edge 24 of irregular shape, and is also formed with a circular opening having an edge 26, either of which edges might be presented against the shaft to effect movement of the member thereabout in the manner indicated, it being noted that the movements effected would be generally opposite,

The member 23 is here shown provided with bearing members 27 extending downwardly therefrom, whereby its frictional engagement with the surface 12 as it is moved thereover may be minimized.

It will now be noted that the member 23 might either in itself constitute the display or that its movement might be utilized to effect the movement or actuation of other articles for display. As here shown, the member 23 is arranged to effect the movement of a display pedestal 28, the latter being secured thereto by means of screws 29 so that the member and pedestal will move together. The pedestal, it will be noted, may be utilized to carry articles of merchandise, or to support an advertising card 31, as is here shown, and its edge 32 preferably extends downwardly toward the surface 12 to conceal the member 23. In this manner, the method of operation of the device is not evident and an element of mystery is added to the display, it being obvious that the concealment of the motor may be readily effected.

Since motors of the type here shown utilized normally operate at a fixed rotative speed, variations in the speed of movement of a traveling magnetic member are preferably effected by varying the effective circumference at the shaft end 21, it being noted that an increased circumference will effect an increased speed of movement of the magnetic member. To effect such result, I accordingly provide one or more members 33 perforated to frictionally engage the tapered shaft end 21, and presenting a horizontally disposed periphery greater than that of the shaft end, it being noted that the periphery of such members need not be circular. It will now be noted that by the use of members 33, or the use of different members 23, variations in the speed and nature of motion of the object for display are effected in an extremely simple manner and without necessitating any adjustments or regulation of the structure of the device. And it will be further noted that accidental stoppage of the movement of members 23 will permit the continued and unhindered operation of the motor, and that no damage to the motor or member will result by reason of such stoppage, this feature being particularly valuable in the display of expensive merchandise.

I claim:

1. A display device comprising a motor having a vertically disposed magnetized motor shaft, a member entirely and resiliently supported on the motor frame and providing an upper surface disposed transversely of said shaft and perforated to allow the extention of said shaft therethrough, and an independent article of display providing a magnetic member having a continuous edge thereof arranged to be disposed on said surface and to frictionally engage said shaft whereby motion of said article over said surface may be produced upon the rotation of said shaft.

2. A display device comprising a motor having a frame and a vertically disposed shaft of magnetic material, means operative to magnetize said shaft during the rotation thereof whereby said shaft will constitute the core of an electro-magnet, a member carried by said frame and providing an upper surface disposed transversely of said shaft and perforated to allow the extension of said shaft therethrough, vibration absorbing means operatively interposed between said frame and member, and an article of display arranged to be slidably and removably supported on said surface and providing a magnetic member having a substantially continuous edge thereof arranged to be magnetically held against said shaft whereby motion of said article over said surface may be produced upon the rotation of said shaft.

3. A display device comprising a motor having a vertically disposed shaft of magnetic material, a helix disposed about said shaft whereby different degrees of magnetization thereof may be effected during the rotation of said shaft, a member providing an upper surface disposed transversely of said shaft and perforated to allow the extension of said shaft therethrough, and a support for an article of display slidably mounted on said surface and including a member formed of a magnetic substance and having an edge thereof arranged to maintain frictional engagement with said shaft during rotation thereof whereby said shaft will engage successive portions of said edge during rotation of said shaft.

4. A display device comprising an electric motor having a vertically disposed shaft of magnetic material, a helix disposed about said shaft, electrical connections whereby said helix may be variably energized during the operation of said motor, a member carried entirely on said motor and providing a supporting surface disposed transversely of said shaft and perforated to allow the extension of said shaft therethrough, and an object of display removably and slidably mounted on said surface and providing a magnetic member arranged to have the edge thereof magnetically held against said shaft during the rotation thereof.

5. In a device of the character described, a motor, a vertically disposed magnetized member carried by said motor and arranged to be rotated thereby, a display supporting member providing a horizontal surface and entirely supported on the motor frame and perforated to allow the extension of said first member therethrough, a display member slidably supported on said surface, and vibration

absorbing means operatively interposed between said frame and member.

6. In a device of the character described, an electric motor, a vertically disposed magnetizable member carried by said motor and arranged to be rotated thereby, a display supporting member having a transverse perforation and disposed to have said first member disposed through said perforation thereof, and a helix for magnetizing said first member.

In testimony whereof, I have hereunto set my hand at Oakland, California, this 20th day of August, 1926.

MULFORD M. WILLIAMS.