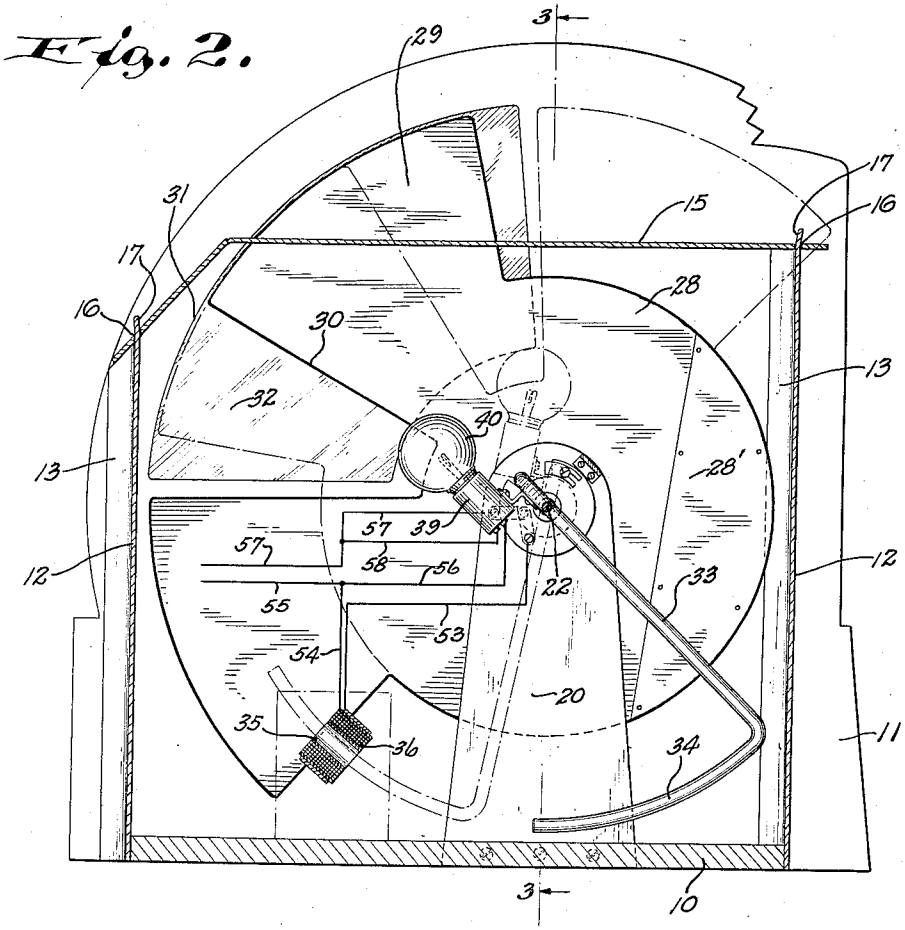
Aug. 11, 1936. A. GROTH 2,050,568

ANIMATED DISPLAY DEVICE

Filed June 5, 1935 2 Sheets-Sheet 1

Fig. 2.



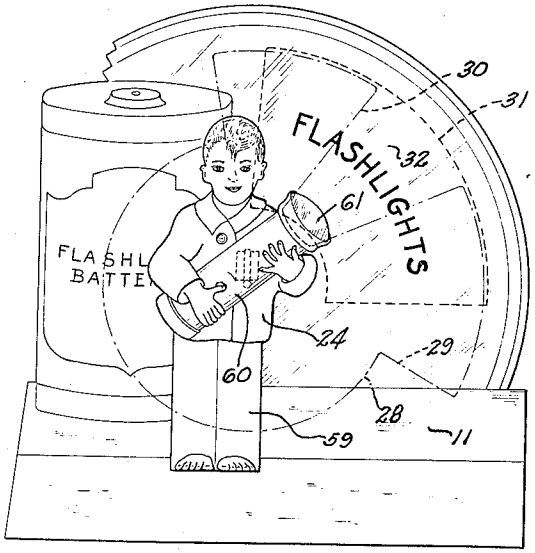


Fig. 1.

INVENTOR.
Alfred Groth
BY
Morsell Lieber & Morsell
ATTORNEYS.

Aug. 11, 1936. A. GROTH 2,050,568

ANIMATED DISPLAY DEVICE

Filed June 5, 1935 2 Sheets-Sheet 2

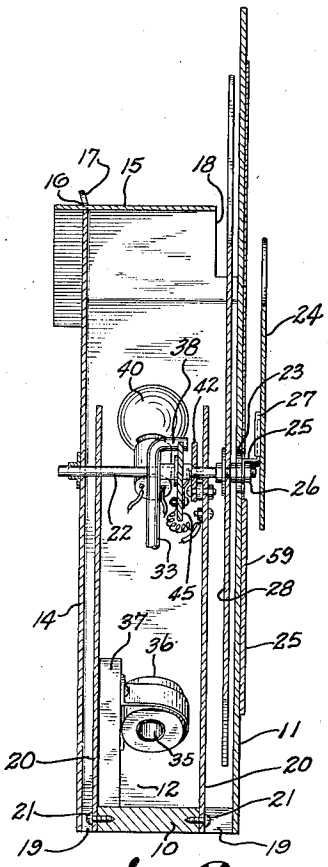


Fig. 3.

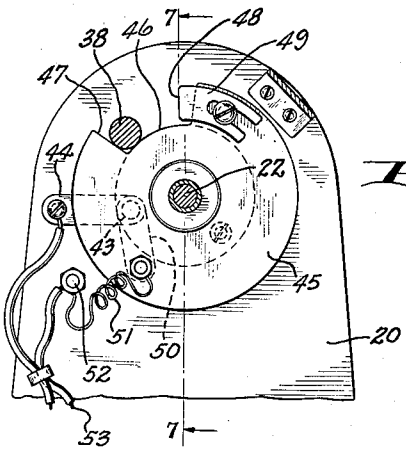


Fig. 4.

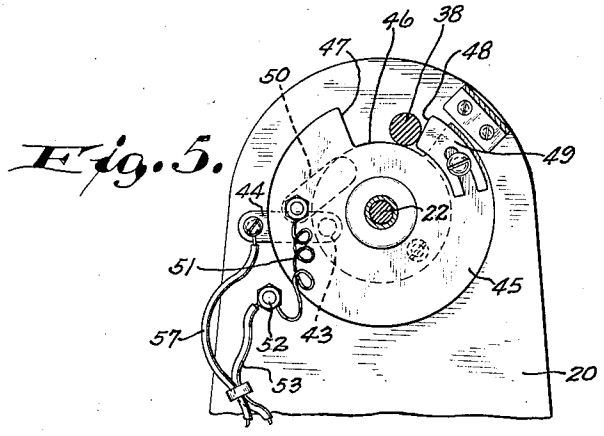


Fig. 5.

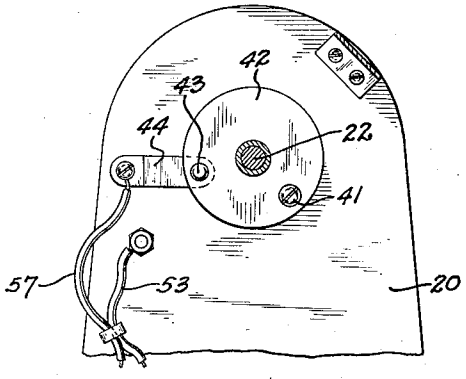


Fig. 6.

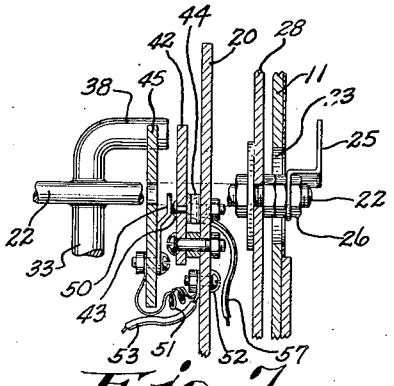


Fig. 7.

INVENTOR.

Alfred Groth

BY

Morsell Lieber & Morsell

ATTORNEYS.

Patented Aug. 11, 1936 2,050,568

UNITED STATES PATENT OFFICE

2,050,568

ANIMATED DISPLAY DEVICE

Alfred Groth, Milwaukee, Wis., assignor to Badger Carton Company, Milwaukee, Wis., a corporation of Wisconsin

Application June 5, 1935, Serial No. 25,071

11 Claims. (Cl. 40—52)

This invention relates to improvements in animated display devices.

Manufacturers of certain types of merchandise have, during the past several years, been resorting to the extensive use of display cards or display stands for placement in windows of drug stores or the like to advertise their products. The majority of these displays are of a non-animated character due to the fact that animated displays as heretofore produced, have necessarily embodied expensive and complicated motion producing mechanism and expensive electrical switches.

The present invention relates to a display device of the animated type, and it is a principal object to provide simple and inexpensive mechanism for producing an oscillatory motion, and more particularly an extremely simple and foolproof form of switch cooperating with said mechanism to make and break an electrical circuit.

A more specific object of the invention is to provide a display device having a swinging pendulum provided with a lower lateral extension cooperating with a fixed solenoid to produce the desired motion, said pendulum being cooperable with a novel form of switch to cause the latter to make and break the circuit to the solenoid.

A further object of the invention is to provide means within the display device carried by said movable pendulum for producing a movable beam of light, and means for so confining said beam that it will cooperate with an exteriorly visible animated display part to produce a novel exterior effect which is particularly adapted for use in advertising flash lights or the like.

A further object of the invention is to provide a display device which is simple and durable in construction, neat and attractive in appearance, and well adapted for the purpose described.

With the above and other objects in view, the invention consists of the improved animated display device and all its parts and combinations as set forth in the claims and all equivalents thereof.

In the accompanying drawings illustrating one complete embodiment of the preferred form of the invention in which the same reference numerals designate the same parts in all of the views:

Fig. 1 is a front elevational view of the improved display device;

Fig. 2 is an enlarged vertical sectional view through the device looking at the interior mechanism from the rear;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged vertical sectional view through the pivot shaft looking at the switch mechanism from the rear and showing the switch parts in circuit making position, parts being broken away and shown in section;

Fig. 5 is a similar view showing the parts in circuit breaking position;

Fig. 6 is a similar view showing the inner switch disc only; and

Fig. 7 is a sectional view taken on line 7—7 of Fig. 4.

Referring more particularly to the drawings, the numeral 10 designates a base of wood or other suitable material. A front 11 of cardboard, fibre board, or the like has its lower edge suitably secured to the front edge of the base. Side pieces 12, also of cardboard, have their lower edges secured to end edges of the base, and have their side edges provided with flanges 13 which may be adhesively connected to the front 12 and to a back member 14. A removable top 15 of cardboard or the like is formed with apertures 16 for the reception of extensions 17 on the side members 12. The top 15 is also formed with a front cutout 18 (see Fig. 3).

The front and rear of the base 10 are recessed as at 19 (see Fig. 3) to permit a pair of up-standing supporting members 20 to have their lower ends secured to the base within said recesses as at 21.

A shaft 22 is journaled in the back member 14 and in upper portions of the supporting members 20, and said shaft has an end projecting through an enlarged apperture 23 in the front 11 of the display device. An animated display part 25 which may simulate the upper portion of the body of a small boy may be removably secured to the end of the shaft 22 by means of an angular connection member 25, which connection member has one end secured to the shaft by a nut 26 and which has its other end removably positionable in a loop 27 on the rear of the animated display part 24.

Rigidly secured on the shaft 22 adjacent the inner side of the front 11 is a movable screen 28 of opaque material counter-balanced with wood or the like 28' having a segmental extension 29 provided with a segmental slot 30. The slot is adapted to move from registration with one end of an opening 31 in the front of the display device to the other end of said opening. The opening 31 is covered with tissue paper or other transparent material 32.

Rigidly secured to a central portion of the shaft 22 is a pendulum 33 having a curved lower end 34, the said pendulum being formed of suitable metal. The pendulum is movable from the full line position shown in Fig. 2 to the dot and dash line position shown therein. When in this latter position, the curved portion 34 enters a core opening 35 in a solenoid 36, the said solenoid being suitably supported on an upright member 37. The upper end of the pendulum projects slightly above the shaft 22 and is formed with an outwardly bent portion 38. The pendulum also has secured thereto a socket 39 for an electric light bulb 40.

Referring to Fig. 6, it will be seen that one of the supporting members 20 has secured thereto, by means of a nut and bolt 41, a disc 42 of fibre or the like, and the shaft 22 extends loosely through a central aperture in said disc 42. The disc is further formed with an electrical contact member 43 connected with a projecting contact strip 44.

A larger disc 45 also of fibrous material is loosely positioned on the shaft 22 adjacent the disc 42 as shown in Fig. 4, and said disc has its periphery cut-out as at 46 to form a shoulder 47. At the other end of the cut-out, an adjustable shoulder 48 is provided through the use of a separate adjustable member 49. The disc 45 has its inner side formed with a metallic contact member 50 which is movable with the disc 45 from a position in engagement with the contact 43 of the disc 42 as shown in Fig. 4, to a position out of engagement therewith as shown in Fig. 5.

A contact member 50 is connected by means of a flexible wire 51 with a fixed binding post 52 on the supporting member 20, and from said binding post 52 a wire 53 extends to the solenoid 36 (see Fig. 2). Another wire 54 extending from the solenoid 36 connects through a conductor 55 with a source of electrical supply and through a conductor 56 with one terminal of the electric light socket 39. Another wire 57 extends from the contact strip 44 of the disc 42 to the source of electrical supply, and a wire 58 from the other terminal of the light socket 39 connects with the wire 57.

In operation when the source of current is turned on, the solenoid 36 will be energized if the disc 45 is in the position shown in Fig. 4 to bring the contacts 50 and 43 into engagement. This will cause the solenoid to exert a pull on the curved pendulum part 44 to move said pendulum part from the full line position of Fig. 2 to the dot and dash line therein shown. When the pendulum is so moved, however, its bent inner end part 38 which moves in the cut-out 46 of the disc 45 will shift from the position of Fig. 4 to the position of Fig. 5 wherein it strikes against the shoulder 48 to move the disc 45 in a clock-wise direction, and thereby break the connection between the contact members 50 and 43 to stop the flow of current to the solenoid. As soon as this occurs, curved portion 34 of the pendulum will be released from the core opening of the solenoid and will swing back to the full line position of Fig. 2, at which time the pendulum part 38 will strike the shoulder 47 of the disc 45 as shown in Fig. 4 to move the disc in counter-clock-wise direction to again complete the circuit to the solenoid. The result will be relatively rapid oscillatory movement of the pendulum in which the making and breaking of the circuit is controlled by the simple and fool-proof switch mechanism illustrated in Figs. 4–7.

Due to the fact that the pendulum is rigidly connected to the shaft 22, the latter will of course be oscillated to impart movement to the animated body portion 24 of the display device.

Referring more particularly to Figs. 1 and 3, this animated body portion 24 cooperates with fixed leg portions 59 to simulate a small boy holding a flash light or the like 60, and due to the movement of the upper portion of the small boy, the flash light illustration will also be moved back and forth from one end of the transparent opening 31 of the display device to the other end. The screening member 28 which is movable behind the front 11 of the display device has its cut-out portion 30 so positioned as to substantially align with the lens part 61 of the flash light illustration, and due to the fact that the animated display part 24 and the screening member are both rigidly mounted on the oscillatory shaft 22, they will move in unison as will also the electric light 40. The latter will cast a beam which is defined by the cut-out part 30 of the screening member, and said beam will therefore move back and forth with the flash light illustration and be effective, due to the transparent opening 31, to perfectly simulate a beam of light cast by the flash light. The lens part 61 of the flash light illustration may be formed of tissue paper so that the light will also show through said lens part. Thus the boy will bend back and forth moving the flash light with him, and the flash light will throw a moving beam of light.

The novel motion producing mechanism and novel switch mechanism in connection therewith may obviously be used to produce motion on various types of display devices, and the present particular display is shown only for purposes of illustration. Furthermore the use of the light 40 cooperating with a movable screening member to cast a movable beam through a transparent front is capable of a wide range of use, but is particularly applicable to advertising displays for flash lights or the like.

Although only one form of the invention has been shown and described, it is obvious that various changes and modifications may be made without departing from the spirit of the invention, and all of such changes and modifications have been contemplated as may come within the scope of the claims.

What I claim is:

1. In an animated display device, a pendulum; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit including a fixed contact member, an oscillatory disc having spaced shoulders, and a second contact member carried by said disc; means in connection with said pendulum engageable with the shoulders of said oscillatory disc to alternately move the contact member carried thereby into and out of circuit making position when the pendulum is swinging; and a movable display part driven by said pendulum.

2. In an animated display device, a pendulum; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit, said switch including a fixed contact member, an oscillatory disc having a cut-out periphery to provide spaced shoulders, and a second contact member carried by said disc; means in connection with the pendulum projecting into said cut-out on the disc and engageable with said shoulders to alternately

move the disc and contact member carried thereby into and out of circuit making position when the pendulum is swinging; and a movable display part driven by said pendulum.

3. In an animated display device, a pendulum; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit, said switch including a fixed contact member, an oscillatory disc having a cut-out periphery to provide spaced shoulders, and a second contact member carried by said disc; said pendulum having a bent upper end projecting into said cut-out on the disc and engageable with said shoulders to alternately move the disc and contact member carried thereby into and out of circuit making position when the pendulum is swinging; and a movable display part driven by said pendulum.

4. In an animated display device, a pendulum; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit, said switch including a fixed contact member, an oscillatory disc having a cut-out periphery to provide spaced shoulders, and a second contact member carried by said disc; means in connection with the pendulum projecting into said cut-out on the disc and engageable with said shoulders to alternately move the disc and contact member carried thereby into and out of circuit making position when the pendulum is swinging; and means for adjusting the position of said shoulders.

5. In an animated display device, a rock shaft journaled in said device; a pendulum having an upper portion rigidly connected to said rock shaft; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit including a fixed contact member, an oscillatory disc loosely mounted on said rock shaft, and a second contact member in connection with said disc; means in connection with said pendulum for actuating said disc to alternately move the contact member carried thereby into and out of circuit making position when the pendulum is swinging; and a movable display part rigidly connected to said rock shaft.

6. In an animated display device, a housing having a translucent front portion, a pendulum within said housing, magnetic means for causing swinging movement of the pendulum, an exterior movable display part driven by said pendulum, an electric light movable with said pendulum within the housing, and a screening member between said light and front portion of the housing movable with said pendulum and with said movable display part, said screening member having an opening in substantial alignment with said light for causing a beam to show through the translucent front portion of the housing and to move with the movable display part.

7. In an animated display device, a housing having a translucent front portion, a pendulum within said housing, magnetic means for causing swinging movement of the pendulum, an exterior movable display part driven by said pendulum, and an electric light movable within the housing with said pendulum for causing a beam to show through the translucent front of the housing and to move with the movable display part.

8. In an animated display device, a housing having a translucent front portion, a rock shaft journaled in said housing, a pendulum having an upper portion rigidly connected to said rock shaft, an electric light movable with said pendulum within the housing, and a screening member rigidly mounted on said rock shaft between said light and front portion of the housing, said screening member having an opening in substantial alignment with said light for causing a beam to show through the translucent front of the housing and to move with the movable display part.

9. In an animated display device, a pendulum; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit including a fixed contact member, an oscillatory disc having spaced shoulders, and a second contact member carried by said disc; means in connection with said pendulum engageable with the shoulders of said oscillatory disc to alternately move the contact member carried thereby into and out of circuit making position when the pendulum is swinging; a movable display part driven by said pendulum, and means for adjusting the position of one of said shoulders.

10. In an animated display device, a rock shaft journaled in said device; a pendulum having an upper portion rigidly connected to said rock shaft; a solenoid for causing swinging movement of said pendulum; an electrical circuit for said solenoid; a switch in said circuit including a fixed contact member, an oscillatory disc loosely mounted on said rock shaft, and a second contact member in connection with said disc; means in connection with said pendulum for actuating said disc to alternately move the contact member carried thereby into and out of circuit making position when the pendulum is swinging; and a movable display part driven by said rock shaft.

11. In an animated display device, a housing having a translucent front portion, a pendulum within said housing, magnetic means for causing swinging movement of the pendulum, an exterior movable display part driven by said pendulum, an electric light within the housing, and a screening member between said light and front portion of the housing movable with said pendulum and with said movable display part, said screening member having an opening for causing a beam to show through the translucent front portion of the housing and to move with the movable display part.

ALFRED GROTH.