

[54] INTRODUCED IN LUMINOUS
PUBLICITY DISPLAYS OF
CONTINUOUS SASH TYPE

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[51] Int. Cl.G09f 11/28
[58] Field of Search.....40/32, 61 A, 62

[56] References Cited

UNITED STATES PATENTS

3,187,451	6/1965	Fontaine.....	40/32
1,450,850	4/1923	Grip.....	40/61 A
1,596,921	8/1926	Childs.....	40/61 A
3,389,483	6/1968	Piper	40/32

2,897,721 8/1959 Cohn et al.....40/32 X

FOREIGN PATENTS OR APPLICATIONS

339,333 7/1921 Germany40/61 A

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[57] ABSTRACT

A continuous sash type luminous display having an image carrying sash mounted on a pair of rollers, one of said rollers being coupled to a drive motor. Switch means are provided in the path of end-of-display members for actuation of said switch means to turn said motor off. Timing circuitry coupled to said motor is also provided for automatically restarting said motor after the passage of a predetermined period of time. Means are also provided for automatically opening and closing a pair of curtains during the cycle.

5 Claims, 5 Drawing Figures

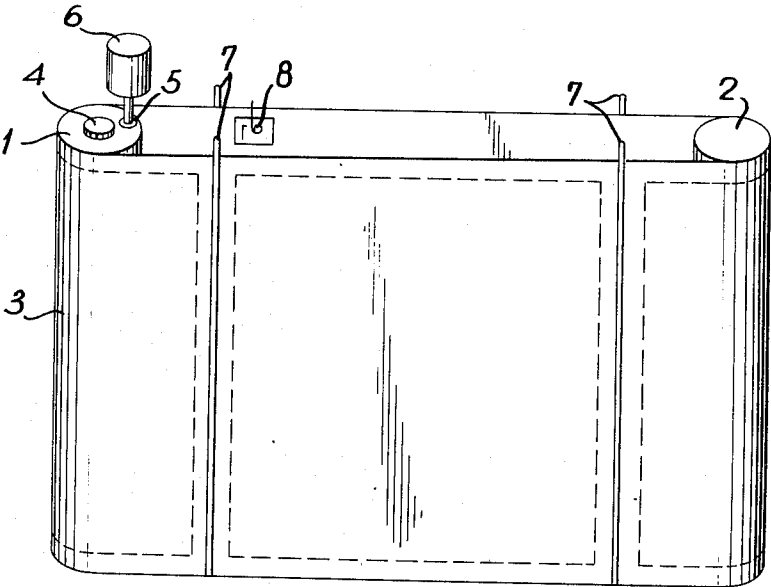


FIG. 1

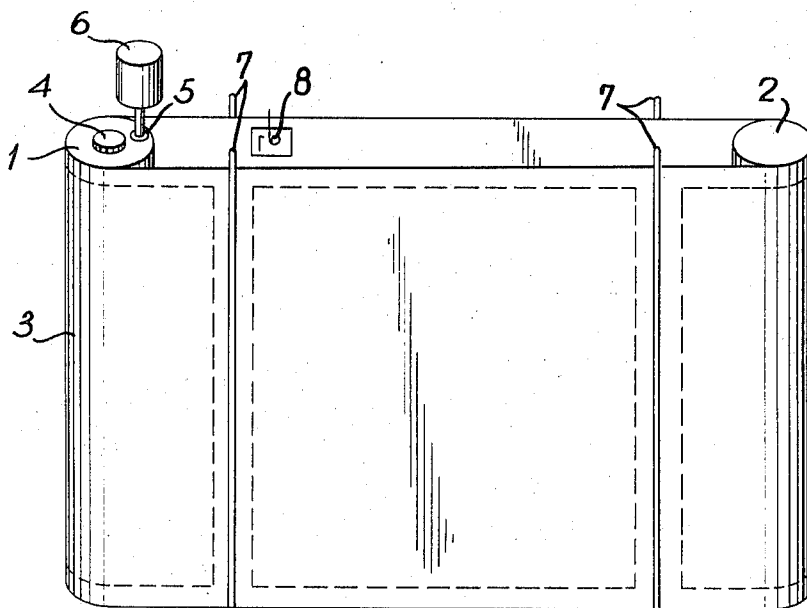


FIG. 2

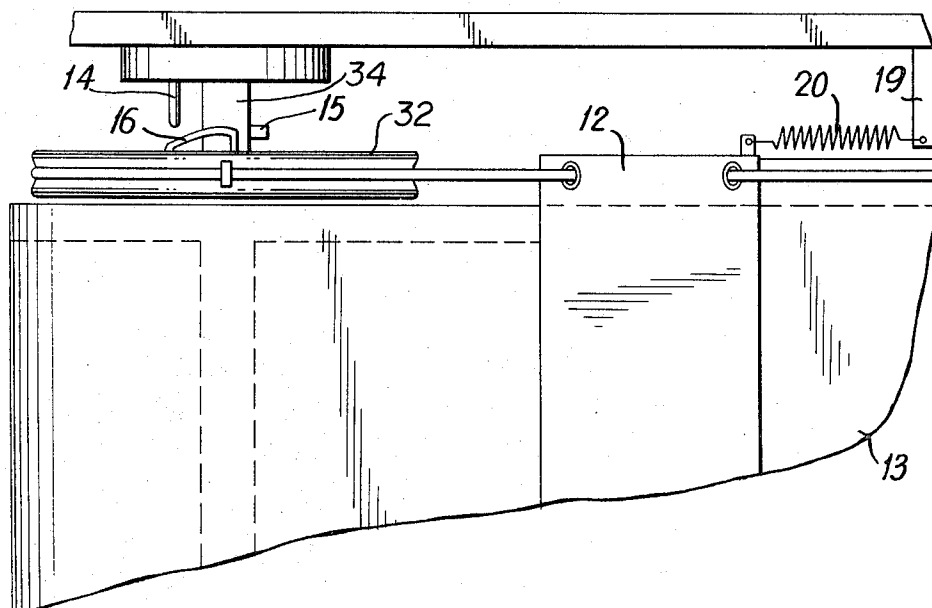


FIG. 3

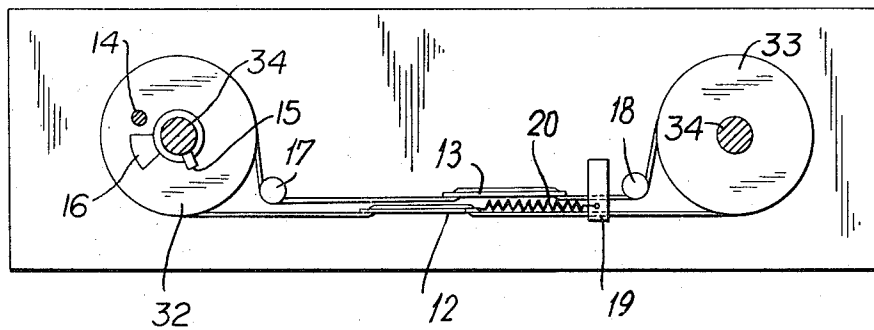


FIG. 4

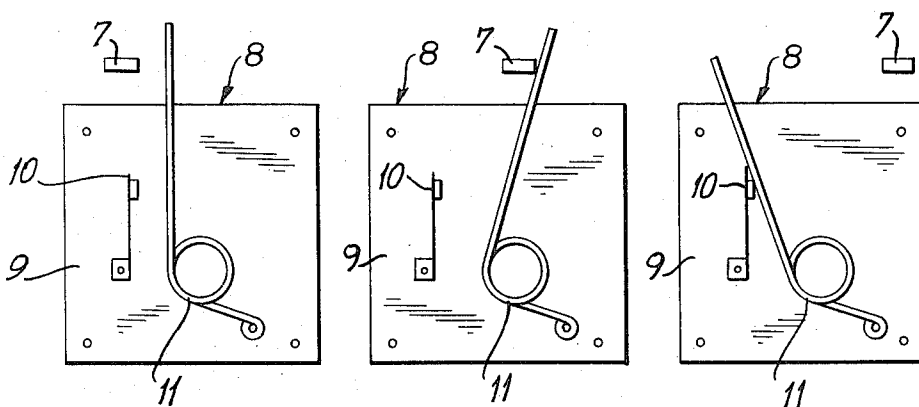
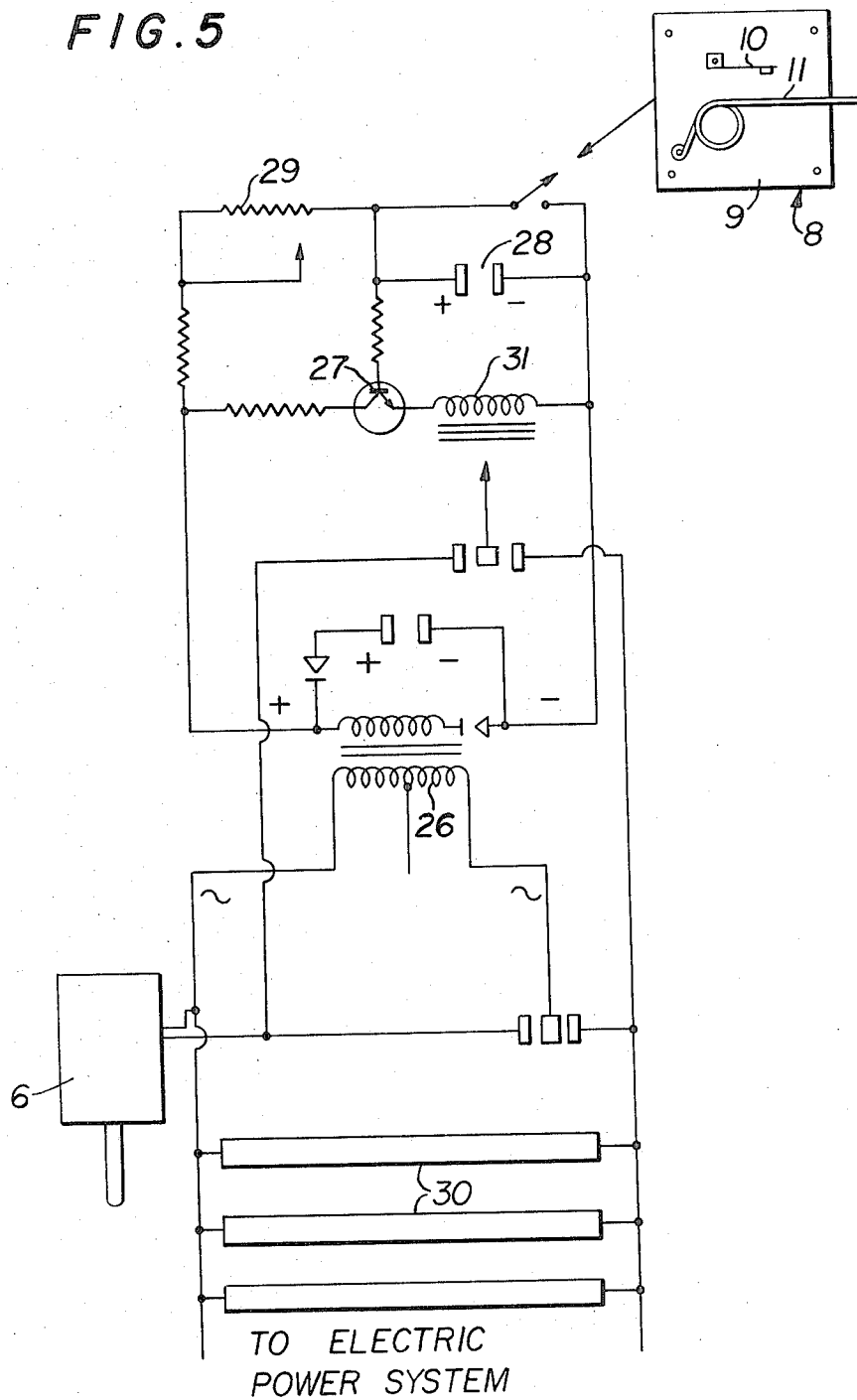


FIG. 5



INTRODUCED IN LUMINOUS PUBLICITY DISPLAYS OF CONTINUOUS SASH TYPE

The present application for patent of invention refers to a luminous publicity display of rolling sash type, as indicated in the title.

At present some displays are known which are limited to illuminating an image, or which project it onto a screen, by means of a cinematograph projector or diapositive. These systems have the drawback that, because of the movement of the image, there is a period of time during which the complete image is not seen, a period which is generally greater than that during which the complete image can be seen. Apart from this it requires a man or some analogous mechanism to effect the replacement or change of image. The projector, as part of its function, makes the image swing to right or left, or from above to below, which alters the vision, and disturbs and tires the attention of the spectator.

Apart from the foregoing, all are subject to the same disadvantage of high cost, precisely because of their varied component items.

The subject of the present application, apart from avoiding the drawbacks alluded to, associates to the fact of its extreme simplicity without loss of originality, a moderate cost which is perfectly adequate for the objective in mind, carrying out synchronistically, at will, all the movement necessary for changes or substitutions of images.

Furthermore, there is also the fact that while with the aforementioned systems it is essential to maintain a penumbra in the background in order that the projected image may be properly prominent, with our system it is unnecessary as the interior illumination is sufficient for the objects to be seen perfectly, because they are not projected, they are made prominent.

With the object of expounding with greater clarity the purpose of this application, some sheets of drawings are attached to this present memorandum and constant reference will be made to them throughout.

FIG. 1 is a sectional view of the object of the application;

FIG. 2 shows the curtains in detail;

FIG. 3 shows a top view of the curtain mechanism of FIG. 2;

FIG. 4 comprises three views of the switch, in its positions of rest, starting and working; and

FIG. 5 is a drawing of the electrical system of the apparatus.

Referring to FIG. 1, it is seen that there are two rollers, i.e., the driving roller 1 and the idler or support roller 2.

Both are connected by means of supports to a plate which is not shown because it is not a part proper and specific to the invention.

Supported between these two rollers there is the tightened sash 3 in which the images to be illuminated are placed, either formed on the sash itself like a screen or else superimposed on it.

The driving roller 1 has connected at one of its ends a dentated corona 4 to which is coupled the pinion 5 of an electric motor 6. A reducer wheel (not shown) may be inserted between said motor pinion and said corona for transmitting the motor drive to driving roller 1. The dimensions of said reducer wheel would depend on the speed at which the sash is to be displaced.

The motor 6 would have to be of a capacity appropriate for the volume of the apparatus, since it is logical that if a large-dimension apparatus is used it would not be able to operate with a small motor.

Starting is effected by means of a time delay circuit 25 (FIG. 5), the level supplied from the electric power system through a voltage transformer 26 which reduces the power to what is necessary for the transistor 27 of said circuit which circuit includes a switch 8, an electrolytic condenser 28 and a variable resistance 29 as its principal components.

The image, carried by sash 3 and illuminated by lamps 30, is kept in the stop position for a previously determined period set by time delay circuit 25, and when this period has expired, said circuit acts through relay 31 to connect and start motor 6

which moves the sash until another image is placed. Between each image and the next there are some end-of-display terminals 7 that cause a switch 8 to trip.

Said switch is of the instantaneous action type, i.e., once it is actuated it recovers normal position instantaneously, loading the electrolytic condenser 28 with a calculated load, adjustable by the variable resistance 29, which will cause the time delay circuit to start working.

This switch 8 (FIG. 4) is formed by a support plate 9, which has a small iron contact plate 10. A spiral contact spring 11 is fixed to the plate, leaving its extremity projecting over the latter. On the end-of-display terminal 7 advancing, it strikes against the extremity, causing it to swing. Once it has passed, the force thereof will make it establish instantaneous contact with the small iron contact plate 10, but instantaneously recovering its rest position.

The disappearance or concealment of the image from the spectator's view may be achieved in two ways—by extinguishing the illumination on starting up the motor or by leaving the latter on, but actuating some curtains interposed on the image.

In the former of these cases the illumination is disconnected when the time delay circuit skips.

In the second case, shown in the drawings, there are two curtains available, one 12 at the front and the other 13 behind, which slide on a horizontal shaft.

Both are held down by a cord, wound about grooved rollers 32 and 33, each rotatably mounted on shafts 34 of adjusting rollers 1 and 2, which may be appreciated by consulting FIGS. 2 and 3.

A pressure pivot 14, a fixed pulling pivot 15 and an engagement pawl 16 are associated with groove roller 32.

In order to maintain the cord in tension, there are two interior rollers 17 and 18, and connected to the chassis a fixed metallic support 19 to which is joined a recuperator spring 20 which in turn is held down to the frontal curtain 12.

The rear curtain 13 is placed on the cord, according to the width of image required in such a manner that it coincides together with the frontal curtain concealing the image completely.

When the image to be displayed is positioned and is being displayed, the curtains 12 and 13 are maintained in the open position by the engagement of pulling pivot 15, which rotates with shaft 34 and tensioning roller 1, against the pawl 16 mounted on groove roller 32, in which position it will remain until the change of image is initiated.

Once the motor starts the change of image movement, in response to the time delay circuit, the pawl is displaced downwardly by engagement with the fixed pressure pivot 14 to a position out of engagement with pulling pivot 15, whereupon the curtains are closed instantaneously, the rear curtain being pulled by the cord and the frontal curtain by the recuperation spring 20.

When the sash has rotated about half of the space that an image occupies, pulling pivot 15 is carried in the clockwise direction as viewed in FIG. 3 back into engagement with pawl 16 so that the pawl exercises pressure through grooved roller 32 and begins to pull on the cord, all synchronizing with the automatic movement of the image.

In the drawings, a system of curtains has been shown with two curtains only. It is also possible to use four, i.e., those described earlier and another two which function following a vertical shaft, with which the effect of aperture would be the same as a diaphragm.

Their movement actuated by the driving roller combined with the moving motor has been described, but it is also feasible to make them function with an auxiliary motor, independent of the first, but synchronized by the time delay circuit with change of image.

Having thus sufficiently described the object of the invention, it only remains to add that those modifications that could be introduced therein and which, as being only in detail and which do not alter the characteristic essentiality, must be considered as comprised in the spirit thereof.

What is claimed is:

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1. A luminous publicity display comprising a drive roller; an idler roller spaced from said drive roller; a continuous image carrying sash mounted on said drive and idler rollers for rotation thereby; a drive motor operatively coupled to said drive roller for the rotation thereof; switch means; and end-of-display member associated with each image on said sash and positioned on said sash for operative engagement with said switch means when its associated image is substantially in a viewing position; time delay circuit means operatively coupled to said switch means and drive motor for actuation by said switch means and for stopping said drive motor upon such actuation, and restarting said drive motor a predetermined period of time thereafter; curtain means mounted for displacement between an open and a closed position relative to said image viewing position; means for biasing said curtain means in said closed position; and curtain drive means coupled to said drive roller for maintaining said curtain means in said open position when said drive motor is stopped, for releasing said curtain means when said drive motor starts to permit said curtain means to assume its closed position, and for displacing said curtain means from said closed to said open position in response to the rotation of said drive motor during the displacement of said sash.

2. A luminous publicity display as recited in claim 1, wherein said time delay circuit means includes a condenser connected for charging upon actuation of said switch means and a variable resistance coupled to said condenser for adjusting the duration of said time delay.

3. A luminous publicity display as recited in claim 1, wherein said curtain drive means includes a curtain roller

operatively coupled to said curtain means and mounted for rotation relative to said drive roller; a displaceable pawl mounted on said curtain roller; a pulling pivot mounted for rotation with said driving roller in the path of said pawl for carrying said pawl and curtain roller therewith to open said curtains and for retaining said pawl and curtain roller for maintaining said curtains in said open position; and a pusher pivot fixedly mounted in the path of said pawl for engaging said pawl as it is carried thereby to displace said pawl out of the path of said pulling pivot to permit the free rotation of said curtain roller and the displacement of said curtains to said closed position in response to said biased means.

4. A luminous publicity display as recited in claim 3, including an idler roller and cord means extending about said curtain roller and idler roller and secured to said curtain means for coupling said curtain means to said curtain roller for positioning of said curtain means in response to the rotation of said curtain roller.

5. A luminous publicity display as recited in claim 1, wherein said switch means comprises a fixed contact and a spring contact, said spring contact being positioned normally out of engagement with said fixed contact in the path of said end-of-display members for displacement away from said fixed contact, and flexing toward and into momentary engagement with said fixed contact upon release by said end-of-display members, said spring contact being adapted to rebound from said fixed contact to assume its initial position out of engagement therewith.

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