

Oct. 14, 1969

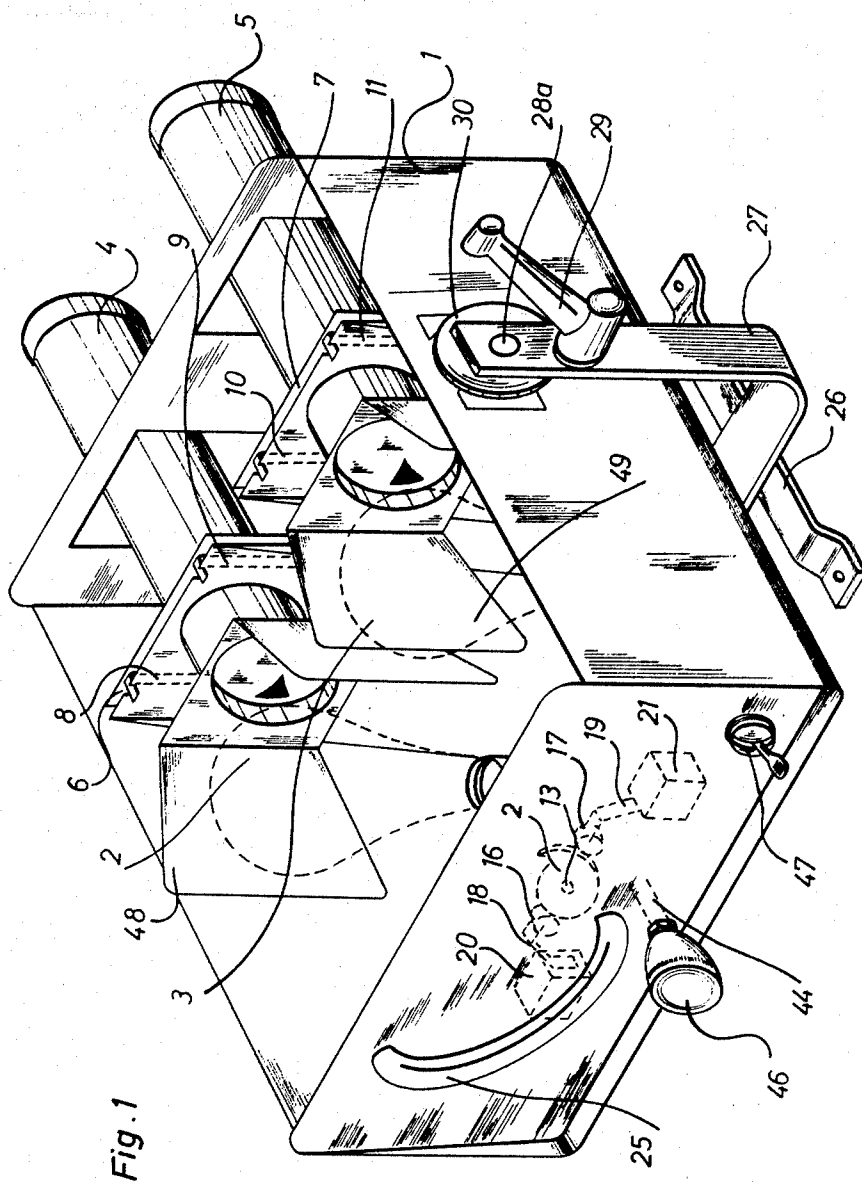
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3,472,586

PICTURE PROJECTOR FOR ADVERTISING

Filed Aug. 29, 1966

4 Sheets-Sheet 1



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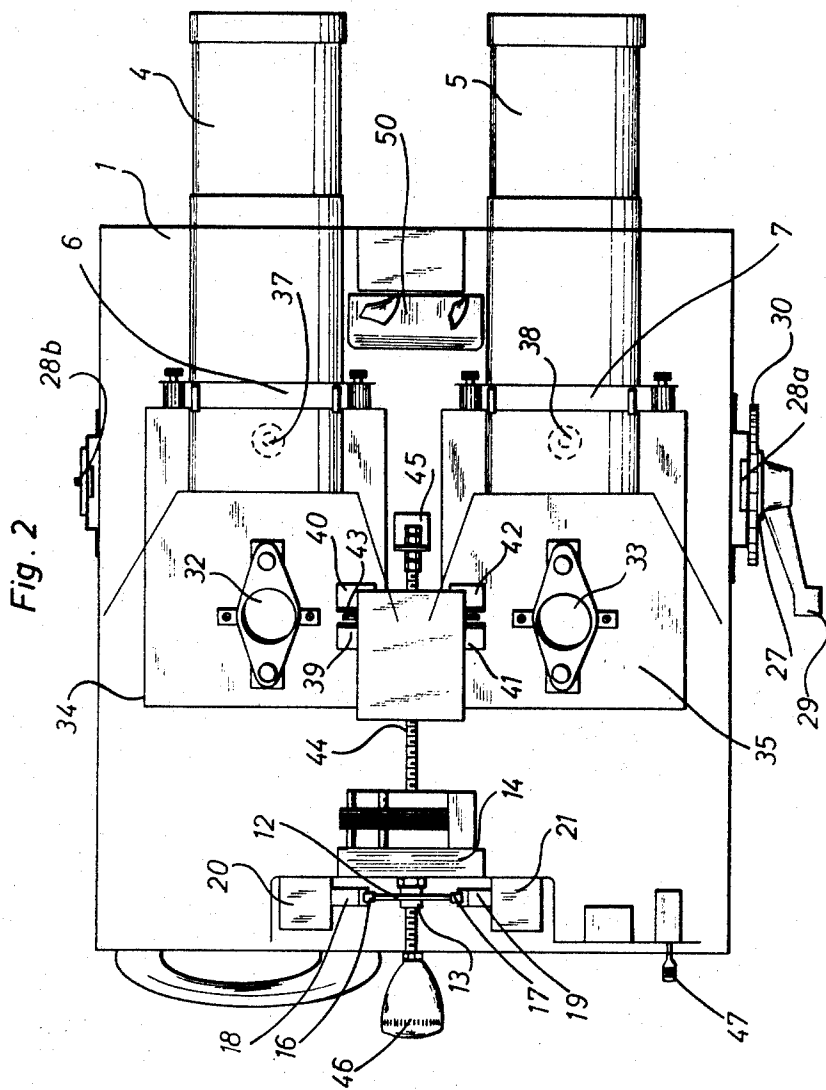
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PICTURE PROJECTOR FOR ADVERTISING

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4 Sheets-Sheet 3

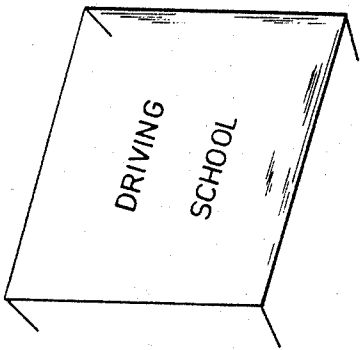
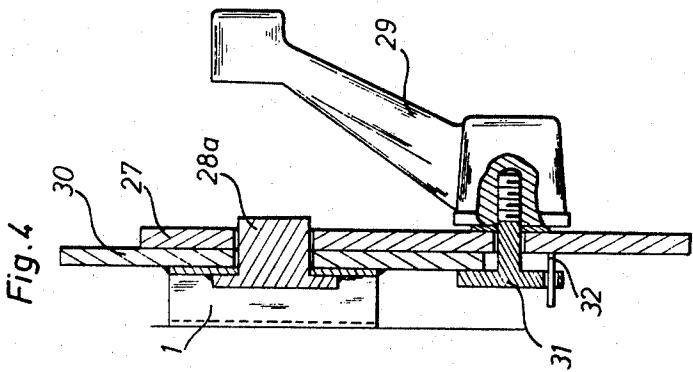
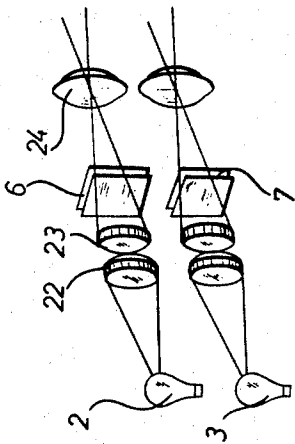


Fig. 3



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4 Sheets-Sheet 4

Fig. 5

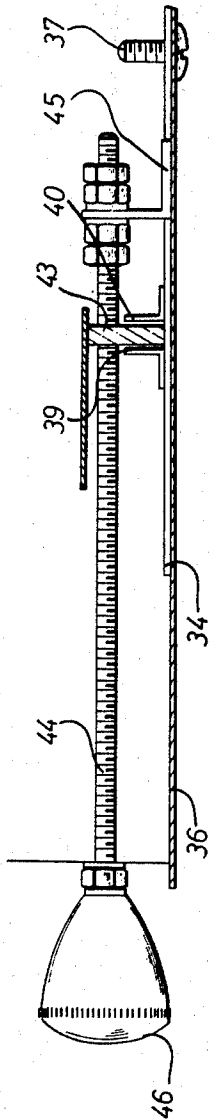


Fig. 7

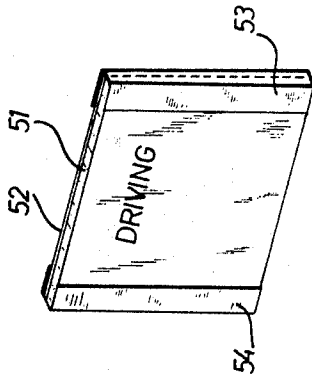
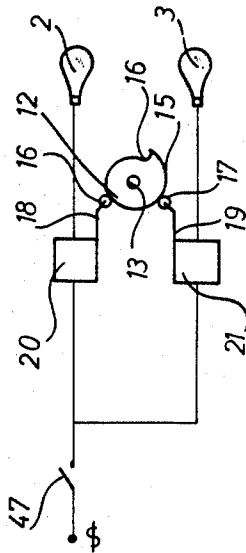


Fig. 6



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1

3,472,586

PICTURE PROJECTOR FOR ADVERTISING
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3 Claims

ABSTRACT OF THE DISCLOSURE

A fixed view projector used for projecting advertising images on a screen in a shop window or on the walls of a room. Two separate projection systems and a switching device for operating them is provided. Images are exhibited in a continuous succession of operating cycles during predetermined portions of each of which different luminous effects are successively provided. The switching device is cam operated and includes contact breakers connected in the supply circuits for the projector lamps.

The present invention relates to a projector which is particularly adapted for projecting, on a screen in a shop window or on the walls of a room, advertising images, commercial slogans, trademarks, and the like.

The motion-picture projectors are not well adapted for that purpose, as the film is expensive and has a limited duration. The conventional devices for projecting transparencies enable one to exhibit fixed images during any time interval which may be useful, but the exhibition is intermittent and lacks the life and attractiveness which would draw the attention of the customer.

It is an object of the present invention to provide a fixed view projector adapted for exhibiting advertising images in a continuous succession of operation cycles during predetermined portions at each of which different luminous effects are successively provided, in view of obtaining a continuous exhibition endowed with attractiveness.

Advertising displays in which different luminous effects are cyclically provided are well known in outdoor advertising, for instance, the electric specaculars, composed of luminescent tubes successively flashing in accordance with various patterns of colours and shapes.

It is an object of the present invention to provide a projector which is adapted for exhibiting advertising displays each comprising various successive patterns, on a transparent screen in a shop window, yet being simple in design and making use of a small number of transparencies for each advertising display.

According to a preferred embodiment of the invention, the projector includes first and second projection systems providing differently coloured images, means for adjusting the direction of the beams of the said systems so as to focus and superimpose on the same screen the two images respectively generated by said systems, and switching means for operating each of said systems during adjustable predetermined time intervals.

These and other objects of the present invention will become apparent from the following description.

In the accompanying drawings:

FIG. 1 is a perspective view of an apparatus in accordance with the preferred embodiment of the invention; of which

FIG. 2 is a plan view; and of which

FIG. 3, very diagrammatically, shows the optical projection systems;

FIG. 4 is a profile sectional view of a locking device for positioning the cabinet in which the optical projection systems are accommodated;

2

FIG. 5 shows, partly in profile, partly in section, a mechanism for adjusting the direction of the axes of the optical projection systems;

FIG. 6 diagrammatically shows power supply and switching means for successively operating the two optical projection systems; and

FIG. 7 is a perspective view of a transparency which is particularly adapted for use with the apparatus of the invention.

Referring now to the drawing, in which like reference numerals indicate corresponding parts in the various figures, it is apparent that the apparatus includes, accommodated in a cabinet 1, two projection systems comprising the respective projection lamps 2 and 3 and optical systems respectively lodged in lens holders 4 and 5. A transparency is inserted in each of the channels 6 and 7, wherein it is maintained in proper position by means of spring leaves 8-9-10-11.

FIG. 3 diagrammatically shows that images of the two transparencies are formed by the two respective optical systems and superimposed on a transparent screen on which the advertising terms "DRIVING SCHOOL" are, for instance, displayed, to be viewed by persons placed behind the screen. For that purpose, the term "DRIVING" is written on the higher half of the first transparency, whereas the term "SCHOOL" is written on the lower half of the second one. When the two projection lamps 2 and 3 are lighted, the whole inscription is displayed on the screen, whereas only one of the words "DRIVING" and "SCHOOL" is displayed when only one of the lamps is lighted. Moreover, the background of the transparency with the word "DRIVING" is, for instance, coloured in blue, whereas the background of the transparency with the word "SCHOOL" is, for instance, coloured in red. It results that the background of the whole inscription is coloured in purple when the same appears on the screen.

The following display cycle of 5 sec. will for instance be provided:

"DRIVING" will be displayed on a blue background for 2 sec.

"DRIVING SCHOOL" will be displayed on a purple background for 0.5 sec.

"SCHOOL" will be displayed on a red background for 2 sec.

"DRIVING SCHOOL" will be displayed on a purple background for 0.5 sec.,

after what, a new cycle will start, with "DRIVING" displayed on a blue background for 2 sec., and so on.

This will be obtained by supplying each of the lamps during successive time intervals of 3 sec. separated by successive time intervals of 2 sec., the operating cycle of one of the lamps being delayed by 2.5 sec. with respect to the operating cycle on the other lamp.

In the embodiment presently being disclosed, this result is obtained as follows: a switching device includes a cam 12 which is mounted for rotation about the shaft 13 of a motor and reducer arrangement 14. The cam 12 has a boss 15 and a recess 16 at its periphery, which is continuously engaged by two rollers 16 and 17 (FIG. 6). The rollers 16 and 17 are mounted at the respective ends of two resiliently rockable levers 18 and 19, each of which controls the operation of a contact breaker (20 and 21, respectively). As appears from FIG. 6, two branches of a circuit are supplied in parallel from the mains and each includes one of the contact breakers, connected in series with one of the lamps 2 and 3. Each time the boss 15 engages one of the rollers 16 and 17, the corresponding lever is rocked away, which has the effect of breaking the contact in the corresponding branch of the circuit, thus switching out the corresponding lamp. The contact is

broken until the roller again engages the recess, at which time the spring-lever is drawn back in a position wherein the contact is again made.

Referring more particularly now to FIG. 3, it appears that each of the two optical systems includes a condenser comprised of two plano-convex lenses 22 and 23 and an objective comprised of a biconvex lens 24.

Referring more particularly now to FIG. 1, the cabinet 1 is fitted with a handle 25 and normally covered with a removable lid, not shown. It is pivotally supported on a supporting frame 26 which has two upright legs such as 27 at the upper ends of each of which is mounted an axis (28a, 28b). Once the cabinet 1 has been rotated about horizontal axes 28a-28b until the lens holders 4 and 5 are brought in the direction of the screen, cabinet 1 is locked into its position through the rocking of a lever 29 (FIGS. 1-2-4). It appears from FIG. 4 that the rocking of lever 29 has the effect of driving in a screw 31, the head portion of which then engages the lower part of a disc 30 which is rigidly bound to the axis 28a and normally slightly apart from the leg 27. It results that the said disc is pushed on leg 27 and that axis 28a locked against rotation.

Once the angle of the two lens holders with respect to the horizontal plane has thus been properly adjusted, the directions of their optical axes in the plane in which they are contained (and which is substantially parallel to the plane of the bottom of cabinet 1) should also be properly adjusted, in view of providing the superimposition of the two images on the screen.

It appears from FIGS. 2 and 5 that the lens holders 4 and 5, together with the sockets 32-33 of the lamps, are mounted on plates 34 and 35, respectively. The plates 34 and 35 are pivotally mounted on the bottom plate 36 of cabinet 1, by means of adjustable screws 37 and 38 respectively, the heads of which may be reached from the outside, under the cabinet.

To each of the plates 34 and 35, there is secured a pair of brackets 39-40 (FIGS. 2 and 5) and 41-42 (FIG. 2), respectively. A vertical plate 43 is wedged into the opposing vertical legs of each pair. A threaded rod 44 is supported at one end by the front plate of the cabinet and, at the opposite end, by a bracket 45 which is secured to the bottom plate 36. A knob 46 enables one to rotate by hand the rod 44, which then drives the plate 43 which in turn drives the plates 34 and 35. The latter then pivot about the axes of the screws 37 and 38 (FIG. 2), which provide an adjustment of the angle of the two beams projected on the screen.

Referring more particularly now to FIGS. 1 and 2, the apparatus further includes a switch 47 which controls the supply of the reflector lamps as apparent from FIG. 6, two reflectors 48 and 49 which are respectively secured at one end of the lens holders 4 and 5, and a blower 50 for cooling the lamps.

Preferably, the transparencies are comprised, as illustrated in FIG. 7, of a glass plate 51 on which the image or inscription is recorded, for instance by transfer, and of a transparent coloured plastic sheet 52, which is stuck to the glass plate by means of adhesive tapes 53 and 54. This enables one to detach the sheet and substitute a differently coloured sheet when desired.

It is to be understood that various modifications may be brought to the apparatus as disclosed, without departing from the spirit and scope of this invention. In particular, a neon coloured transparency could be used, a rotatable disc having differently coloured sectors being then interposed on the path of each of the two beams.

Another modification would consist in permanently

supplying the two lamps and providing the projectors with a mask which should interrupt each of the beams during suitable time intervals.

What I claim is:

1. A fixed view projector comprising: first and second projection systems each adapted for generating a light beam and forming a coloured image in a plane substantially perpendicular to the direction of said beam; means for selecting the colours of the said images; switching and supply means for operating each of said projection systems during adjustable predetermined time intervals, the directions of the beams generated by said first and second projection systems being substantially contained in the same plane and forming an angle one with respect to the other, the said projection systems being lodged in a cabinet having an horizontal axis of rotation substantially perpendicular to the general direction of said beams; means for adjusting the inclination of the plane of the beams with respect to the horizontal, the first and second projection systems being respectively mounted on first and second plates, the cabinet having a bottom plate and said first and second plates being pivotally mounted on said bottom plate; and means for adjusting the angle of the directions of the beams, said means including a member rigidly connected to said first and second plates; a threaded rod rotatably connected to the cabinet and adapted for displacing said member in a direction substantially parallel to the general direction of said beams and a control knob for rotating the said rod.

2. A fixed view projector comprising: first and second projection systems each adapted for generating a light beam and forming a coloured image in a plane substantially perpendicular to the direction of said beam; means for selecting the colours of the said images; means for adjusting the directions of said beams so as to superimpose in the said plane the images respectively formed by said first and second projection systems; and switching and supply means for operating each of said projection systems during adjustable predetermined time intervals, the said projection systems each including an optical system and a lamp, the said switching and supply means comprising first and second branches connected in parallel and having a common input adapted for connection to a power supply source, each of said branches including a contact breaker connected in series with one of said lamps; and switching means cooperating with the said contact breakers for making contact in the respective branches during the said predetermined time intervals.

3. A fixed view projector as claimed in claim 2, wherein said switching means include a motor having a shaft and a cam mounted on the said shaft, said contact breakers having spring-urged levers and rollers mounted on the said levers and cooperating with the said cam.

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