Feb. 13, 1945. G. E. MUSEBECK 2,369,483

PICTURE PROJECTING RECORD

Filed Oct. 15, 1942

FIG. 1

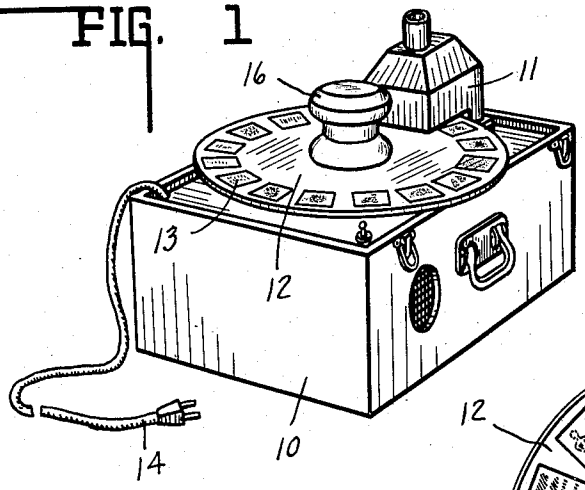


FIG. 2

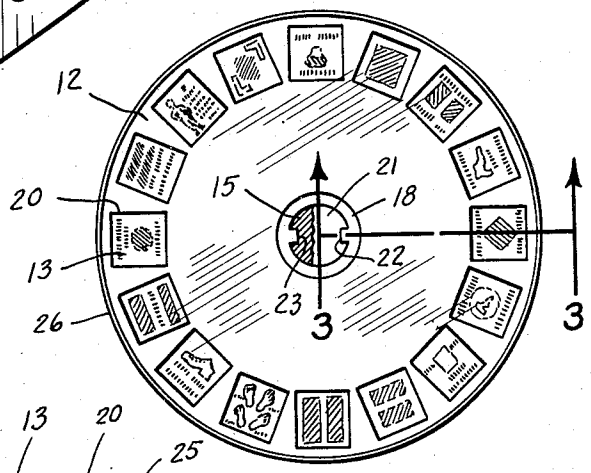


FIG. 3

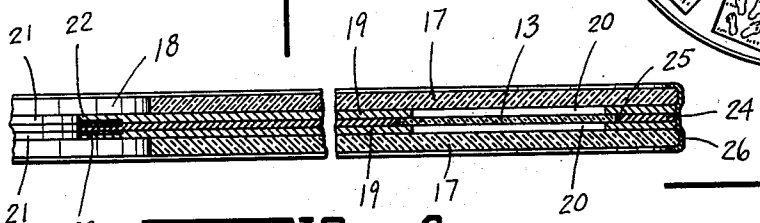


FIG. 4

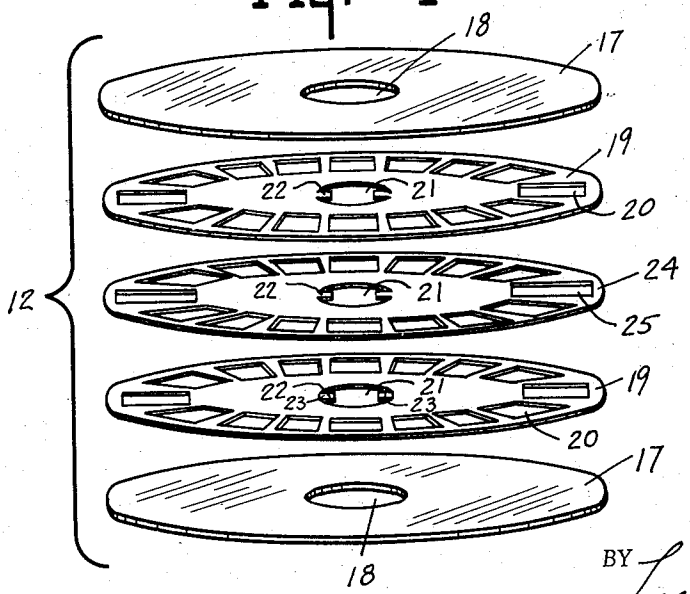


FIG. 5

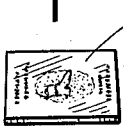
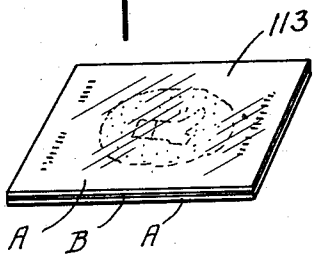


FIG. 6



INVENTOR.
GEORGE E. MUSEBECK.

BY Lockwood, Goldsmith & Galt.
ATTORNEYS.

Patented Feb. 13, 1945 2,369,483

UNITED STATES PATENT OFFICE

2,369,483

PICTURE PROJECTING RECORD

George E. Musebeck, Danville, Ill., assignor to Musebeck Shoe Company, Danville, Ill., a corporation

Application October 15, 1942, Serial No. 462,118

1 Claim. (Cl. 88—27)

This invention relates to the construction of a record disk for use in connection with a light projecting machine whereby a series of pictures carried by the record may be projected intermittently and in sequence.

Heretofore, picture projecting apparatus have had associated therewith a record disk adapted to be intermittently rotated for carrying a picture film into registry with a projecting beam of light. Such devices and records are generally employed for advertising display, such as in store windows or the like, or for educational purposes. In such devices, the record disk has embodied a single circular film carrying a series of annularly-positioned radially-extending spaced picture reproductions, or a similar disk of plastic material provided with a suitable light sensitive emulsion sensitized through photographic process to provide a corresponding plurality of circumferentially spaced photographs for picture projection.

Such record disks have not proven entirely satisfactory by reason of light interference and absorption due to the film or plastic through which the projecting light rays must pass. This results in a comparatively dim and hazy picture which becomes effective only in darkened surroundings.

Another objection and difficulty present in film and plastic record disks resides in their failure to at all times be exactly in focus. Thus, a slight sagging or warping of the picture or disc will produce a fuzzy or indistinct reproduction.

It is the purpose of this invention to provide such a record disk as may permit projection of the picture in a brilliant and clear-cut accurately focused manner substantially unaffected by light, whereby it is not necessary that such pictures be projected in a darkened surrounding. Thus, by means of this invention, such pictures may be projected in a show window or educational room without being materially affected by the ordinary light, such as an artificially lighted store window or day light. This is accomplished by causing the projecting light rays to pass through glass slides and supports so as to be virtually unaffected by absorption in passing through relatively heavy film or plastic.

Accordingly, there is provided a pair of supporting glass disks between which a series of cardboard or similar non-transparent disks are secured with registering apertures of such related dimensions as to retain and frame a glass side or slides bearing the picture to be projected.

Further features of the invention reside in the provisions of aligning and locking projections provided within a central aperture of the record disk to interlock with a spindle for causing each of the picture carrying apertures therein to be brought into accurate alignment with the projecting light beam.

The full nature of the invention will be understood from the accompanying drawing and the following description and claim:

Fig. 1 is a perspective view of a projector showing the record disk mounted thereon in projecting position. Fig. 2 is a plan view of the record disk. Fig. 3 is a cross section taken on the line 3—3 of Fig. 2 radially of the record disk, enlarged and with a portion broken away. Fig. 4 is a perspective view of the component parts of the record disk. Fig. 5 is a perspective view of a glass slide to be framed therein. Fig. 6 is the same as Fig. 5, showing a modified form of laminated glass slide.

In the drawing there is shown, for purposes of illustration, a projector box 10 carrying a light projector housing 11 through which a concentrated beam of light is adapted to pass for projecting a picture upon a suitable screen. Secured in a horizontal position thereon for intermittent rotation there is shown a picture record disk 12 carrying circumferentially thereabout a series of glass picture slides 13. Said box is adapted to house a suitable driving mechanism receiving its energy through the electric cord 14 and arranged to intermittently rotate the disk 12 to align each of the slides 13 with the light beam of the housing 11. Such driving mechanism and a source of light is not shown herein as forming any part of this invention, being well known and understood in the art. However, said driving mechanism is adapted to drive the record disk through a suitable driving shaft 15 indicated in part in Fig. 2 over which a securing and locking knob 16 is screwed for removably securing the disk thereon.

As best illustrated in Figs. 3 and 4, the disk 12 comprises a pair of circular transparent glass disks 17 having an apertured center 18. Between said glass disks and lying in face contact with each of them, there is a pair of framing disks 19, which disks are preferably made of cardboard or similar material and darkened so as to be impervious to the passage of light rays therethrough. Each of said disks has a series of registering apertures 20 formed circumferentially thereabout in spaced relation. Said apertures are formed with their center lines on equally spaced radii of the disk. Each disk is also formed with registering central apertures

21 in axial alignment with the apertures 18 of the disks 17 when assembled, but of less diameter. Extending into the apertures 21 there is provided a pair of oppositely-disposed tongues 22 adapted to be slidably received in a keyway provided in the shaft 15 and protected from mutilation by a metal plate 23 secured thereover.

Intermediate the framing disks 19 there is provided a slide supporting disk 24 of the same dimensions and formation as the framing disks, including the central aperture 21, tongues 22 and metal tongue reinforcing plate 23. Said supporting disk is provided with a series of apertures 25 adapted to register with the apertures 20 with the center lines on the same radial plane as those of the apertures 20. However, the apertures 25 are of slightly larger dimensions to snugly receive therein the picture slide 13, whereby said picture slide will be framed by the overlapping margins of the smaller apertures 20, as illustrated in Fig. 3.

The several disks, as shown in Fig. 4, are assembled by placing the lower framing disk 19 upon the lower glass disk 17 with the supporting disk 24 placed in registry thereupon. The slides 13 are then placed within the apertures 25 with their marginal edges resting upon the disk 19. Thereupon the upper framing disk 19 and glass disk 17 are placed in position thereover and they are all secured together by a marginal binding strip 26. The record disk is then in readiness for placement upon the shaft 15 with the glass slides 13 framed therein ready for projection.

Fig. 6 shows a modified form of glass picture slide, as set forth in the appended claim. Thus in place of a single glass plate carrying the reproduction on one side thereof, there is substituted therefor a laminated glass picture slide 113 comprising a pair of glass plates AA between which the picture reproduction film is positioned as indicated at B.

Such glass slides 13 or 113 when framed as above set forth provide a rigid disk such that at all times, as each picture is presented to the projector, the projection will be exactly in focus. Thus, upon the focusing of one such slide, all other slides of the series will be properly in focus. This is for the reason that the rigidity of the glass slides and their framing prevents any sagging or warping which, often to a slight extent, may improperly focus the picture.

The invention claimed is:

A picture record disk for a multiple picture projecting machine, including a circular supporting disk centrally apertured and provided with a series of equally spaced picture receiving apertures extending about and adjacent the periphery thereof, each of said picture apertures being of a shape and size to snugly receive a picture slide therein for retaining it in juxtaposition relative to the central aperture and the associated slides and prevent relative movement therebetween, a pair of oppositely disposed circular retaining and framing disks mounted on opposite sides of said supporting disk, each of said retaining and framings disks being of the same diameter as said supporting disk and provided with corresponding aligned central apertures and peripherally disposed framing apertures of lesser dimensions than said slides and the receiving apertures therefor in said supporting disk, a pair of oppositely disposed rigid glass disks correspondingly centrally apertured and of the same diameter as said aforementioned disks mounted over the opposed exposed surfaces of said retaining and framing disks, and a sealing band extending about the periphery of each of said disks for securing them rigidly together as a unit with said picture slides secured and framed therein.

GEORGE E. MUSEBECK.