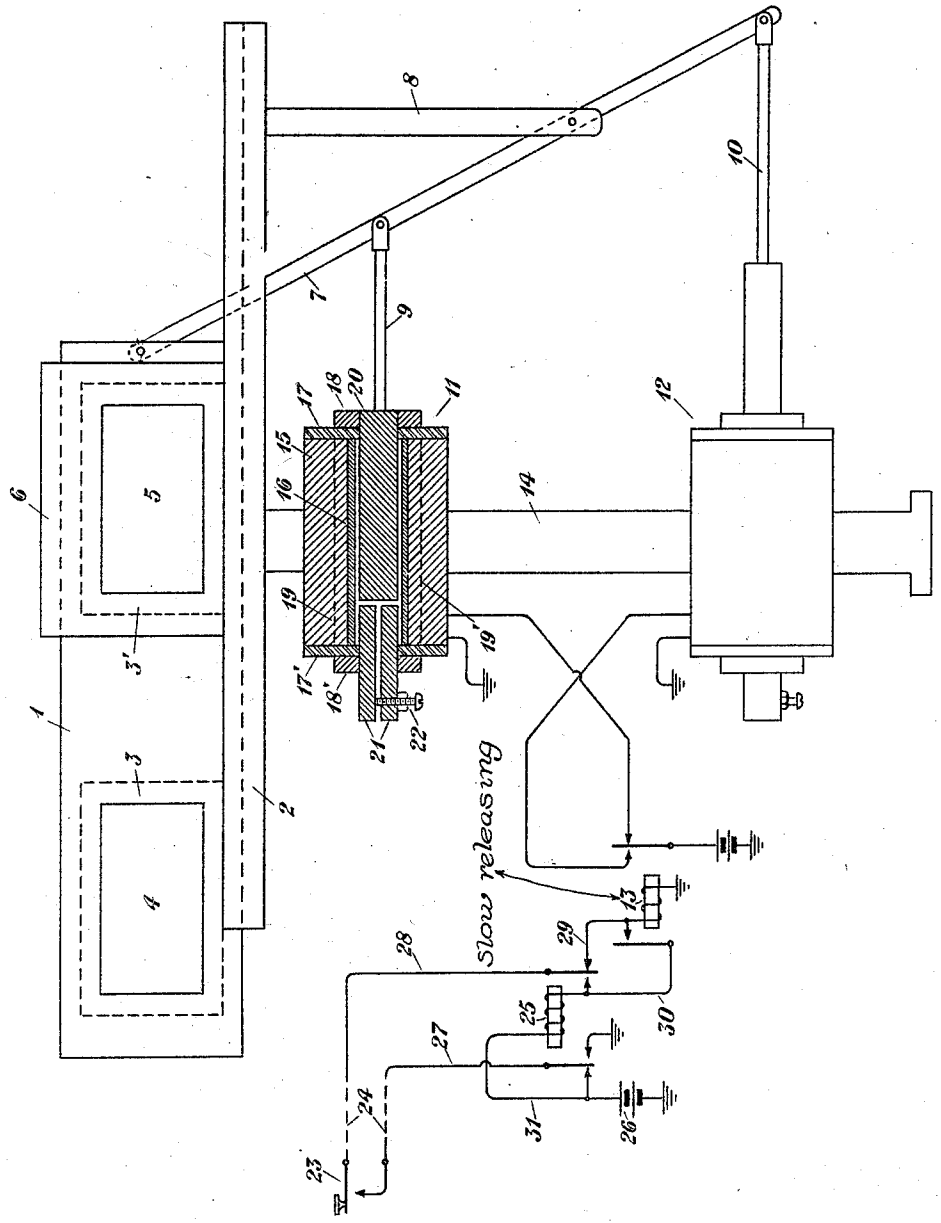
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G. S. VERNAM

STEREOPTICON CONTROL DEVICE

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INVENTOR
G. S. Vernam

BY

ATTORNEY

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GILBERT S. VERNAM, OF RIVER EDGE, NEW JERSEY, ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

STEREOPTICON-CONTROL DEVICE.

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This invention relates to display devices, such as stereopticons, and more particularly to arrangements for operating and controlling the same.

It is a primary object of the invention to provide arrangements which make it possible for a person giving a public address illustrated by stereopticon views to control the change of pictures from any desirable place and from any distance from either the projecting machine or the audience. For example, the speaker might be on the stage and the projector at the rear of the room, or the speaker might be in one city and the audience and projector in another, the two being connected by a telephone wire, or radio link, and loud speaker, and a control circuit. By the arrangements of the invention it would also be possible for a speaker to give an illustrated lecture to several audiences at once, as it would be possible to exercise control over the changing of all of the pictures from one spot. Other objects and features of the invention will appear more fully from the detailed description thereof hereinafter given.

The invention may be more fully understood from the following description together with the accompanying drawing in the figure of which is illustrated a diagram of the control circuit and a side view, partly in cross-section of the apparatus of the invention.

In the drawing is shown a base member 14 on which is mounted a holder support 2 with a groove therein. Adapted to slide in this groove is a holder 1, upon which the picture plates 3 and 3′ may be mounted. The holder 1 has two open spaces 4 and 5 therein. The picture plates 3 and 3′ would be mounted in front of these openings. By sliding the holder 1 either to the right or left, the pictures plates and openings may be brought in front of a projecting space 6 which is exposed to the light, whereby the picture may be thrown upon a screen. The holder 1 is moved to the right or the left by the lever 7 which is pivotally mounted on a member 8. The lever 7 is operated by the shafts 9 or 10 which are attached to the plungers of the solenoids 11 and 12. These solenoids are operated alternately by a control circuit 24 and a key 23, as will be pointed out hereinafter.

Solenoid 11 consists of a winding 15 mounted on a tubular member 16 having end pieces 17 and 17′. An iron yoke having pole pieces 18 and 18′ is shown, which extends around one side of the solenoid as indicated by the dotted lines 19 and 19′, and is affixed to the base member 14. The plunger 20 operates inside of the tubular member 16. Inserted in the tubular member 16 is the member 21, which has a small hole drilled through it, which may be partially closed by the screw 22. This small air hole serves to form a cushion for the operation of the plunger 20. The solenoid 12 is substantially the same in detail as solenoid 11, and accordingly, further description of its construction will be omitted.

The operation of the arrangements are as follows: The lecturer controls the movement of the holder 1 by means of a key 23 located, as has been pointed out, at any desirable place. The key 23 operates any desirable number of control circuits such as 24 to operate picture shifting mechanism similar to that heretofore described, associated with each control circuit. The control circuit 24 is arranged so that the first closure and opening of the contacts of key 23 leaves the two relays 25 and 13 locked up, while the next closure and opening releases them. In other words, the alternate or odd-numbered pulses from the contacts of key 23 operate relay 13 and solenoid 12 to move the picture plate 3 to the left and away from the projecting space 6. On the other hand, the even-numbered pulses will release relay 13, thereby operating solenoid 11 to move picture plate 3′ to the right and away from projecting space 6 and to again place another picture plate in place of plate 3 in front of the projecting space 6. The circuit operation is as follows: When key 23 is first closed,

a circuit is completed from battery 26, left-hand break contact of relay 25, conductor 27, contact key 23, conductor 28, right-hand break contact of relay 25, conductor 29, winding of relay 13 to ground. This will operate relay 13, which will close the following locking circuit: from ground, winding of relay 13, contact of relay 13, conductor 30, winding of relay 25, conductor 31 to battery 26 and ground. However, relay 25 will not operate at this time because its winding is short circuited as follows: left-hand armature of relay 25, conductor 27, contacts of key 23, conductor 28, conductor 29, contact and armature of relay 13, conductor 30, winding of relay 25, conductor 31, left-hand break contact of relay 25 to the left-hand armature of relay 25 again. When the contacts of key 23 are now opened, this short circuit about the winding of relay 25 will be removed, and relay 25 will operate and remain operated over the heretofore traced locking circuit for relay 13. The operation of relay 25 transfers its left-hand armature from a contact leading to battery 26 to a contact leading to ground. Accordingly, upon the next closure of the key 23 the winding of relay 13 will be short circuited as follows: from ground, left-hand armature of relay 25, conductor 27, contacts of key 23, conductor 28, right-hand make contact of relay 25, winding of relay 25, conductor 31 to battery 26 and ground. This will hold relay 25 operated, but will release the relay 13. The release of relay 13 will connect battery to the windings of solenoid 11 to again shift the picture holding arrangements. When key 23 is now opened again, the last mentioned circuit through relay 25 will be open, and the circuit will be restored to its original condition.

While the invention has been pointed out in certain specific arrangements which are deemed desirable, it is understood that it is capable of embodiment in many other forms without departing from the spirit of the invention, as defined in the appended claims.

What is claimed is:

1. A display device comprising a base member, a horizontal support member attached thereto, two solenoids attached to said base member, a display holder adapted to slide in said horizontal support member, a lever pivotally connected to said display holder and to said horizontal support member, means to control said lever by said solenoids, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circuit, said operating circuit being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

2. A display device comprising a base member, a grooved horizontal support member attached thereto, two solenoids attached to said base member, a projecting space member attached to said horizontal support, a holder having a number of apertures therein and adapted to slide in the grooved portion of said horizontal support member whereby different ones of said apertures may be positioned next to said projecting space member, means controlled by said solenoids for slidably moving said holder, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circuit, said operating circuit being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

3. A display device comprising a base member, a grooved horizontal support member attached thereto, two solenoids attached to said base member, a projecting space member attached to said horizontal support, a holder having a number of apertures therein and adapted to slide in the grooved portion of said horizontal support member, a lever pivotally connected to said holder and to said horizontal support member for imparting a sliding movement to said holder, means controlled by each of said solenoids for operating said lever in different directions, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circuit, said operating circuit being

arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

4. A display device comprising a base member, a grooved horizontal support member attached thereto, two solenoids attached to said base member, a projecting space member attached to said horizontal support, a holder having a number of apertures therein and adapted to slide in the grooved portion of said horizontal support member, a lever pivotally connected to said holder and to said horizontal support member for imparting a sliding movement to said holder, means controlled by each of said solenoids for operating said lever in different directions, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circuit, said operating circuit being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

5. A display device comprising a base member, a horizontal support member attached thereto, two solenoids attached to said base member, a display holder adapted to slide in said horizontal support member, a lever pivotally connected to said display holder and to said horizontal support member, means to control said lever by said solenoids, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circuit, said operating circuit being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

6. A display device comprising a base member, a grooved horizontal support member attached thereto, two solenoids attached to said base member, a projecting space member attached to said horizontal support, a holder having a number of apertures therein and adapted to slide in the grooved portion of said horizontal support member, a lever pivotally connected to said holder and to said horizontal support member for imparting a sliding movement in opposite directions to said holder, means controlled by each of said solenoids for operating said lever in opposite directions, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, switching mechanism in said operating circut being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal.

7. A display device comprising a base member, a horizontal support member attached thereto, two solenoids attached to said base member, a display holder adapted to slide in said horizontal support member, a lever pivotally connected to said display holder and to said horizontal support member, means to control said lever by said solenoids, and control mechanism for alternately operating said solenoids, said control mechanism comprising a control relay adapted to open and close operating circuits for said solenoids, an operating circuit for said control relay, swtching mechanism in said operating circuit, said operating circuit being arranged so that the initial closing of said switching mechanism will operate said control relay, a locking circuit for said control relay, means controlled by the subsequent opening of said switching mechanism for

preparing a short circuit for the winding of said control relay with respect to said locking circuit, means controlled by the subsequent closing of said switching mechanism for closing said short circuit and releasing said control relay, and means controlled by the subsequent opening of said switching mechanism for restoring said mechanism to normal, said switching mechanism in said operating circuit being located at a point geographically distant from said display device.

In testimony whereof, I have signed my name to this specification this 27th day of October, 1925.

GILBERT S. VERNAM.