

K. KOIKE.
 DISPLAY APPARATUS.
 APPLICATION FILED MAR. 13, 1911.

1,012,655.

Patented Dec. 26, 1911.

Fig. 2

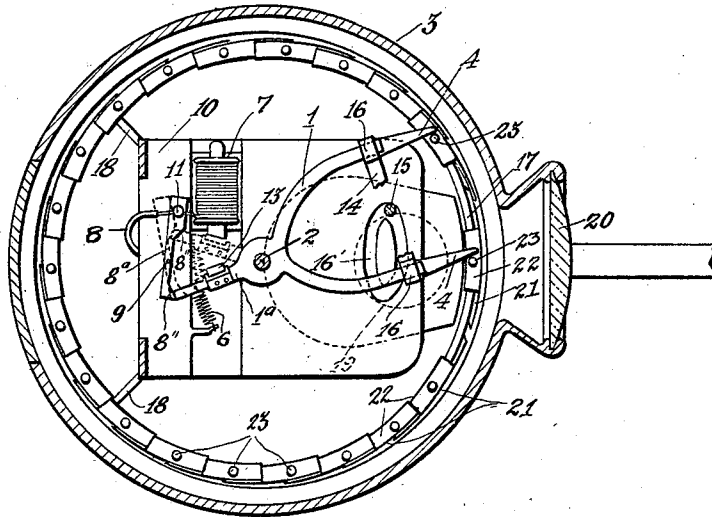


Fig. 1

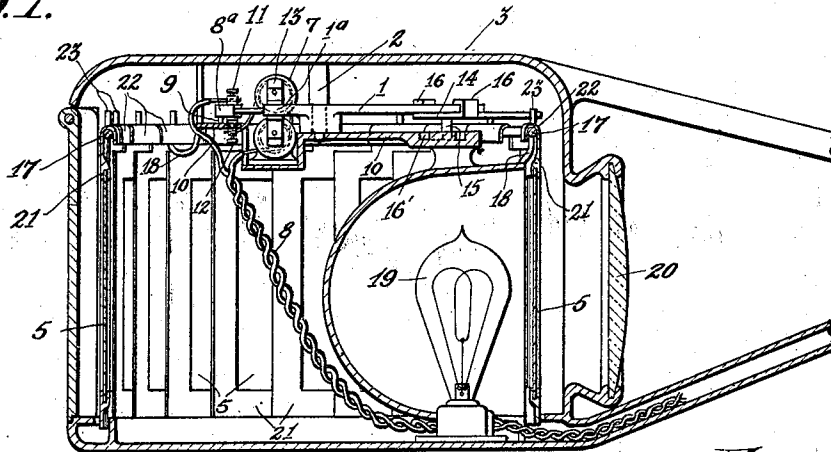


Fig. 5

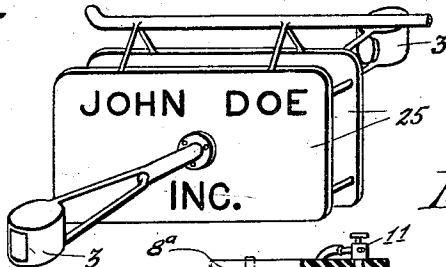


Fig. 3

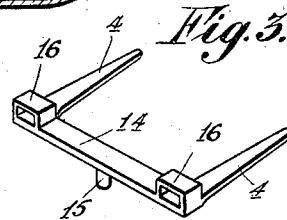
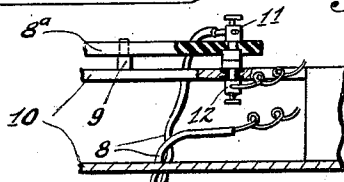


Fig. 4



Witnesses

James E. Sproll,
Arleta Adams

Inventor

Kihei Koike,

By Adams & Brooks
 Attorneys.

UNITED STATES PATENT OFFICE.

KIHEI KOIKE, OF SEATTLE, WASHINGTON.

DISPLAY APPARATUS.

1,012,655.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed March 13, 1911. Serial No. 614,245.

To all whom it may concern:

Be it known that I, KIHEI KOIKE, a subject of the Emperor of Japan, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Display Apparatus, of which the following is a specification.

My invention relates to apparatus of the above type wherein a series of slides or the like are successively moved for the display of their contents, and removed after a pause of predetermined length, and it has for a primary object the provision of a simplified and improved construction and arrangement of parts by which the slides are controlled and operated.

Other objects will be set forth as my description progresses and those features of construction, arrangements and combinations of parts in which my invention resides, succinctly defined in my annexed claims.

Referring to the accompanying drawing wherein like numerals of reference indicate like parts throughout the several views: Figure 1 is a vertical longitudinal section of the apparatus. Fig. 2 is a horizontal section thereof. Fig. 3 is a detail perspective of the adjustable engaging members of the slide shifting mechanism. Fig. 4 is a fragmentary view, with portions being broken away, illustrating more particularly the circuit closing means for the electro-magnet, and Fig. 5 is a perspective illustrating a sign board equipped with my invention.

Reference numeral 1 indicates an oscillatory driver, journaled on a stud 2 of a suitable casing 3, the same being substantially Y-shaped and provided on its furcations with adjustable fingers or engaging parts 4, adapted to be moved into and out of the path of a series of slides 5, by and during movement of the driver 1, as hereinafter more fully set forth.

For oscillating driver 1, I conveniently provide a spring 6 and an electro-magnet 7, the former serving to return driver 1 to its first position wherein it is connected with the slides 5. Electro-magnet 7 is connected by wires 8 with a suitable source of electrical energy, in one of which wires I interpose a switch 8^a, the latter being pivoted at 9 on a fixed internal support 10 of casing 3 and provided with a contact connected through a binding post 11 with a section of

one wire 8 and adapted to be moved into and out of engagement with an underlying contact, provided on support 10 and having a binding post 12 with which the second section of the last named wire 8 which leads to magnet 7, is connected, see Fig. 4.

Reference numeral 13 indicates an armature for magnet 7, the same extending vertically from the stem or rearwardly projecting portion 1^a of driver 1. Adjustable fingers or engaging parts 4 are connected for simultaneous movement by a bar 14 having a depending follower 15 adapted for travel in a cam groove 16', formed in support 10.

While connection between fingers or engaging parts 4 and the branches of driver 1 can be otherwise effected, I prefer to provide the fingers 4 with apertured lugs 16 which slidably receive the adjacent end portions of said driver branches.

Reference numeral 17 indicates a track, supported in casing 3 by suitable bracket arms 18, said track extending concentrically about stud shaft 2 for supporting slides 5 for movement between a source of light 19 and projecting lens 20.

Slides 5, which are of glass or other suitable transparent construction are mounted in carriers 21 having track engaging parts 22, conveniently in the form of hook-shaped extensions thereof and each provided with an upwardly projecting pin or engaging part 23, positioned to be successively engaged by fingers 4, whereby through such engagement one finger will position a carrier for the display of its contents and the other finger will remove such carrier during the next corresponding movement of driver 1.

Assuming that the parts are arranged as shown with switch 8^a adjusted to close the electrical circuit, armature 13 is drawn toward electro-magnet 7 thereby swinging driver 1 to simultaneously move one carrier 21 from between lamp 19 and lens 20, and the succeeding carrier to such position of display. During this movement of driver 1, follower 15 travels in cam groove 16', which is substantially elliptical in form, and withdraws fingers 4 from the engaging parts 23. Movement in the reverse direction is effected through spring 6, the latter operating when magnet 7 is deenergized through opening of switch 8^a. Switch 8^a is operated by driver 1 whose stem 1^a alter-

nately engages the cam surfaces 8'', provided on the switch on opposite sides of its pivot 9, as will be readily understood.

As now considered, carriers 21 are arranged in overlapping position with those on opposite sides of the lens 20 crowded together with their track engaging parts 22 contacting one another, thereby enabling me to maintain a multiplicity of slides, constituting a supply, on a comparatively short length of track.

In Fig. 5 I have illustrated my invention provided in connection with a sign board 25 for illuminating the face thereof, and when so employed I preferably provide slides 5 in different colors.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America; is:

1. A display apparatus comprising a track, a slide carrier mounted on said track, a driver supported for movement, a relatively movable engaging member on said driver, means for alternately projecting and retracting said engaging member by and during movement of said driver to thereby connect and release said slide carrier, and means for operating said driver in relatively opposite directions.

2. A display apparatus comprising a track, a plurality of slide carriers mounted on said track and provided with engaging parts, a rotatably supported driver, means for operating said driver, relatively adjustable members on said driver spaced one in advance of the other to simultaneously engage the engaging parts of respective slide carriers, and means for projecting and retracting said members during movement of said driver.

3. A display apparatus comprising a track, a plurality of slide carriers mounted on said track and provided with engaging parts, a rotatably supported driver, means for operating said driver, relatively adjustable members on said driver spaced one in advance of the other to simultaneously engage the engaging parts of respective slide carriers, and means for projecting and retracting said members during movement of said driver, said last means comprising a cam track pro-

vided on a relatively fixed part, and a follower carried by said adjustable members and engaged with said cam track.

4. A display apparatus comprising a track, a plurality of slide carriers mounted on said track and provided with engaging parts, a rotatably supported driver, means for operating said driver, a pair of fingers slidably supported on said driver for outward movement with respect to its axis, said fingers being connected for simultaneous movement, and means for projecting and retracting said members during movement of said driver.

5. A display apparatus comprising a track, a slide carrier mounted on said track, a driver rotatably supported, means for alternately connecting and releasing said carrier with respect to said driver, electro-magnetic means for operating said driver, and means operated by and during movement of said driver for deenergizing said electro-magnetic means.

6. A display apparatus comprising a track, a slide carrier mounted on said track, a driver rotatably supported, means for alternately connecting and releasing said carrier with respect to said driver, electro-magnetic means for operating said driver in one direction, other means for operating said driver in the reverse direction, and means operated by and during movement of said driver for controlling said last two named means for alternate operation.

7. A display apparatus comprising a track, a slide carrier mounted on said track, a driver rotatably supported, means for alternately connecting and releasing said carrier with respect to said driver, electro-magnetic means for operating said driver in one direction, a switch for controlling the flow of current to said last means, a spring for operating said driver in the reverse direction, and means whereby said switch is opened and closed by and during movement of said driver.

Signed at Seattle, Washington, this 4th day of March, 1911.

KIHEI KOIKE.

Witnesses:

STEPHEN A. BROOKS,
ARLITA ADAMS.