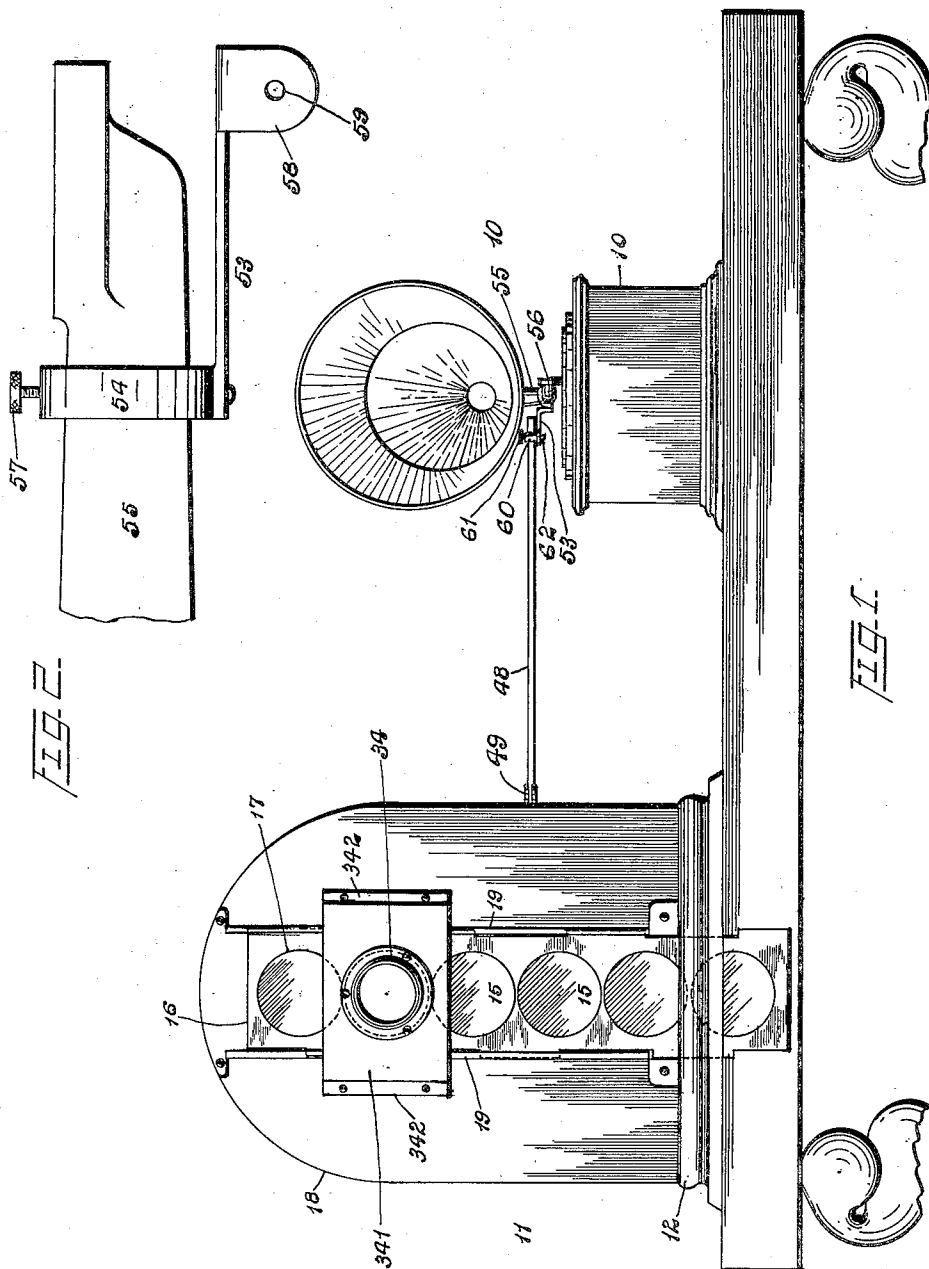


H. C. MATTHEWS.
 PICTURE EXHIBITING DEVICE FOR TALKING MACHINES.
 APPLICATION FILED AUG. 20, 1908.

996,102.

Patented June 27, 1911.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

FIG 4

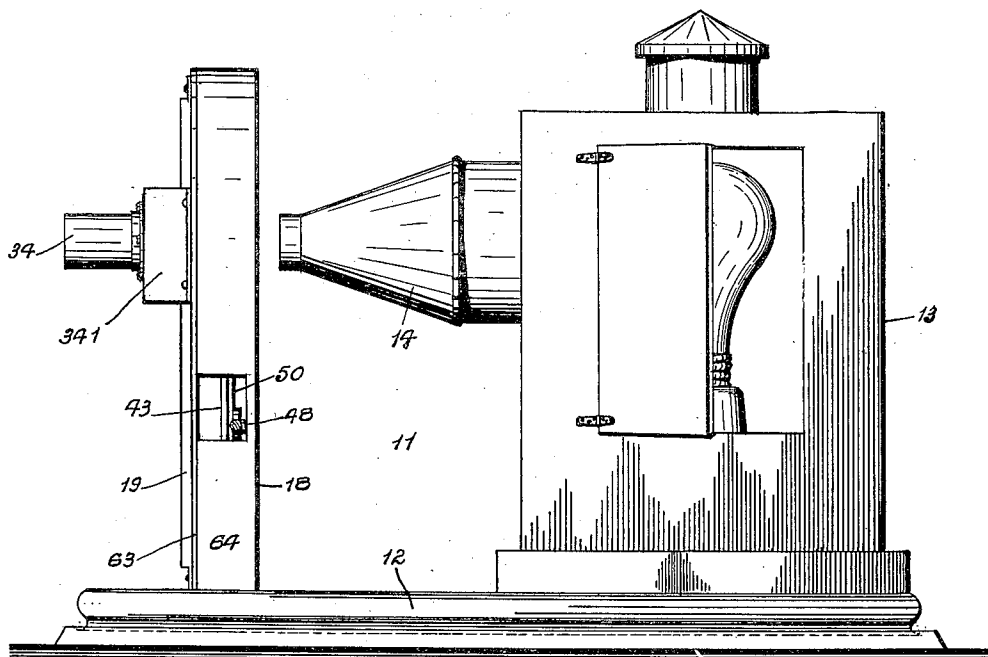
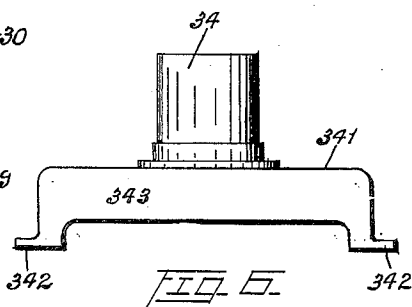
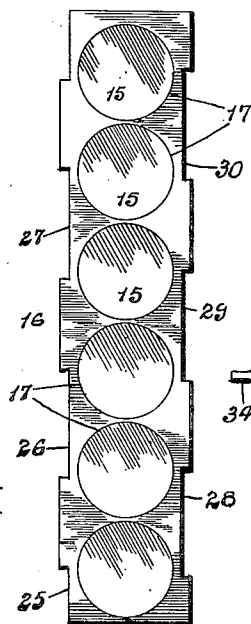
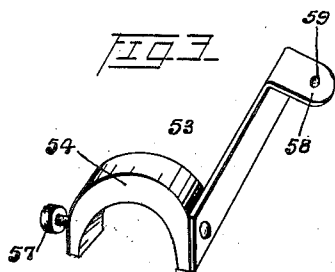


FIG 3



WITNESSES

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FIG 5

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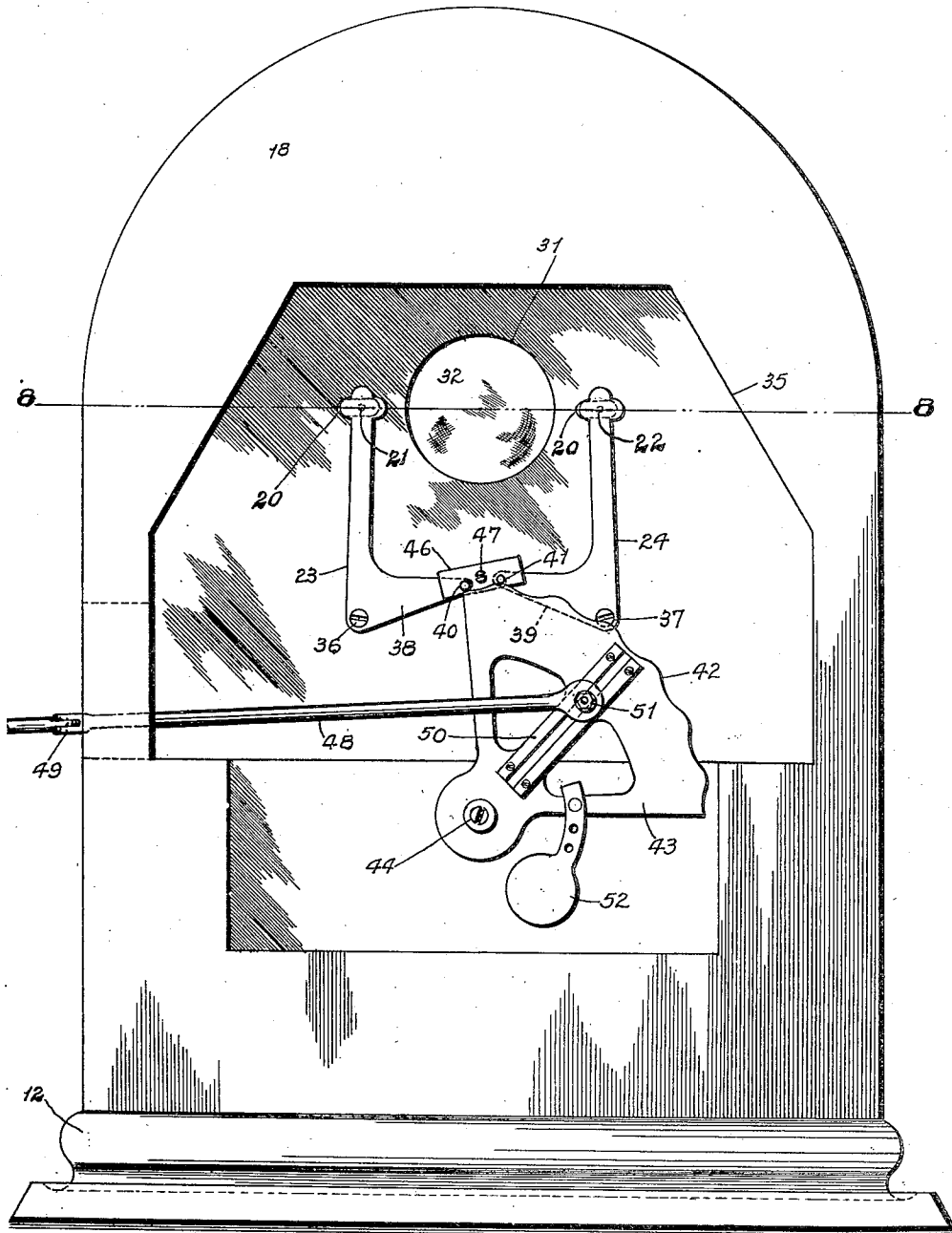
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4 SHEETS—SHEET 3.



WITNESSES

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FIG 7

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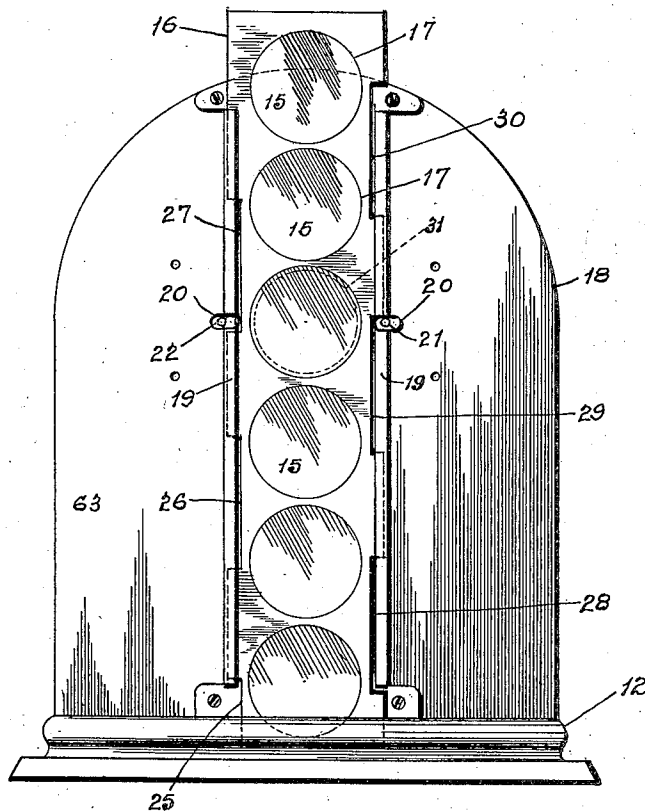
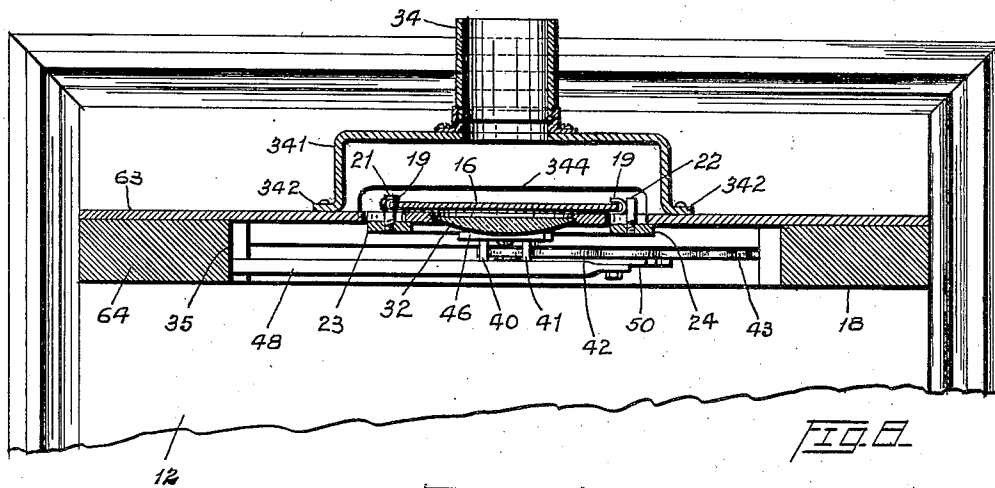
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4 SHEETS-SHEET 4.



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PICTURE-EXHIBITING DEVICE FOR TALKING-MACHINES.

996,102.

Specification of Letters Patent. Patented June 27, 1911.

Application filed August 20, 1908. Serial No. 449,393.

To all whom it may concern:

Be it known that I, HAROLD C. MATTHEWS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Picture-Exhibiting Devices for Talking-Machines, of which the following is a specification.

This invention relates to such means for operating a magic lantern in connection with a talking machine as are set forth in my co-pending application Serial No. 449,392, the objects of the present improvements being to secure a simplified construction and one which can be very economically manufactured; to enable the device to be accommodated to different makes or kinds of machines; to thus provide a device which can be used with either cylinder or disk talking machines, as desired by the operator; to enable the change to be made instantly and without inconvenience; to secure an instantaneous change of pictures by the force of gravity; to reduce the number of moving parts to a minimum, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts in the several figures, Figure 1 is a front view of a magic lantern connected to a disk talking machine, the whole embodying my invention; Fig. 2 is a plan of the reproducer arm with a certain attaching bracket thereon; Fig. 3 shows the said attaching bracket in perspective; Fig. 4 is a side view of the magic lantern and its attachments; Fig. 5 is a detail view of the picture slide; Fig. 6 is a detail top view of a certain front lens holder; Fig. 7 is a rear view of the magic lantern with the lamp-house removed; Fig. 8 is a horizontal section taken on line 8—8, of Fig. 7, and Fig. 9 is a view of the picture slide at the front of the magic lantern with the lens holder removed for the sake of greater clearness.

In said drawings, 10 indicates a talking machine of the disk type, and 11 a magic lantern to which my improvements are shown applied.

The magic lantern comprises a suitable base 12 upon the rear of which is mounted a lamp-house 13 of any suitable and well-known construction, having a tube 14 through which the light is concentrated upon the pictures, as usual.

The pictures 15 are arranged in a row or series upon a picture slide 16, said slide having apertures 17 in each of which one of the pictures is mounted. This picture slide is arranged at the front of the magic lantern, in a vertical slideway upon the front surface of an upright plate 18 stationed transversely at the front end of the base 12. The said slideway comprises strips of sheet metal, 19, one at each side of the picture slide and attached to the plate 18 by any suitable means, both strips being bent at their free edges inward over the edges of the picture slide to slidably hold the same.

Through each guide strip 19 and the plate 18 beneath, is cut a transverse slot 20, and through these slots project pins 21, 22, each from a bell-crank lever 23 or 24 at the rear of the plate 18. These pins preferably carry rubber covered rollers, which are adapted to engage the opposite edges of the picture slide 16. Said edges have each a series of shallow recesses separated by entire edge portions, and the recesses of one edge of the slide being alternate in horizontal view with those of the other edge. The recesses at one edge of the slide I have marked 25, 26 and 27, while those at the other edge I have marked 28, 29 and 30, in the drawings. One of the pins 21, 22, therefore, lies in one of the edge recesses, while the other pin is against the entire portion of the opposite edge of the slide or between recesses. Hence, if the pins be moved sidewise of the picture slide, the one which is in a recess will become free therefrom, allowing the picture slide to drop by its own weight. The opposite pin at practically the same time enters the lower end of the next recess in that edge of the picture slide, and as said slide drops, this pin catches the top end of the recess to limit such dropping to the proper position of the slide to bring the next picture into view. This position is such that the picture comes in front of an opening 31 in the plate 18 and in which opening is arranged a lens 32.

Below the picture slide is a slot 33 in the base 12 for the slide to enter as it passes downward, and in front of the opening 31 is a lens holder 34 which is supported by a box-like member 341, bent out of sheet metal and fitting at its edge against the plate 18. The upright edges of this lens holder support 341 have flanges 342 for attachment, and the top and bottom are slotted as at 343 and

344 to allow the picture slide to pass up and down.

The means for swinging the bell-crank levers 23 and 24 so as to move the pins 21 and 22 as above described, will next be described, and these means are located upon the back of the plate 18 and preferably in a large shallow recess 35 thereof. The two bell-crank levers 23 and 24 are pivoted thereon as at 36, 37 respectively, their long arms having the pins 21, 22 extending substantially vertical and their short arms 38, 39 extending horizontally toward each other. At the ends of these horizontal arms 38 and 39 are pins 40 and 41 which project laterally from the bell-crank levers and are adapted to rest on the upper edge 42 of a cam 43 also pivoted on the plate 18, as at 44. This cam I have shown quadrant shaped, although it might be of any desired form, and provided at its outer edge with rounded alternate projections and recesses, forming a sinuous or undulating edge 42. This edge rests against the pins 40 and 41, and thus as the cam 43 is swung on its pivot 44, said edge moves along under said pins and causes them to alternately rise and fall, one rising while the other is falling, so that the upper ends of the bell crank levers 23 and 24 are always moving in the same direction,—that is, either to the right hand or to the left. Preferably the two pins 40 and 41 of the lower arms of the bell crank levers are linked together by a small plate 46 which is pivoted upon the plate 18 as at 47. This insures that the two levers move always in unison. The said cam 43 is given its motion by means of a connecting rod 48 which extends therefrom to the reproducer arm of the talking machine. Preferably this connecting rod is jointed intermediate of its ends, as at 49, to swing horizontally, and this in connection with the vertical pivoting of the rod to the cam, provides a universal joint which gives freedom of movement between the talking machine and the magic lantern, even though they are not in exact alinement.

The attachment of the connecting rod 48 to the said cam 43 is preferably by means of a grooved slideway 50 radially arranged on said cam, and receiving the head of a bolt carried by said connecting rod and having at the opposite side thereof a clamping nut 51. By this means, the attachment of the connecting rod to the cam may be effected at any desired point out from its center of movement or swinging, and thus the range of movement and operation of the cam may be varied. For instance, it can very readily be adjusted to either a cylinder or disk talking machine. A weight 52 adjustably connected to the lower part of the cam 43 equalizes its movement for the entire length of its working edge 42.

In attaching the connecting rod 48 to a

disk machine, as shown in the drawings, a bracket 53 is employed, (see Figs. 2 and 3), which fits at its curved portion 54 upon the arm 55 of the talking machine adjacent to the reproducer 56, and is adapted to be clamped thereon by means of the set screw 57. This bracket extends forward at the side of the arm and has at its extremity a horizontal lip 58 with an aperture 59 therein. A block 60 slidable upon the connecting rod 48 and adapted to be set in any desired position by a clamping screw 61, has beneath the rod a projection 62 adapted to loosely enter the said hole 59 of the bracket. This secures an adjustable, and at the same time detachable, connection. It will be noted that the plate 18 is shown as comprising a metal front 63 on a wooden backing 64, but obviously this is immaterial.

In the operation of my invention, the picture slide is at first, or as the talking machine commences a record, at the top of its slideway, largely projecting therefrom and with its lower picture registering with the aperture 31. The pin 22 of the bell-crank lever 24 is at that time in the recess 25, holding the picture slide, and as the reproduction of sound progresses the movement of the reproducer pushes the cam 43 to tilt the same and cause its undulating edge 42 to rock the two bell crank levers until said pin 22 disengages the picture slide and it drops by gravity to expose the next picture, the other pin 21 catching into recess 28 to hold it. Further movement of the reproducer causes a reverse rocking of the cam 43, and pin 21 becomes idle, while pin 22 engages in recess 26 to expose the third picture of the slide. This continues during the entire record, until all the pictures of the slide have been shown, and swinging the reproducer back to the starting point tips the cam 43 also back to its starting point for a new picture slide.

In using the device with a cylinder talking machine, the cam 43 swings in just the opposite direction, or starts in its lowermost position as shown in Fig. 7, and is pulled upward by the travel of the reproducer. Obviously, it makes no difference which way the cam swings, as to its effect. Since the range of movement of the reproducer in a cylinder talking machine is about one and a half times that in a disk machine, it is necessary in changing from one to the other to shift the attachment of the connecting rod 48 in the slideway 50 of the cam. This, however, is quickly and easily done.

Having thus described the invention, what I claim as new is:—

1. The combination with a talking machine and a magic lantern having a slide way adapted to receive a picture slide, of means arranged adjacent to said slideway

and automatically operated by said talking machine for controlling the movement of a picture slide along said slideway.

2. The combination with a talking machine having a reproducer and a magic lantern having a slideway adapted to receive a picture slide, of means arranged adjacent to said slideway and operated by the travel of said reproducer to automatically arrest the movement of a picture slide along said slideway.

3. The combination with a talking machine and a magic lantern having a slideway adapted to receive a picture slide, of means arranged adjacent to said slideway and operated by said talking machine for intermittently arresting the movement of a picture slide along said slideway.

4. The combination with a talking machine and a magic lantern having a vertical slideway down which a picture slide may pass by gravity, of a member adjacent to said slideway adapted to arrest the falling of a picture slide in said slideway, and means connecting said member to the talking machine to receive motion therefrom.

5. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of members one at each edge of said slideway each adapted to swing into engagement with a picture slide or clear the same, means for imparting opposite motions to said members simultaneously, and connections between said means and the talking machine.

6. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of bent levers each having one arm adjacent to said slideway and adapted to engage a picture slide in said slideway or clear the same, means engaging the other arms of said levers to move the same, and connections between said means and the talking machine.

7. The combination with a talking machine, of a magic lantern having an upright plate with an aperture therein, a vertical slideway on said plate, bent levers fulcrumed on said plate each with one arm adjacent to said slideway and adapted to engage a picture slide therein, means engaging the other arms of said levers to swing the same, and connections between said means and the talking machine.

8. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of a member adjacent to said slideway adapted to swing into engagement with a picture slide therein, a cam engaging said member to move the same, and means connecting said cam to the talking machine.

9. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of a member adjacent to said slideway adapted to swing into engagement with a picture slide therein, a pivoted cam engaging said member to move the same, a rod connected at one end to said cam and at the other end to the talking machine, and means for adjusting the point of said connection of rod and cam.

10. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of a member adjacent to said slideway adapted to swing into engagement with a picture slide therein, a pivoted cam engaging at its edge said member to move the same, draft means connected at one end to said cam and at the other end to the talking machine, and means for adjusting the point of connection of said draft means and cam with respect to the point of pivoting of said cam.

11. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of pivoted members adjacent to the opposite edges of said slideway and adapted to engage a picture slide therein, a pivoted cam having a sinuous edge adapted to engage said members to move the same, and means connecting said cam to the talking machine.

12. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of pivoted members adjacent to the opposite edges of said slideway and adapted to engage a picture slide therein, a pivoted cam having a sinuous edge adapted to engage said members to move the same, draft means connecting said cam to the talking machine, and means for adjusting the point of connection of said draft means to the said cam.

13. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of bent levers arranged in substantially the same plane each with one arm adjacent to the said slideway and adapted to engage a picture slide therein, a cam having a sinuous edge adapted to engage the other arms of said bent levers and swing the levers, and means connecting said cam to the talking machine.

14. The combination with a talking machine and a magic lantern having a slideway through which a picture slide may fall by its own weight, of bent levers arranged in substantially the same plane each with one arm adjacent to the said slideway and adapted to engage a picture slide therein, a cam having a sinuous edge adapted to engage the other

arms of said bent levers and swing the levers, a pivotal link connecting said last mentioned arms, draft means connecting said cam to the talking machine, and means for
5 adjusting the point of connection of said cam and draft means.

15. The combination with a talking machine having a reproducer arm, and a magic lantern having a slideway through which a
10 picture slide may fall by its own weight, of a member adjacent to one edge of said slideway adapted to engage a picture slide therein, a cam adapted to engage said member, a bracket on the reproducer arm of the talking
15 machine, a block detachably engaging said bracket, and draft means adjustably engaging said cam at one end and the said block at the other end.

16. The combination with a talking ma-

chine and a magic lantern having a vertical
20 slideway, of a picture slide having recesses in its edge, a member adapted to move into and out of said recesses, means for operating said member, and connections between the
25 talking machine and said means.

17. The combination with a talking machine and a magic lantern having a vertical
30 slideway, of a picture slide having in its opposite edges recesses staggered with respect to each other, members adapted to move into and out of said recesses, means for operating said members, and connections between the
talking machine and said means.

HAROLD C. MATTHEWS.

In the presence of—

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ETHEL B. REED.