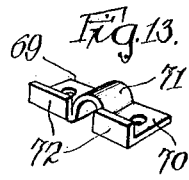
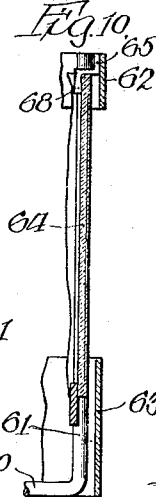
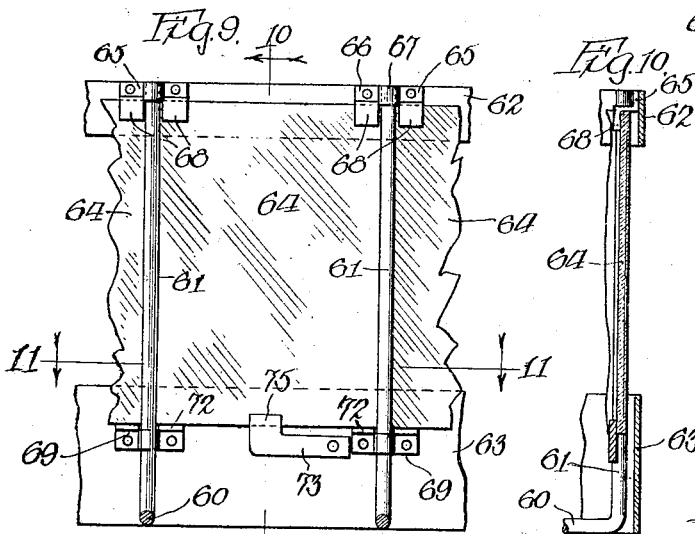
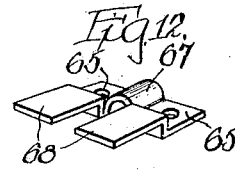
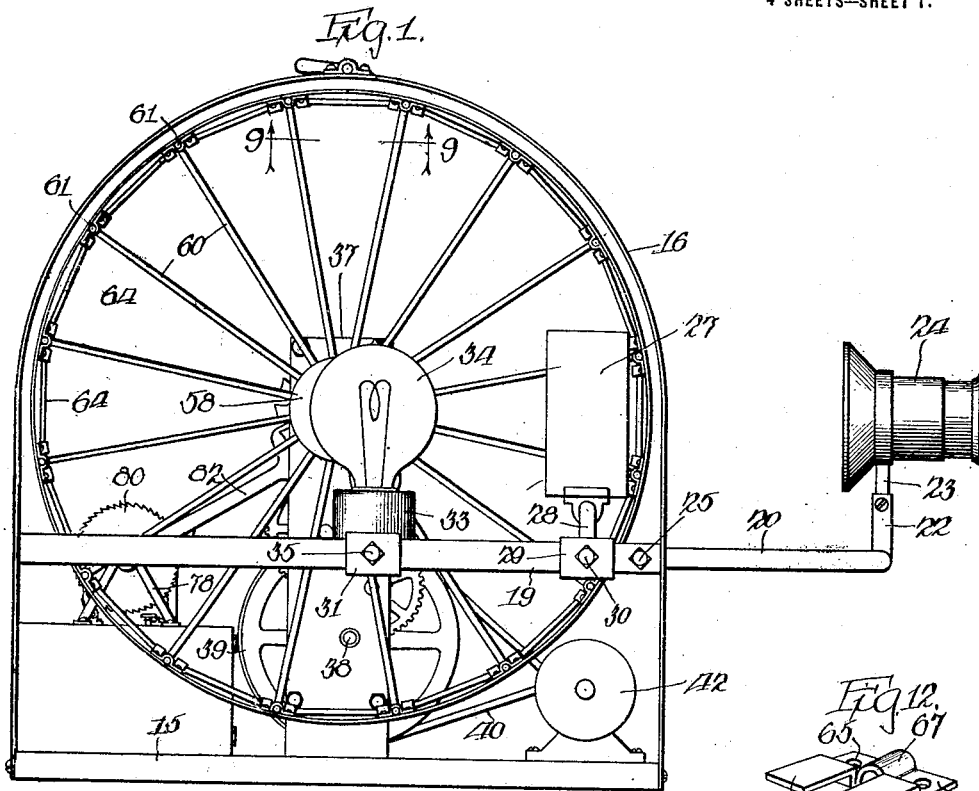


F. L. OLESON.
 AUTOMATIC STEREOPTICON.
 APPLICATION FILED APR. 2, 1917.

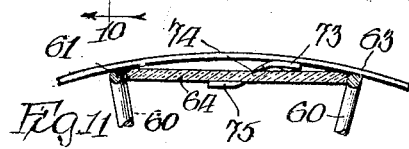
1,296,583.

Patented Mar. 4, 1919.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

Fig. 2.

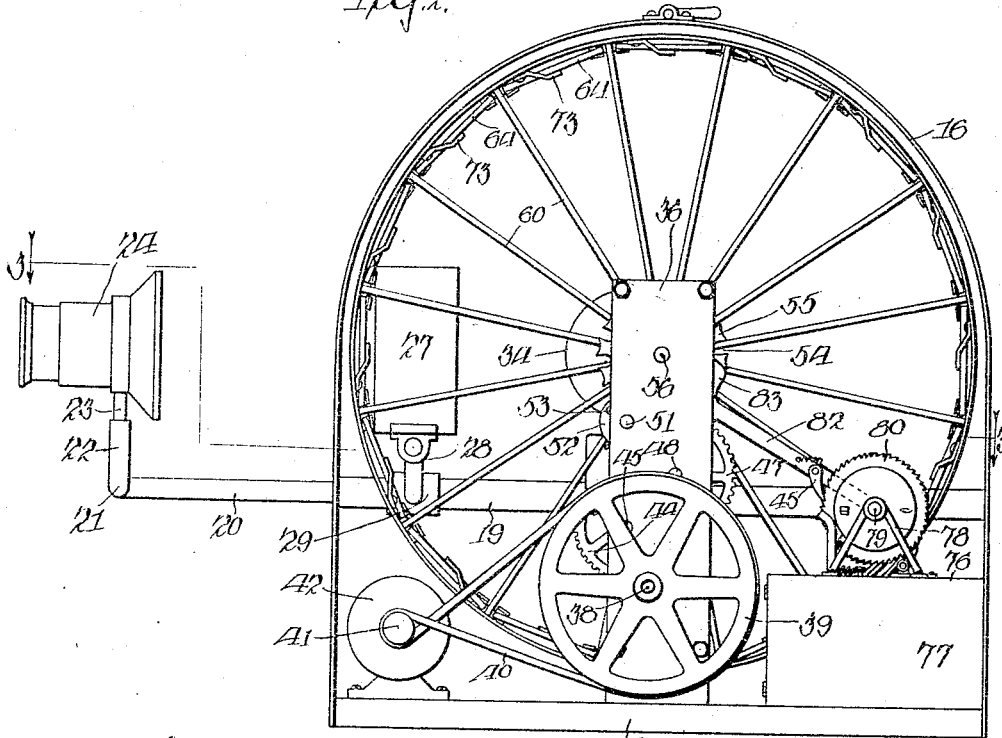
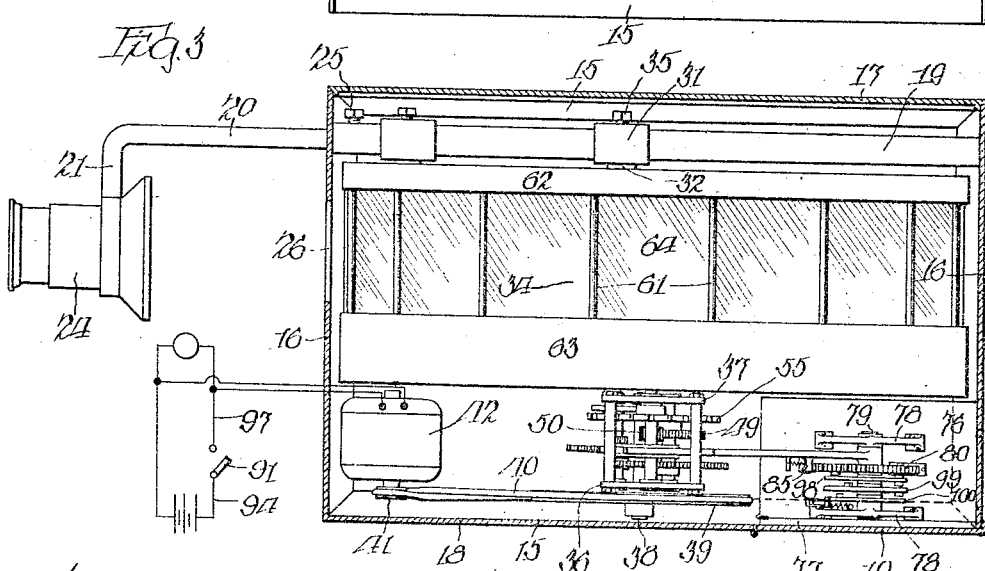


Fig. 3.



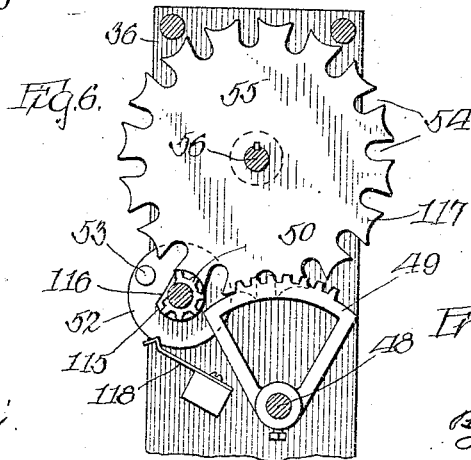
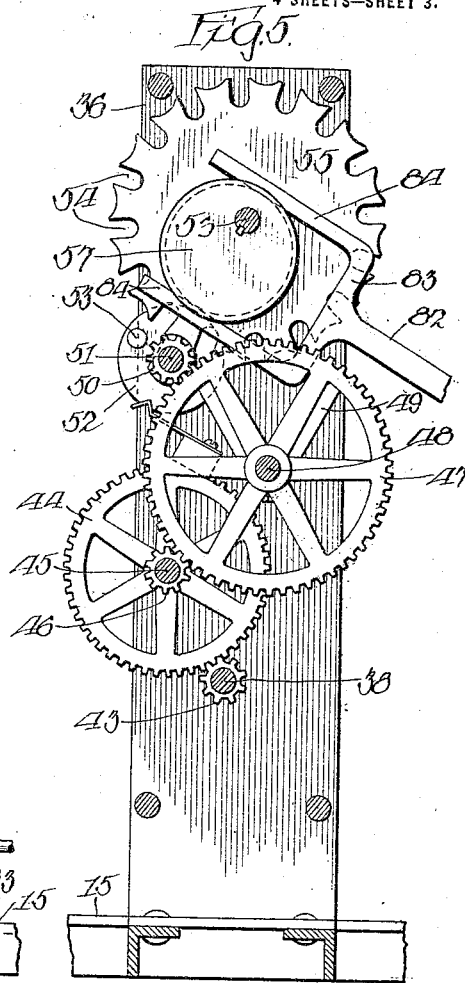
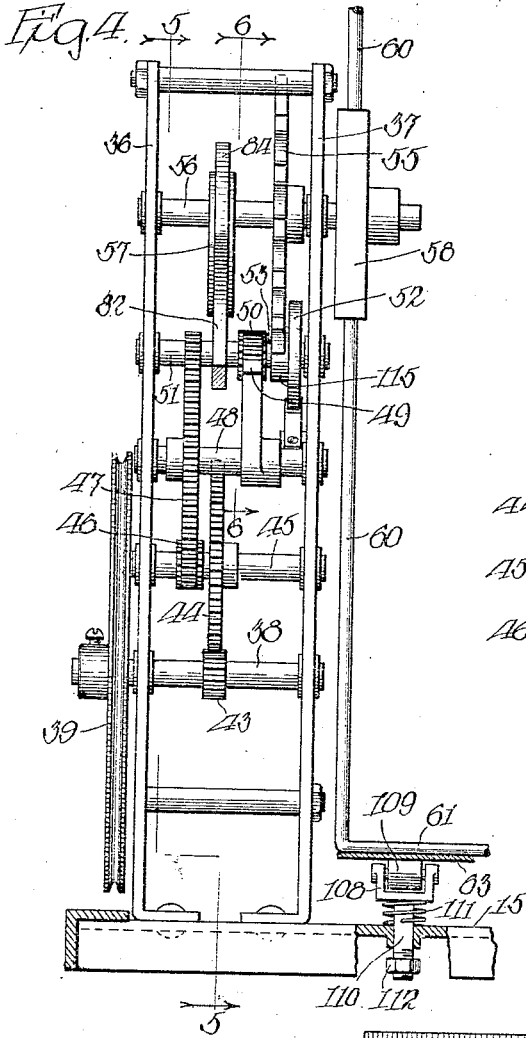
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1,296,583.

Patented Mar. 4, 1919.

4 SHEETS—SHEET 3.



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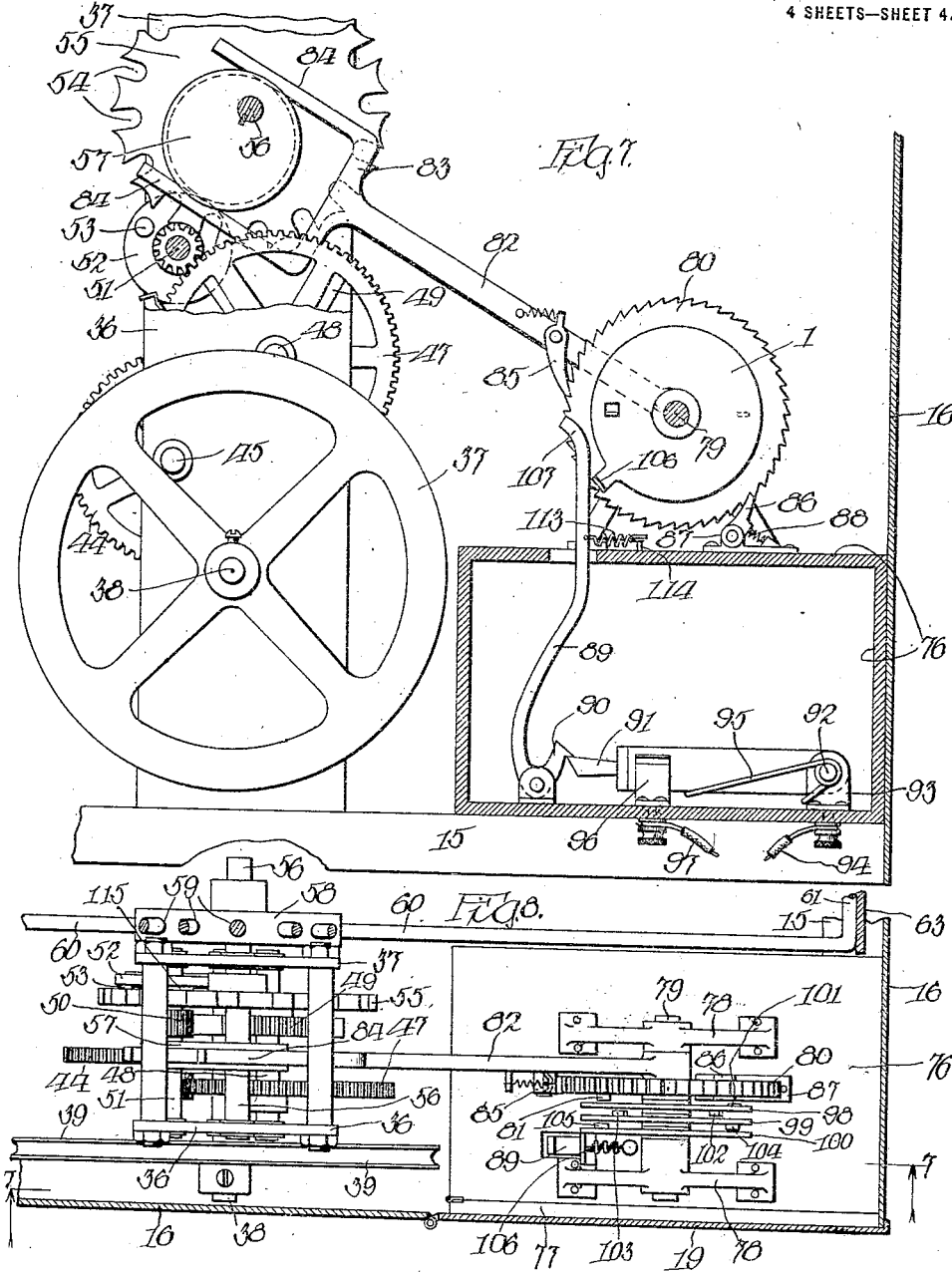
By *Chas. Killman*
 atty

F. L. OLESON.
 AUTOMATIC STEREOPTICON.
 APPLICATION FILED APR. 2, 1917.

1,296,583.

Patented Mar. 4, 1919.

4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC STEREOPTICON.

1,296,583.

Specification of Letters Patent.

Patented Mar. 4, 1919.

Application filed April 2, 1917. Serial No. 159,108.

To all whom it may concern:

Be it known that I, FRANK L. OLESON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Stereopticons, of which the following is a specification.

This invention relates to improvements in that type of stereopticons in which a circular or cylindrical carrier for the slides is mounted to rotate in a vertical plane, and it consists in certain peculiarities of the construction, novel arrangement and operation of the various parts thereof as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a stereopticon for automatically and consecutively projecting or displaying on a screen a large number of pictures, signs and the like, in such a way as to permit each display to remain on the screen for a predetermined length of time, and so that, after the entire series of display matter held by the carrier shall have been exhibited, a repetition thereof for any desired number of times may be automatically effected.

Another object of the invention is to provide an apparatus of the above named general character, which shall be simple and inexpensive in construction, strong, durable and efficient in operation, and so made that the casing for the various parts of the machine, will not only act as a housing therefor, but will form the lamp-house also, and can be used for conveniently carrying or handling the stereopticon.

A further object is to so construct and arrange the parts of the slide-carrier and mount the latter, that the slides may be readily placed and firmly secured in the proper positions thereon, or easily removed therefrom, and when positioned thereon will be moved or rotated in the direction of their shorter dimensions, thus affording means for more quickly changing the displays, and besides enabling more slides to be placed on the carrier, than if they were located thereon so as to be moved or rotated in the direction of their longer dimensions, it being understood that the slides used are preferably parallelogrammatic in shape.

Still another object is to provide means for intermittently rotating the slide carrier in such a way that the movements thereof to

effect the changes of displays will be substantially instantaneous, yet without rebound or vibrations.

Various other objects and advantages of the invention, will be disclosed in the sub-joined description and explanation.

In the accompanying drawings, which serve to illustrate an embodiment of the invention,

Figure 1, is a view in side elevation of the stereopticon, showing one side of the housing therefor removed in order to illustrate the general construction of the interior mechanism.

Fig. 2, is a similar view of the opposite side of the apparatus with the face or side plate of the housing therefor removed.

Fig. 3, is a plan sectional view taken on line 3—3 of Fig. 2, looking in the direction indicated by the arrows, showing diagrammatically the electric connections with the motor used for operating the slide carrier.

Fig. 4, is a fragmental view in elevation, showing a part of the base or the main frame, and illustrating the gearing for operating the slide carrier and part of the means for controlling its operation.

Fig. 5, is a vertical sectional view taken on line 5—5 of Fig. 4, looking in the direction indicated by the arrows.

Fig. 6, is an enlarged sectional view taken on line 6—6 of Fig. 4, looking in the direction indicated by the arrows.

Fig. 7, is an enlarged view partly in section and partly in elevation, taken on line 7—7 of Fig. 8, looking in the direction indicated by the arrows.

Fig. 8, is a plan sectional view through a section of the housing or casing, a part of the slide carrier illustrating the operating mechanism for said carrier and also the means for timing, repeating and controlling the movement of said carrier.

Fig. 9, is a greatly enlarged bottom plan view of a fragment of the carrier and its slides, taken on line 9—9 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 10, is a cross-sectional view taken on line 10—10 of Fig. 9, looking in the direction indicated by the arrows.

Fig. 11, is a fragmental view partly in section and partly in elevation, taken on line 11—11 of Fig. 9, looking in the direction indicated by the arrows.

Fig. 12, is a detached perspective view of

one of the clips used for securing the ends of the slides to the carrier, and

Fig. 13, is a like view of one of the abutting clips for the slides used on the opposite side of the rim of the carrier.

Like numerals of reference refer to corresponding parts, throughout the different views of the drawings.

The base frame of the stereopticon is designated by the reference numeral 15 and is preferably rectangular in shape as is clearly shown in different views of the drawings. Mounted on the base 15 and extending upwardly therefrom, is a casing 16 which is substantially semi-circular when viewed from its sides. Detachably secured in any suitable manner to one side of the casing 16 is a plate 17, see Fig. 3, which can be removed when desired to permit of access to the interior of the casing 16, for the insertion of slides to their holders on the carrier, and for the adjustment or manipulation of the mechanism of the apparatus. The opposite side of the casing 16 is by preference permanently closed by means of a plate 18 or side board which has in the lower portion of one of its corners a hinged door 19 for access to the timing mechanism of the device. Horizontally mounted within the casing near the side 17 thereof and extending from its front to its rear end is a bar or tube 19 in the front end of which is telescoped an arm 20 which has at its outer end a horizontally extended part 21 and from the same an upwardly extended arm 22 in which is mounted a stem 23 of a holder 24 of the ordinary or any desired construction, for the objective lens which may be of the ordinary or any well-known construction. The arm 20 can be moved back and forth with respect to the bar or tube 19 so as to obtain the proper focus and may be fixed in any desired position by means of a setscrew 25 seated in the front portion of the bar 19 and adapted to engage the arm 20 when tightened up. The flared end of the holder 24 is located directly in front of an opening 26 formed in the front wall of the casing 16 at a suitable point to align with the condensing lens which is contained in a holder 27 mounted by means of a bracket 28 on a collar 29 which is slidably mounted on the bar or tube 19 and may be fixed thereon by means of a set-screw 30 seated in said collar and adapted to engage said bar. The holder 27 and condensing lens therein may be of the ordinary or any preferred construction. Slidably mounted on the bar or tube 19 near its middle is a collar 31 which has extended inwardly of the casing frame an arm 32 which arm carries on its inner end a lamp socket 33 on which is mounted an incandescent lamp 34 of any suitable kind. The lamp and its socket may be adjusted longitudinally on the bar or tube 19 by sliding the collar

31 thereon to the proper position where it may be fixed by means of a setscrew 35 seated in said collar and adapted to engage the tube or bar. By referring to Figs. 1, 2 and 3 of the drawings, it will be seen that the supporting bar or tube 19 for the lamp 34, condenser holder 27 and objective lens holder 24, is located horizontally near the side 17 of the casing at a slight distance above the base 15. This arrangement permits of easy and free access to the slide carrier when the side 17 of the casing is open. Near the side 18 of the casing the base 15 has mounted thereon a pair of parallel upright standards 36 and 37, on the lower portion of which is transversely journaled a driving shaft 38 on which is mounted near one of its ends a grooved driving pulley or wheel 39 to which power may be applied by means of a belt 40 connected to a pulley 41 on the driving shaft of an electric motor 42 which is located on the base 15 of the casing near one corner thereof. The shaft 38 has mounted thereon a pinion 43 which meshes with a gear 44 mounted on a shaft 45 which is transversely journaled on the standards 36 and 37 above the shaft 38. The shaft 45 also has mounted thereon a pinion 46 which meshes with a gear 47 mounted on a shaft 48 which also carries a segmental gear 49, see Figs. 4 and 6 of the drawings. The segmental gear 49 is fixed on the shaft 48 between the standards 36 and 37 on which said shaft is journaled, and meshes with a pinion 50 mounted on a shaft 51 journaled on said standards. Mounted on the shaft 51 between the pinion 50 and the standard 37 is a disk 52 which carries a pin 53 to engage recesses 54 in a wheel or disk 55 which is fixed on a shaft 56 transversely journaled on said standards and extended through one of them as is clearly shown in Fig. 4 of the drawings. Fixed on the shaft 56 is an eccentric 57 to be used for the purpose to be presently explained. Mounted on the lateral extension of the shaft 56 is the hub of the slide carrier or wheel, and said hub is provided with a series of radial openings 59 in which are located the inner ends of a series of radially disposed spokes 60 each of which has its outer portion provided with an extension 61 projecting at a right-angle from its spoke and laterally from the driving mechanism mounted on the standards 36 and 37 above mentioned. The extensions 61 of the spokes 60 are arranged in a circle just large enough to fit within the casing without touching the same as will be clearly understood by reference to Fig. 1 of the drawings. These extensions are surrounded near their free ends by means of a band 62, and at their junctures with the spokes 60 by another band 63 which is by preference wider than the band 62 as will be clearly understood by reference to Figs. 9 and 10 of

the drawings, from which views it will be seen that the bands are spaced apart at a considerable distance so as to afford an open space for the pictures or other display matter on the transparent slides 64 which are mounted transversely on the inner surfaces of the bands 62 and 63 of the slide carrier or wheel and in such a manner, that in the movement of the carrier said slides will be moved thereby in the direction of their shorter dimensions. The bands 62 and 63 are secured to the extensions 61 of the spokes by means of clips or brackets which are riveted to said bands and not only serve to secure the latter in position on the extensions 61 but also act as holders for the slides 64 which are of sufficient width to fit snugly between the extensions 61 as will be readily understood by reference to the different views of the drawings. The clips or brackets used for securing the band 62 to the extensions 61 of the spokes are designated as a whole by the reference numeral 65 and each of said brackets consists of a flat strip of metal 66 having its middle portion provided with a transverse bend 67 to receive one of the extensions 61, see Figs. 9 and 12. On each side of the bent portion 67 the strip 66 is provided with an upwardly and inwardly extended lip or catch 68 to underlie or engage the slides 64 at their edges adjacent to said clips. The clips or brackets used on the band 63 for securing it to the extensions 61 of the spokes, are designated as a whole by the reference numeral 69 and each consists of a strip of metal 70 having at its middle a transverse bend 71 and on each side of said bent portion a projection 72 at right angles thereto so as to provide abutments for the edges of the slides 64 opposite those edges engaged by the lips 68 of the brackets 65 on the other side of the slide carrier. The brackets 65 and 69 are united to the inner surfaces of the bands 62 and 63 respectively with their curved portions 67 and 71 respectively engaging the extensions 61 as is clearly shown. By this arrangement it is obvious that by placing one end of each of the slides between the lips 68 of the clips 65 and the band 62 the other ends of the slides will rest against the inner surfaces of the projections 72 on the clips 69 in such a way as to prevent any movement of the slides. When thus positioned, it becomes necessary to fasten the last named ends of the slides against movement inwardly from the bands, and this is accomplished by means of a number of catches 73 one of which is pivoted at a proper point to the inner surface of the band 63 between each pair of the extensions 61 of the spokes. Each of these catches consists of a piece of metal deflected from its pivoted end as at 74, see Fig. 11, and provided at its free end with an exten-

sion 75 to engage the slide 64 at its end or edge adjacent to said catch.

Mounted on the base frame 15 in the opposite corner of the casing 16 from that in which the motor 42 is located and on the same side of the casing is a box 76 which may be provided on its outer portion with a hinged door 77 access to which door and box may be attained through the doorway closed by the door 19 of the casing. Mounted on the top of the box or support 76 are a pair of brackets 78, on which is journaled a shaft 79 on which is mounted a ratchet wheel 80 having on one of its sides a lateral projection 81 for the purpose hereinafter to be explained. Mounted at one of its ends on the shaft 79 and near the ratchet wheel 80 is a rod or bar 82 which has at its other end a yoke 83 the prongs 84 of which embrace the eccentric 57 and contact therewith. Near the ratchet wheel 80 the bar 82 has pivoted thereon, a spring actuated pawl 85 which depends and is held in engagement with the teeth of the ratchet wheel by means of its spring. A retaining pawl 86 is pivotally mounted on a bracket 87 on the support 76 and is held in yielding engagement with the ratchet wheel by means of a spring 88. Fulcrumed at its lower end on the base frame 15 and within the box or support 76, is a bell-crank-lever, the longer arm 89 of which is extended upwardly through the top of the support 76 and at one side of the shaft 79 and near the ratchet wheel thereon. The shorter arm 90 of said lever is adapted to engage a knife switch 91 which is located below the ratchet wheel, and by preference, within the box 76 and is pivoted at one of its ends as at 92 on a suitable binding post 93 from which an electric conductor 94 leads. A spring 95 engages at one of its ends the switch 91 so that when it is released from the arm 90 of the bell-crank-lever the switch will be thrown out of contact with another binding post 96 which has a conductor 97 leading therefrom. Mounted on the shaft 79 near the ratchet wheel 80 are a number of disks, usually three in number, although this number may be increased or diminished. These disks are designated by the numerals 98, 99 and 100, see Figs. 3 and 8 of the drawings, and the disk 98 is provided on its surface adjacent to the ratchet wheel 80 with a lateral projection 101 to engage the projection 81 on the ratchet wheel in the rotation of the latter so as to cause the rotation of the disk 98 which has on its surface opposite the projection 101 another lateral projection 102 which is adapted to engage the projection 103 on the adjacent face of the disk 99, which latter disk is provided on its face opposite the projection 103 with another projection 104 which is adapted to engage a projection 105 on the adjacent face of the disk 100 which latter disk is provided at its

periphery with a lateral projection 106 to impinge against the curved upper portion 107 of the bell-crank-lever 89 in the rotation of said disk and ratchet wheel. The projections 101 to 105 inclusive, on the disks 98, 99 and 100 may be located at any suitable points on said disks, but by preference, so that each disk will make approximately a complete revolution before its projection will engage the projection on the disk adjacent thereto, but for the convenience of illustration the projections on said disks are not so shown in Figs. 3 and 8 of the drawings.

Vertically mounted on the base 15 directly below the shaft 56 and to one side of the standard 37 is a bracket 108 in the upper portion of which is journaled a roller 109 which is adapted to contact with the band 63 of the slide carrier. The bracket 108 is provided with a screw-threaded spindle 110 which is extended through a suitable opening in the base 15 and is surrounded by a spring 111 which rests at one of its ends against the bracket 108 and at its other end against the base 15 and is used to yieldingly hold the roller 109 in contact with the band 63 so as to prevent vibrations of the slide carrier or rebounding thereof when it is intermittently rotated. The tension of the spring 111 may be regulated by means of a nut 112 on the lower end of the spindle 110 as is obvious.

From the foregoing and by reference to the drawing, it will be readily understood and clearly seen, that assuming the parts of the apparatus to be in the positions shown in Figs. 1 and 2 of the drawings the operation will be as follows: By turning on the current to the motor and closing the switch 91 the train of gears uniting the driving shaft 38 and shaft 56 on which the slide carrier is mounted will be driven through the instrumentality of the pulley 37 and its connections with the motor. In this operation the segmental gear 49 will be rotated and caused to engage the pinion 50 and to turn it and its shaft completely around. In this action the eccentrically located pin 53 on the disk 52 will be caused to engage one of the recesses 54 of the wheel or disk 55 and thus partially rotate said disk and the shaft 56 as well as the slide carrier or wheel which is mounted on the last named shaft. The above named operations will be repeated or continued as long as power is applied to the driving shaft or its pulley, and it will be understood that the eccentric 57 on the shaft 56 will be caused to make a complete revolution for every complete revolution made by the recessed wheel 55 or disk, and that in its revolutions the eccentric which is embraced by the prongs 84 of the yoke 83 will cause the bar or rod 82 to be moved in the proper direction to permit the pawl 85 carried by said bar to force the

ratchet wheel 80 the distance of one of its teeth for each revolution of the eccentric 57, recessed wheel 55 and the slide carrier. Now, assuming that the wheel has (50) fifty teeth on its periphery, it is obvious that in order for it to be turned a complete revolution the slide carrier or wheel would have to make fifty (50) complete revolutions, each being intermittently made so as to enable the display matter on the slides to be thrown on the screen by means of the lamp 34 condensing and objective lenses for a predetermined length of time. Now, if it is desired that the machine shall be operated just long enough for a single complete revolution of the ratchet wheel 80, or say long enough to make fifty (50) complete revolutions (intermittently) of the slide carrier the disks 98, 99 and 100 may be turned on the shaft 79 so that the projection 101 on the disk 98 will engage the projection 81 on the ratchet wheel on the side of the last named projection in which it rotates, and so that the projections 102, 103, 104 and 105 on the disks will interlock with one another. When the said parts are so arranged the projection 106 on the disk 100 when the ratchet wheel 80 is about to finish its complete revolution will strike the curved portion of the tripping lever 89 and cause said lever to be thrown out of engagement with the knife switch 91 thus breaking the electric circuit and thereby causing the operation of the machine to cease. Now, if it is desired that the machine shall run for a longer period than one complete revolution of the ratchet wheel 80 one or more of the disks 100, 99 and 98 may be turned on the shaft 79 so that the projections on the adjacent sides of said disks will be out of contact with each other, but so as to be placed in contact one pair at a time in the revolution of the disks until the disk 100 is rotated sufficiently to cause its projection 106 to strike the curved portion 107 of the tripping lever and to throw it out of engagement with the knife switch. After the tripping lever 89 has been thrown out of engagement with the switch 91 by the projection 106, it will be retracted by means of a spring 113 which is secured at one of its ends to said lever and at its other end to a projection 114 on the support 76. After the switch has been thrown out of engagement with the tripping lever 89 it is obvious that it will have to be placed in engagement therewith manually which can be done by opening the doors 19 and 77 of the casing 16 and box or support 76 respectively.

It will be observed by reference to Figs. 4 and 6 of the drawings that an enlargement 115 is mounted on the shaft 51 between the pinion 50 and disk 52 which enlargement is provided adjacent to the pin 53 with a segmental or curved recess 116, which construction is employed to permit of

the rotation of the recessed wheel 55 when the pin 53 engages one of the notches thereof, for it is obvious that in the rotation of the disk 52 the pin 53 will operate in one of the recesses 54 in such a way that the end of the tooth 117 of the wheel 55 adjacent to the enlargement 115 must be free, and by providing the cut away portion 116 in the enlargement 115 which may be integral with the disk 52, this will be accomplished. The disk 52 after it has been rotated by the segmental gear 49 will be held in about the position shown in Fig. 6, or so that the pin 53 will be out of the way of the wheel 55 by means of a spring catch 118 mounted on the standard 36 which catch engages a suitable notch in the disk 52 at its periphery.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

1. An automatic stereopticon including a rotatable cylindrical carrier for slides consisting of a hub, radial spokes extended therefrom and provided at their outer ends with lateral extensions, a pair of spaced apart bands uniting said extensions circumferentially, and means on said bands for detachably holding a slide thereon between each pair of said extensions.

2. An automatic stereopticon including a rotatable cylindrical carrier for oblong slides consisting of a hub, radial spokes extended therefrom and provided at their outer ends with lateral extensions, a pair of spaced apart bands uniting said extensions circumferentially, and means on said bands for detachably holding a slide thereon between each pair of said extensions with its shorter dimensions located in the direction of the movement of the carrier.

3. An automatic stereopticon, including a rotatable cylindrical carrier for oblong slides consisting of a hub, radial spokes extended therefrom and provided at their outer ends with lateral extensions, a pair of spaced apart bands uniting said extensions circum-

ferentially, clips each having a transverse bend and an inwardly extended projection on each side of said bend secured to one of said bands at points thereon so that the transverse bends will receive or engage the said spoke extensions and other clips each having a transverse bend and a projection on each side of said bend secured to the other of said bands at points thereon so that the transverse bends of the last named clips will receive or engage the said spoke extensions, and fasteners for the slides pivotally secured to the last named band.

4. An automatic stereopticon including a rotatable cylindrical carrier for slides mounted to rotate in a vertical plane, said carrier consisting of a hub, radial spokes, extended therefrom and provided at their outer ends with lateral extensions, a pair of spaced apart bands uniting said extensions circumferentially, means on said bands for detachably holding a slide thereon between each pair of said extensions with its shorter dimensions located in the direction of the movement of the carrier, and means resiliently and adjustably mounted to contact with the carrier to prevent vibration or rebound thereof.

5. An automatic stereopticon including a driven shaft, a slide carrier mounted thereon for rotation, an eccentric fixed on said shaft, a bar mounted at one of its ends on another shaft and having at its other end a yoke embracing said eccentric, a ratchet wheel mounted on the last named shaft, a pawl carried by the said bar to engage the teeth of the ratchet wheel, electrical means for driving the carrier, a switch in the electric circuit, a tripping lever to engage the switch, and means operated by the ratchet wheel to trip said lever.

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