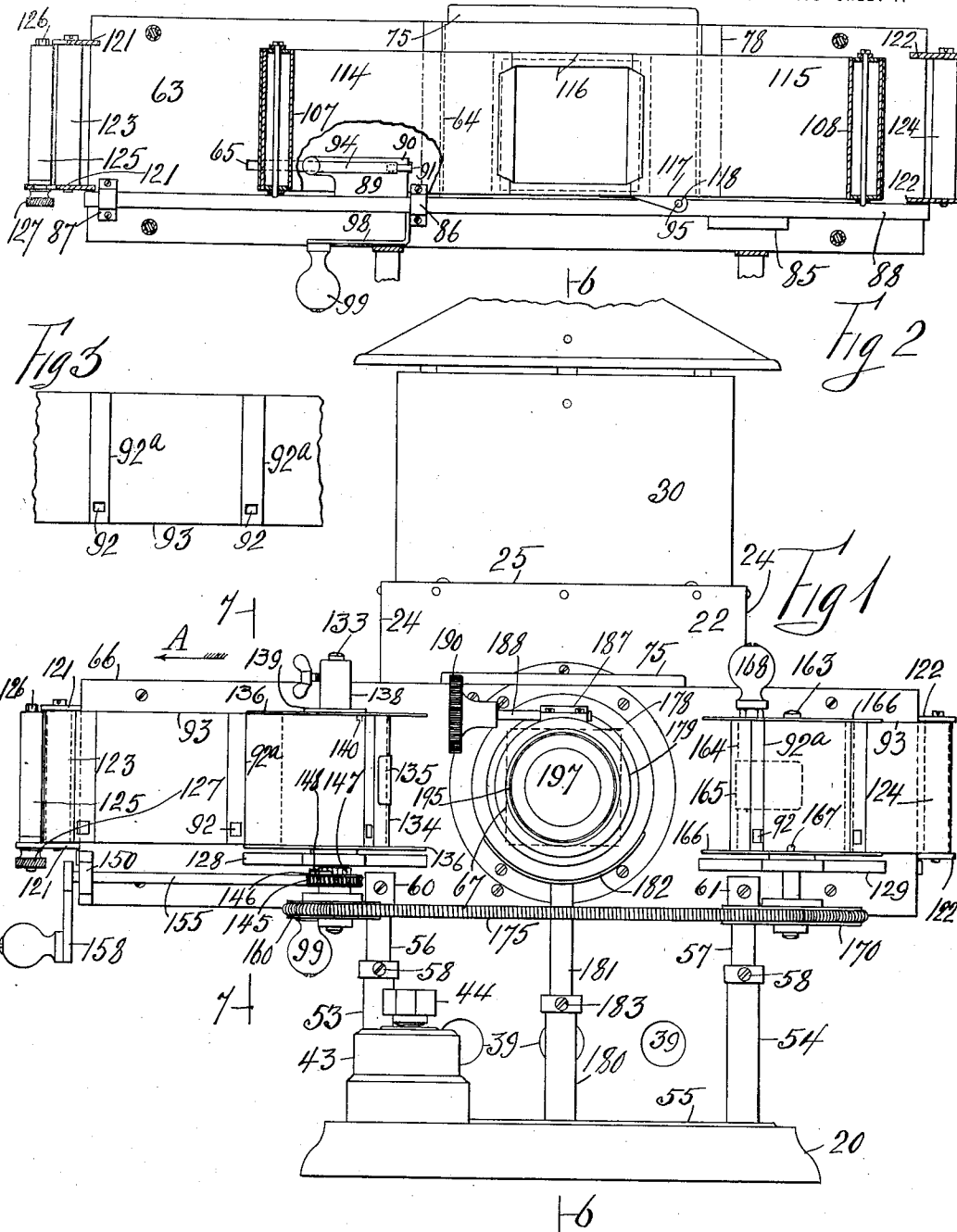


F. H. WHITE.  
 COMBINED STEREOPTICON AND PANORAMIC PROJECTING MACHINE.  
 APPLICATION FILED JUNE 13, 1914.

1,154,819.

Patented Sept. 28, 1915.

4 SHEETS—SHEET 1.



Witnesses:  
 John Jessick.  
 David Bachman.

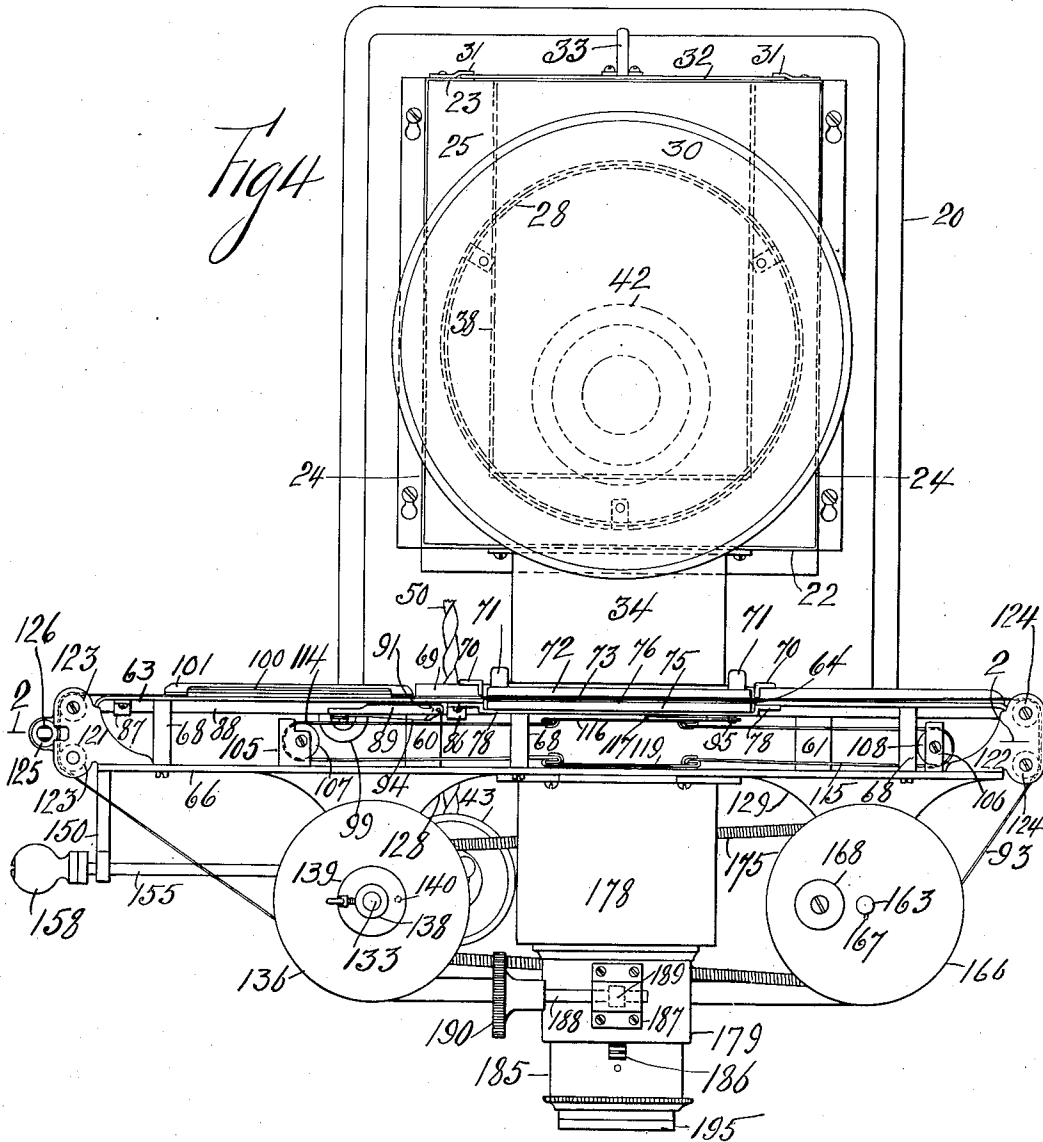
Inventor  
 Frederick H. White  
 By his Attorney  
 J. D. Romwell

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4 SHEETS—SHEET 2.



Witnesses:  
 John Jessick.  
 David Wickerman.

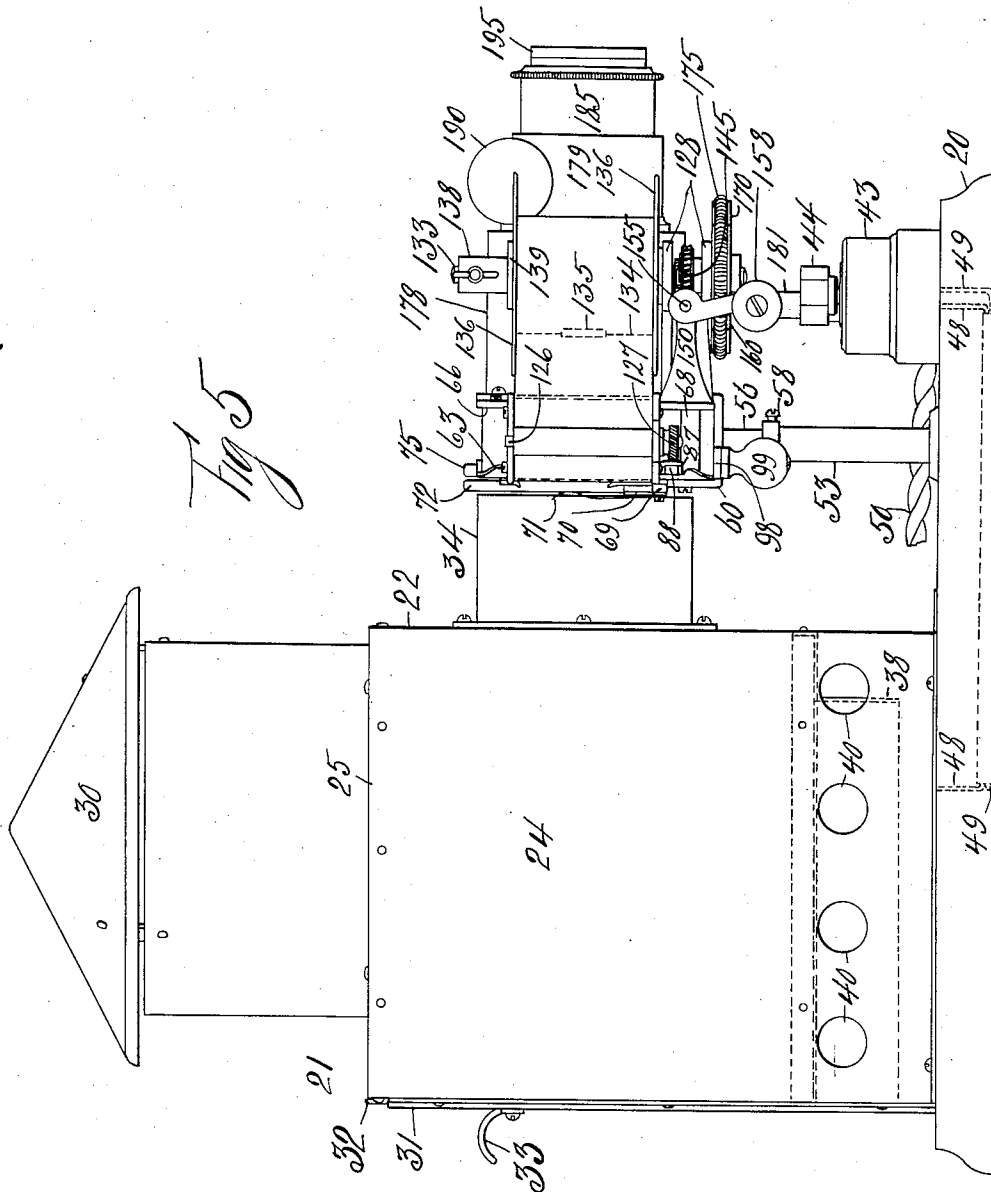
Inventor  
 Frederick H. White  
 By his Attorney  
 John D. Borneville

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4 SHEETS—SHEET 3.



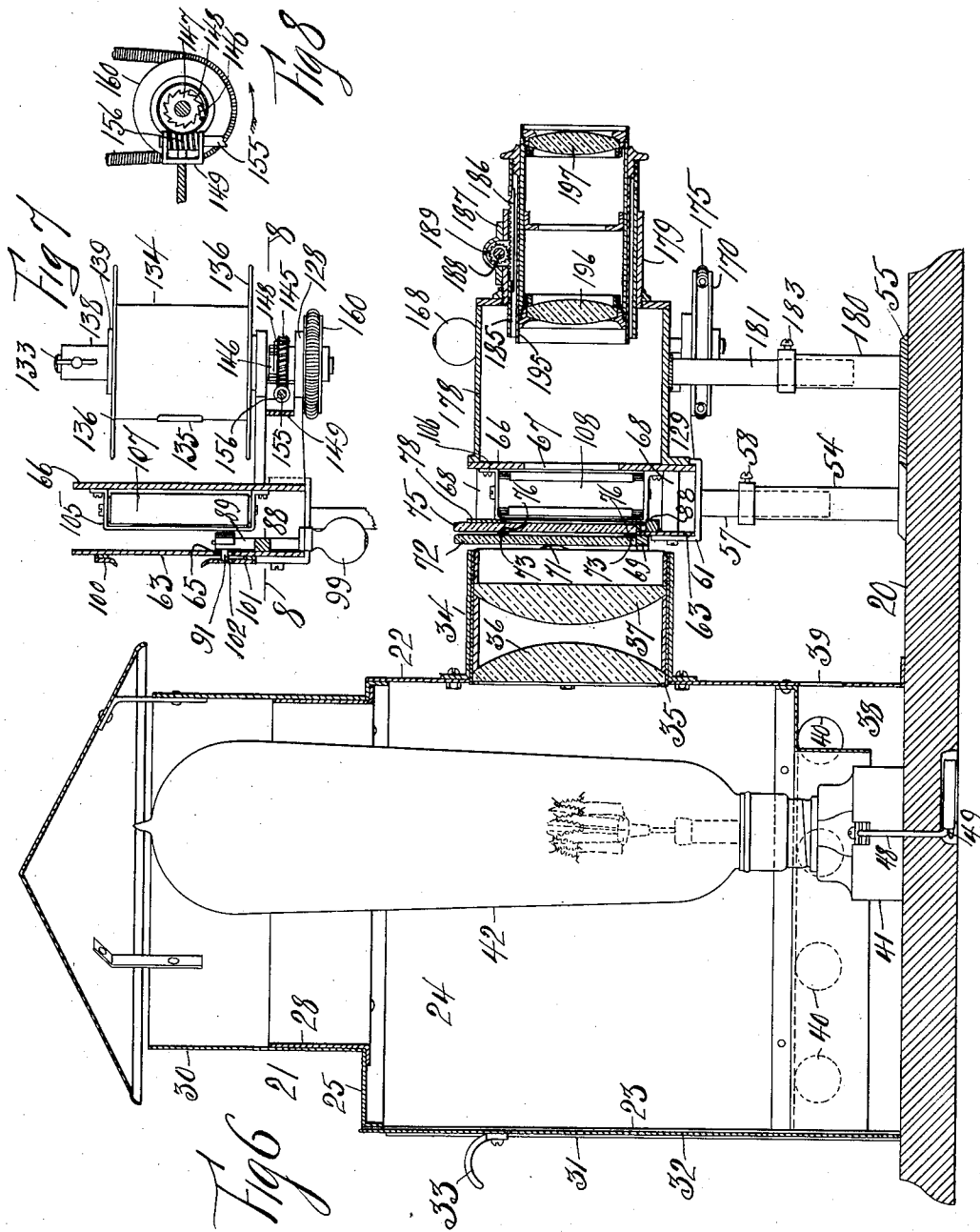
Witnesses:  
 John Jessick.  
 David Ackerman.

Inventor  
 Frederick H. White  
 By his Attorney, Ad. Romeville

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 4 SHEETS—SHEET 4.



Witnesses:  
 John Jessick.  
 David Ackermann.

Inventor  
 Frederick H. White  
 By his Attorney  
 John D. Somerville

# UNITED STATES PATENT OFFICE.

FREDERICK H. WHITE, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM W. WESTCOTT, OF NEW YORK, N. Y.

COMBINED STEREOPTICON AND PANORAMIC PROJECTING-MACHINE.

1,154,819.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed June 13, 1914. Serial No. 844,891.

*To all whom it may concern:*

Be it known that I, FREDERICK H. WHITE, a citizen of the United States, and a resident of the borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in a Combined Stereopticon and Panoramic Projecting-Machine, of which the following is a specification.

10 This invention relates to improvements in a combined stereopticon and panoramic projecting machine, its object being to either consecutively project a series of pictures or a panoramic view.

15 Figure 1 represents a front elevation of a machine exemplifying the invention, Fig. 2 is a section of Fig. 4 on the line 2, 2, Fig. 3 represents a fragmentary portion of a film, Fig. 4 shows a top plan view of Fig. 1, Fig. 5 is a left hand side view of Fig. 1, Fig. 6 represents a part elevation and section of Fig. 1 on the line 6, 6, Fig. 7 is a partial section of Fig. 1 on the line 7, 7, and Fig. 8 shows a partial section of Fig. 7 on the line 8, 8.

25 The machine is shown with a base plate 20 upon which is supported a lamp house indicated in its entirety by the numeral 21. The lamp house is shown with the front wall 22, rear wall 23, side walls 24 and roof 25. A sleeve 28 extends from the roof 25 and has slidably supported thereon the ventilator hood 30. The rear wall 23 has an opening with the guides 31, for the sliding door 32, the latter having extending therefrom the handle 33. The front wall 22 has an opening for the sleeve 34, in which is slidably supported the lens barrel 35 with the condenser lenses 36, 37. A U shaped ventilator duct 38 is formed with the front wall 22 and side walls 24. Openings 39 in the front wall 22 and openings 40 in the side walls 24 coact with said duct.

40 A lamp socket 41 extends from the base plate 20 and supports the electric lamp 42. An electric switch 43 with the handle 44 is supported on the base plate 20. Wires 48, 49 connect the switch 42 with the lamp socket 41. A coil 50 with two main line wires for a source of electric current are connected to said switch 43.

55 A pair of tubular supporting columns 53, 54, extend from the plate 55, which latter is supported on the base plate 20. Supporting rods 56, 57 are respectively adjustably sup-

ported in the columns 53, 54 by means of the screws 58. A U shaped bracket 60 is carried on the rod 56 and a U shaped bracket 61 is carried on the rod 57.

A supporting plate 63 with the openings 64, 65 and the supporting plate 66 with the opening 67 are carried on the U shaped brackets 60 and 61. Separators 68 extend between the plates 63 and 66. A supporting bar 69 is fastened to supporting plate 63 and has extending up therefrom the end stops 70. Springs 71 extend up from the supporting bar 69 and bear upon the glass guide plate 72. The latter has formed therewith the projecting guide strips 73. An accompanying glass guide plate 75 with the projecting guide strip 76 is supported in the annular frame 78, the latter being secured to the supporting plate 63. A supporting guide 85 and supporting brackets 86, 87 extend from the supporting plate 63 and on which is slidably supported the film slide bar 88.

80 A block 89 with the bifurcated end 90 is supported on the slide bar 88. It has pivoted therein the gripping finger 91, one end of which passes through the opening 65 of the plate 63 and engages the openings 92 in the connecting strips 92<sup>a</sup> of the film 93. A spring 94 has one end fastened to the block 89 and the other end bears on the gripping finger 91, to maintain the latter in proper position. A pin 95 extends from the bar 88. A bracket 98 extends from the bar 88 and has fastened thereto the operating handle 99. Film guides 100 and 101 extend from the supporting plate 63. The film guide 101 has the opening 102 for the gripping finger 91.

95 The plate 66 has supported thereon the brackets 105, 106 which have respectively journaled therein the rollers 107, 108 for the bands 114 and 115. An annular frame 116 with the lug 117 having the opening 118 is fastened to one of the ends of each of said bands, and an annular frame 119 is fastened to the other ends of the bands. The opening 118 locks with the pin 95.

100 On the ends of the supporting plates 63 and 66 are fastened the journal brackets 121, 122 which have respectively journaled therein the guide rollers 123, 124. One of the brackets 121 has adjustably journaled therein the tension roller 125, by means of the threaded spindle 126 and jam nut 127.

Bifurcated journal brackets 128, 129 extend from the supporting plate 66. A pin 133 is journaled in the bracket 128 and which supports the film receiving drum 134  
 5 having the clamping spring 135 and flanges 136. A clamping sleeve 138 having the disk 139 with the locking pin 140 is fastened to the pin 133. The locking pin 140 locks with  
 10 an opening in one of the flanges 136. A worm wheel 145 is loosely carried on the pin 133, and a pawl 146 is pinned to said wheel. A ratchet wheel 147 is fastened to the pin 133, and a spring 148 carried on the worm wheel 145 bears against the pawl  
 15 146.

An auxiliary bracket 149 extends from the bracket 128 and an auxiliary bracket 150 extends from the supporting plate 66. A worm shaft 155 with the worm 156 is  
 20 journaled in the brackets 149 and 150. The worm 156 meshes with the worm wheel 145. An operating handle 158 extends from the worm shaft 155. A pulley 160 is fastened to the pin 133. A pin 163 similar to 133  
 25 is journaled in the bracket 129. A feeding drum 164 with the clamping spring 165 and flanges 166 is carried on the pin 163. A spline 167 extending from the pin 163 engages a notch in one of the flanges 166. A  
 30 handle 168 extends from one of the flanges 166. A pulley 170 is fastened to the pin 163 and a spring belt 175 connects the pulleys 160 and 170.

A sleeve with the tubular portions 178 and 179 extends from the supporting plate 66. A tubular column 180 extends up from the plate 55, which latter is supported on the base plate 20. A supporting bar 181  
 35 with the curved bracket 182 is adjustably supported in the column 180 by means of the screw 183.

A supporting sleeve 185 is slidably carried in the sleeve 179. A rack 186 is carried on the sleeve 185. A bracket 187 is  
 45 carried on the sleeve 179 and has journaled therein the spindle 188 carrying the pinion 189, which latter meshes with the rack 186. A knurled head 190 is carried on the spindle 188. A lens barrel 195 is fastened in the  
 50 supporting sleeve 185 and carries the objective lenses 196 and 197.

The film 93 has one end thereof fastened to the feeding drum 164 and is wound around the same. The said film is led from the said drum around the rollers 124 and  
 55 from thence between the guide plates 72 and 75. The film then is led between the film guides 100 and 101 and between the rollers 123 and the roller 125 and from thence to the receiving drum 134.  
 60

To use the machine as a stereopticon the operator pulls the handle 99 and thereby the slide bar 88 is moved and the gripping  
 65 finger 91 engages the openings 92, one at a time and pulls the film 93 in the direction

of the arrow A. The distance traveled by the film is controlled by the stroke of the finger 91 in the opening 65. When the said finger reaches the end of its stroke a picture  
 70 on the film is in proper position for the axial center of the lenses of the machine. The stroke of the slide bar 88 which carries the gripping finger 91 is a little longer than the length of the opening 65. When the slide  
 75 bar 88 is moved to propel the film it travels the full length of the opening 65 and upon its return stroke, the finger 91 rides on the film 93 until it reaches the other end of the opening, it then rides on the plate 63 during the completion of the return stroke of the  
 80 slide bar 88. Upon starting another forward stroke, the finger 91 again engages an opening in the film. Upon the return stroke of the slide 88 the finger 91 bears on the film 93 with only very slight pressure.  
 85 When the film 93 is to be moved continuously the slide bar 88 is located so that the gripping finger 91 will bear upon the supporting plate 63, a little beyond the edge of the opening 65 which in turn is adjacent to  
 90 the axial center of the lenses of the machine. The annular frames 116 and 119 at the same time will be axially in line with each other and in line with axis of the lenses of the machine. When the film 93 leaves  
 95 the drum 164 the latter turns on its axis and thereby rotation is given to the pulley 170. The latter, by means of the spring belt 175, transmits rotation to the pulley 160. The drum 134 turns with the pulley  
 100 160 and the film is taken up on the drum 134. The pulley 160 is somewhat smaller in diameter than the pulley 170 to maintain the requisite tension on the film 93. The tension on the film can be adjusted by  
 105 locating the tension roller 125 in different positions, by means of the spindle 126 and the jam nut 127. With the movements of the slide bar 88 motion is transmitted to the bands 114 and 115 through the lug 117 and  
 110 pin 95. The pin 95 is always locked in the opening of the lug 117. When a picture on the film 93 starts to leave its position from the axial center of the lenses, the annular frames 116 and 119 move in opposite direc-  
 115 tions from the axial center of the lenses to stop off the light. The frames 116 and 119 with their openings constitute a shutter for the machine. When the handle 99 is moved in a direction opposite to the arrow A, the  
 120 frames 116, 119 again approach each other and are located in the axial center of the lenses. The picture on the film is then ready to be projected on a screen.

If the operator desires to use the machine  
 125 for panoramic pictures, he turns the handle 158 by which motion is transmitted to the worm 156 and worm wheel 145. Thereby the pawl 146 engages the ratchet wheel 147 and causes the drums 134 and 164 to move  
 130

the film. The slide bar 88 with its coacting elements remain stationary and the bands 114, 115 also remain stationary with the annular frames 116 and 119 in alinement 5 with each other and with the optical axis of the lenses of the apparatus.

Having described my invention what I desire to secure by Letters Patent and claim is:

1. In a machine of the character described 10 the combination of a lamp house, a lens for the lamp house to project pictures of a film, means to intermittently move the film and means to continuously move the film.

2. In a machine of the character described 15 the combination of a lamp house, lenses coacting with the lamp house to project the pictures of a film, a pair of rollers journaled in the machine, a pair of bands for said rollers, annular frames connecting the 20 ends of the bands, a reciprocating element in the machine, connections between said element and the band to reciprocate the latter, the annular frames permitting light to pass therethrough when in alinement with the 25 optical axis of the lenses, and means connected between said element and picture film to move the latter.

3. In a machine of the character described, 30 the combination of a lamp house, lenses for the machine, a pair of rollers journaled in the machine, a pair of bands for the said rollers, a pair of annular frames connecting the ends of said bands, a slide bar guided in the machine, and means connected to the 35 slide bar to move a film past the said lenses and connections between the slide bar and the said bands to move the latter into proper position for the pictures on the film, the frames when in alinement with the optical 40 axis of the lenses enabling the light rays from the lamp house to project said pictures, and to shut off said light rays when the film is being moved.

4. In a machine of the character described, 45 the combination of a lamp house, lenses coacting with the lamp house, a pair of rollers journaled in the machine, a pair of bands

for said rollers, annular frames connecting the ends of the bands, a slide bar guided in the machine, a lug with an opening extending from one of the annular frames, a pin 50 extending from the slide bar engaging said opening, the said frames permitting light rays to pass therethrough when in alinement with the optical axis of the lenses, 55 a block extending from said slide bar, and a gripping finger pivoted in said block located to engage openings in a film.

5. In a machine of the character described the combination of a lamp house, lenses co- 60 acting with the lamp house, transparent guide plates, each having a pair of guide strips, each guide strip on one of the plates contacting with its accompanying guide strips on the other plate to form guide 65 means for the edges of a film and means to move the film.

6. In a machine of the character described the combination of a lamp house, a source of illumination in said lamp house, con- 70 denser lenses for the lamp house, a pair of supporting plates each having openings that are coincident with the axial center of said lenses supported in the machine, a pair of transparent guide plates supported on one 75 of said supporting plates, objective lenses connected with the other supporting plate, a pair of rollers journaled between the said supporting plates, bands for the rollers constituting a shutter for the lenses, annular 80 frames connected to the bands allowing light to pass therethrough when in alinement with the optical axis of the lenses of the apparatus, and means to move the film between the transparent guide plates in conjunction 85 with the movements of the shutter.

Signed in the borough of Manhattan in the county of New York and State of New York this 2nd day of June A. D. 1914.

FREDERICK H. WHITE.

Witnesses:

A. A. DE BONNEVILLE,  
JOHN JESSICH.