

(No Model.)

2 Sheets—Sheet 1.

C. A. CHASE.
STEREOPTICON PANORAMA MACHINE.

No. 545,423.

Patented Aug. 27, 1895.

Fig. 1.

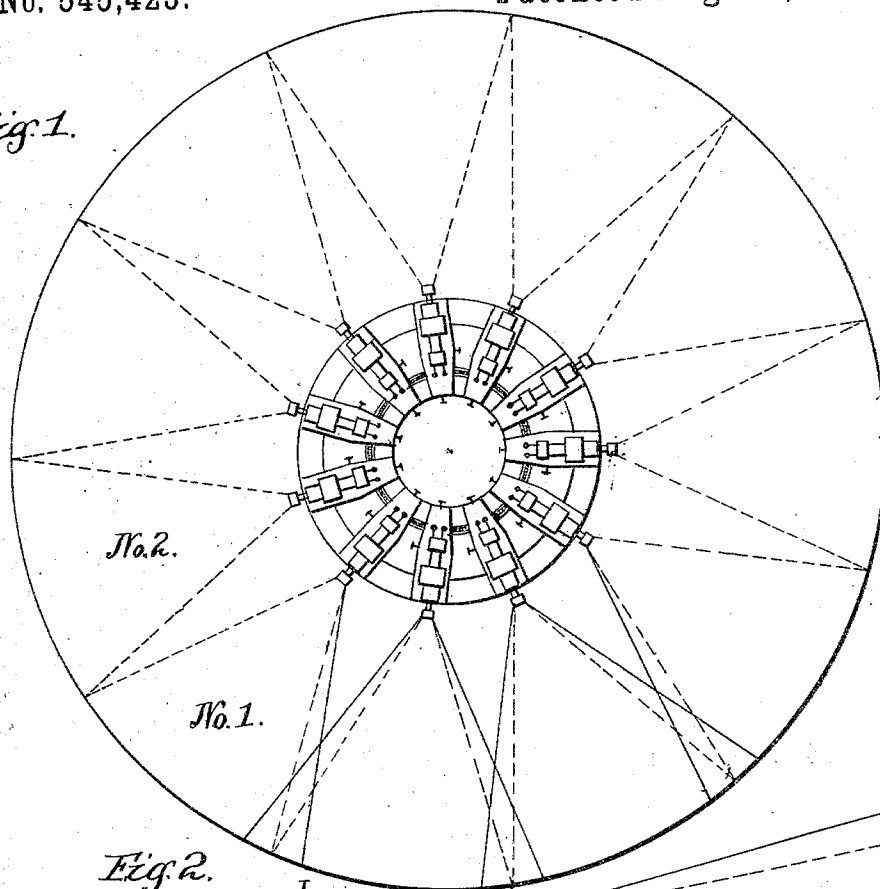


Fig. 2.

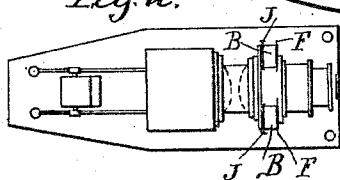
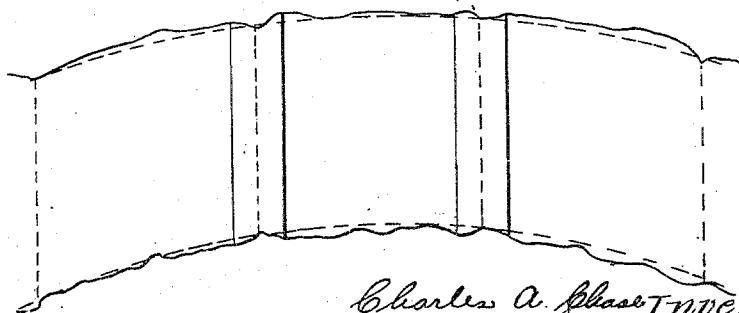
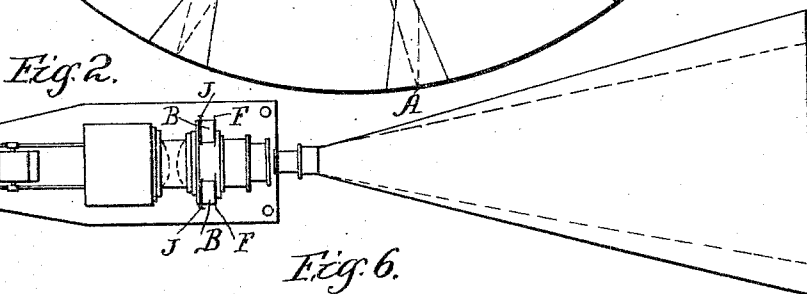


Fig. 6.



Witnesses
J. M. R. R. R.
H. M. R. R.

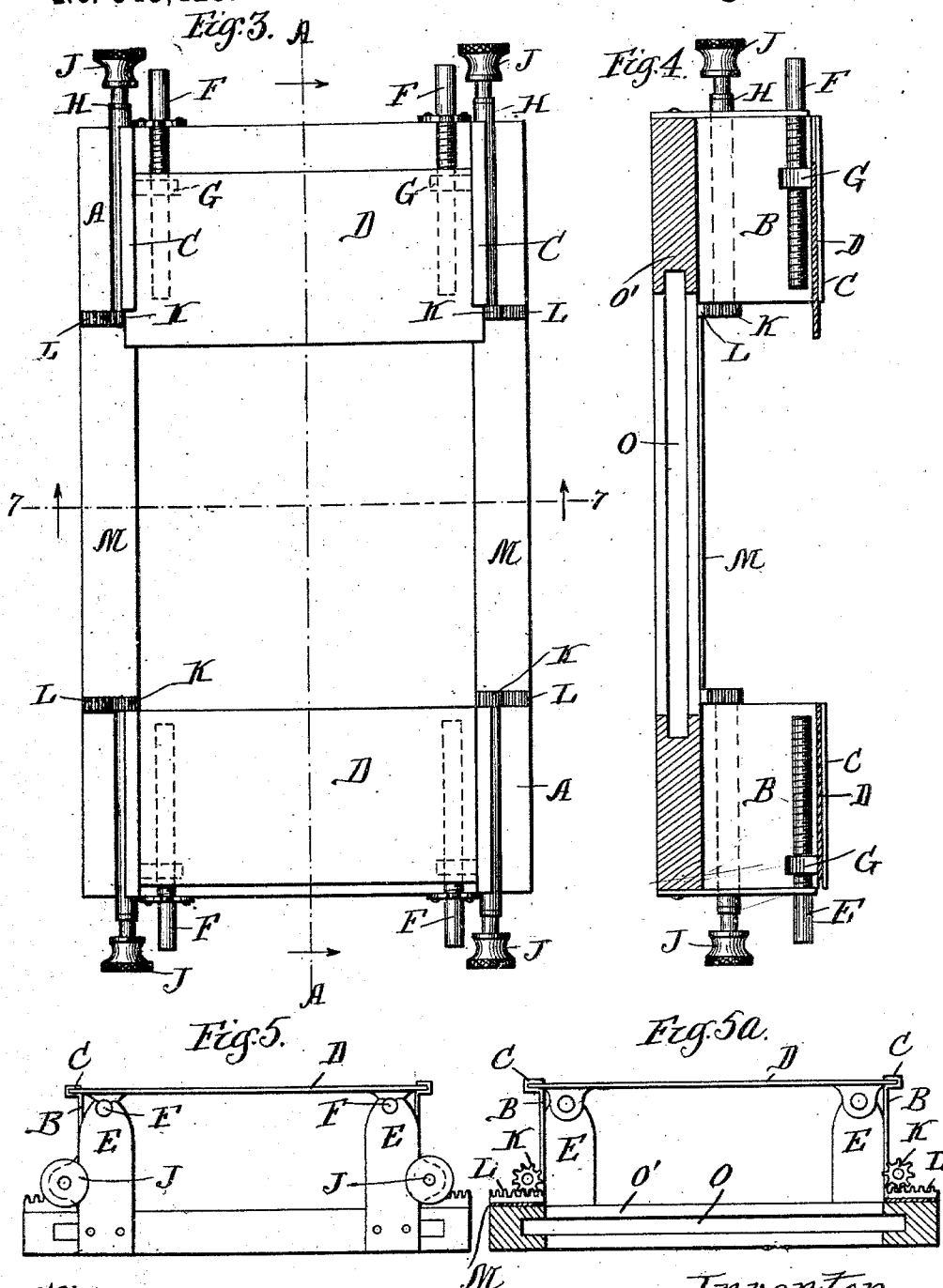
Charles A. Chase Inventor

by *James W. Park*

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Witnesses.
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UNITED STATES PATENT OFFICE.

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STEREOPTICON PANORAMA MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,423, dated August 27, 1895.

Application filed September 24, 1894. Serial No. 523,976. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. CHASE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Stereopticon Panorama Machines, of which the following is a specification.

My invention relates to stereopticon panorama devices or machines, and has for its object to provide certain convenient and simple means for properly joining the horizon pictures reproduced by such machine, so as to give the effect of a continuous unbroken view.

The further object of my invention is to provide means for producing a continuous upper and lower border or vanishing line in the case of such panoramic reproductions. In an application of even date herewith, and serially numbered 523,975, I have shown an arrangement for regulating the position of the different stereopticons. In my present application I have shown a device which, when applied to each stereopticon and correctly manipulated, causes the separate parts of the picture projected by each stereopticon to become blended into one continuous reproduction.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a diagrammatic view of my apparatus with the lines of projection of light indicated. Fig. 2 is a plan view of a single stereopticon with light-projection lines. Fig. 3 is an enlarged front view of the blending device. Fig. 4 is a longitudinal section on line A A of Fig. 3. Fig. 5 is an end view of the blending device. Fig. 5^a is a cross-section on line 7 7 of Fig. 3. Fig. 6 is a view showing the bounding-lines of a series of sections of a horizon picture.

Like parts are indicated by the same letters throughout the several views.

In reproducing horizon views with panoramic effects great difficulty is encountered with regard to the matter of correctly and accurately joining the series of pictures which together make up the continuous horizon view. The slightest deviation with regard to the line of junction of the two adjacent pictures is enormously magnified by the time the

light has reached the screen, so that it is practically impossible or at least extremely difficult to obtain a series of sections of horizon views of such accuracy that they can be made to join perfectly by simply adjusting the ordinary stereopticon. To obviate these difficulties, I first undertook to overlap the pictures. Thus where I employed eleven stereopticons to reproduce the entire horizon I placed in each stereopticon somewhat more than one-eleventh of the horizon—say, one-tenth—and this made an overlapping of the pictures at the ends or edges. This, however, produced a broad light streak at the point where the two pictures overlap or blend. This excess of light rendered the expedient impracticable, whereupon I set out to secure the invention which is the subject-matter of this application. In like manner when the series of scenes are projected on the screen it will be found that one portion will rise slightly higher than the next adjacent portion or descend slightly lower, so as to produce a ragged and uneven upper and lower boundary-line of the horizon picture. All this is illustrated in Figs. 1 and 6 in full lines, and these two figures contain a like diagram in dotted lines of the condition of things when my invention has been properly applied.

Referring now to Figs. 3, 4, and 5, and 5^a, A A indicate the frame-pieces of a slide-holder reconstructed so as to contain my invention. These frame portions are preferably wide and constitute a body portion upon which the other parts are mounted. B B are side portions serving as guides and standards, terminating each in the guideway C for the blending-shutter D, which slides along in such guides. At the ends are the standards E E and upon each is mounted the screw-rod F, adapted to rotate on such standard, but not to move therealong. This rod is received into a screw-threaded block G on the under side of the plate D, so that when the rods F F are turned the plate D is moved in its guides. Two such shutters are provided, one at each end of the slide-frame. The shafts H H are journaled on the sides of the standard-plates B B, and are provided at one end with the thumb-pieces J J and at the other end with

the pinions K K, adapted to engage the short racks L L on the shutter-bars M M. These racks L are placed one at each end of the shutter M. Said shutters may therefore be moved back and forth by turning the shafts H H. O is the slot through the framework O', in which the slide is adapted to be placed. By this means the aperture through which the light from the slide passes is capable of control, the picture at top and bottom being controlled by means of the slides or shutters M, which can be moved in either direction to bring the tops and bottoms of the successive sections of the horizon picture in relation so as to make of them continuous lines. The slides D D are situated a considerable distance from the plate or slide proper, as is indicated in Figs. 4 and 5.

I do not wish to be limited to the precise form and construction of these several parts, as by a consideration of what I will now set forth concerning my invention it is evident that these details of construction could be greatly altered without departing from the spirit of my invention.

The use and operation of my invention are as follows: The stereopticons having been arranged as indicated in Fig. 1, each is provided with the "blending device," as I have called it, and which is illustrated in Figs. 3, 4, 5, and 5". The pictures are now thrown upon the screen in as close relation as possible. By operating the slides M M we can now cut off the rays of light at top and bottom of the several pictures, so as to give the entire horizon picture a continuous upper and lower edge. At the same time one should so adjust the stereopticons that the pictures will be as nearly as possible blended. As above suggested, the pictures will slightly overlap; but the point or strip of overlap is abnormally illuminated, since it receives the rays of light from each of two adjacent stereopticons. The parts of the pictures on the two overlapping portions are preferably made to register. I now operate my shutters D D, which, as above remarked, are considerably separated from the plate or positive until the light on such strip or overlap portion of the pictures is reduced so as to give uniform light about the whole circle. This is done by moving these shutters forward into the "line of sight," so to speak, and as this is done it will be found that the light in such band of overlap greatly diminishes, and when the right point has been reached the shutters are no longer moved. There is thus a perfect blending of all the pictures. They are slightly overlapped so as to make complete joining, and the abnormal light is then reduced by the blender so as to give to all parts of the picture the same degree of illumination. It is of course evident that as the shutters D D are moved into the line of sight the overlap is reduced; but there seems

to be an additional effect produced—viz., a blending effect—as far better results are produced when the shutters D D are placed at some distance from the slide carrying the picture, as shown, than when placed very near such slide.

I have spoken of "horizon views." By this I mean views which include whole or part thereof. With this significance it will be seen that the device might be employed substantially as herein shown for the production of a portion of the horizon—say, such part as would be covered by two or more instruments.

As shown in the drawings, the blending device is associated with the slide-holder, which is connected with the stereopticon in the ordinary manner, as shown in Fig. 2. It is evident that I may utilize the blending device in making joinings between the upper and lower edges of the pictures, as well as between the sides, in cases where it is desirable to project one picture above another.

I claim—

1. The combination of a series of stereopticons arranged so as to project a horizon picture, with section views, slides or plates each containing slightly more than its proportionate amount of the horizon view, and means for reducing the light on the overlap portions so that these separate portions of the reproduced view will be blended into one substantially homogeneous view.

2. The combination of a series of stereopticons adapted to reproduce a horizon view, with a series of views, slides or plates, one for each stereopticon, each plate containing slightly more than its proportionate amount of the total picture, and movable shutters in advance of the views, slides or plates and adapted to cut off a portion of the light at the sides so as to blend and reduce the light of the overlapping portions of the reproduced picture.

3. The combination of a series of stereopticons adapted to produce a horizon picture, with a series of views, slides or plates and movable shutters located at the top and bottom of the pictures to be reproduced and adapted to be moved with relation to such picture or views, slides or plates so as to cut off the light and produce a uniform upper and lower surface of the complete picture.

4. The combination with two or more stereopticons arranged so as to project adjacent portions of the same view upon a receiving wall, of a blending device associated with each stereopticon and adapted when properly manipulated to substantially obliterate the line of demarkation between the separate portions of the reproduced view.

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Witnesses:

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FRANCIS M. IRELAND.