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Fig. 3

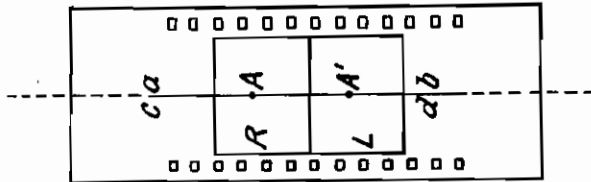
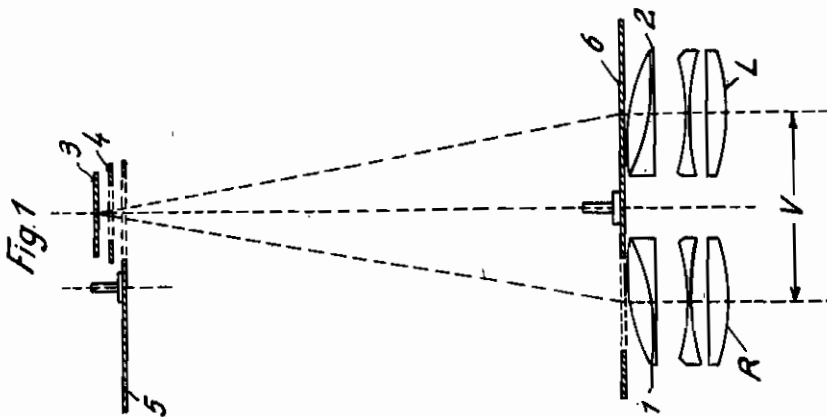
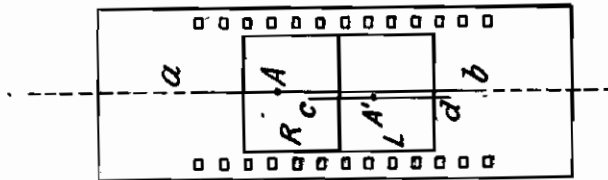


Fig. 2



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# ALIEN PROPERTY CUSTODIAN

## PRODUCTION OF STEREOSCOPIC MOTION PICTURES

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This invention relates to a method and device for producing stereoscopic motion pictures.

One of the objects of the invention is to combine the effects of space and motion into an image recorded on a film by successively taking, as stereophotographs, two pictures at the visual angles corresponding to interocular space and adapting the sequence of the two exposures to the speed at which the film moves relative to the objective or the time of exposure, i. e., the exposures are made both stereoscopically and cinematically, and the two images corresponding to the two visual angles appear after or below one another as in ordinary film.

When a film provided with such stereoscopically arranged single pictures passes at sufficient speed through a projector of known type, the two images corresponding to the two visual angles appear on the screen one after another, the image first presented to the eye being still covered by the preceding image owing to the persistence of vision, so that both eyes simultaneously and continuously receive an image alternately from a left and right photograph and, due to the union of the two images, a stereoscopic image is produced in the brain.

As the stereoscopic speed corresponds to the cinematic speed and both speeds or exposure times coincide, motion besides the stereoscopic effect can be perceived during projection.

A further object of this invention is to permit the employment of the various types of apparatus hitherto in use which are merely provided with a second objective to make possible stereo-cinematographic photography of movable and immovable objects which at their projection give the effect of solidity. Projectors of the customary kind may be used without making the slightest change therein.

The entire producing and reproducing process, compared with known methods, is therefore considerably simplified and rendered less costly, since existing apparatus may serve for its performance.

The device for carrying out the method according to the invention is distinguished by the feature that in front of the gate of a camera of known type, at interocular distance, two objectives are provided whose rear lens is prismatically ground or rendered prismatic by arranging plane prisms in the rear thereof for laterally deflecting the incident image from the rectilinear optical axis so that it can be recorded on the film disposed between the objectives. In this way, two pictures following each other on the film are taken in both limit positions of the pair of objec-

tives, i. e., corresponding to the interocular distance.

Exposure is made every time one of the objectives is covered by a rotary shutter disc having an open and an opaque sector, the latter one serving for covering the change of objectives. The rotary shutter disc is positioned between the two objectives and the gate and coupled with the film feed.

One form of the invention is illustrated by way of example in the accompanying diagrammatic drawing, in which

Figure 1 is a top view showing the general arrangement of the prismatic objectives and of the rotary shutter disc according to the invention, and

Figs. 2 and 3 indicate how compensation is effected between the parallax differences of two stereoscopic half images and accommodation of the eye.

Referring to the drawing, and first to Fig. 1, the pair of objectives R and L chiefly comprises two prismatic lenses 1 and 2, and the distance between the two limit positions V of the two objectives is equal to the interocular space. 3 designates the film, 4 the gate, and 5 and 6 refer, respectively, to the lens shutter and the rotary shutter disc.

The device functions as follows:

The image alternately passes through the two objectives R and L to the film 3. Prior to exposure the gate 4 is covered by the shutter 5 and the film advanced one section. During this motion of the film the rotary shutter disc 6 coupled with the film feed is turned 180° so that the objective R is ready for exposure whilst the objective L is covered. During exposure the shutter 5 opens, and the picture is taken by the objective R. During the following exposure the gate 4 is covered again and the film advanced another section while the shutter disc 6 is turned another 180° so that the objective R is covered and the objective L uncovered for the next exposure. Of two images successively recorded in this manner on the film one is taken at the position R of the objective and the other one at the position L.

The process involves therefore successive stereoscopic work in which the single pictures are positioned on the film after or below one another.

For performing the taking method the following device is provided:

Figs. 2 and 3 show a diagram for stereoscopic work. Fig. 2 illustrates a right and a left exposure designated, respectively, R and L. An arbitrarily chosen image point A of the exposure

R is positioned on the line *a, b*, but the same image point *A'*, due to parallax, is on the line *c, d* in the exposure L. The two image points *A, A'* fail therefore to coincide in the frame.

In order to correct this error the objective L 5 in Fig. 1 has to be displaced out of its middle position or optical center until point *A'* in Fig. 3 coincides with point *A*, that is, until line *c, d* coincides with line *a, b*.

For this purpose the objective L in Fig. 1 is so equipped as to permit of lateral displacement with the aid of a micrometer screw. When a film corrected in the manner indicated is projected by an apparatus of known make, the picture shown on the screen will have the appearance of solidity.

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