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J. MITTASCH

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DIAPHRAGM FOR THE OBJECTIVES OF STEREOCAMERAS

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Fig. 1

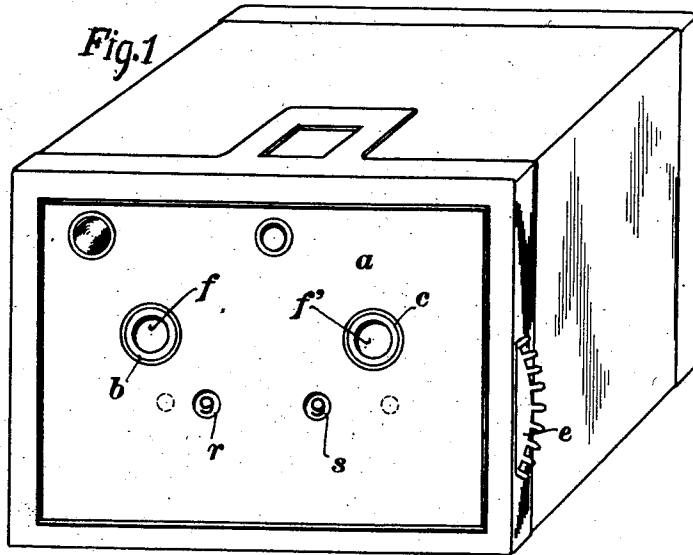
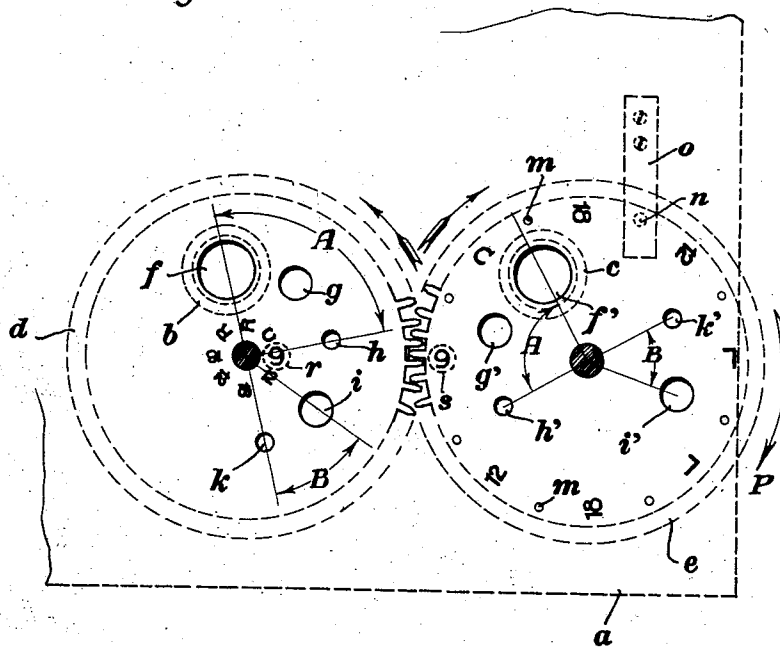


Fig. 2



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UNITED STATES PATENT OFFICE.

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DIAPHRAGM FOR THE OBJECTIVES OF STEREOCAMERAS.

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To all whom it may concern:

Be it known that I, JOHANNES MITTASCH, a citizen of the German Republic, residing at Heidelberg, Germany, have invented certain new and useful Improvements in Diaphragms for the Objectives of Stereocameras, for which application for patent has been filed in Germany on the 8th of December, 1922, and of which the following is a specification.

It has become known to regulate the light-intensity of the objective in photographic apparatus with the aid of sliding- revolving- or iris diaphragms and to bring these diaphragms into effect in the most various manners. The invention relates to the well known rotary diaphragms with exposure apertures of different size in their application to stereocameras.

The arrangement is such that photographs can be taken with both objectives simultaneously or only with one of the two objectives. With this object in view two rotary diaphragms are arranged according to this invention which gear with one another and have each two sets of apertures of different dimensions. On the one diaphragm these two sets of apertures are arranged in direct succession, the distance between the several apertures being equal. On the other diaphragm a part of the rotary diaphragm follows upon the one set of apertures which acts like a covering diaphragm, the second set of apertures following only on this part of the rotary diaphragm. The displacement of the two sets of apertures on the second diaphragm for an angle which depends on the number of apertures has for its object to enable the alternating use of the objectives also for single-exposures.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding that while on the drawing one embodiment of the invention is disclosed, the invention is not confined to any strict conformity with the showing of the drawing, but may be embodied in any manner which does not make a material departure from the salient features of the invention.

In the drawing:

Fig. 1 is a perspective view of a stereocamera with the improved arrangement of diaphragms.

Fig. 2 shows the diaphragms on a larger scale than that used in Fig. 1, the front wall of the camera being removed.

In the front wall *a* of a stereocamera having the objective apertures *b* and *c* respectively the two rotary diaphragms *d* and *e* are mounted which gear the one with the other. Each diaphragm has two sets A and B of apertures with the values of for instance $F=18, 12, 9, 18$ and 12 which are designated on the left diaphragm with the reference characters *f, g, h, i* and *k* and on the right diaphragm with *f', g', h', i'* and *k'*. One of the two diaphragms has further a number of small holes *m* uniformly distributed over the circumference and serving as notches for a stud *n* of an elastic blade *o*. The sets A and B of apertures are arranged on the one diaphragm in direct succession so that the distance is equal between the several apertures. On the other diaphragm the apertures *f', g', h'* of the first set A stand at equal distances apart, but between aperture *h'* of set A and aperture *i'* of set B is a distance three times that between every two apertures of the first or second set. The solid part of the rotary diaphragm *d* situated between the apertures *f* and *k* on the one hand and the parts of the rotary diaphragm *e* situated between the apertures *h'* and *i'* and *f' k'* on the other hand act as covering diaphragms when single exposures have to be made or when the two objectives have to be obturated.

Around the axes of rotation of the diaphragms index figures and characters are arranged, 9, 12, 18, 12, 18, R, R and C on the rotary diaphragm *d* and 9, 12, 18, L, L, 12, 18 and C on the rotary diaphragm *e*, of which always two signs belonging together appear in the two windows *r* and *s*. Owing to the arrangements of the diaphragm apertures and of the indexing signs the following positions of the diaphragms are possible and can be read at once.

At the position shown in Fig. 2 the largest diaphragm apertures ($F=9$) *f* and *f'* stand behind the objective apertures *b* and *c*. By rotating in the direction of arrow P the toothed rotary diaphragm *e*, which with this object in view slightly projects from the casing, the apertures *g, g'* ($F=12$) or *h, h'* ($F=18$) are brought in the optical axes. In the two windows *r* and *s* the corresponding figures 9, 9 or 12, 12 or 18, 18

are visible. These positions of the diaphragms serve for stereoscopic photograph taking. When the diaphragm *e* is further rotated the apertures *i* or *k* will come on the other side into the optical axis, while the objective aperture for diaphragm *e* is covered by said diaphragm. In the window *r* the figures 12 or 18 are visible and in the window *s* the character L (left) is visible both times. These positions serve for single view taking on the left half of the plate. If the diaphragm *e* is still rotated further the objective *f* remains covered, the apertures *i'* or *k'* standing in front of the objective *f'*. In the window *r* appears in this case the character R (right) and in the window *s* appears the figure 12 or 18. These positions serve for single view taking on the right half of the plate. If the rotary diaphragm is still further rotated both objectives are covered and the two characters C (closed) appear in the windows *r*, *s*.

I claim:—

1. Diaphragms for the objectives of

stereo-cameras comprising in combination two diaphragms gearing with one another having each two sets of apertures of different dimensions said sets being arranged in the one diaphragm in direct succession and in the other diaphragm displaced with regard to one another.

2. Diaphragms for the objectives of stereo-cameras comprising in combination two diaphragms gearing with one another having each two sets of apertures of different dimensions said sets being arranged in the one diaphragm in direct succession and in the other diaphragm displaced with regard to one another, indexing signs on said diaphragms, and the front wall of the camera having two windows one for one of the indexing signs of each diaphragm.

In testimony whereof I affix my signature in presence of two witnesses.

JOHANNES MITTASCH.

Witnesses:

C. C. L. B. MYLES,
H. SCHICHEET.