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H. KUNZE

IRIS DIAPHRAGM

Filed Aug. 16, 1923

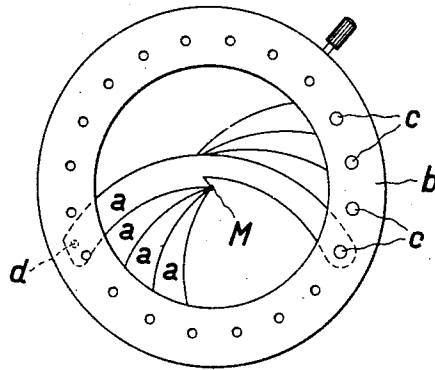


Fig. 1

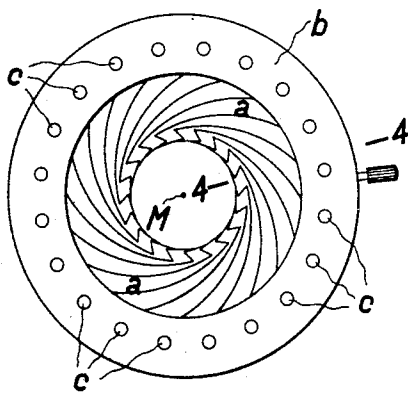


Fig. 2

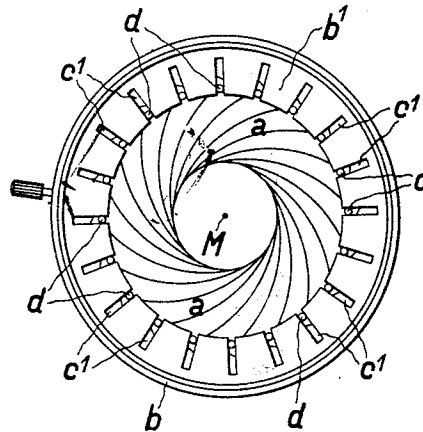


Fig. 3

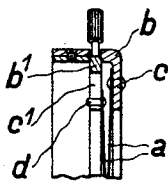


Fig. 4

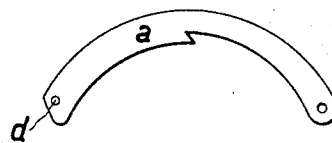


Fig. 5

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UNITED STATES PATENT OFFICE.

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IRIS DIAPHRAGM.

Application filed August 16, 1923. Serial No. 657,764.

To all whom it may concern:

Be it known that I, HUGO KUNZE, a citizen of Germany, and residing at Jena, Germany, have invented a new and useful Iris Diaphragm (for which I have filed an application in Germany on October 14, 1922), of which the following is a specification.

The present invention relates to iris-diaphragms fitted with curved lamellæ which are supported at both ends, viz at the one end rotatably about a fixed axis and at the other end displaceably relatively to the mount of the iris-diaphragm in their longitudinal direction. According to the invention the single lamellæ of these diaphragms are recessed on their hollow side from the point, which with the closed diaphragm comes to lie into the centre of the diaphragm to almost the end, rotatable about a fixed axis, so that this side of each lamella is narrower than the remaining part of the same. The invention is based upon the knowledge that, in order to attain the effect of the diaphragm already those parts of the lamellæ are sufficient which with the closed diaphragm lie between the centre of the diaphragm and the ends of the lamellæ, displaceable relatively to the diaphragm-mount, and that it suffices to construct the remaining parts of the lamellæ as carrying arms for the first-named parts which may be narrower than those parts acting as the diaphragm proper. By means of the recessed parts of the carrying arms it is possible to avoid, especially with the closed diaphragm, the accumulation of material in the centre of the diaphragm, whereby a greater mobility of the lamellæ in the vicinity of the closing state of the diaphragm is obtained and besides, even with comparatively thick lamellæ, an almost complete closing of the diaphragm.

The annexed drawing shows in five figures a constructional example of an iris-dia-

phragm according to the present invention. Figs. 1 and 2 represent a front view each of the diaphragm, viz in Fig. 1 the lamellæ are shown in the position corresponding to the smallest diaphragm aperture and in Fig. 2 in a middle position, Fig. 3 represents a back view of the diaphragm, whereby the lamellæ are in the same position as in Fig. 2. Fig. 1 shows only a part of the lamellæ for the sake of distinctness. Fig. 4 is a section on the line 4—4 of Fig. 2 and Fig. 5 is a front view of a single lamella.

In the example shown the lamellæ *a* are supported at their one end in a mount *b* rotatably about pivots *c* fixed in the mount *b*. At their other end the lamellæ are supported in a ring *b*¹ rotatable in the mount *b*, whereby lamellæ are displaceable by pins *d* in corresponding slits *c*¹ of the ring *b*¹. From the points which with the closed diaphragm come to lie into the centre *M* of the same, the lamellæ are recessed, as shown in the drawing; towards those ends which are rotatable about the fixed pivots *c*. As may easily be seen from the drawing, this does not impair the effect of the diaphragm.

I claim:

In an iris-diaphragm a mount comprising two parts rotatable relatively to one another about the axis of the diaphragm, a plurality of curved lamellæ, each of which is supported at one of its ends rotatably about a fixed axis at one of the said two parts and at its other end displaceably relatively to the other part in its longitudinal direction, the said lamellæ being recessed on their hollow side from the point, which with the closed diaphragm comes to lie into the centre of the diaphragm, to almost the end, rotatable about a fixed axis, so that this part of each lamella is narrower than the remaining part of the same.

HUGO KUNZE.