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JP-A-45 032 290
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Kodak Photo Information Book 1969, "Professional-
blende" Fa Hassel blad 1
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Description

This invention relates to an accessory mounting device for the object lens of photographic cameras and to a lens shade suitable for use with this device. From the European Patent application of the present Applicant No. 79 400 165.1, published under the number EP-A-0 004 246, an accessory mounting device for photographic cameras is known, characterized essentially by the fact that it comprises a body, an intermediate mounting element for fitting the body to the object lens of the camera, said mounting element being constituted of a removable ring equipped with an external thread for screwing it on to the object lens, said ring being adapted to be positioned in a corresponding seating of said body in such a manner as to permit a relative rotational movement of said body with respect to said object lens, said body possessing, in addition, on its side remote from the seating for said ring, at least one pair of throats permitting the reception of various photographic accessories, notably filters.

In one particular form of embodiment, the throats for the reception of accessories are formed in substantially parallel opposed cheeks, projecting outwards perpendicularly to said body.

In one preferred embodiment of this earlier Patent application, the seating for the body for reception of the mounting ring is present in the form of an annular throat extending around the greater part of a circular cut-out formed in said body and having a dimension corresponding to the external diameter of the ring, a stop being provided for laterally immobilizing the ring in its seating while at the same time

/permitting

permitting relative rotation between the ring and the body.

According to this prior Patent application, it is also envisaged to equip the body with means permitting the fitting of a supplementary element, notably a lens shade, which is preferably in the form of a hollow box, more specifically of square section having rounded edges.

The present application has the objective of applying improvements to the earlier device with a view to permitting notably the mounting, on to the object lens of a photographic camera, of several bodies of the type defined in the prior Patent application, permitting the fitting onto one single object lens of a larger number of accessories, such as filters and/or lens shades, the number and relative arrangement of the accessories being able to be modified at will.

The present application also has the objective, in one particular form of embodiment, of improving the device according to the prior Patent application in respect of the characteristics of the body and of the lens shade with a view to the fitting of the latter.

The device according to the present invention is characterized essentially by the fact that it comprises at least one adaptor element comprising, on the one hand, means for placing it in the seating provided in said body for the reception of the mounting ring, said means permitting a relative rotation of the adaptor element with respect to said body while at the same time assuring its lateral immobilization in said body, and, on the other hand, means for positioning the adaptor element between the facing throats of the opposite cheeks of the body,

/said means for

said means for positioning between the throats permitting the sliding translatory displacement of the adaptor element relative to said body.

It will be understood that, with such characteristics, it is possible to position on one single object lens two bodies separated by an adaptor element, this adaptor element being adapted for sliding relative to the body fitted to the object lens through the intermediary of its mounting ring, the other body being adapted for a relative rotational movement with respect to the adaptor element, that is to say with respect to the first body and the object lens. By increasing the number of adaptor elements, which thus each fulfil the function of a turret, it is of course possible to arrange a corresponding number of bodies in succession on a single object glass for a photographic camera.

In one particular form of embodiment, the means provided on said adaptor element and permitting its rotation relative to said body comprise a flange projecting radially from said element and terminated by an edge rim, each adaptor element being thus fitted into a body in the same manner as a mounting ring for a body having an object lens.

The means provided on said adaptor element and permitting it to be received between the facing throats of the cheeks of the body are constituted of two parallel, straight edge faces of the adaptor element, realized in the form of a plate, the spacing between which corresponds to the distance between the bases of the facing throats of the cheeks of said body and the thickness of the plate corresponds to the width of said throats. The adaptor element is thus positioned inside said

/body in the same

body in the same manner as an accessory such as a plane filter, the translatory mobility of the adaptor element with respect to the body thus permitting the lateral relative arrangement of two bodies mounted on either side of said adaptor element to be modified.

According to another characteristic of the present invention the body possesses, preferably on the external faces of its cheeks, members such as projecting lugs on which there can engage, by corresponding orifices, tongues of an accessory such as a lens shade.

The present invention also has, as its objective, an accessory such as a lens shade, formed of a hollow box, preferably of square section having rounded edges and comprising such tongues equipped with an orifice for engagement onto said body, said lens shade comprising, in addition, in the internal faces of its box, projecting lugs similar to those carried by the cheeks of said body and permitting two lens shades to be fixed to each other.

Advantageously, the adaptor element according to this invention comprises, in addition, projecting lugs similar to those carried by the body and the lens shade and adapted to engage into recesses forming corresponding orifices formed for this purpose in the internal faces of the box of the lens shade and opposite to those carrying said projecting lugs.

It is thus possible, as a result of the present invention, to mount as desired on a single object lens, in any desired succession, a plurality of bodies each equipped with accessories such as plane or circular filters, and a plurality of adaptor elements and/or lens shades.

/Other advantages

Other advantages and characteristics of the invention will become apparent from a study of the following description of an example of embodiment and by reference to the attached drawing, in which:

Figure 1 represents an exploded perspective view of the essential components of the device according to this invention,

Figure 2 is a front elevation view of an adaptor element of the device according to this invention,

Figure 3 is a view in cross-section of the adaptor element,

Figure 4 is a rear elevation of the adaptor element,

Figure 5 is a lateral elevation of an example of a mounting arrangement comprising two bodies,

Figure 6 is an end view of the arrangement of Figure 5.

The device according to this invention is composed of modular elements, which can be seen in Figure 1.

Among these modular elements will be found a body 1 of small thickness and substantially hexagonal shape with rounded corners, the essential characteristics of which are described in the aforementioned European Patent application No. 79 400 165.1. For mounting the body on the object lens, an intermediate mounting ring 2 is provided, also described in the prior Patent application and comprising a radial annular flange 3 adapted to be screwed into the thread possessed by the object lenses of photographic cameras.

/The body 1,

The body 1, preferably formed in one piece by moulding, possesses a central circular orifice 4 and, on one of its faces, a throat 5 of annular shape extending around the greater part of the circular central opening 4 of the body, this throat being defined in the external wall 6 of the body.

The body 1 comprises, in its zone for the introduction of the intermediate mounting ring, in the throat 5, a stop of substantially triangular form 7 intended for retaining the mounting ring 2 in the throat 5 of the body. The throat 5 extends around rather more than a semi-circle in such a manner as to retain elastically the intermediate ring 2 introduced into it.

The body 1 of the device according to this invention comprises, in addition, two parallel cheeks 8, opposite each other, on two opposite sides of the body.

Each of the cheeks 8, comprises, on its internal face, a plurality of throats, each of the throats on one of the cheeks being situated opposite one of the throats on the other cheek.

The cheeks 8 possess, in addition, on their external faces, projecting lugs 9, four in number on each cheek in the example shown, the function of which will be described below.

In Fig. 1 there can be seen, as also in Figures 2 to 4, an adaptor element referenced generally 10 in the form of a plate of substantially rectangular shape possessing two straight sides 11 and 12 connected together by set-backs 13 on two straight sides 14 and 15, each of these

/sides possessing two

sides possessing two projecting lugs 16, the spacing and dimensions of which are identical to the spacing and dimensions of the projecting lugs 9 formed on the external faces of the cheeks 8 of the body 1.

The plate constituting the adaptor element 10 comprises a circular central cut-out 17 bounded by a flange 18 projecting radially from said element, itself bounded by an edge rim 19.

The dimensions of the plate constituting the adaptor element 10 are determined so as to permit cooperation between the adaptor element 10 and the body 1 in the following manner.

First of all, the spacing between the parallel edge faces 11 and 12 is determined in such a manner as to permit the introduction and also the lateral translatory sliding of the adaptor element 10 between two mutually facing throats formed in the opposite cheeks 8 of the element 1.

In addition, the dimensions of the flange 18 and of its rim 19 are chosen so as to permit the introduction of the adaptor element into the seating 5 of the body 1 in place of and instead of an adaptor ring 2 and in such a manner as to permit, once positioning has been carried out, a relative rotational movement of the adaptor element 10 with respect to the body, while at the same time preventing a relative movement in the lateral direction by means of the stop 7.

It is thus possible to construct a mounting arrangement such as that shown in Figures 5 and 6, where two bodies 1a and 1b are positioned on either side of an adaptor element 10, the body 1a being capable of translatory movement with respect to the adaptor element 10 and

/therefore with

therefore with respect to the body 1b, the latter in turn being adapted for a relative rotational movement with respect to the adaptor element 10 and therefore to the body 1a. The body 1a, for its part, may be mounted directly on an object lens through the intermediary of a mounting ring such as that shown at 2 in Figure 1. It is also possible to envisage other types of mounting by arranging in succession several adaptor elements and therefore several bodies.

As shown in Figure 1, the device according to this invention comprises, as another modular element, a lens shade referenced generally 20, which advantageously is present in the form of a hollow box, formed in one piece, of substantially square shape with rounded edges.

The lens shade 20 comprises, in the continuation of two of its opposite faces, tongues 21 each possessing orifices 22, the dimensions and spacing of which correspond to the dimensions and spacing of the projecting lugs 9 and 16, carried respectively by the flanges 8 of the body 1 and by the adaptor element 10. As a result of the cooperation of such projecting lugs and such orifices, it is possible according to this invention to mount a lens shade on a body as shown in particular in Figure 5, or again to mount the lens shade on an adaptor element 10.

Furthermore, in two opposite internal faces, the box constituting the lens shade 20 according to this invention comprises projecting lugs 23, the dimensions and spacing of which are identical to the lugs 9 and 16 respectively, which enables two lens shade elements to be fitted one to the other, the projecting lugs 23 being formed in a recessed zone, the depth of which bounded by a set-back 24 corresponds to the width of a tongue 21.

/Furthermore, it is

Furthermore, it is advantageous to equip the lens shade, in its two internal faces opposite to those carrying the projecting lugs 23, with orifices having a spacing and dimensions corresponding to the orifices 22 of the external tongues of the lens shade. It is thus possible to position a lens shade directly on an adaptor element or on a body, either through the intermediary of these orifices in the internal face or through the intermediary of the orifices 22 on the external tongues.

In the light of what has been stated above concerning the numerous possible ways of mounting the elements relative to one another, it will readily be understood that the example of mounting of Figures 5 and 6 illustrates only one variant from among very numerous others, it being possible to increase the number of the elements and their relative arrangement as desired according to the requirements of the photographic cameras, as a function in particular of the number of filters or lens shades which the photographer wishes to use.

Claims

1. Accessory mounting device for photographic camera, comprising a body (1), an intermediate mounting element (2) for fitting the body to the object lens of the camera, said mounting element being constituted of a removable ring (3) equipped with an external thread for screwing it onto the object lens, said ring being adapted to be positioned in a corresponding seating of said body in such a manner as to permit a relative rotational movement of said body with respect to said object lens, said body possessing, in addition, on its side remote from the seating for said ring, at least one pair of throats permitting the

/reception of

reception of a photographic accessory (20), notably a filter, characterized by the fact that it comprises at least one adaptor element (10) comprising, on the one hand, means (18, 19) for placing it in the seating (5) provided in said body (1) for the reception of the mounting ring (2), said means permitting a relative rotation of the adaptor element with respect to said body while at the same time assuring its lateral immobilization in said body, and, on the other hand, means (11, 12) for positioning the adaptor element (10) between the facing throats of the opposite cheeks (8) of the body, said means for positioning between the throats permitting the sliding translatory displacement of the adaptor element relative to said body.

2. Device according to Claim 1, characterized by the fact that the means provided on said adaptor element and permitting its rotation relative to said body comprise a flange projecting radially from said element and terminated by an edge rim.

3. Device according to any one of Claims 1 and 2, characterized by the fact that the adaptor element has the form of a plate and the means provided on said adaptor element and permitting its reception between the facing throats of the cheeks of the body are constituted of two straight, parallel edge faces of the adaptor element, the spacing between which corresponds to the distance between the bases of the facing throats of the cheeks of said body, and the thickness of which corresponds to the width of said throats.

/4. Device according to

4. Device according to any one of the preceding Claims, characterized by the fact that the body possesses, on the external faces of its cheeks, projecting lugs on which there can engage, by corresponding orifices, tongues of an accessory such as a lens shade.

5. Device according to any one of the preceding Claims, characterized by the fact that the adaptor element comprises projecting lugs, onto which there can engage, by corresponding orifices, tongues of an accessory such as a lens shade.

6. Lens shade intended to be used with the device according to one of Claims 4 or 5 comprising a hollow box, notably of square section with rounded edges, characterized by the fact that it possesses, in the continuation of two of its opposite faces, tongues equipped with orifices for the engagement of the corresponding projecting lugs carried by said body and/or the adaptor element.

7. Lens shade according to Claim 6, characterized by the fact that it comprises in addition, in two opposite internal faces of its box, projecting lugs similar to those carried by the cheeks of said body and permitting the fixing of the lens shade onto said body and/or onto another lens shade.

8. Lens shade according to any one of Claims 6 and 7, characterized by the fact that it comprises, in two opposite internal faces of the box, recesses forming orifices similar to those carried by its tongues.

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