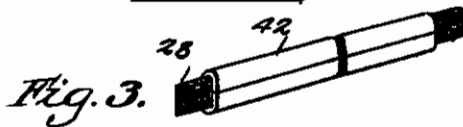
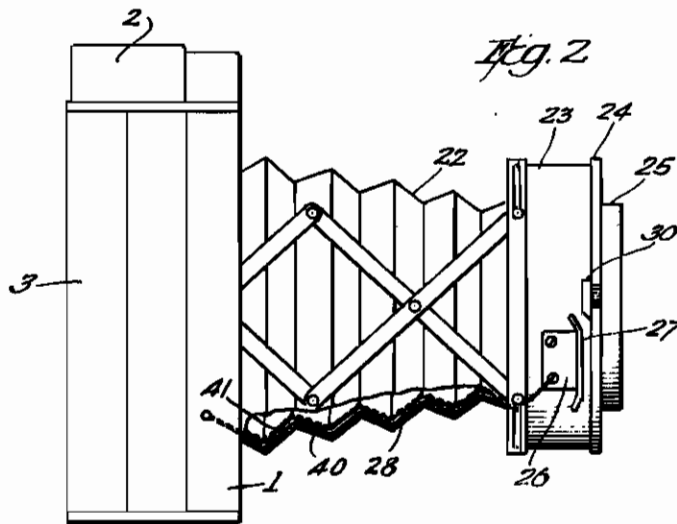
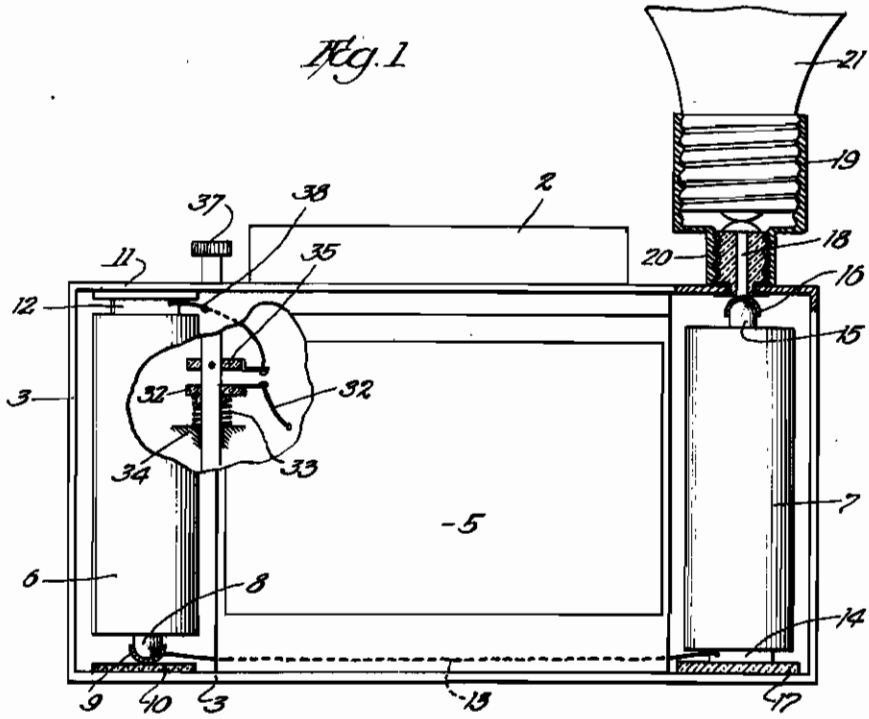


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# ALIEN PROPERTY CUSTODIAN

## CAMERAS

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This invention relates to improvements in cameras in which electric conductors form part of the equipment. Such electric conductors may, for instance, be used in association with a photo-electric exposure meter combined with the camera, or they might be used with a flash synchronizer, or with other accessories.

It is an object of the present invention to relieve the conductors of mechanical strain and particularly to adapt the use of these conductors to cameras having bellows.

It is also an object of the invention to position the electric conductors in the interior of the camera housing in a manner to guard them against injury during the use or transportation of the camera.

Another object of the invention is to provide a camera with electric conductors associated with an expansible element of the camera in such manner that the conductors are united with the expansible element and insulated thereby with respect to other parts of the camera.

The invention also has the object of providing a camera with electric conductors associated with foldable or expansible elements of the camera and to combine the electric conductors with said elements in such manner as to eliminate thereby the conduction of current through pivot joints or through slidable contacts or to utilize loose conductors for this purpose.

Another object of the invention is to select conductors of a suitable cross-section to permit them to carry safely the current required while at the same time permitting the folding or expanding of the elements with which these conductors are associated.

The invention has the object of arranging in a camera the electrical conductors in the form of flat and highly flexible current carrying strips interposed between insulating parts of expansible elements and to envelop, if necessary, the flat flexible current conducting strips in insulating material.

The invention, furthermore, has the object of providing a camera with a flash synchronizer operable by the shutter during the release movement, and preventing accidental creation of the flash during the tensioning movement of the shutter.

The invention also has the object of providing a flash synchronizer, in which the creation of the flash is dependent upon the simultaneous closure of several contacts located remotely from each other.

Another object of the invention is to improve

the association of a flash synchronizer with a camera by providing in the circuit of the electric bulb in which the flash is created, a pair of contacts, one of which is manually closable by the operator when the exposure is to be made, while the other one is closable by the shutter during its tensioning movement as well as during the release movement and to dispose these contacts serially in the circuit, whereby upon the closure of the contact under direct control of the operator, the shutter release is effected and the shutter simultaneously closes the second contact to complete the circuit.

With these and numerous other objects in view, an embodiment of the invention is illustrated in the accompanying drawing by way of example, to which reference is made in the following specification.

In the drawing:

Fig. 1 is an elevation of the camera housing showing certain parts in the interior thereof, while other parts are broken away, and shown in section;

Fig. 2 is a diagrammatic side elevation and partly section of the complete camera, and

Fig. 3 shows diagrammatically and perspective a flexible conductor detached from the other parts of the camera.

The camera housing 1 is shown to be provided with an exposure meter 2, the construction of which is of no importance for the present invention. This housing also is equipped with a removable rear part 3 to facilitate the insertion of film spools, not shown, and for the reception of additional elements pertaining to the present invention. A film guide plate 5 of any desired construction may be united with the rear portion of the camera. A pair of batteries 6 and 7 respectively also are removably positioned in the rear portion 3 of the camera, and as will be seen from Fig. 1, the battery 6 is seated by means of its terminal 8 in a contact socket 9 which is secured to the bottom wall of the rear portion 3 of the camera.

An insulating layer 10 is interposed between the current conducting socket 9 and the bottom wall. Similarly also, an insulating layer in the form of a disc 11 or the like is advisably interposed between the opposite terminal 12 of the camera and the top wall of the rear portion 3.

The conductor 13 extends between the conductive socket 9 and the terminal 14 of the second battery 7. It is obvious, however, that the two batteries 6 and 7, instead of being positioned adjacent the two end walls of the rear portion

may also be located in other parts of the camera and may be serially connected, as indicated, or may be in other electric association, as required. The second terminal 15 of the battery 7 again makes contact with a conductive socket 16 adjacent the top wall and insulated from the metallic body 3 in some suitable way. An insulating disc 17 is interposed between the terminal 14 of the battery 7 and the metallic body of the camera portion 3.

Any other source of electric energy may be used in place of the pair of batteries illustrated as long as the source of energy is electrically insulated from the camera body.

The socket 16 is in conductive connection with a central pin 18 of a lamp socket indicated at 19, the outer sleeve of which may be grounded on the camera body, the pin 18 being insulated from the sleeve of the socket 19 by the insulating mass 20 in a way which is well known in the art. A flash bulb 21 may be removably secured within this socket 19 in a known way.

In the embodiment illustrated, the camera is shown as a camera having a bellows 22 diagrammatically illustrated in expanded condition in Fig. 2. The bellows carries at its forward end the shutter housing 23 and a lens mount 25.

The assembly of the shutter, lens mount, and adjustable diaphragm (not shown) may be carried by a rigid board, not illustrated, which also acts as a front wall for the camera housing when the camera is closed. This wall usually is hinged to the camera casing itself. These parts are well known from folding cameras and do not require either illustration or further description.

The shutter housing 23 carries a terminal plate 28 insulated from the housing and to which a resilient contact strip 27 is secured in any desired way. A highly flexible conductor 26 is secured at one end to the terminal plate 26. This conductor is formed as a strip of such cross-section that its flexibility is approximately the same as that of the expansible bellows 22 with which it is associated. The flexibility of the conductor strip 26 may be attained by braiding or otherwise uniting a great number of flexible thin conductive elements in the form of a woven or braided flat ribbon. This strip is shown positioned between two layers 40 and 41 which form a wall of the folding bellows 22, whereby these flexible walls 40 and 41 not only protect the strip 26 against mechanical injury but also insulate said conductive strip. It may be advisable, however, to envelop the conductive strip in insulating material, as indicated at 42 in Fig. 3 in the form of an insulating fabric, a coating of cellulose or the like. The elements of which the strip 26 is composed by braiding and the like may in themselves be surrounded by insulation, as for instance, by cellulose.

By locating the conductor 26 between the two layers 40, 40 of an expansible wall of the bellows 22, the conductor 26 will automatically assume the proper position as required in the expansion and folding of the bellows. No separate attachments for the conductor to the bellows are required nor is it necessary to conduct the current through slidable or pivotal joints as had been the practice heretofore.

The movable shutter element 24 is provided with a companion contact 30 adapted to engage the contact strip 27 during the movement thereof. The setting of the shutter to a selected speed effected by the adjustment of the movable element 24 must be such that the contact element 30 carried thereby will go past the companion contact element 27.

The shutter housing 23 establishes a second ground connection with the mass of the camera housing, as will be obvious from the drawing.

While one end of the flexible conductor 26 has been described as being secured to the plate 28 insulated from the shutter housing 23, the opposite end of this conductor is conductively continued to a contact carried by an insulated contact finger 32, as shown in Fig. 1.

In the embodiment shown, this finger 32 is supported by a spring 33 which rests on a support 34 in the interior of the camera. The non-conductive companion contact carrier 35 is fixedly secured to a rod 36 which forms a part of the shutter actuating means to be manipulated, as for instance, by the projecting button 37 when an exposure is to be made. The contact spring of this companion carrier 35 is connected by a flexible insulated conductor 38 with the terminal 12 of the source of current.

The electric connection between the source of current formed by the batteries 6 and 7, and the flash bulb 21 to be energized thereby therefore is closed solely when the contacts of the elements 32, 35 are connected, and when at the same time also the contact elements 27, 30 are in conductive engagement. The current then flows from the electric batteries 6 and 7 to the central contact pin 18 of the lamp socket through the bulb into the grounded part of the socket connected with the mass of the housing portion 3 and through the grounded conductor or metallic elements connecting the housing 3 with the shutter housing 23. The contact carrying plate 26 being insulated from the shutter housing, the current will flow into the conductor 26 solely upon the closure of the contacts 27, 30. This closure may occur during the tensioning movement of the shutter disc 24, but the circuit is incomplete as long as the gap between the contact carriers 32 and 35 remains open.

When the shutter has been set to the selected speed and the operator depresses the release button 37 to make the exposure, he establishes the contact between the springs on the members 32, 35, while at the same time the shutter upon being released, closes the contact between the members 27, 30, and the current flows from the plate 26 to the ground to complete the circuit.

It would also be seen that the batteries 6, 7 are arranged in the portion of the camera in such manner that they can be inserted in a predetermined position only to establish the proper serial connection between the two batteries through the conductor 13.

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