# United States Patent

[11] **3,575,369**


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[54] **SUPPORT FOR DEVICES SUCH AS CAMERAS, LAMPS, AND THE LIKE**
**9 Claims, 6 Drawing Figs.**


[52] **U.S. Cl.** ..... **248/158,** 248/181
[51] **Int. Cl.** ..... **F16m 13/04**
[50] **Field of Search** ..... 248/181, 188.8, 188.9, 188.2; 95/86; 248/158, 160, 161



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**ABSTRACT:** A support which is adapted to carry a device, such as a lamp, camera, or the like, which is oriented in a given direction during use thereof. The support includes an elongated pole having a top end which carries the device as the camera, lamp, or the like. At its bottom end the pole is connected with a stirrup which is adapted to engage the floor, ground, or the like and which receives the foot of the operator, so that in this way the support structure can be steadied.

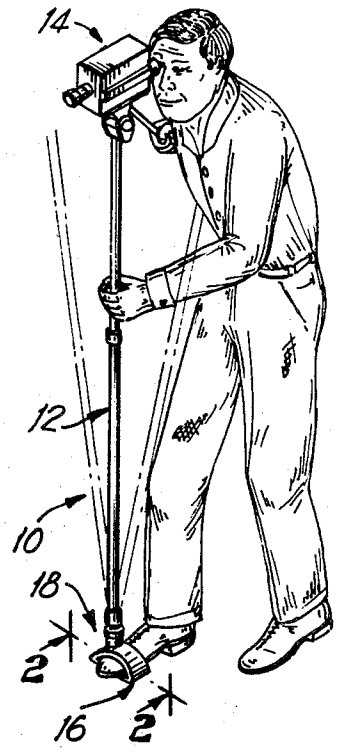



FIG. 1

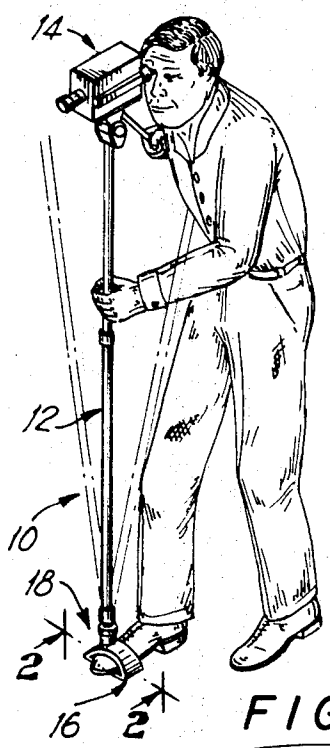



FIG. 2

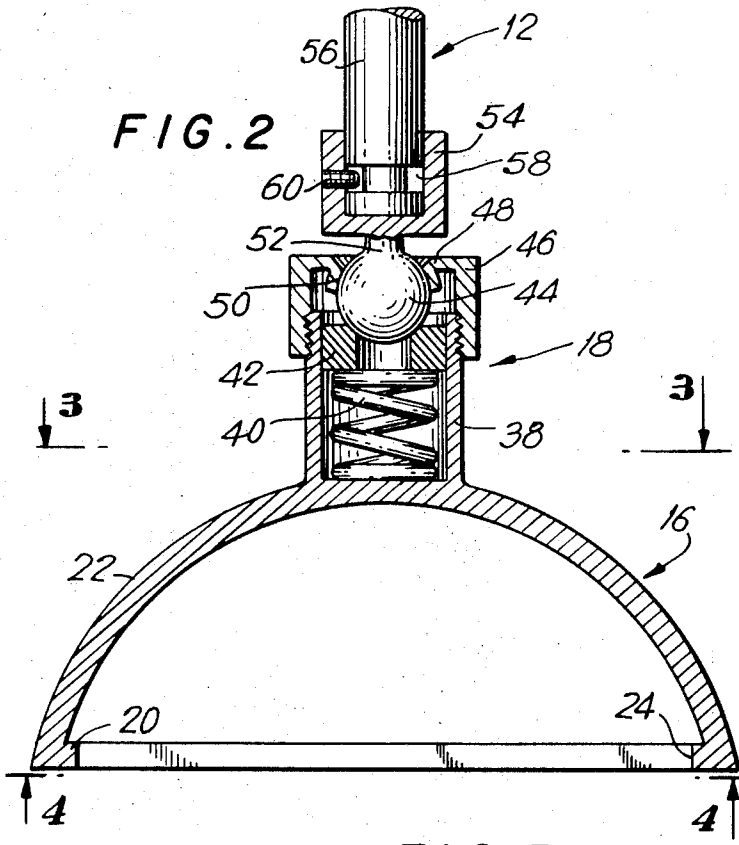



FIG. 5

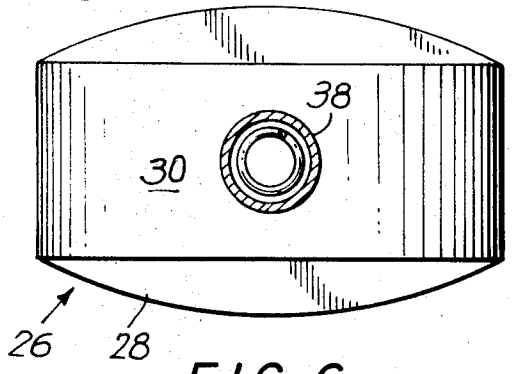



FIG. 3

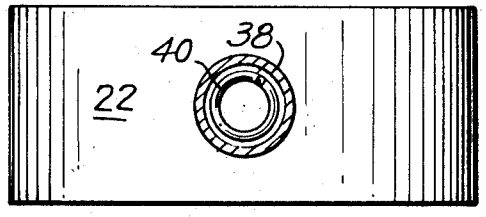



FIG. 4

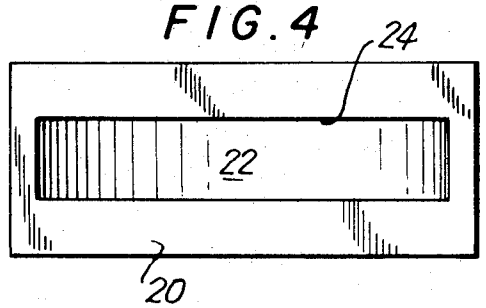
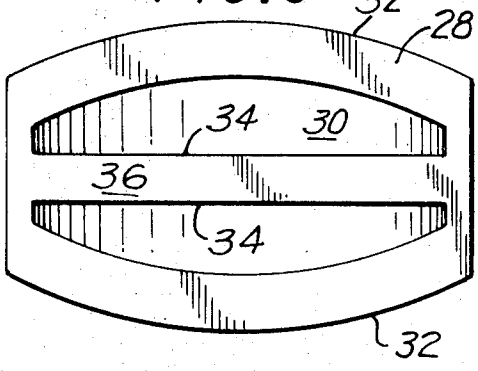



FIG. 6




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# SUPPORT FOR DEVICES SUCH AS CAMERAS, LAMPS, AND THE LIKE

## BACKGROUND OF THE INVENTION

The present invention relates to supports for devices such as cameras, lamps, and the like.

Devices such as optical or illuminating devices conventionally are oriented in a given direction so that the light will be directed to a given location in the case of a lamp or so that the camera or other optical device will be aimed at a given object.

As is well known, such devices are often too heavy to be handheld, and in the case of cameras it is desireable to provide a steady support particularly in the case where the exposure time is too long to prevent blurring of the image if the camera is handheld. While conventional tripod-type supports are known for such purposes, such tripods have proved in practice to be unwieldy and cumbersome to carry about and set up. It has therefore become known to provide for supporting devices of the above type a single pole which at its top end carries the device which is to be supported and at its bottom end engages the ground. Such a pole can have a telescope construction so that it can be adjusted in height, and any suitable structure can be provided for connecting the camera or other device to the top of the pole for swiveling movement with respect thereto.

While such a pole is superior to a conventional tripod in many ways, nevertheless it does not always permit the device to be supported with the required steadiness and with the required range of movement. For example, the ground on which the pole rests, at the bottom end of the pole, can be rough and irregular so that the pole cannot have a steady support or such terrain. Moreover, even where a relatively smooth ground or flat floor is available for the bottom end of the support, the elongated pole is often swung with respect to such a surface to such an angle, during the maneuvering of the camera, lamp, or the like, that an unstable engagement between the pole and the supporting surface for the latter results, so that the device cannot be reliably maintained in the desired attitude.

## SUMMARY OF THE INVENTION

It is accordingly a primary object of the invention to provide a structure which will avoid the above drawbacks.

In particular, it is an object of the invention to provide a construction which will retain all the advantages of a single-pole type of support while at the same time eliminating the drawbacks of this type of support.

More specifically, it is an object of the invention to provide for a structure of the above general type a means which will enable the single-pole type of support to be held very reliably and in a fully stable manner in engagement with the ground, floor, or other supporting surface, irrespective of the nature of the latter.

Also, the objects of the invention include the provision of a structure of this type which can reliably remain in whatever position it is placed in by the operator, while at the same time presenting no appreciable resistance to displacement to another position.

Furthermore, it is an object of the invention to provide a construction of this type which can be very easily carried about.

In addition, it is an object of the invention to provide a construction of the above general type which is exceedingly simple and inexpensive to manufacture, so that the advantages of the structure of the invention can be enjoyed at relatively low cost.

In accordance with the invention the elongated pole which carries the camera, lamp, or the like at its top end, is connected at its bottom end to a stirrup which is adapted to engage the supporting surface, such as the floor, ground or the like. This stirrup is adapted to receive a foot of the operator, so that with this foot pressing the stirrup against the supporting surface an exceedingly steady support for the device at the top of the pole is achieved.



## BRIEF DESCRIPTION OF DRAWINGS

The invention is illustrated by way of example in the accompanying drawings which form part of this application and in which:

FIG. 1 is a schematic perspective representation of the manner in which the structure of the invention is used;

FIG. 2 is a fragmentary sectional elevation, at an enlarged scale as compared to FIG. 1, taken along line 2–2 of FIG. 1 in the direction of the arrows and showing the details of the connection between the pole and stirrup;

FIG. 3 is a sectional plan view taken along line 3–3 of FIG. 2 in the direction of the arrows;

FIG. 4 is an upwardly directed plan view taken along line 4–4 of FIG. 2 in the direction of the arrows;

FIG. 5 is a sectional plan view corresponding to FIG. 3 but showing another embodiment of a structure of the invention;

FIG. 6 is an upwardly directed plan view corresponding to FIG. 4 but showing the structure of the embodiment of FIG. 5.

## DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to FIG. 1, it will be seen that the support 10 of the invention includes the elongated pole 12 which at its top end is shown as carrying a device which in the illustrated example is a camera 14. This camera 14 may, for example, be a motion picture camera, and it may have a swivel type of connection to the top end of the single pole 12 so that by grasping a handle of the camera the operator can aim it at the object which is to be photographed, in the manner indicated in FIG. 1. The manner in which such a camera is connected to the top end of a pole 12 is well known and forms no part of the present invention so that it is not further described. Furthermore, it is known to make a pole 12 of a telescoped or other adjustable construction so that the elevation thereof can be regulated.

In accordance with the present invention, a stirrup 16 is connected to the bottom end of the pole 12 so as to be capable of receiving a foot of the operator, in the manner indicated in FIG. 1. Thus, because the operator presses with his foot against the bottom wall of the stirrup, this stirrup is very steadily maintained in engagement with the supporting surface such as the ground, floor, or the like, and thus an exceedingly steady support 10 is provided.

Furthermore, the stirrup 16 is connected to the bottom end of the pole 12 by a connecting means 18 of the invention which enables the pole 12 to be swung to any desired attitude, as indicated by the dot-dash lines in FIG. 1, thus enlarging the range of positions in which the device 14 may be located. It is to be noted in this connection that because of the pressure with which the stirrup 16 is held against the supporting surface by the foot of the operator, irrespective of the angle to which the pole 12 is swung, an exceedingly reliable steady support will be maintained.

Referring now to FIGS. 2—4, it will be seen that the stirrup 16 has a flat bottom wall 20 and a curved upper wall 22. These walls 20 and 22 are of a constant width and the width of the wall 20 is equal to the width of the wall 22. The curve of the wall 22 is connected at its ends to the ends of the flat bottom wall 20, and the entire stirrup can be made of a single casting of aluminum, for example. The bottom wall 20 is formed with an elongated rectangular slot 24 extending therethrough and extending longitudinally of the wall 20 substantially centrally thereof, so that the operator can invert the entire support 10, after the pole 12 has been telescoped to its shortest length, and place his fingers through the slot 24 so that in this inverted position the stirrup 16 can act as a handle for conveniently carrying the structure about.

In the embodiment of FIGS. 5 and 6, the stirrup 26 which corresponds to the stirrup 16 and is used in the same way has a bottom wall 28 and a curved upper wall 30. This curved upper

wall 30 is also connected at its ends to the opposed ends of the bottom wall 28. However, in this case, although the wall 30 may be identical with the wall 22, the bottom wall 28 is wider than the wall 30 and has opposed curved edges 32. Thus, the bottom wall 28 will extend over a larger area to provide an even more secure support than the wall 20.

In addition, this wall 28 is formed with a pair of longitudinal slots 34 defining between themselves the elongated central strip 36 of the bottom wall 28, so that while the weight of the entire stirrup is reduced in this way, without sacrificing its security with the engagement of the ground, at the same time the pair of slots 34 can conveniently have the hand of the operator passing therethrough while the operator grasps the central longitudinal strip 36 to carry the structure about in a manner which is even more convenient than that which is possible with the embodiment of FIG. 3 and 4.

Both of these stirrup embodiments coact in the very same way with bottom end of the pole 12 by way of the connecting means 18. Thus, the upper central region of the upper wall of the stirrup 16 or 26 has an integral upwardly extending cup portion 38 housing in its interior, a coiled compression spring 40 which bears against a ring-shaped friction member 42 (FIG. 2) having about its central bore an upper concave surface forming part of a sphere which matches the spherical configuration of ball member 44 shown in FIG. 2. Thus, this ball member 44 slidably and frictionally engages the ring 42. A circular cap member 46 is threaded onto the cup 38 and has a central flange 48 provided with an inwardly directed lip 50 conforming in curvature to the curvature of the exterior surface of the spherical member 44, so that the latter can turn with respect to while frictionally engaging the lip 50 of the flange 48.

The ball member 44 has an upper extension 52 affixed to an upwardly directed cup member 54 which receives the bottom end 56 of the pole 12. This bottom end 56 extends freely into the cup 54 and is formed, at its region which is situated within the cup 54, with an annular groove 58. A screw 60 is threadedly mounted in a bore in the side wall portion of the cup 54 and is freely received within the groove 58, so that in this way while the pole 12 is retained in engagement with the cup 54, nevertheless the pole 12 can at any time be swiveled about its own axis.

The above-described ball-and-socket joint which forms the connecting means 18 enables this connecting means to provide for the pole 12 the swinging movement to any desired angular position with respect to the stirrup.

In addition, the spring 40 together with the friction member 42 have with respect to the ball member 44 a sufficient friction to reliably retain the pole 12 at whatever position it is placed in by the operator. At the same time, this force of friction is not so great as to present any inconvenience in changing the position of the pole from one altitude to another. The force of the friction means 40,42, with respect to the ball member 44, can be adjusted by turning the cap 46 further onto the cup 38 for increasing the force of friction and further off the cup 38 to decrease the force of friction. Of course, this friction means also include the lip 50 which frictionally engages the spherical ball member 44.

It is thus apparent that the structure of the invention provides an exceedingly simple inexpensive unit for achieving an exceedingly steady support retaining all of the advantages of a single-pole type of support over the tripod type of support. Furthermore, the range of possible movement of the support is almost limitless since not only can it be tilted in all directions, but in addition the pole can be turned about its own axis. Furthermore, the friction means will reliably retain the structure at whatever position it has been moved by the operator, without, however, making it inconvenient to change the angle of the pole 12 from one position to another. Furthermore, it will be noted that all of the components of the structure of the invention have simple inexpensive constructions which enable them to be very inexpensively manufactured, and they are easily assembled, so that the entire structure enables the advantages of the invention to be achieved at a relatively low cost.

I claim:

1. A support for a device, such a camera, lamp, or the like which is oriented in a predetermined direction during use of the device, comprising an elongated self-sustaining pole having a top end where the device which is to be supported is located, and a stirrup connected to the pole at an opposed bottom end thereof to engage the floor, ground, or other surface and to receive the foot of the operator of the device for steadying the pole and the device carried thereby, said stirrup having a flat bottom wall and a curved upper wall joined at its ends to opposed ends of the flat bottom wall and extending upwardly therefrom to pass over a foot of the operator which is received in the stirrup, said curved upper wall having midway between said opposed ends thereof a central portion connected to the bottom end of said pole.

2. The combination of claim 1 and wherein said flat bottom wall is formed with at least one slot extending longitudinally therealong to facilitate carrying of the support.

3. The combination of claim 1 and wherein said flat bottom wall and curved upper wall are of uniform width.

4. The combination of claim 1 and wherein said flat bottom wall has opposed curved outer edges extending between said curved upper wall and the latter being narrower than said flat bottom wall.

5. The combination of claim 4 and wherein said flat bottom wall is formed with a pair of longitudinal substantially parallel slots providing said bottom wall with a central elongated strip portion around which the operator can place a hand which extends through said slots to facilitate carrying of the support.

6. The combination of claim 1 and wherein a connecting means interconnects the bottom end of the pole with said stirrup for swinging movement of said pole in all directions with respect to said stirrup.

7. The combination of claim 6 and wherein a friction means coacts with said connecting means for frictionally retaining the pole in the angular position to which it is displaced.

8. The combination of claim 7 and wherein an adjusting means coacts with said friction means for adjusting the force thereof.

9. The combination of claim 6 and wherein said connecting means also connects said pole to said stirrup for free rotary movement of said pole about its axis.