The clamping device provides an attachment mechanism for a source of illumination (flashlight) to be fixed to a mobility support apparatus such as a walking cane, walker, crutches, trekking poles, hiking or ski poles. The illumination source is secured by the clamping device, which attaches the light source to the mobility apparatus. The illumination device can be a standard mini-flashlight with a filament bulb, light emitting diode or halogen bulb as the light source.
CLAMP DEVICE DRAWING No. 1.
CLAMP FOR ATTACHING AN ILLUMINATING DEVICE TO MOBILITY SUPPORT APPARATUS

BACKGROUND OF THE INVENTION

[0001] There is often a need to illuminate the area around one's feet and in the direction one is traveling. A flashlight or similar light source is the common solution. If an individual needs to use a mobility support apparatus such as a cane, walker, crutches or trekking pole etc. and carry a flashlight, both hands would now be occupied. This can reduce balance and hinders gripping other supports for regaining stability. This is especially more demanding for the senior or handicapped population. The need increases dramatically when traversing a poorly lit path, getting up a night to take care of personal needs, when out walking at sunset or at night, when arriving home. It also can be of benefit when cross country skiing and hiking at night. The invention clamp with an illumination device attached, improves visibility and safety by allowing the user to direct an adjustable circular pattern of light on the ground in front or ahead of the support apparatus simply by raising the apparatus for a brief moment.

BRIEF SUMMARY OF THE INVENTION

[0002] The clamping device is made of plastic or sheet steel of a prescribed length and width. In the center of the length of the sheet, a nearly complete cylinder is formed. This cylinder is less in diameter that the outside diameter of the illuminating unit that it has to grip. Transitioning from this cylinder are two flat surfaces in parallel to and directly opposite each other. Both flat surfaces have a hole in the center. The hole in one surface is larger that the opposite hole which is threaded. Beyond the flat surface with the holes and continuing along the length of the sheet shape, each flat surface transitions to form a half cylinder; again directly opposite and mirroring the other. These half cylinders form the portion of the clamp that will grip the mobility support apparatus. The final transition of the sheet metal beyond the half cylinders is a small reverse lip along the entire length of the half cylinders. This lip allows for an easy, non-grabbing, on/off sliding of the clamp. The last aspect of the clamping device is the pressure adjusting screw which because of its shape is called a “T” thumbscrew. This T screw passes thru the larger hole in one of the flat surfaces and screws into the smaller threaded hole in the opposite flat surface. Rotation of the screw will increase or decrease the clamping pressure on the shaft of the mobility support apparatus.

BRIEF DESCRIPTION OF DRAWINGS

[0003] In drawing No. 1, the clamp is presented in an isometric drawing by the numeral (1) in solid lines. The “T” thumbscrew is represented by (2). For clarity (3) depicts a mini-flashlight and (4) the shaft of a mobility support apparatus. They are drawn with dotted lines.

[0004] In drawing No. 2, (5) represents the nearly complete cylinder of the clamp. (6,6a) represent the two flat surfaces that are parallel and opposite each other. (7) indicates the threaded hole and (8) indicates the larger pass thru hole. The half cylinders are identified by (9,9a) and the small arc reverse lip is specified by (10,10a). The rounded corners of which there are four, are represented by (11). The thumbscrew is identified in both drawing No. 1 and No. 2 with the numeral (2).

DETAILED DESCRIPTION OF THE INVENTION

[0005] Drawing No. 1 shows the invention clamp (1) in its applied use. The clamp for this illustration is holding a mini type flashlight (3) and is also mounted on a mobility support apparatus which in the drawing is the shaft of a cane (4). The clamp is capable of mounting on other forms of mobility support devices such as walkers, crutches, personal walking sticks and trekking poles as well as ski poles. The clamp, functions to hold both the mini-flashlight and grasp the support apparatus with the help of adjustable pressure created by turning the thumbscrew (2). Turning the thumbscrew (2) clockwise increases the pressure on the support apparatus and turning the thumbscrew (2) counter-clockwise reduces the pressure for removal and mounting on another apparatus. This thumbscrew (2) adjusts the pressure by moving the two parallel flat surfaces together or apart. This is better seen in Drawing 2.

[0006] In drawing No. 2 there is a front and a side view. In both side and front view we see the center of the clamp starts at the shape of the nearly completed cylinder (5) which transitions to two parallel flat surfaces (6,6a). In the center of each flat surface there is a hole (7,8). The front view illustrates a large hole (8) in the surface (6a) that the thumbscrew enters and a smaller threaded hole (7) in the adjacent flat surface (6). The hole (7) is threaded so as to accept the threaded portion of the thumbscrew.

[0007] Continuing past the flat surfaces (6,6a) on each side, the metal now transitions to two half cylinders (9,9a) which form the opening that accepts and grips the shafts of the various mobility support apparatus described before. Both half cylinders (9,9a) transition to a small reverse curved lip (10,10a). This reverse lip allows the clamp to slip easily on and off various sizes and shapes of the mobility apparatus. The corners (11) of the curved lip sections (10,10a) are rounded to avoid sharp corners.

BRIEF DISCUSSION OF PRIOR ART

[0008] In the review of prior art, it appears that most of the patents refer to built in or permanently attached sources of illumination in conjunction with the mobility support apparatus. One patent (Conkle) essentially covers the fabrication of a flashlight with a long lever switch and not the nature of its mounting or dismounting to mobility support apparatus. In the case of (Conkle), the patent makes use of an already existent plastic squeeze clip.

[0009] Other prior art reflects significant fabrication of complex parts that provide for the attachment of the illumination device to the mobility support apparatus. No prior art
compares to the simplicity, adjustability and versatility of the “Clamp” described here in.

1. This clamp invention enables a person to attach a source of illumination temporarily or permanently to any mobility support apparatus such as a cane, walker, crutches, trekking, hiking or ski pole.

2. The clamp invention allows for the accommodation of mobility support apparatuses that vary in size, diameter and shape. This is accomplished with the use of a thumbscrew that alters the size of the opening and tension of the clamp on the apparatus.

3. The clamp invention is shaped to slide easily on and off the support apparatus of similar diameters without adjustment. This occurs, because the final shape of the adjustable opening displays a small curved reverse lip that speeds application and removal.

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