Sept. 15, 1931. C. R. KILBURN 1,823,274

JOINT

Filed Dec. 5, 1929

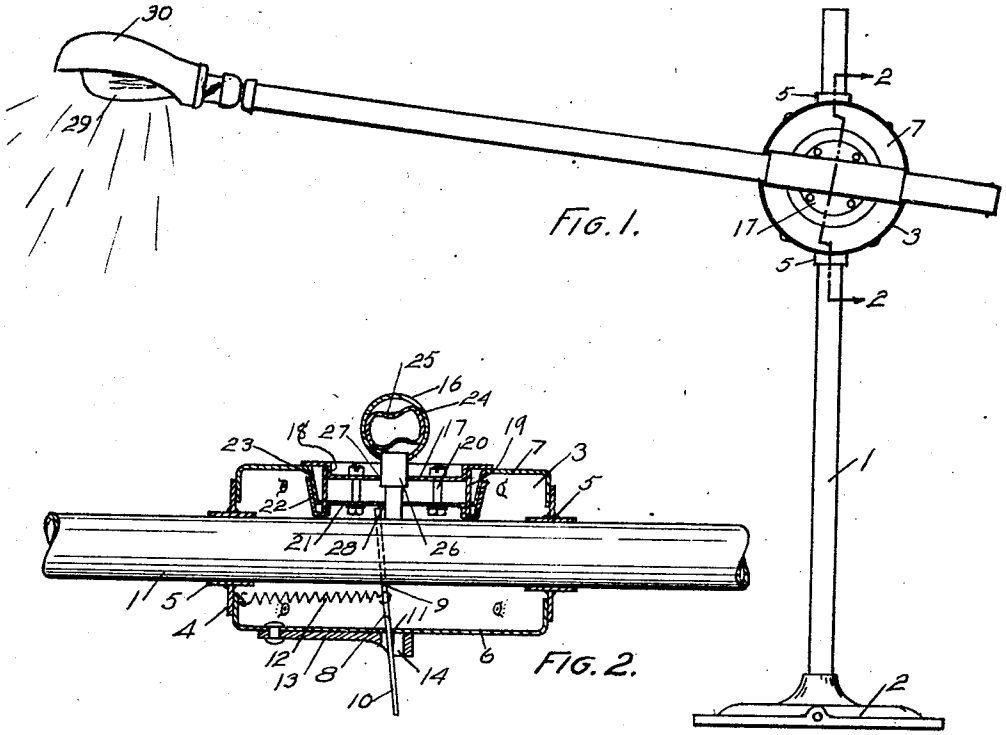


FIG. 1.

FIG. 2.

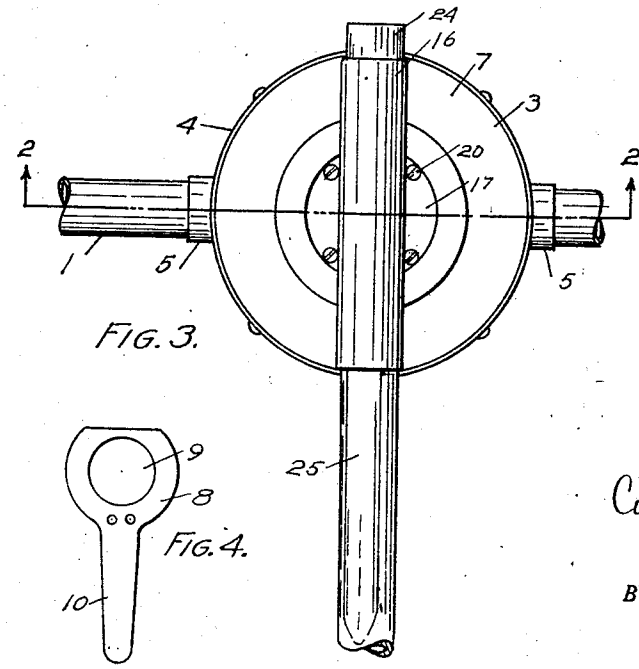


FIG. 3.

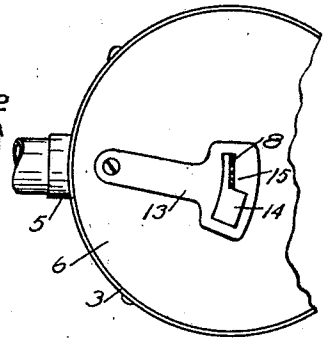


FIG. 5.

FIG. 4.

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UNITED STATES PATENT OFFICE

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JOINT

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The present invention is designed to provide a joint in which the members may be moved relatively to each other in different directions and locked in adjustment by the operation of one of the members from a point remote from the joint. Such a device is of particular utility as a holder, or support, for electric lights. Such holders, or supports are used in working on machinery, such for instance, as automobiles where the operator has the light within easy reach and it is desired to change the position, or direction of reflection of the light from the position of the operator rather than at the point of support. The invention is illustrated and exemplified as a support for a light which forms a preferred embodiment. Features and details of the invention will appear from the specification.

A preferred embodiment of the invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows an elevation of the device.

Fig. 2 a section on the line 2—2 in Fig. 1.

Fig. 3 a front elevation of the joint itself.

Fig. 4 a detached view of a latch for a locking device.

Fig. 5 a rear view of the joint proper.

1 marks a post, or standard, 2 a base through which the post, or standard may extend. The joint elements are arranged on an annular box-shaped mounting 3. This has an annular shell 4 in which are opposing sleeves 5 through which the post 1 extends. It has the flanged face plate 6 at the rear side secured to the annular shell 4 and the flanged shaped cover plate 7 secured to the annular shell at the front. A locking plate 8 has an opening 9 through which the post 1 extends. This locking plate has a handle 10 which extends through an opening 11 in the plate 6. It is pulled out to a position at right angles to the post by a spring 12 and this side pull brings the side walls of the opening into engagement with the post so that the mounting 3 is secured against a downward movement on the post. When it is desired to lower the mounting 3 on the post the plate 8 is brought to the horizontal, thus releasing the post and permitting the downward movement. The plate will release itself for a reverse movement. In order that the mounting may be freed from the operation of the locking plate 8 a latch 13 is pivotally mounted on the plate 6 and this has a slot 14 terminating in a narrower extension 15. With the latch 13 swung to bring the opening 14 into register with the handle 10 the plate 8 can assume the locking angle, but when the handle is lifted bringing the plate 8 to a direct horizontal the latch may be swung bringing the handle into the extension 15 in which event the handle when released rests on the bottom of the extension 15 which holds the plate in substantially a horizontal position and consequently holds it out of locking position. A sleeve 16 is mounted on a rotating base 17, this base having an annular shoulder 18 operating in the out-turned flange 19. The plate 17 is secured to a locking plate 21 by bolts 20. The locking plate 21 has an internally beveled periphery 22 which engages a beveled in-turned flange 23 on the cover plate 7.

A bar in the form of a conduit tube 24 is slidingly and rotatively mounted in the sleeve 16. It has a part of its wall grooved at 25 forming cam surfaces which operate upon a locking pin 26. The locking pin 26 extends through an opening 27 in the plate 17 and a perforation 28 in the plate 21. Its inner end is adapted to engage the post 1 and is forced into position with relation to this post by a turning of the bar 24 and thus turning the cam 25 so as to act on the pin. This camming action operates as a complete lock of all the parts. The thrust of the pin on the post 1 locks the joint case in place on the post. The thrust from the pin 26 is exerted against the sleeve 16 and this in turn is exerted against the plate 17 and plate 21, thus forcing the wedge-shaped periphery 22 into engagement with the wedge 23, thus locking the plates 17 and 21 against turning and locking the sleeve 16 against rotation. The same turning of the bar in the sleeve 16 brings the surfaces of the bar into engagement with the end of the pin 26 and thus frictionally locks the bar in its turned position. This may be turned through quite a range of movement leaving the parts locked. In the use to which I have referred a

lamp 29 is secured to the end of the bar 16 with a reflector 30.

In operation, it will readily be seen that an operator engaging the end of the bar 24 can, by turning it, loosen the connection, readjust the connection and lock it from a position quite remote from the connection. This is of great convenience where the operator is, for instance, under a car and a movement to bring the support in reach involves a material effort.

What I claim as new is:—

1. In a joint, the combination of a connecting member having two guide sleeves, one of which is movable relatively to the connecting member; bars arranged in said sleeves; and means actuated by a rotation of one of the bars on its axis locking said sleeves relatively to each other.

2. In a joint, the combination of a connecting member having two guide sleeves, one of which is movable; bars arranged in said sleeves, one of said bars being slidable in its sleeve; and means actuated by a rotation of one of the bars on its axis locking said sleeves and bars relatively to each other.

3. In a joint, the combination of a connecting member having two guide sleeves, one of which is movable; bars arranged in said sleeves, one of said bars being slidably and rotatively mounted in its sleeve; and means actuated by a rotation of one of the bars on its axis locking said sleeves relatively to each other.

4. In a joint, the combination of a connecting member having two guide sleeves, one of which is movable relatively to the connecting member; bars arranged in said sleeves; and means actuated by a rotation of one of the bars on its axis locking said sleeves relatively to each other and to one of said bars.

5. In a joint, the combination of a connecting member having two guide sleeves, one of which is movable relatively to the connecting member; bars arranged in said sleeves; and means actuated by a rotation of one of the bars on its axis locking said sleeves relatively to each other and to both of said bars.

6. In a joint, the combination of a connecting member having two guide sleeves, one of which is rotatable; a conical mounting for said rotatable sleeve; bars arranged in said sleeve; and means actuated by the rotation of one of the bars on its axis exerting pressure on the conical mounting to lock the same.

7. In a joint, the combination of a connecting member having two guide sleeves, one of which is rotatable; a conical mounting for said rotatable sleeve; bars arranged in said sleeves; and a cam on one of said bars adapted to lock the conical mounting through the rotation of the bar on its axis.

8. In a joint, the combination of a connecting member having two guide sleeves, one of which is rotatable; a conical mounting for said rotatable sleeve; bars in said sleeves; said bars being movable in the sleeves; and means actuated by a rotation of one of the bars on its axis in its sleeve for locking the bars and sleeves in position.

9. In a joint, the combination of a connecting member having two guide sleeves, one of which is rotatable; a conical mounting for said rotatable sleeve; bars in said sleeves, said bars being movable in the sleeves; and means actuated by a movement of one of the bars in its sleeve for locking the bars and sleeves in position, said means comprising a cam surface on the bar and devices actuated by the cam surfaces.

10. In a joint, the combination of a connecting member having a surrounding shell and providing a conical shoulder; a rotating plate engaging the conical shoulder; a sleeve rigid on the connecting member; a second sleeve on the rotating plate; bars extending through said sleeves; and means actuated by the bar on the rotating plate locking the member and plate together and one of said bars in position.

11. In a joint, the combination of a connecting member having a surrounding shell and providing a conical shoulder; a rotating plate engaging the conical shoulder; a sleeve rigid on the connecting member; a second sleeve on the rotating plate; bars extending through said sleeves; and means actuated by the bar on the rotating plate locking the member and plate together and both of said bars in position.

12. In a joint, the combination of a connecting member having a surrounding shell and providing a conical shoulder; a rotating plate engaging the conical shoulder; a sleeve rigid on the connecting member; a second sleeve on the rotating plate; bars extending through said sleeves; means actuated by the bar on the rotating plate locking the member and plate together and one of said bars in position; and a locking plate adapted to lock the other of said bars in position.

13. In a joint, the combination of a connecting member having a surrounding shell and providing a conical shoulder; a rotating plate engaging the conical shoulder; a sleeve rigid on the connecting member; a second sleeve on the rotating plate; bars extending through said sleeves; means actuated by the bar on the rotating plate locking the member and plate together and both of said bars in position; a locking plate operating on one of said bars; and a latch operating on the locking plate to hold it out of locking position.

14. In a joint, the combination of an annular member; sleeve openings in said annular member; cover caps on the sides of the annular member, one of said cover caps having a beveled flange; a rotating plate engaging said beveled surface; a sleeve on the

rotating beveled plate; a bar in said rotating sleeve, said bar having a cam surface; a bar in the sleeve in the annular member; a cam on the bar in the rotating sleeve; and a pin mounted in the rotating plate and actuated by the cam and engaging the bar in said sleeves carried by the annular member and exerting pressure on the locking plate to lock it in position.

15. In a joint, the combination of an annular member; sleeve openings in said annular member; cover caps on the sides of the annular member, one of said cover caps having a beveled flange; a rotating plate engaging said beveled surface; a sleeve on the rotating beveled plate; a bar in said rotating sleeve, said bar having a cam surface; a bar in the sleeve in the annular member; a cam on the bar in the rotating sleeve; and a pin mounted in the rotating plate and actuated by the cam and engaging the bar in the sleeves carried by the annular member exerting pressure on the locking plate to lock it in position, said cam being adapted to exert a wedging pressure on the bar having the cam to yieldingly lock said bar in the sleeve on the rotating plate.

In testimony whereof I have hereunto set my hand.

CORTTIS R. KILBURN.