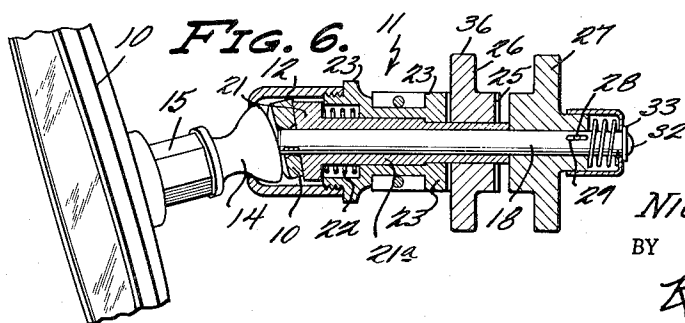
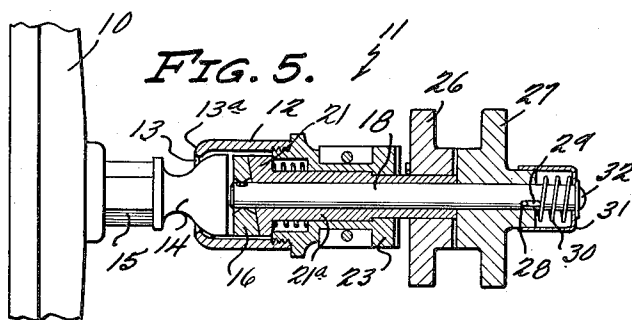
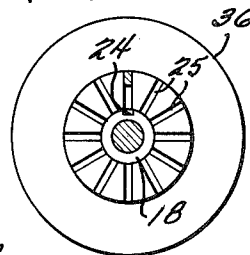
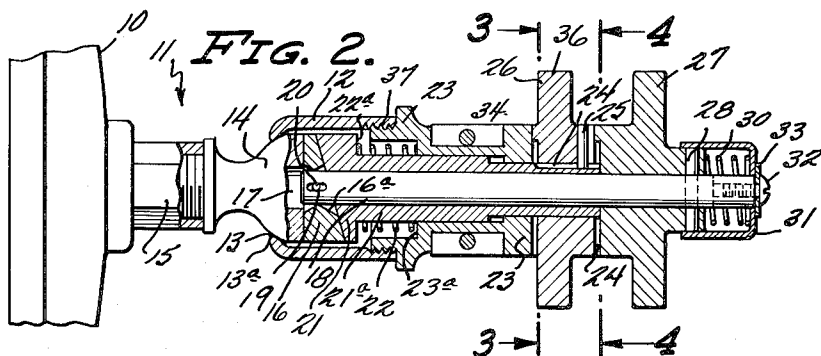
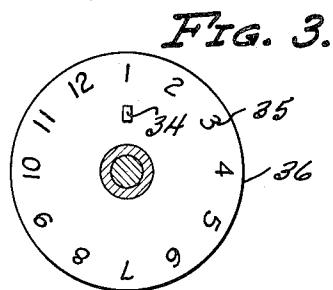
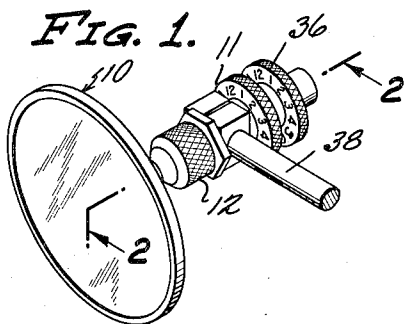


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N. H. TRANAS
ADJUSTABLE SWIVEL
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ADJUSTABLE SWIVEL

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This invention relates to an adjustable swivel support of the type used to provide a rigid mounting for any applicable device.

A primary object of this invention is the provision of an adjustable setting for a swivel support that may later be readjusted to the identical setting, thereby positioning the device in any angle desired and further providing for easily returning the device to this position after a change in setting.

As an example of a use of this invention, a rear-view mirror set in this supporting swivel can be easily adjusted to suit any individual user and, further, can easily be readjusted to this user, should the mirror setting be changed between uses by that person.

A further object of this invention is a means for the prevention of the accidental disalignment of the device in the swivel support, from a knock or blow thereon.

Another object of this invention is the facilitation of the rapid setting of predetermined positions of adjustment by means of revolving digitated wheels.

Other objects and advantages will be readily apparent upon consideration of the appended specification and drawing wherein:

FIGURE 1 is a perspective view disclosing a swivel constructed in accordance with the instant invention and a supporting arm, with a rear-view mirror attached to the swivel;

FIGURE 2 is a longitudinal cross sectional view of the swivel of FIG. 1 disclosing internal details and construction;

FIGURE 3 is a view taken substantially along the line 3-3 of FIG. 2, looking in the direction of the arrows;

FIGURE 4 is a view taken along the line 4-4 of FIG. 2 looking in the direction of the arrows;

FIGURE 5 is a view of the swivel mounting similar to FIG. 2 with the registry wheels rotated to a different position of adjustment;

FIGURE 6 is a cross-sectional view corresponding to FIGS. 2 and 5 but with the registry wheels further rotated to still another position of adjustment, thus angling the mirror.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing in detail, a mirror 10 is held in a rigid position by a swivel mounting constructed in accordance with the instant invention generally indicated at 11. The mirror 10 is attached to the swivel mounting 11 by means of a knurled nut 12, the frontal aperture 13 of which is inwardly flanged as at 13a in order to grasp firmly the substantially hemispherical base 14 of the mounted member 10 while allowing its position to be rotated and changed.

Base 14 is attached to the mirror 10 by means of a hexagonal threaded fitting 15 shown in partial cut-away in FIG. 2. The base 14 ends in a smooth flat surface to allow the surface of a cam 16 to make contact in as friction free a manner as possible. A circular hole 17 is fashioned in the center of the base 14 to permit passage of an operating rod 18.

The cam 16 is circular in shape with one side being flat and the other side an inclined plane and is provided with a central aperture 16a so constructed as to allow the free movement of the operating rod 18 regardless of

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the position of rotation. This free movement is facilitated by an elongated slot 19 cut in the operating rod 18 to allow the free horizontal movement of the rod 18 around a connecting pin 20 extending transversely across opening 16a. Further free movement is made possible by the interior construction of the opening 16a, the inside diameter of which tapers from the flat surface and the inclined surface toward the center line. This construction allows the cam 16 to be tilted in any direction relative to the rod 18.

Referring particularly to FIG. 2, a second cam 21 is constructed with an inclined surface apposed to that of the first cam 16 so as to contact and tilt, upon rotation, cam 16. Cam 21 has an integral elongated tubular extension 21a which forms a shoulder 22a for the retention of one end of a spring 22 in a compressed position and further to rotate smoothly within a fixed support sleeve 23. The sleeve 23 is recessed to form a shoulder 23a engaging the opposite end of spring 22, and is provided with an exteriorly threaded outer end 37 to receive fitting 15.

Extension 21a is slotted as at 24 in its after portion to accommodate a pin 25 carried by registry wheel 26, this slot 24 and pin 25 allowing transmission of rotation of the wheel 26 to cam 21 and through the confronting cam surfaces to cam 16 which, in turn, positions the mirror 10 in the desired angular setting.

The spring 22 serves to bias cam 21 into abutting engagement with cam 16.

Further adjustment is allowed by a second registry wheel 27 which carries interiorly a pin 28 engaging in an elongated slot 29 in pin 18, as seen in FIGS. 5 and 6. This connection is similar in construction to the pin 25 and slot 24 described above and seen in FIG. 2 in that it allows limited movement in a horizontal direction of the rod 18. The rotational adjustment of the second registry wheel 27 is thus transmitted to the cam 16 by the rod 18. The proper tension is retained upon the second wheel 27 by means of a spring 30 which is held in position by a casing 31 which is fastened to the outer end of rod 18 by a screw 32 and washer 33.

Spring 30 normally biases the flat surface of cam 16 against base 14, the hemispherical surface of which engages flange 13a securely to hold mirror 10 in adjusted position. Movement of wheel 26 in a direction away from mirror 10 to the position of FIG. 5 will release the frictional engagement of the parts to permit their ready adjustment.

Wheels 26 and 27 are each provided with a lug 34 as seen in FIG. 3, in order to enhance the friction-free rotation of said wheels by substantially reducing the contacting face area with, in the case of wheel 26, the end of sleeve 23, and in the case of wheel 27, the confronting face of wheel 26.

Wheels 26 and 27 are provided with indicia 35 such as numbers or letters placed around the forward edge of said wheels to provide a means for registering certain positions of the wheels and thereby of the mirror, as best shown in FIG. 3. The outer edges 36 of wheels 26 and 27 are knurled to permit ready gripping of the wheels for rapid adjustment.

The entire mechanism, generally indicated at 11, is secured to a body, such as a vehicle, by means of a support arm 38 which is attached to sleeve 23 by any convenient means.

While the instant swivel support is herein described holding a rear-view mirror, its operation is not, however, limited to this application.

In the use and operation of the device a first driver positions the mirror on his automobile by first rotating the registry wheels 26 and 27 to a desired position. The wheels are withdrawn manually to the position of FIG. 5

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and the mirror suitably adjusted. The wheels are then rotated until the arrangement of the cams is such as to hold the mirror in the required position and the setting of the indicia noted. Later, when a second driver repositions the mirror in the aforesaid manner, the first driver can reset the device by returning the wheels to the previous setting and at once obtain full vision to the rear without the difficulty of continual readjustment. Furthermore, once the mirror is set in this position, it need not be readjusted for it will not move again until the registry wheels are actuated.

From the foregoing it will now be seen that there is herein provided a swivel support which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

1. A swivel support comprising, in combination, a sleeve having an opening therein, a flange surrounding said opening, an article holding hemispherical base with a flat surface seating in said opening, a first cam having

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a flat surface confronting said flat surface of said base, a second cam confronting the cam surface of said first cam, a first indicia bearing wheel connected to said first cam, a second indicia bearing wheel connected to said second cam, said connections including means mounting said wheels for independent rotation to vary the relationship of said confronting surfaces of said cams and hence the angular position of said base and the article connected thereto.

2. The structure of claim 1 wherein spring means are provided in said sleeve biasing said cams together and said first cam into engagement with said flat surface of said base.

3. The structure of claim 2 wherein said first cam is tiltably mounted on a rod, said first wheel is fixed to said rod, said second cam is mounted on a sleeve co-axially surrounding said rod, and said second wheel is affixed to said sleeve.

4. The structure of claim 3 wherein said indicia on said wheels comprises correlated numbers denoting the relative position of said cams to each other.

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