

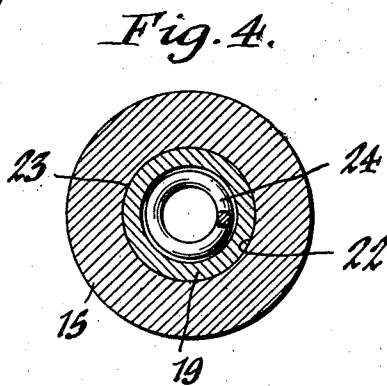
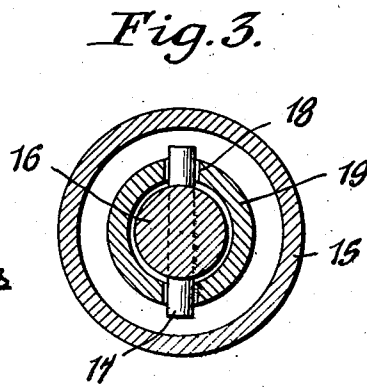
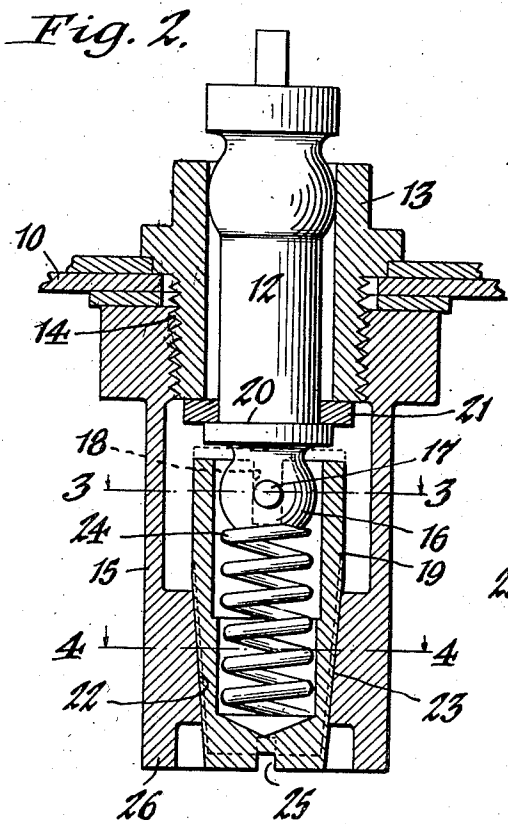
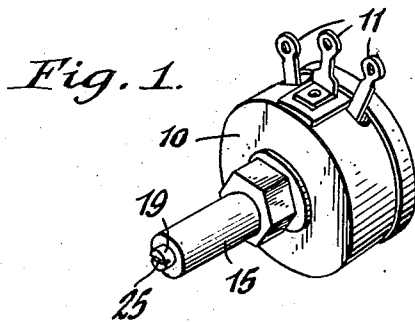
Oct. 10, 1944.

C. J. HULL

2,360,134

SELF-LOCKING ADJUSTABLE DEVICE

Filed Oct. 5, 1942



Inventor,
Charles J. Hull,
by Walter P. Seyer
Attorney.

UNITED STATES PATENT OFFICE

2,360,134

SELF-LOCKING ADJUSTABLE DEVICE

Charles J. Hull, Buffalo, N. Y., assignor to The Rudolph Wurlitzer Company, North Tonawanda, N. Y., a corporation of Ohio

Application October 5, 1942, Serial No. 460,921

1 Claim. (Cl. 74—531)

This invention relates generally to adjustable devices but more particularly to a self-locking adjustable device for the controls of electrical and other equipment installed, for example, on vehicles, ships, airplanes, etc.

One of its objects is to provide an adjustable device of this character which is so designed and constructed as to effectually and positively remain in a given position of adjustment even when subjected to severe shocks, jarrings or vibrations of the vehicle on which it is mounted.

Another object of the invention is to provide a self-locking adjustable device for electrical and like instruments which is simple, compact and inexpensive in construction, whose parts are so organized and arranged as to constantly seek and be maintained in a set position, and which requires the use of a separate tool to make adjustments.

Other features of the invention reside in the construction and arrangement of parts hereinafter described and particularly pointed out in the appended claim.

In the accompanying drawing:

Figure 1 is a perspective view of the adjustable control embodying my invention. Figure 2 is an enlarged longitudinal section thereof. Figures 3 and 4 are cross sections taken on the correspondingly numbered lines in Figure 2.

Similar characters of reference indicate corresponding parts throughout the several views.

While my invention is applicable to various appliances and instrumentalities requiring adjustment for one purpose or another, it has been shown, by way of example, in connection with a volume control for sound equipment, the numeral 10 indicating the control-housing, 11 the terminals for the electrical connections and 12 the control shaft on which the control elements (not shown) of the device are mounted for rotation to different positions of adjustment.

This shaft extends outwardly through a bushing 13 disposed centrally of the housing and on its front or exposed end has an externally-threaded portion 14 to which a tubular member or cap 15 is connected. The outer end of the control shaft terminates within the inner end of this cap in a head 16 having a radial coupling pin 17 thereon engaging companion notches 18 formed in the diametrically opposite sides of the opposing inner end of a hollow actuating stem 19 supported in the cap in axial relation with said shaft, so that when the stem is turned in one direction or the other the control shaft is likewise turned to a given adjusted position. The shaft

12 has a thrust shoulder 20 inwardly of its coupling head and interposed between the same and the opposing outer end of the bushing 13 is a washer 21. The coupling notches 18 are of a depth to permit an axial, coupled displacement of the actuating stem relative to the control shaft for adjustment purposes.

Adjacent its outer end the cap 15 has an outwardly-tapering bore portion 22, while the companion end of the shaft-actuating stem 19 has a like tapered portion or shank 23. A coil spring 24 is fitted in this hollow stem, bearing at one end against the closed end of the latter and at its other end against the shaft-head 16, and serving constantly to urge the stem into firm wedging engagement with the tapered bore of the cap. At its outer end the stem is provided with a notch or kerf 25 for receiving a screw driver to turn the stem and the shaft in one direction or the other to make the adjustments desired. The outer end of the cap may be provided with a rim 26 to serve as a protective guard or sheath for the notched end of the stem.

While manifestly simple and compact in construction, this self-locking adjustable device is reliable and positive in retaining adjustments and is not liable to be disturbed or dislodged out of adjustment by surrounding shocks or jarrings. When it is desired to make an adjustment, a screw driver is inserted in the notched end of the actuating stem 19 and, while pressing such stem inwardly against the tension of the spring 24 to break the gripping, tapered joint between the stem and the cap 15, the screw driver is turned in one direction or the other to set the instrument under control to the position desired. When the proper adjustment is reached, the pressure against the screw driver is released and the spring 24 urges the stem outwardly in firm gripping contact with the tapered portion 22 of the cap and maintains the adjustment positively in position.

I claim as my invention:

In a self-locking device for volume controls, a housing for the controllable part thereof having an adjustable control shaft projecting therefrom and terminating at its outer end in a coupling head, a tubular cap detachably mounted on said housing in axial relation to said shaft and projecting outwardly beyond the coupling head thereof, said cap being provided adjacent its outer end with an outwardly tapering bore and terminating outwardly of said bore in a protective rim, a hollow actuating stem closed at its outer end and open at its inner end and rotat-

ably supported in said cap in alining relation to said shaft for axial displacement relative to such parts and having complementary coupling means at its inner end for detachable driving engagement with the coupling head of said shaft and having means at its outer end exposed endwise through said cap for receiving a tool to actuate said stem to adjust the shaft, the exposed end of the stem being sheathed by said cap-rim, said stem having an outwardly tapering portion com-

plementary to the tapering bore of the cap, and a spring fitted in said hollow stem and bearing at one end against the closed end of the latter and at its opposite end against said shaft-head and normally serving to urge the stem into firm wedging engagement with the cap-bore to retain the control shaft in its adjusted position when subjected to severe external shocks and vibrations.

CHARLES J. HULL.