

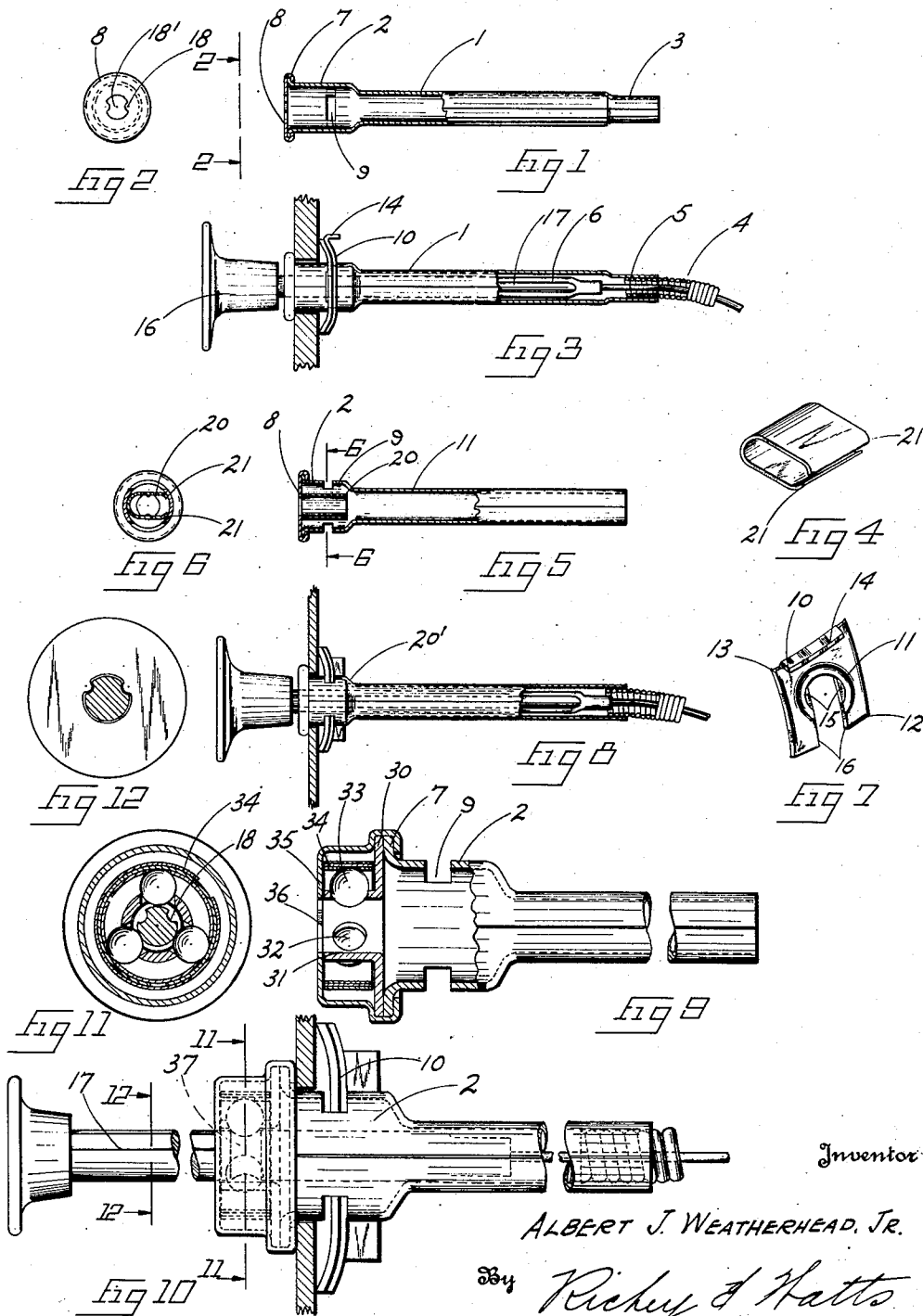
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CONTROL DEVICE

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CONTROL DEVICE

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1 Claim. (Cl. 74-502)

This invention relates to a control device adapted for instrument panel or dash mounting that may be advantageously employed for operating such instrumentalities as the choke, carburetor, cut-out, free wheeling or similar devices common to automotive vehicles. However, it is to be understood that this control device is not limited in its application for use in connection with automotive vehicles and appurtenances common thereto and may be employed in other and further capacities if so desired.

The control contemplated has been evolved with an eye toward simplicity and neatness of construction without sacrificing efficiency, durability and easy assembly. Further the novel construction embodies certain refinements of construction intended to overcome certain objectionable features prevailing in prior devices, for instance improved means are provided for positively or frictionally holding the reciprocable control element against longitudinal travel when not manipulated by the operator, such means being simple and effective to resist movement of the controlling rod, yet relatively inexpensive to manufacture and assemble.

In one form, the resistance to movement of the choke control rod is supplied by resilient member mounted in the escutcheon tube that bears against such rod. In another form, the resistance is obtained by means of a plurality of spring pressed spherical members that cooperate with a groove upon the control rod which defines the farthest outward position thereof. The cooperation of the spherical members with the groove acts in the nature of a positive stop although there is a certain resistance to longitudinal movement of the rod between farthest open and closed position when not manipulated by the operator.

One object of this invention is to provide a simple, efficient and effective means for holding the reciprocable control element against longitudinal travel when not manipulated by the operator. Another object is to secure the escutcheon to a dash or instrument panel by an inexpensive means which may be expeditiously manufactured and assembled and readily removed. Another object is to secure such an escutcheon to an instrument panel with such security as to hold it in non-rotatable relation to the panel. Another object of this invention is to provide a control wherein the pull rod may be moved outwardly away from the dash panel or inwardly theretoward and will be held in any desired adjustable or determined position irre-

spective of road shocks or jars when not held by the operator. A still further object is to provide a complete dash control assembly which may be manufactured inexpensively and which will be of rugged construction and efficient in operation for long periods of use.

Other objects and advantageous features of this invention will be noted in the following detailed description and the accompanying drawing wherein like characters of reference designate like parts, and wherein:

Fig. 1 is a side elevation partly in section showing one form of my escutcheon tube.

Fig. 2 is a front elevation looking in the direction of the arrows 2-2.

Fig. 3 is a side elevation, with certain parts in section, of the dash assembly shown mounted on an instrument panel.

Fig. 4 is a perspective view of the U-shaped resilient member.

Fig. 5 is a side elevation, partly in section, of an escutcheon tube provided with a resilient means for frictionally engaging with the control rod.

Fig. 6 is a section taken on the line 6-6, Fig. 5.

Fig. 7 is a perspective view showing a clip employed and securing the escutcheon tube to the panel.

Fig. 8 is a side elevation of a dash assembly employing the escutcheon tube shown in Fig. 5.

Fig. 9 is a side elevation of another means for holding the control rod in adjusted position.

Fig. 10 is a side elevation of the device shown in Fig. 9 mounted on an instrument panel.

Fig. 11 is a section taken on the line 11-11, Fig. 10.

Fig. 12 is a sectional end view taken on the line 12-12, Fig. 10.

This invention has to do with the escutcheon tube and the particular design thereof along with a means for securing such tube to the instrument panel and is also directed to a means for frictionally holding the control element against longitudinal travel. In other words, the invention is directed to a novel dash control assembly that includes certain improvements all combined in one complete assembly.

Referring to the drawing in Fig. 1, I have shown an escutcheon tube which is quite simple and inexpensive to manufacture and is adapted to cooperate with a U-shaped securing member to permit of attachment to the instrument panel of an automobile vehicle. This tube is designated generally by the numeral 1. In the man-

ufacture and construction of this tube, I preferably take a flat piece of stock, not shown, and form it into tubular shape, circular in cross section with the seam extending longitudinally along one side. This tube as shown in Fig. 1, is provided with an enlarged end 2 integral with a longer tubular body portion of slightly less diameter that is intended to house the main portion of the control rod, as shown in Fig. 3, and may be further reduced in diameter at the end 3 and thereafter crimped into engagement with one end of a conduit tube 4. The conduit tube may be made up of spirally wound wire and houses a wire 5 connected to the control rod 6 and to the choke, carburetor, free wheeling clutch or other device intended to be operated by the control assembly.

Referring again to the enlarged end tube it will be noted that the external end of the enlarged portion is flared outwardly as at 7 to provide a radial flange over which a button 8 is spun. When the tube is mounted in a panel, the shoulder thus formed abuts against such panel and cooperates with the securing device hereinafter mentioned to securely support the escutcheon tube in proper position.

The method of securing the escutcheon in a panel calls for the grooving or channeling of the enlarged portion 2, as at 9, on opposite sides, such grooves having preferably parallel bases and parallel top and bottom sides.

The grooves are preferably cut so that the bottom sides will be substantially flush with, or a little below, the inner surface of the panel, and may be formed in any convenient manner as by milling or punching operation.

Referring to Fig. 7 a locking member described and claimed in the copending application of John D. Baldwin, Jr., Serial No. 449,343, filed May 2, 1930 and assigned to me, designated by the numeral 10 is shown as being U-shaped having legs spaced apart a distance substantially equal to the distance between the bases of the grooves 9 in the enlarged portion 2 of the escutcheon, such legs being adapted to contact with such grooves and thereby engage the escutcheon in non-rotatable relation. The locking member is preferably stamped and/or pressed from sheet stock and is preferably given a spherical concavo-convex form with a substantially C-shaped ridge 11 raised to a maximum height and with the external corners 12 and 13 depressed to a maximum depth. The bottom points of the corners 12 and 13 are preferably sharpened thereby tending to gouge into the metal of the panel and enter into a non-rotatable engagement therewith when the locking device is forced into place. The rearward edge of the clip is turned at right angles to form a flange 14 by means of which the clip can be gripped by appropriate tools to facilitate the removal or the mounting thereof from locking engagement.

Bounded by the C-shaped ridge 11 and by the inner sides of the legs of the clip are formed flat planular half moon shaped areas 15, shaped similarly to the upper sides of the opposing grooves 9 and constituting seats for engagement with the sides of the recess. It will be seen that when the clip is forced into place by movement transversely of the shank of the escutcheons and in a plane parallel with the dash panel, the upper sides of the grooves 9 come into contact with the inner sides of the legs of the U at about the points 16, see Fig. 7. The

legs of the U pass into the recess and are engaged by the upper sides thereof until the recess engages with the half-moon areas 15 lying within the C-shaped ridge at which time the clip has moved into full engagement with the escutcheon tube.

It will be appreciated that the tube 1 and the securing device together form a very simple arrangement that may be easily manufactured and readily assembled on the dash or instrument panel. Heretofore, the shank of the escutcheon has been threaded in such manner that a nut and lock was employed in holding the escutcheon to the instrument panel. With this improved arrangement set out in this specification there is no necessity for threading the tube or providing a nut inasmuch as the opposing parallel grooves cooperating with the U-shaped clip completely obviate the use of threads and a nut and offer a simpler and more efficient locking device that lends itself readily to assembly or removal.

Hence the complete assembly, as shown in Fig. 3, consists in the escutcheon and securing device 10, the pull button 16, control rod 6, wire 5 and spirally wound conduit 4, adapted for instrument panel mounting. It is understood that the control member 6 is grooved longitudinally on opposing sides as at 17, said grooves adapted to cooperate with the opposed projections 18, Fig. 2, extending into the aperture 18' of the escutcheon plate 8 to thereby prevent rotational movement of the control.

In Fig. 5 I have shown an escutcheon tube which embodies all of the features and advantages of the tube illustrated in Fig. 1 and, in fact, is constructed in the same manner as the tube hereinabove described. However, it will be noted that the enlarged portion 2 is reduced slightly in length and is intended to house a U-shaped spring 20. In manufacturing this tube, prior to the placing of the cap 8 on the end thereof, the spring is inserted into the enlarged portion 2 with the legs of the U facing the wall thereof. It is noted that the U-shaped spring may have the ends thereof turned inwardly toward one another as at 21 to coincide with the wall of the enlarged portion 2. This permits of a snug fit therewith. This U-shaped spring member lies between the channeled grooves 9 and abuts against the shoulder 20' formed at the shank of the tube which limits the inward movement thereof. When the cap 8 is spun over the end of the tube, the U-shaped clip is snugly held against longitudinal movement. Hence when the control rod 6 is inserted into the opening 18 the legs of the U resiliently engage the periphery of the rod, as best shown in Fig. 6, and tend to frictionally hold it in any position of adjustment, as best shown in Fig. 8 in the dotted line.

In this form of escutcheon tube, as in the form shown in Figs. 1 and 3, I intend to employ the securing device designated by the numeral 10 inasmuch as I have provided channeled grooves 9 adapted to cooperate with the legs of such device. Although I have not shown it, the end of this escutcheon tube may be reduced in diameter as in 3 of Fig. 1 to provide a point of affixation for the spirally wound conduit 4.

It will be appreciated that the operator of the vehicle may manually adjust the control button 16 to thereby effect a positioning of the control rod 6 at any point desired. The spring 20

will grasp and frictionally hold the control when it is not manipulated by the operator and will permit of the selective positioning thereof to hold the choke or cut-out in open or closed, or partially open position.

In Figs. 9 to 11, inclusive, I have shown a form of device for holding the controlling element against longitudinal movement. This device differs over the devices hereinbefore described in that a high degree of frictional resistance is concentrated at a point defining the point of farthest outward movement of the control rod 6, and resistance to longitudinal reciprocation of the rod from a frictional standpoint is negligible. The idea of placing a high frictional resistance on the rod at one point acts in the nature of a positive stop, although it does not rise to the dignity of such an arrangement. This device, best shown in Figs. 9 and 10, is

adapted to be incorporated with the enlarged end 2 of the escutcheon in the position normally occupied by the cap 8. This tube is identical with the tube shown in Figs. 1 and 5 and includes a reduced shank portion integral with an enlarged end portion 2 having channeled grooves 9 and a radial flange 7. Bearing against the flange 7 is a member having a radial flange 30 and a hub portion 31 having a plurality of perforations 32 adapted to form seats for a plurality of balls 33, the perforations being of slightly lesser diameter than the greatest diameter of the balls 33 to permit the lower portions of the balls to lie within the area defined by the wall of the hub 31 as urged therein by suitable radially acting resilient means. Encircling these balls is a resilient element 34 preferably made up of a plurality of split resilient rings of spring steel that are adapted to urge the balls inwardly toward their seats and into contact with the control rod as best shown in Fig. 10. A cover or cap 35 having an opening 36 coaxial with the opening in the hub 31 is spun down over the flange 30 and flange 7 to securely affix the three members.

The control rod 6 may be similar to the control rod shown in Figs. 3 and 8 with the exception that it is provided with an annular groove 37 spaced inwardly from the head 16. Hence when the control rod is moved to its farthest outward position (defined by the position of the annular groove) the balls which are normally unseated by engagement with the shank of the rod 6 are forced into the groove by the pressure on the spring 34 and check further outward movement of the control rod, however, pressure on the head 16 will serve to unseat the balls and permit the control rod to be returned to the initial position. It will be apparent from a study of Figure 9 that the balls, when in engagement with the groove, do not rest below dead center and hence when the control rod is pushed inwardly toward the dash,

the balls are ejected from the groove along a line perpendicular to the longitudinal axis of the control rod, by reason of the concave walls of the groove. It is quite apparent if the balls were to rest below dead center it would be impossible to eject them. It will be apparent that a certain degree of resistance to movement will be exerted on the control rod by the balls at all times. The concentrating of a high degree of resistance on the control rod, albeit that resistance is frictional, is advantageous where the device is employed for operating a cut-out or free wheeling clutch wherein the control rod will be moved to the farthest outward position and will be permitted to remain there for long periods of time. It is equally effective as a choke control in that sufficient resistance to reciprocate the rod 6 is provided to hold it in partially open position.

In this assembly, as in the assembly hereinbefore described, the U-shaped clip may be employed as a means for securing the escutcheon tube to the instrument panel. The clip may be identical with the clip shown in Figs. 3 and 8 and is affixed to the tube in the same manner.

It will be seen from the foregoing that while I have illustrated and described a preferred form of my invention it will be appreciated that my invention has many uses and applications beyond the one described in detail herein. In view of the foregoing I do not care to be limited to the particular forms or applications of my invention illustrated and described herein, or otherwise in the scope of my patent other than by the claim appended hereto when interpreted in the light of the existing state of the art and given the range of equivalents to which they are entitled.

I claim:

In a control assembly, an escutcheon tube adapted to be mounted on a dash panel or similar supporting surface, said escutcheon tube having a flanged end portion and a tubular projection extending beyond said flanged end portion, a control rod reciprocable within said escutcheon tube and having at least one circumferentially reduced portion defining the limit of movement of said control rod in one direction, a ball seated on said control rod and retained in position by said tubular projection, said ball being adapted to cooperate with said circumferentially reduced portion to retain said rod in at least one position of adjustment, means comprising a plurality of over-lapping convolutions of resilient material surrounding said tubular projection and resiliently urging said ball into cooperation with said circumferentially reduced portion, and a cap engaging the flange of said escutcheon tube and said tubular projection for retaining said resilient means in position.

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