March 4, 1958 C. E. NAGY 2,825,596

DOOR KNOB ACTUATING ATTACHMENT

Filed Nov. 2, 1954 2 Sheets-Sheet 1

Fig. 1

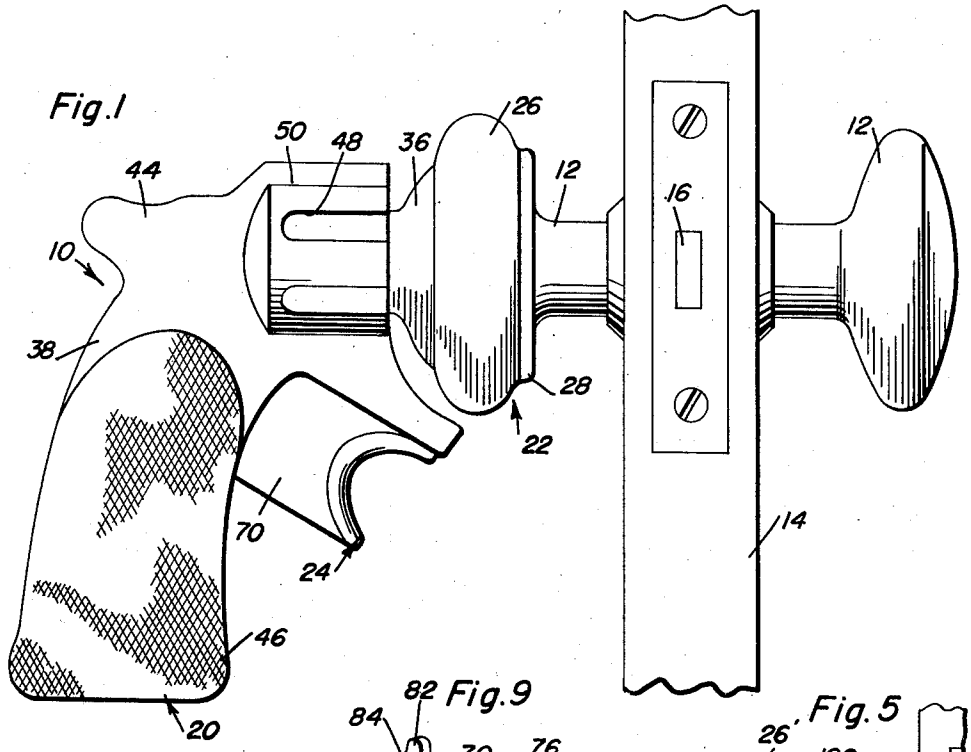


Fig. 9

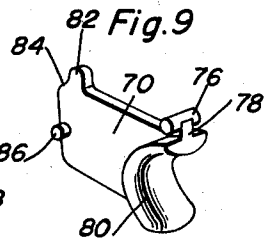


Fig. 5

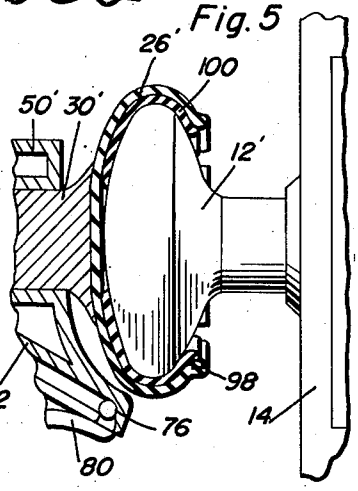


Fig. 2

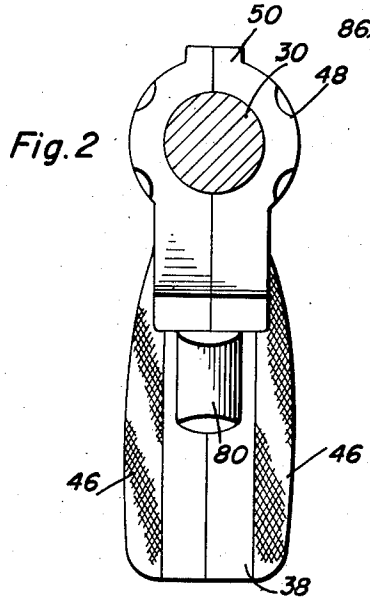
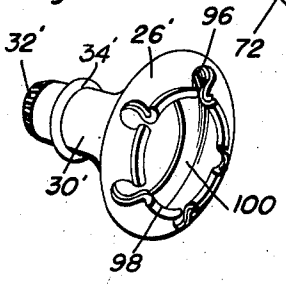


Fig. 6



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Fig. 3

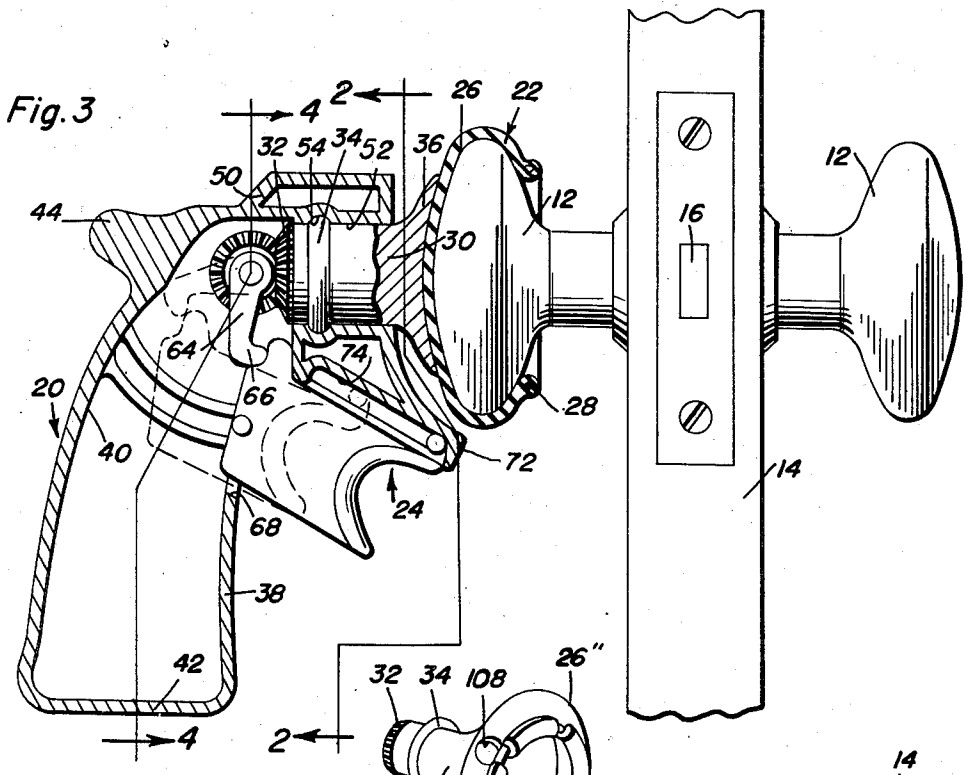


Fig. 8

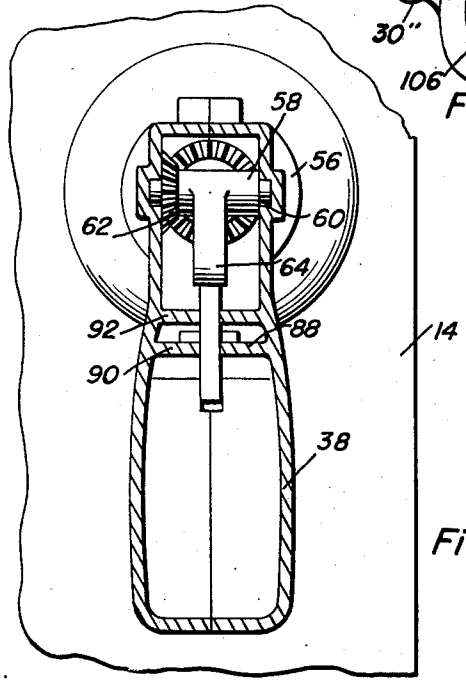
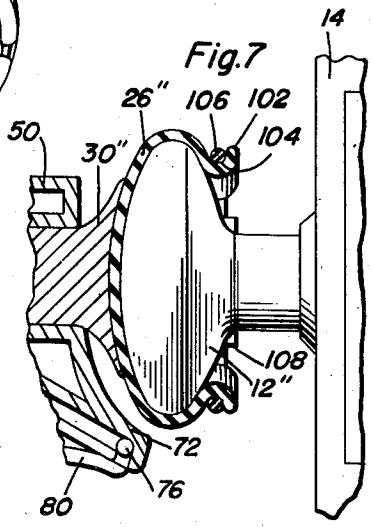


Fig. 4

Fig. 7



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DOOR KNOB ACTUATING ATTACHMENT

Charles E. Nagy, Los Angeles, Calif.

Application November 2, 1954, Serial No. 466,311

1 Claim. (Cl. 292—336.3)

This invention relates to an attachment for door knobs wherein the attachment is utilized for actuating or rotating the door knob, wherein a person may operate or actuate the door knob without rotation of his hand.

An object of this invention is to provide a door knob actuating attachment which is generally an improvement on my copending application, Serial No. 324,322, filed December 5, 1952, now Patent Number 2,699,353, issued January 11, 1955.

Another object of this invention is to provide a door knob attachment including a handle together with a rotatable door knob grip positioned thereon together with means for rotating the door knob grip without rotating the handle.

Still another important object of the present invention is to provide a door knob actuating attachment including a knob gripping member together with a handle shaped in the form of a pistol grip together with a movable trigger which acts to rotate the door knob grip along with the door knob when the trigger is reciprocated, wherein the door knob may be actuated without rotation of the pistol grip handle but by mere reciprocation of the pistol-type trigger positioned on the pistol-type handle.

Yet another important object of the present invention is to provide a door knob actuating attachment conformable to the preceding objects which is simple in construction, easy to attach to existing door knobs, easy to operate, fool-proof, well adapted for its intended purposes, and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view showing the door knob actuating attachment of the present invention attached to a door knob;

Figure 2 is a vertical sectional view taken substantially upon a plane passing along section line 2—2 of Figure 3 showing the relative positions of the rotatable element and the pistol-type handle together with the movable trigger mounted therein;

Figure 3 is a longitudinal, vertical sectional view taken substantially upon a plane passing along the longitudinal center line of the attachment of the present invention showing the interior details of construction;

Figure 4 is a transverse, vertical sectional view taken substantially upon a plane passing along section line 4—4 of Figure 3 showing further structural details of the actuating attachment of the present invention;

Figure 5 is a detail sectional view showing a modified form of door knob gripping member that rotates the door knob;

Figure 6 is a perspective view of the door knob gripping and rotating member illustrated in Figure 5;

Figure 7 is a detail sectional view similar to Figure 5

showing another form of the door knob gripping member of the present invention;

Figure 8 is a perspective view showing the door knob gripping member and rotating member illustrated in Figure 7; and

Figure 9 is a perspective view showing the actuating trigger for rotating the door knob gripping and rotating member.

Referring now specifically to the drawings, it will be seen that the numeral 10 generally designates the door knob attachment of the present invention which is attached to a door knob 12 positioned conventionally in a door 14 having a retractible latch 16 wherein rotation of the door knob 12 will actuate the latch 16, thereby permitting the door 14 to be opened. The attachment 10 of the present invention includes three arrangements; namely, a hollow handle generally designated by the numeral 20, an attaching means generally designated by the numeral 22 for securing the handle to a door knob 12, and an actuating means generally designated by the numeral 24 which rotates the attaching means 22 in relation to the handle 20 for rotating one of the knobs 12. thereby permitting the door 12 to be opened after the latch 16 has been retracted.

Referring now specifically to the attaching means 22, it will be seen that a generally cup-shaped member 26 is provided having an enlarged circular opening formed by a resilient rib 28 wherein the resilient cup-shaped member 26 may be positioned over the door knob 12 and is securely gripped and attached thereto by the resilient nature of the cup-shaped member 26 securely engaging the outer periphery of the door knob 12. The cup-shaped member 26 is generally complementary to the shape of the door knob 12 for closely engaging the surface thereof. Bonded to and extending outwardly from the closed portion of the cup-shaped member 26 is a cylindrical shaft 30 which is provided with an integrally formed spur gear 32 on its outer end and a peripheral rib 34 adjacent the spur gear 32 and positioned between the spur gear 32 and the cup-shaped member 26. The shaft 30 is provided with a generally enlarged inner end 36 for attachment to the cup-shaped member 26 by bonding, wherein the shaft 30 and the cup-shaped member 26 generally form an integral single member.

Referring now specifically to the handle construction generally designated by the numeral 20, it will be seen that a generally right angular tubular housing 38 is provided with a generally right angular passage 40 whcih is closed at the lower end thereof by a bottom member 42. Adjacent the juncture of the vertical and horizontal portion of the right angular tubular housing 38 is provided a generally upwardly and rearwardly projecting portion 44 which simulates a pistol hammer and the exterior surfaces of the depending portion of the tubular housing 38 is provided with serrations 46 in order to simulate a pistol grip. On the exterior of the horizontal portion of the right angular housing 38 is provided a simulated revolver cartridge holder 48 which further simulates a pistol wherein the pistol-type grip 46 together with the hammer 44 and the cartridge holder 48 will simulate a pistol, thereby forming a pistol-type grip or handle 20 for attachment to the attaching means 22. The horizontal portion of the tubular housing 38 that is generally designated by the numeral 50 includes a cylindrical bearing 52 having a peripheral groove 54 therein for rotatably supporting the peripheral rib 34 on the shaft 30, thereby rotatably supporting the shaft 30 within the cylindrical bearing 52 and the seating of the rib 34 in the groove 54 will prevent longitudinal movement of the shaft 30 in relation to the horizontal portion 50 of the housing 38 that forms the handle 20, thereby securing the handle construction 20 to the attaching means 22 wherein the

attaching means 22 may rotate independently of the handle construction 20 about the longitudinal axis of the shaft 30.

Referring now specifically to the actuating mechanism generally designated by the numeral 24, it will be seen that outwardly projecting bosses 56 are provided in each side of the tubular housing 38 adjacent the rear end of the cylindrical bearing 52 at a point just behind the bevel gear 32 on the shaft 30. Rotatably positioned and journaled in the bosses 56 is a transverse shaft 58 having projecting bearings 60 in the bosses 56 thereby journaling the shaft 58 in the bosses 56. Rigidly secured to the shaft 58 is a bevel gear 62 in meshing engagement with the bevel gear 32 on the shaft 30. The bevel gear 62 may be integrally formed with the shaft 58 and is positioned adjacent one end thereof for lateral bearing engagement with the inner surface of the tubular housing 38, thereby preventing longitudinal and transverse movement of the meshing bevel gears 32 and 62, thereby assuring that the bevel gears 32 and 62 will retain their meshing status. Integrally formed and projecting generally downwardly from the transverse shaft 58 is an operating arm 64 terminating in an inturned end portion 66 wherein angular movement of the arm 64 will rotate the shaft 58, thereby rotating the shaft 30 through the bevel gears 32 and 62. In order to angularly move the arm 64, the tubular housing 38 is provided with an enlarged opening 68 for slidably receiving a trigger member 70 shaped generally in the form of an elongated vertically disposed plate. Projecting forwardly at the upper edge of the opening 68 is a trigger guide member 72 which includes a downwardly opening channel-shaped guide 74 for slidably receiving a cylindrical member 76 spaced from the upper edge of the plate 70 and secured thereto by a projecting web 78. The trigger plate 70 is generally provided with a concave outer surface 80 for engagement by the finger of the operator, and the rear edge of the plate 70 is provided with an upstanding projection 82 having a concave seat 84 on the rear edge thereof for seating engagement with the forwardly projecting end 66 of the arm 64. Projecting outwardly from each side of the plate 70 adjacent the rear bottom edge thereof are projecting pins 86 which ride in a groove 88 formed by inwardly projecting partition members 90 and 92 on the inner surfaces of the tubular housing 38 wherein the partitions 90 and 92 are spaced from each other, thereby forming a guide slot 88 for the projecting pins 86 wherein the rearward movement of the trigger plate 70 will be guided by use of the channel-shaped guide 74 receiving the cylindrical member 76 and the projecting cylindrical pins 86 riding in the arcuate groove 88, thereby rotating the transverse shaft 58 along with the bevel gears 62 and 32 which rotate shaft 30 and the resilient cup member 26, thereby rotating the door knob 12 for retracting the latch 16.

In practical operation, by reciprocation of the trigger plate 70 together with the concave forward member 80 to the dotted line position, as illustrated in Figure 3, will rotate the shaft 58 a sufficient amount to rotate the knob 12 a sufficient amount to retract the latch 16, thereby operating the door knob 12 without rotation of the hand of the person actuating the door knob 12, since the hand of the person merely grips the tubular handle or housing 38 and pulls rearwardly on the trigger outer surface 80. The spring urging the retracting latch 16 outwardly to its normal position will be effective for returning the trigger plate 70 together with the attaching mechanism 22 and the rest of the actuating mechanism 24 to its normal position for a repeat performance.

Referring now specifically to Figure 5 wherein primed reference numerals illustrate identical parts, it will be seen that the cup-shaped member 26' that resiliently grips the door knob 12' is provided with a plurality of inwardly extending enlarged grooves 96 which communicate with a terminal rib 98 in the opening of the cup-shaped member 26'. The inwardly extending grooves 96 generally terminate in their inner ends in a circular portion, thereby permitting contraction of the rib 98 for secure gripping of the door knob 12'. Positioned between the periphery of the door knob 12' and the inner surface of the resilient cup-shaped member 26' is a lining 100 of resilient material which may be also constructed of an anti-slipping material, thereby assuring that the resilient cup-shaped member 26' will be securely attached to the door knob 12'. The shaft 30 is secured to the cup-shaped member 26' by bonding or by any other well known means by utilizing acceptable manufacturing procedures. The operation of the device as illustrated in Figures 5 and 6 is substantially the same as that illustrated in Figures 1–4.

Referring now specifically to Figures 7 and 8, it will be seen that the numeral 26'' designates the resilient cup-shaped member which is positioned over the door knob 12''. The terminal rib 102 of the cup-shaped member 26'' is reversely bent, thereby forming a substantially channel-shaped groove 104 for receiving a resilient ring 106 which engages the groove 104 for contracting the rib 102. Grooves 108 are provided in the rib 102 substantially similar to the grooves 96 in the form of the invention illustrated in Figures 5 and 6, thereby permitting ease in contraction of the resilient cup-shaped member 26'' in gripping engagement with the door knob 12'', thereby securely gripping the cup-shaped member 26'' to the door knob 12'' for actuation thereof by rotating the shaft 30'' which is secured to the cup-shaped member 26'' by suitable bonding or the like. The device as illustrated in Figures 7 and 8 operates in exactly the same manner as the device illustrated in Figures 1–4, and employs all the other construction shown therein.

The hollow housing 38 may be constructed of suitable plastic or other similar materials, wherein the limits of the housing 38 form stop limits for movement of the trigger plate 70 as well as the pivoting arm 64, thereby limiting the movement of the trigger plate 70 and limiting the rotational movement of the door knob 12. In construction, the device may be formed of suitable material wherein the entire device is constructed of a single unit that may be attached to any conventional type of door knob 12.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

An actuating attachment for doorknobs comprising a handle, means for attaching the handle to a doorknob, and means for rotating the attaching means thereby rotating the doorknob, said attaching means including a cup-shaped resilient member having an enlarged opening for receiving a doorknob, a peripheral resilient rib extending around said opening for securely gripping a doorknob, a shaft extending outwardly from said cup-shaped member, said shaft being rotatably positioned in said handle and connected to said rotating means, said opening being defined by an outwardly flared edge forming an outwardly opening annular groove, and a resilient ring disposed in said groove for urging the cup-shaped member into gripping engagement with a doorknob.

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