Aug. 10, 1948. B. S. FLORADAY 2,446,753

DOOR HANDLE ASSEMBLY

Filed Sept. 6, 1945 2 Sheets-Sheet 1

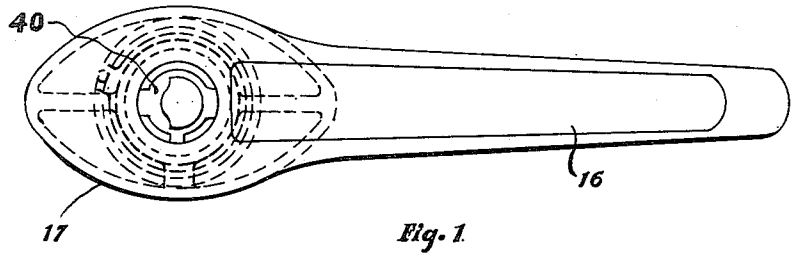


Fig. 1

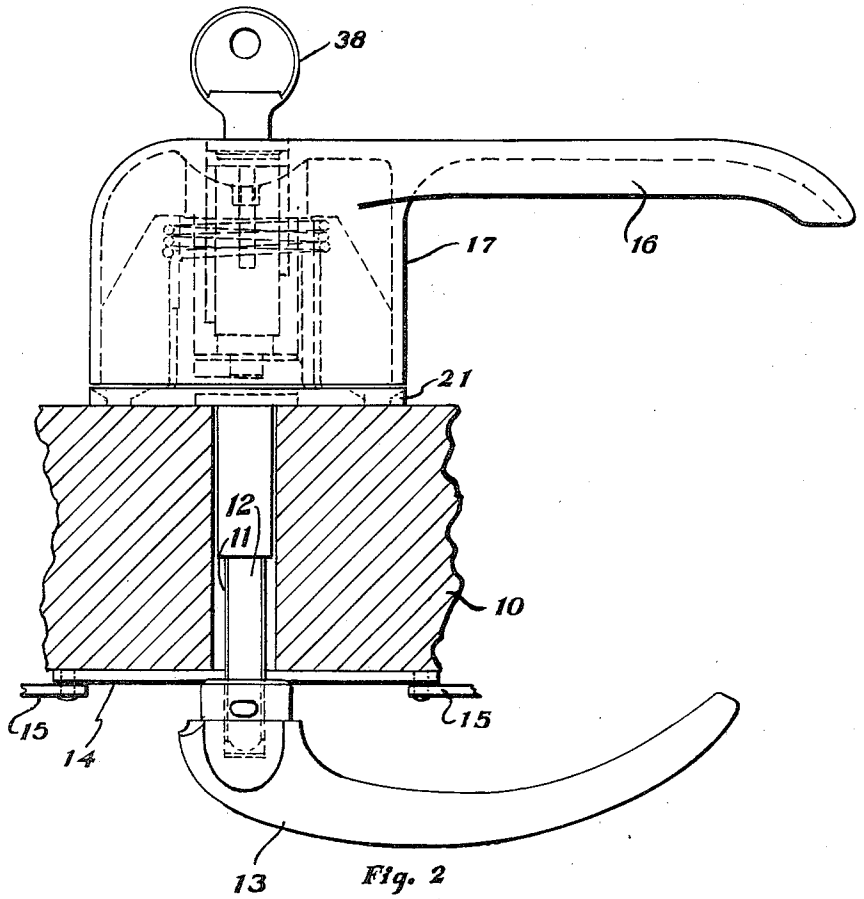


Fig. 2

INVENTOR.
Burton S. Floraday
BY Malcolm W. Fraser
ATTORNEY

Aug. 10, 1948. B. S. FLORADAY 2,446,753

DOOR HANDLE ASSEMBLY

Filed Sept. 6, 1945 2 Sheets-Sheet 2

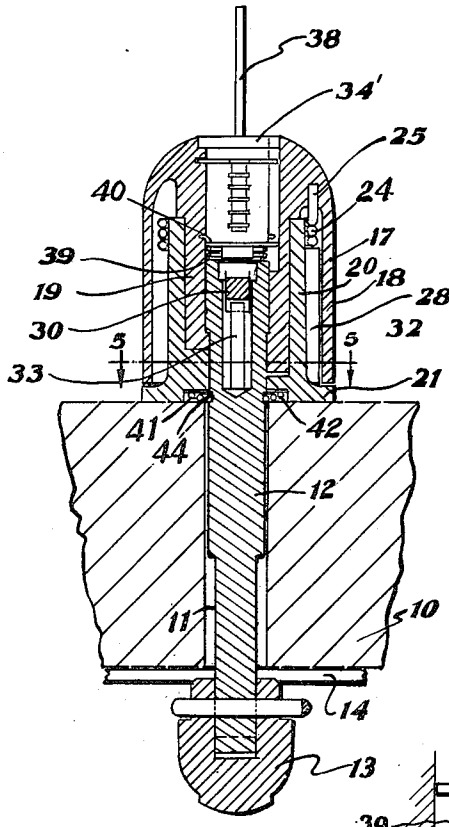


Fig. 3

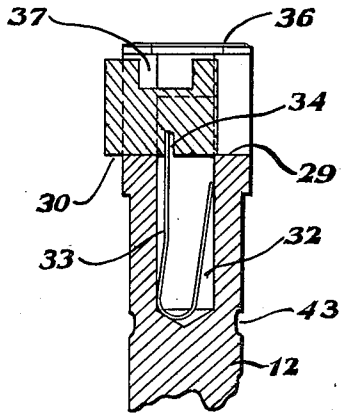


Fig. 4

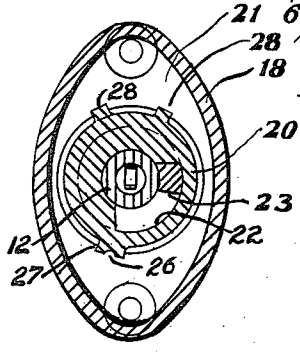


Fig. 5

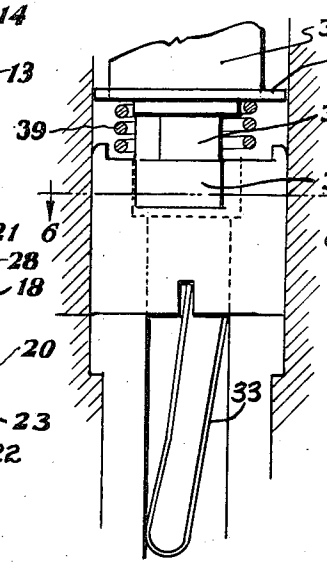


Fig. 7

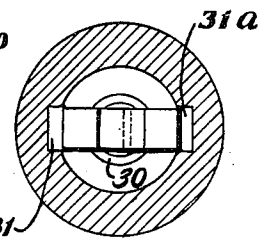


Fig. 6

INVENTOR.
Burton S. Floraday
BY
ATTORNEY

Patented Aug. 10, 1948 2,446,753

UNITED STATES PATENT OFFICE

2,446,753

DOOR HANDLE ASSEMBLY

Burton S. Floraday, Toledo, Ohio, assignor to Detroit Harvester Company, Detroit, Mich., a corporation of Michigan

Application September 6, 1945, Serial No. 614,633

5 Claims. (Cl. 70—221)

1

This invention relates to door handle assemblies but more particularly to so-called free turning handles which can be operatively connected to or disconnected from the actuating spindle, and an object is to produce a door handle assembly having the new and improved features of construction, arrangement and operation hereinafter described.

By way of illustration but not of limitation, an embodiment of the invention is shown on the accompanying drawings, in which

Figure 1 is a top plan view of the door handle assembly with the key lock cylinder removed;

Figure 2 is a view partly in section and partly in elevation showing the handle assembly mounted on a panel of an overhead garage door with the free turning handle on the outside of the door;

Figure 3 is a sectional view of the handle assembly and door panel;

Figure 4 is an enlarged fragmentary longitudinal sectional view of the actuating spindle on which the handle is mounted and showing the spring tensioned key or dog for operatively connecting the handle and spindle;

Figure 5 is a transverse sectional view on the line 5—5 of Figure 3;

Figure 6 is a transverse sectional view through the free turning handle and spindle to show the key for connecting same for conjoint turning movements; and

Figure 7 is a longitudinal fragmentary view of the free turning handle and its spindle.

The illustrated embodiment of the invention comprises a door handle assembly for use in connection with an overhead door, such as used on garages, and the reference number 10 designates a panel of such door. The door panel 10 is formed with a transverse hole 11, through which extends a shouldered actuating spindle 12 having portions extending beyond the inner and outer sides of the panel. Fixed to the inner end of the spindle 12 is an inside handle 13 and fixed to the spindle between the handle 12 and the inner side of the panel 10 is an operating plate or disc 14. Pivoted to opposite side edge portions of the operating plate are connecting links 15 which are part of the locking means for the door, but since such locking means forms no part of the present invention and may be of any suitable or well-known type, further description or illustration thereof is not considered necessary.

Mounted on the spindle 12 on the outer side of the door panel 10 is a free turning handle assembly which includes a handle portion 16 and a hub portion 17. The hub portion has an outer cylindrical skirt 18 and an inner concentric tubular bearing sleeve 19 and the sleeve 19 fits rotatably within a cylindrical bearing extension 20 of an escutcheon, the base 21 of which is suitably secured to the outer side of the door panel 10. Formed in the escutcheon base 21 is an arcuate groove 22 (Figure 5) into which projects an integral extension 23 of the bearing sleeve 19, the extension being considerably shorter than the groove 22, the ends of which provide stops for limiting the turning movement of the handle when the latter is disconnected from the spindle 12, as will hereinafter appear.

2

The handle portion 16 is turned to a predetermined position when in unlocked condition by a helical spring 24, one end of which is turned outwardly as at 25 and socketed in the hub portion and the opposite end is turned inwardly to fit into a groove 26 formed in a rib 27 integral with the outer side of the escutcheon bearing extension 20. Ribs 28 are formed on the opposite side of the extension 20, and terminate at the upper end thereof to provide a support for the spring 24 and hold the same in the desired position. Thus it will be understood that when the handle is free of the actuating spindle, it is rocked by the coil spring 24 until the extension 23 engages one end of the arcuate groove 22 and so held in that position under spring tension.

Formed in the upper end of the actuating spindle 12 is a transverse slot 29, open at both ends, and mounted therein for sliding movement is a key or bolt 30, which when advanced to the position indicated on Figure 4 is adapted to extend into a groove or recess 31 in the bearing sleeve 19 of the handle hub. When in such position the handle and actuating spindle 12 are positively coupled and turning movements of the handle impart corresponding movements to the spindle, thereby to enable locking or unlocking of the door, as will be readily apparent. Diametrically opposite to the groove 31 is a similar groove 31*a* for convenience from an assembly standpoint.

A socket or cavity 32 is formed in the actuating spindle 12 below the transverse groove 29 and arranged therein is a U-shaped leaf spring 33, one leg of which extends into a groove 34 in the under side of the bolt 30. The spring 33 normally urges the bolt 30 toward its latching or operative position with its nose or outer end portion projecting from the groove 29.

A cylindrical opening is formed in the handle hub 17 and fitting therein is a key operated cylinder lock unit 34' provided with suitable snap spring means for securing the unit within the

hub opening. The construction of the lock unit **34** forms no part of this invention so that detail description and illustration of same is not regarded as necessary. Suffice it to say that at the inner end of the lock unit is an eccentric pin **35** (Figure 7), which extends through an aperture **36** in the upper end of the actuating spindle and into a groove **37** in the upper end of the transversely slidable bolt **30**. A key **38** fits the lock unit **34** and by turning it in one direction, the eccentric pin **35** is moved so that the leaf spring **33** projects the bolt into the recess in the actuating spindle **12** when the parts are in the proper position of registry. Turning movement of the key **38** in the opposite direction causes the eccentric pin to move the bolt **30** positively against the force of the spring **33** and hold the bolt in that position until the key is again used to couple the parts together.

A coil spring **39** encircles an end portion of the lock unit **34** and bears at one end against the adjacent end of the spindle **12** and at the other end against a washer **40** to hold it in place. As shown in Figure 1, the washer **40** is held against turning and has a central opening so shaped that it limits the swinging movement of the eccentric pin **35**.

The base **21** of the escutcheon is formed with a recess **41** and a conical spring **42** is disposed within the recess. The inner end of the spring **42** engages an annular groove **43** (Figure 4) and the outer end bears against a washer **44** within the recess **41**. In this manner the spindle **12** is placed under spring tension to militate against rattling.

From the above, it will be manifest that I have produced a door handle which when unlocked, automatically returns to a predetermined position and the opposite handle may be actuated without disturbing such position. The parts are neatly housed so that they are effectively shielded from the elements. Not only is the assembly a reliable one but it lends itself admirably for large scale production.

Although the handle assembly has been described in connection with a garage door, it can be satisfactorily used in other locations and therefore the above is illustrative and not limiting and changes in details of construction and assembly may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

What I claim is:

1. A door handle assembly comprising a handle portion, a hub portion having inner and outer concentric sleeves, an escutcheon having an integral bearing sleeve fitting said inner sleeve, an arcuate recess in said escutcheon, an extension on said inner sleeve projecting into said recess whereby turning movement of said hub portion is limited by the ends of said recess, and spring means normally holding said extension against one end of said recess.

2. A door handle assembly as claimed in claim 1, in which said spring means comprises an helical coil spring housed within said outer concentric sleeve and having its ends anchored respectively to said hub portion and said bearing sleeve respectively.

3. A door handle assembly comprising a handle portion, a hub portion having inner and outer concentric sleeves, an escutcheon having an integral bearing sleeve fitting said inner sleeve, an arcuate recess in said escutcheon, an extension on said inner sleeve projecting into said recess whereby turning movement of said hub portion is limited by the ends of said recess, spring means normally holding said extension against one end of said recess, a spindle fitting within said inner concentric sleeve, a bolt mounted for movement transversely of said spindle, a socket in said inner concentric sleeve adapted to receive a portion of said bolt whereby to couple said handle and spindle, and key operated means for controlling actuation of said bolt.

4. A door handle assembly comprising a handle portion, a hub portion having inner and outer concentric sleeves, an escutcheon having an integral bearing sleeve fitting said inner sleeve, an arcuate recess in said escutcheon, an extension on said inner sleeve projecting into said recess whereby turning movement of said hub portion is limited by the ends of said recess, spring means normally holding said extension against one end of said recess, a helical coil spring housed within said outer concentric sleeve and having one end anchored to said hub portion, a rib on the outer side of said bearing sleeve having a groove to receive the opposite end of said spring, and means for supporting said spring.

5. A door handle assembly as claimed in claim 4 in which said spring supporting means comprises rib means on said bearing sleeve.

BURTON S. FLORADAY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
626,338	Phelps	June 6, 1899
2,013,055	Kerwin, Jr.	Sept. 3, 1935
2,019,534	Henst	Nov. 5, 1935
2,111,511	Lowe et al.	Mar. 15, 1938
2,185,295	Floraday	Jan. 2, 1940