Dec. 16, 1924. 1,519,503

H. E. NORWOOD ET AL

HANDLE CONSTRUCTION

Filed March 31, 1922

Fig. 2.

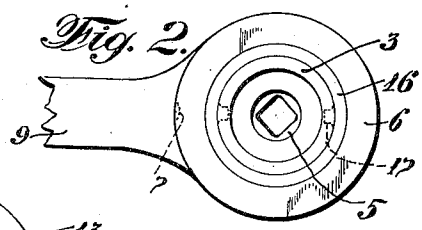


Fig. 6.

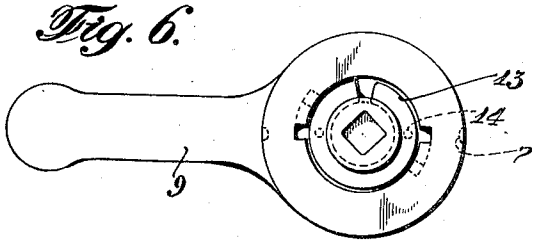


Fig. 7

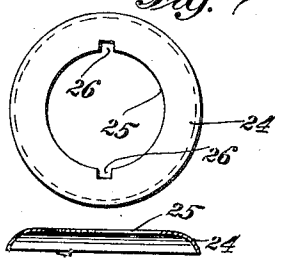


Fig. 5.

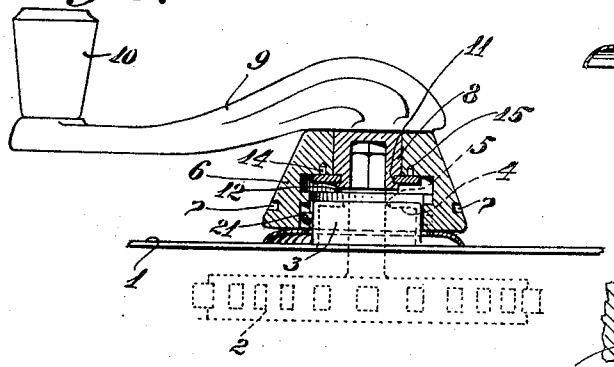


Fig. 8.

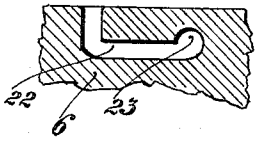


Fig. 1

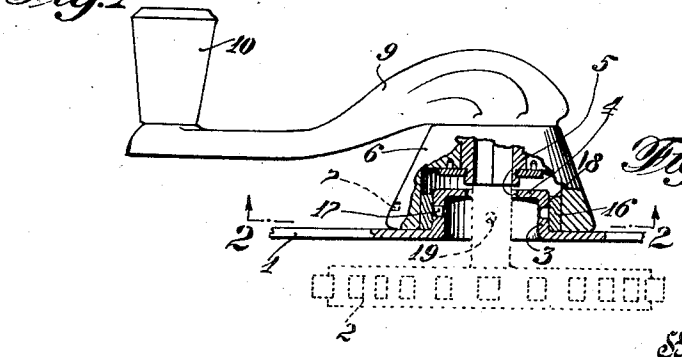


Fig. 3.

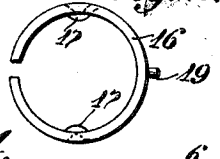
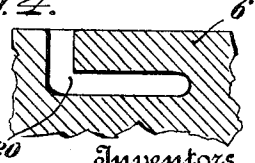


Fig. 4.



Inventors
Harry E. Norwood
Peter John Kurscheidt
By their Attorneys
Townsend & Wheeler.

Patented Dec. 16, 1924.

1,519,503

UNITED STATES PATENT OFFICE.

HARRY E. NORWOOD, OF NEW YORK, AND PETER JOHN KURSCHEIDT, OF BROOKLYN, NEW YORK, ASSIGNORS TO PERFECT WINDOW REGULATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MAINE.

HANDLE CONSTRUCTION.

Application filed March 31, 1922. Serial No. 548,272.

To all whom it may concern:

Be it known that we, HARRY E. NORWOOD and PETER JOHN KURSCHEIDT, citizens of the United States, and residents of New York, in the county of New York and State of New York, and Brooklyn, in the county of Kings and State of New York, respectively, have invented certain new and useful Improvements in Handle Constructions, of which the following is a specification.

Our invention relates to handle constructions comprising essentially two parts, a handle or crank member proper and a bearing member on which the handle is rotatable.

The principal object of the invention consists in the production of a device of the above character having a construction permitting the bearing member to be expeditiously mounted on and detachably fastened to a wall or plate or other suitable support.

A further object of the invention is the production of a handle member and bearing member of a construction permitting the handle to be rotatably held to the bearing member by novel and simple means.

To the above ends our invention consists in the novel parts and combinations thereof hereinafter more particularly described and then specified in the claims.

In the accompanying drawing:

Fig. 1 is a side elevation (partly in section) of our invention.

Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

Fig. 3 is a plan view of the split spring collar.

Fig. 4 is a section taken through a portion of the body of the bearing to which the device is detachably secured.

Fig. 5 is a side elevation (partly in section) of a modification.

Fig. 6 is a bottom plan view thereof.

Fig. 7 is a plan view of and a section taken through the spring washer of the modification.

Fig. 8 is a section of the modification similar to Fig. 4 of the preferred form.

Referring in detail to the several figures of the drawing:

1 indicates a plate or other support to which the device is secured and which may be the wall of a housing within which is a member or mechanism, as for instance a sprocket 2, which may be operated or rotated by rotation of the handle. Said plate is provided with an upstanding neck or flange 3 pressed out of the metal and having an upper wall 4 provided with an annular opening 5 therein.

6 indicates an annular bearing member having an inclined side wall which is provided with holes or openings 7 adapted to receive a spanner or other tool to rotate said bearing member when so desired. The lower part of the bearing is hollow while the upper portion or wall is provided with an annular opening receiving the rotatable hub 8 of a conventional handle or crank 9 provided with an operating or gripping knob 10. The end of the hub 8 which projects within the hollow portion of the bearing is provided with a circumferential groove 11 therein forming a flange or shoulder 12 on the extreme end of the hub.

For securing the handle and hub to the bearing while permitting free rotation of the hub thereon we have provided a split spring ring 13 (see Fig. 6) which may have pins 14 adapted to enter suitable holes or openings 15 in the upper portion or wall of the hub 6. The inner diameter of the said spring ring 13 is normally less than the diameter of the end flange 12. The ends of the ring are spread outwardly away from each other by any suitable tool so that it may be slipped over the end flange 12 whereupon, after removal of the tool, it will snap, by its spring action, into the circumferential groove 11 and the pins 14, if used, will enter or may be made to enter the holes or openings 15. The engagement of the ring 13 with the flange 12 will thus prevent a withdrawal of the hub 8 from the bearing member as is obvious but will not interfere with the free rotation of the handle.

Referring more particularly to Figs. 1 to 4 inclusive, 16 indicates a split spring collar with a space normally obtaining intermediate the ends thereof as shown in Fig. 3. Said collar is provided with lugs 17 which are diametrically opposed and which are pressed inwardly from the metal of the collar. The said collar fits around the neck or flange 3 with the lugs thereof entering suitable slots 18 which are cut through said

neck, said slots being of a length sufficient to permit lateral movement of the lugs therein. The collar is also provided with an outwardly projecting pin 19 adapted to enter an L-slot 20 with which the body of the bearing 6 is provided.

To detachably fasten the bearing in position on the plate 1, the bearing is pressed over the collar 16 so that the annular wall of the hollow portion of the bearing will engage said collar and so that the pin 19 will enter the vertical leg of the L-slot 20. This vertical leg is preferably in alignment with one of the openings 7 in the bearing so that the pin 19 may be readily lined up with the vertical leg of the slot before the bearing is pressed "home" on the collar 16. When the bearing is pressed over the collar it acts to force the ends thereof towards each other which causes a slight movement of the lugs 17 in the slots 18. The spring action of the collar tends to spread the ends apart so that a tight frictional engagement of the bearing and collar obtains. To provide additional locking means, however, the bearing is rotated thereby causing the pin 19 to slide in the horizontal leg of the L-slot 20. The bearing carrying the handle may then not be removed until the bearing has been rotated in the opposite direction and until the pin 19 is in alignment with the vertical leg of the L-slot 20, whereupon the bearing may be manually withdrawn with some effort from the collar 16 and against its spring action.

In the modification illustrated in Figs. 5 to 8 inclusive we eliminate the spring collar and construct or press out the neck or flange of a size whereby it will snugly interfit within the hollow portion of the bearing 6. The said neck or flange is provided with outwardly projecting and diametrically opposed lugs or pins 21 thereon adapted to be received within the L-slots 22 formed within the body of the bearing, said L-slots terminating at their inner ends in notches 23. The openings 7 in the body of the bearing are preferably in alignment with the vertical legs of said L-slots 22 for the same purpose as in the preferred form of the invention. 24 indicates a cup-shaped spring washer provided with an opening therein of a size permitting it to receive the neck or flange 3 and also provided with diametrically opposed indentations 26 adapted to receive the lugs or pins 21.

To detachably mount the bearing on the plate 1 the spring washer 24 is slipped over the neck or flange 3, the lugs or pins 21 passing through the indentations 26 and the washer being placed or allowed to fall into engagement with the plate 1. The bearing 6 is then slipped over the neck 3, the vertical legs of the L-slots 22 first having been brought into alignment with the lugs or pins 21. The bearing is then pressed downwardly into engagement with the spring washer and against its spring action. When the lugs or pins 21 reach the bottom of the vertical legs of the L-slots the bearing is rotated and the pins ride in the horizontal legs of said slots. When the pins reach the inner ends of the horizontal legs of said slots the action of the spring washer, unless downward pressure is applied to the bearing, will force the lugs or pins 21 within the notches 23 to hold the bearing in proper position adjacent the plate 1 without interference with the rotation of the handle 9. The bearing carrying the handle may be removed by downward pressure thereof against the action of the spring and by rotation thereof after the pins 21 have become disengaged from the notches 23.

What we claim as our invention is:—

1. An article of manufacture comprising a support, a hollow bearing, a rotatable member mounted thereon, an annular flange extending outwardly from said support within said hollow bearing and spring means associated with said annular flange for holding said bearing thereto.

2. An article of manufacture comprising a support, a hollow bearing, a rotatable member mounted thereon, an annular neck extending outwardly from said support and provided with an upper wall having an opening therein, removable means interposed between said annular neck and bearing for holding said bearing to said neck and means extending through said support and said opening and operatively connected to said rotatable member.

3. An article of manufacture comprising a support, a bearing having a slot therein, a flange extending outwardly from said support, a rotatable member mounted on said bearing and a pin associated with said flange and adapted to extend within said slot for locking said bearing to said flange.

4. An article of manufacture comprising a support, a hollow bearing having an L-slot therein, an annular neck extending outwardly from said support and entering said hollow bearing, a rotatable member mounted on said bearing and a pin associated with said annular neck and adapted to ride in said L-slot for locking said bearing to said flange.

5. An article of manufacture comprising a support, a hollow bearing, a rotatable member mounted thereon, an annular flange extending outwardly from said support and entering said hollow bearing and spring means associated with said flange and engaging said bearing.

6. An article of manufacture comprising a bearing, a rotatable member mounted thereon, a hub member extending within said bearing and provided with a groove therein

and a ring engaging said groove for locking said rotatable member to said bearing.

7. An article of manufacture comprising a bearing having an opening in the body thereof, a rotatable handle, a hub on said handle extending within said opening and provided with a groove therein and a ring engaging said groove and said bearing for locking said handle to said hub.

8. An artcle of manufacture comprising a bearing having an opening in the body thereof and also provided with a hole therein, a hub on said handlc extending within said opening and provided with a groove therein and a split spring ring engaging said groove and having a pin thereon entering said hole for locking said handle to said hub.

9. An article of manufacture comprising a support, a neck extending outwardly therefrom, a split spring collar carried by said neck, a bearing frictionally engaging said spring collar and a rotatable member mounted on said bearing.

10. An article of manufacture comprising a support, an annular neck extending outwardly therefrom and provided with a slot therein, a split spring collar carried by said neck and having a lug entering said slot, a bearing frictionally engaging said spring collar and a rotatable member mounted on said bearing.

11. An article of manufacture comprising a support, an upstanding member thereon provided with a slot therein, a split spring collar associated with said member and having a lug entering said slot, a bearing frictionally engaging said upstanding member and having a slot therein, a pin on said collar entering the slot in said bearing and a rotatable member mounted on said bearing.

12. An article of manufacture comprising a support, an upstanding neck thereon provided with a slot therein, a split spring collar carried by said neck and having a lug entering said slot, a hollow bearing receiving and frictionally engaging said neck and having an L-slot in the body thereof, a pin extending outwardly from said collar and entering said L-slot and a rotatable member mounted on said bearing.

13. An article of manufacture comprising a support a bearing having an opening in the outer wall thereof and an L-slot in the body thereof the vertical leg of which is in a alignment with said opening, an upstanding member on said support, a pin associated with said upstanding member and adapted to enter said L-slot and a rotatable member mounted on said bearing.

14. An article of manufacture comprising a support, a hollow bearing, a rotatable member mounted thereon, an annular flange extending outwardly from said support within said hollow bearing and removable spring means interposed between said annular flange and bearing for holding said bearing to said flange.

Signed at New York, in the county of New York and State of New York, this 29th day of March A. D. 1922.

HARRY E. NORWOOD.
PETER JOHN KURSCHEIDT.

Witnesses:
F. B. TOWNSEND,
GEORGE E. BROWN.