April 27, 1926. 1,582,189

S. W. NICHOLSON

HANDLE ASSEMBLY

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Fig. 1.

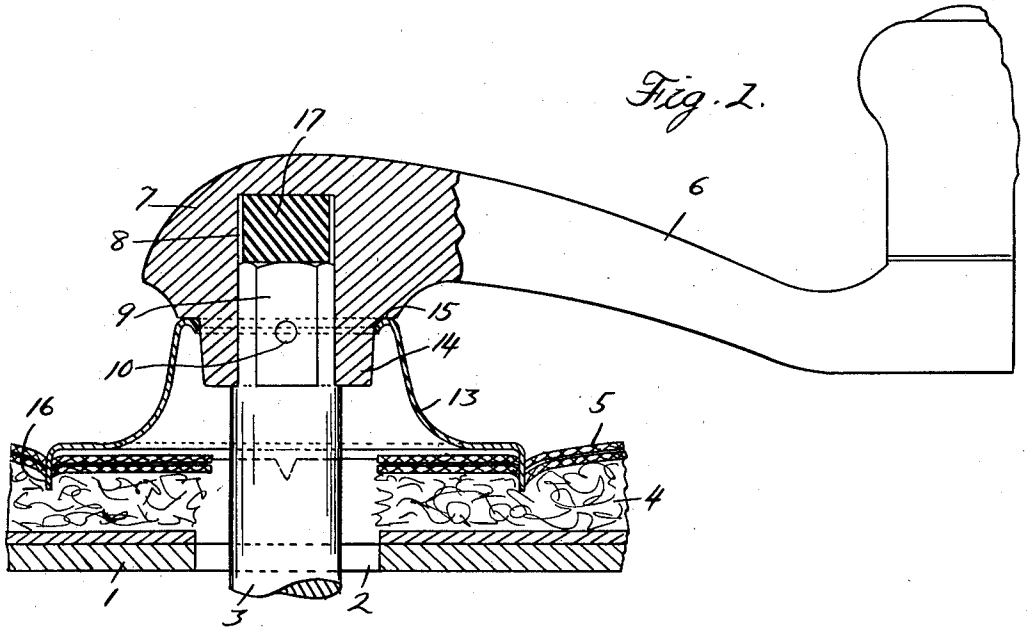
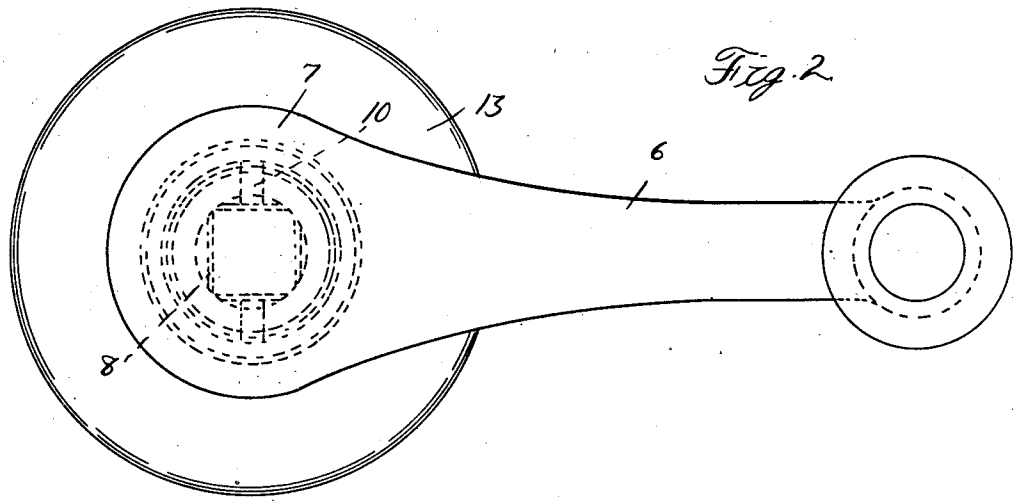


Fig. 2.



Inventor
Stanley W. Nicholson

By Whittemore Hulbert Whittemore & Belknap Attorneys

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Fig. 5.

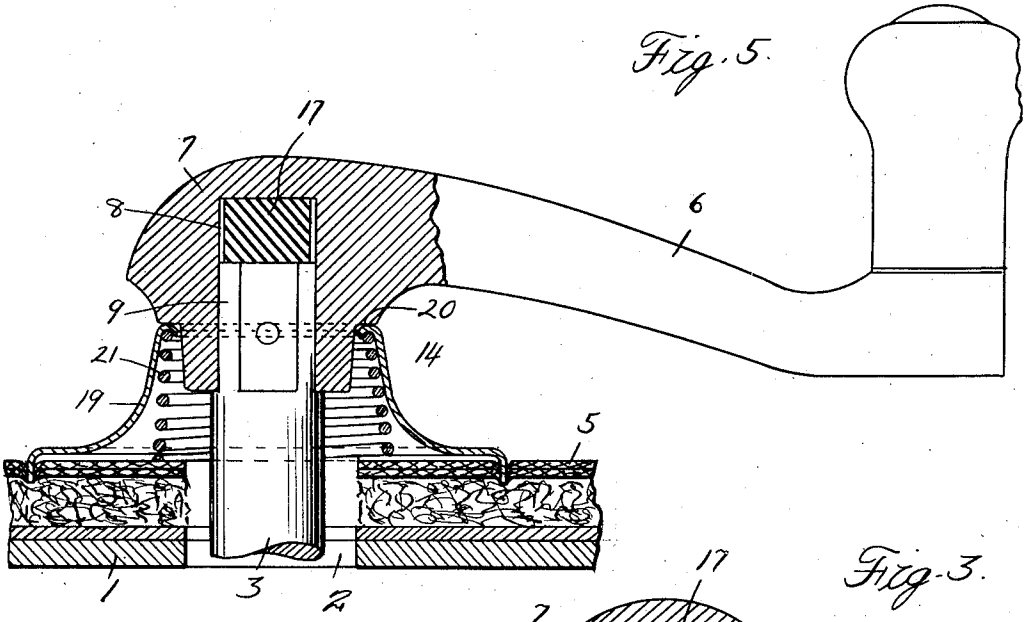


Fig. 3.

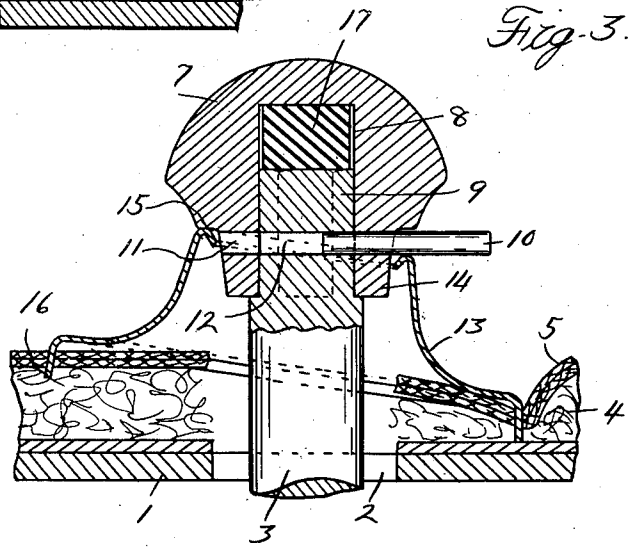
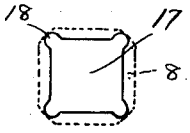


Fig. 4.



Inventor
Stanley W. Nicholson

By Whittemore Hulbert Whittemore & Belknap Attorneys

Patented Apr. 27, 1926. 1,582,189

UNITED STATES PATENT OFFICE.

STANLEY W. NICHOLSON, OF TOLEDO, OHIO, ASSIGNOR TO THE DURA COMPANY, OF TOLEDO, OHIO, A CORPORATION OF DELAWARE.

HANDLE ASSEMBLY.

Application filed May 19, 1924. Serial No. 714,450.

To all whom it may concern:

Be it known that I, STANLEY W. NICHOLSON, a citizen of the United States of America, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Handle Assemblies, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to handle assemblies and is particularly applicable to handle assemblies adapted for use with mechanisms for raising and lowering windows of automobiles of the closed type.

One of the objects of the invention is the provision of an improved means for securing the handle to the shaft. Another object is the provision of means for retaining the parts of the handle assembly from rattling. Further objects of the invention reside in the novel features of construction and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:

Figure 1 is a cross section, partly in elevation, of a handle assembly embodying my invention.

Figure 2 is a plan view thereof.

Figure 3 is a cross section at right angles to Figure 1 and showing the parts in the process of assembling.

Figure 4 is a detail.

Figure 5 is a view similar to Figure 1 but showing a modified construction.

As shown in the present instance, 1 is the lock board of a frame member of an automobile, such as a door, having the opening 2 through which the shaft 3 extends. This shaft is connected by suitable mechanism to a window to raise and lower the latter. The trimming at the inner side of the door comprises the fibrous material 4 and the lining 5 which is preferably formed of some suitable fabric.

6 is the handle having the hub 7 which is transversely recessed at 8 to receive the end portion 9 of the shaft 3. The recess and the end portion are preferably of corresponding polygonal cross section so that the latter fits in the former. 10 is a pin engageable in the transverse bore 11 of the hub 7 and also the transverse bore 12 in the end portion 9 of the shaft 3 for securing the handle to the shaft.

For producing a finished appearance and securing the pin 10 from accidental disengagement from the handle and shaft I have provided the escutcheon 13 which surrounds the reduced end 14 of the handle hub 7 and abuts the shoulder 15 connecting the reduced end to the remaining portion of the hub. This escutcheon is preferably formed of a stamping and is provided with peripherally spaced prongs 16 at its opposite end which pierce the lining 5 of the trimming and thereby hold the escutcheon from rotation. The transverse bore 11 is formed in the reduced end 14 of the handle hub so that when the pin 10 is located within this bore the escutcheon 13 conceals the pin and also prevents its accidental disengagement.

To assemble the parts the escutcheon 13, as shown particularly in Figure 3 is forced toward the lock board and preferably tilted thereby depressing the fibrous material 4. When this escutcheon uncovers one end of the transverse bore 11 the pin 10 is inserted into this bore and through the bore 12 of the shaft 3. After the insertion of the pin the escutcheon is permitted to resume its normal position under the pressure exerted by the fibrous material of the trimming.

For the purpose of preventing rattling between the handle and the shaft I have provided the yieldable insert 17 in the recess 8 of the handle hub which contacts with and is held under compression between the end of the shaft and the end of the recess when the handle is secured upon the shaft by the transverse pin. To secure the insert in the handle so that it will not become accidentally disengaged therefrom when the handle is detached from the shaft, the insert is provided at its corners with outwardly projecting longitudinal ribs 18 which are compressed when the insert is forced into the recess.

In the modified handle assembly of Figure 5 the escutcheon 19 is yieldably held against the annular shoulder 20 which connects the reduced end to the remaining portion of the handle hub, by the coil spring 21 located between the opposite end of the escutcheon and the lock board of the door. This escutcheon is thus held in place to cover the transverse handle securing pin and to prevent its accidental disengagement.

What I claim as my iuvention is:

1. The combination with a support and a handle shaft upon said support and nor-

mally held from longitudinal movement relative thereto, of a handle upon said shaft, means for securing said handle to said shaft and an escutcheon yieldingly held in position to retain said means from accidental disengagement.

2. The combination with a support and a handle shaft upon said support and normally held from longitudinal movement relative thereto, of a handle mounted upon said shaft, a pin connecting said handle to said shaft and an escutcheon yieldingly held in position to cover said pin and adapted to be moved toward said support to uncover said pin.

3. The combination with a frame member, of a handle shaft extending therethrough and normally held from longitudinal movement relative thereto, a handle mounted upon said shaft, means for securing said handle to said shaft, an escutcheon and a yieldable member between said escutcheon and frame member for normally retaining said escutcheon in position to retain said means from accidental disengagement, said escutcheon being movable toward said frame member to provide access to said means.

4. The combination with a frame member and yieldable trimming thereupon, of a handle shaft extending through said frame member, a handle upon said shaft, a transverse pin for securing said pin to said shaft and an escutcheon between said handle and trimming and yieldably held by the latter in position to conceal said pin.

5. The combination with a shaft, of a handle provided with a recess for engagement in by said shaft, means for securing said handle to said shaft and yieldable means anchored in said recess and located between the end of said recess and said shaft for holding said handle from rattling upon said shaft.

6. The combination with a handle having a recess therein, of a shaft having an end portion engageable in said recess, means for securing said handle and shaft to each other and a yieldable insert between the end of said recess and the end of said shaft, said insert having a compressed portion in engagement with the side wall of the said recess.

7. The combination with a handle having a recess therein, of a shaft having an end portion engageable in said recess, means for securing said handle and shaft to each other and an insert formed of yieldable material located in said recess between its end and the end of said shaft, said insert being provided with a projection at its side held under compression within said recess.

8. In a window regulating mechanism, a driving shaft, a crank, a collar surrounding the axis of rotation of the shaft, a key member for connecting the crank to the shaft and engaged by the collar for retaining the key member in position, and a substantially flat, resilient supporting structure, the collar having integral points for piercing the supporting structure for preventing shifting of the collar, said supporting structure cooperating with said collar for retaining said collar in key engaging position.

9. In a window regulating mechanism for vehicles, a driving shaft, a crank, a collar surrounding the hub of the crank and a key member for connecting the crank to the shaft and engaged by the collar for retaining the key member in position, an elastic vehicle lining for elastically maintaining the collar in its key engaging relation.

10. In a window regulating mechanism, a driving shaft, a crank, a collar surrounding the axis of rotation of the shaft, a key member for connecting the crank to the shaft and engaged by the collar for retaining the key member in position, and a substantially flat, resilient supporting structure cooperating with said collar for retaining said collar in key engaging position.

11. The combination with a frame member and yieldable trimming thereupon, of a handle shaft extending through said frame member, a handle upon said shaft and an escutcheon between said handle and trimming and yieldably forced against the former by the latter.

12. The combination of a shaft, a handle upon said shaft, a collar surrounding the axis of rotation of said shaft, means for connecting said handle to said shaft and engaged by said collar for retaining said means in position, and a resilient supporting structure cooperating with said collar for retaining the same in position to engage said connecting means.

In testimony whereof I affix my signature.

STANLEY W. NICHOLSON.