Nov. 20, 1928. 1,691,923

K. EKLUND

HANDLE FOR OPERATING LEVERS

Filed March 19, 1928

Fig. 1.

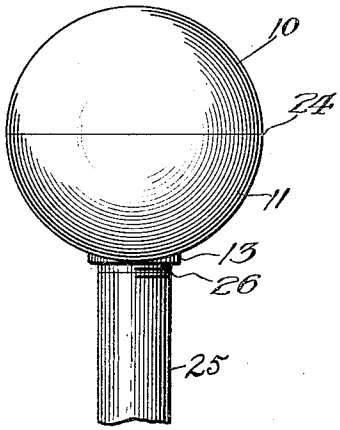



Fig. 2.

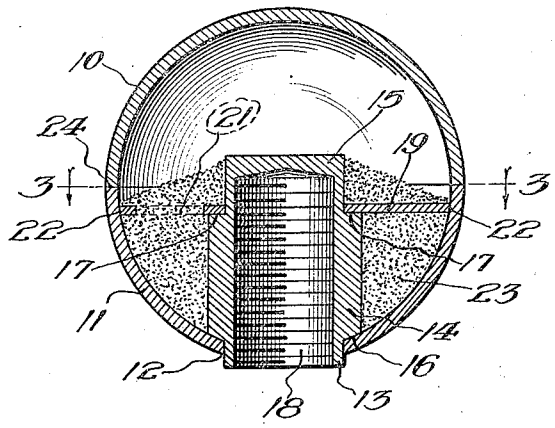



Fig. 3.

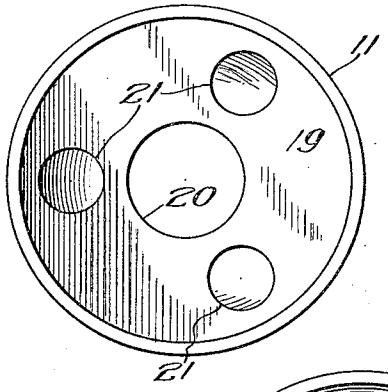



Fig. 4

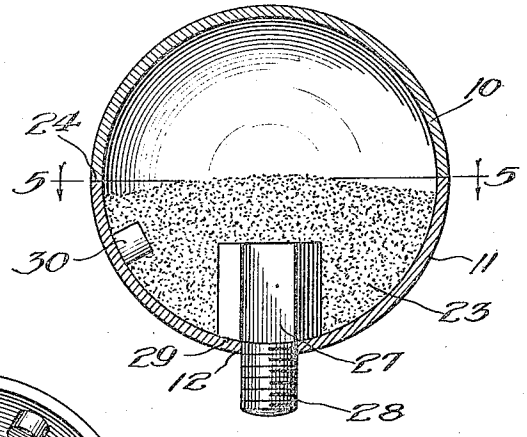
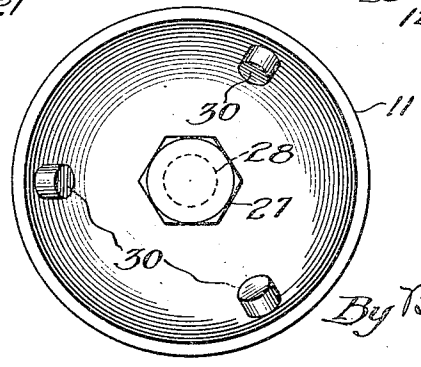



Fig. 5.




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# UNITED STATES PATENT OFFICE.

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## HANDLE FOR OPERATING LEVERS.

Application filed March 19, 1928. Serial No. 262,849.

This invention relates to handles for operating-levers, such as the gear shift levers of automobiles, for door knobs, and for use in connection with soda fountain apparatus and the like.

The object of the invention is to produce a handle or knob, adapted for screw threaded engagement with a lever or tool end, which shall be pleasing in appearance, require no exterior attaching means and in which the screw threaded bushing or other means for engaging the lever end shall be securely and non-rotatably positioned with respect to the outer shell and interior filling.

In the drawings:

Figure 1 is an elevation showing the outside of the knob or handle attached to one end of a gear shift lever.

Figure 2 is a vertical, sectional view of the knob.

Figure 3 is a horizontal, sectional view taken on the line 3—3 of the Figure 2, looking in the direction indicated by the arrows, with the filling material and the bushing removed.

Figure 4 is a vertical, sectional view of a modification of the invention.

Figure 5 is a horizontal, sectional view taken on the line 5—5 of Figure 4, with the filling material removed.

In that embodiment of my invention shown in Figures 1 to 3, inclusive, the handle comprises two hemispherical shell portions 10 and 11, respectively. The lower portion 11 is apertured as indicated at 12 to receive the cylindrical lower portion 13 of a bushing having an exterior hexagonal portion 14. The upper closed end of the bushing, indicated at 15, is also cylindrical in contour, and both of the cylindrical portions 13 and 15 are of less diameter than the hexagonal or angular portion 14. The part 14 is integral with and merges into the cylindrical lower portion 13 thereby forming a slightly inclined shoulder 16 complemental to the inner surface of the outer shell. The top of the hexagonal portion 14 forms a shoulder 17 extending outwardly from its connection to the cylindrical end 15. The bushing is screw threaded interiorly, as indicated at 18. This bushing is inserted in the lower hemispherical part 11 before the latter is connected to the hemisphere 10.

After the bushing is positioned, as shown in Figure 2, a circular plate 19, having a central aperture 20 and a plurality of smaller apertures 21, is placed over the end 15 of the bushing so that the margins of the plate surrounding the aperture 20 will engage the side of the cylindrical portion 15 of the bushing and the lower surface of the plate near the aperture 20 will rest upon the shoulder 17. The plate 19 is of such size that its peripheral margin engages the inner surface of the wall of the hemisphere 11 slightly below the margin of said hemisphere and is rigidly cemented in place, as indicated at 22.

After the bushing 14 and plate 19 have been positioned, any suitable filling material, indicated at 23, is poured into the interior of the hemisphere 11 through the apertures 21. Any filling material capable of becoming solidified will answer the purpose. It will be obvious that as the material 23 sets, it will engage the hexagonal walls of the bushing 14, the inner surface of the hemisphere 11 and will extend upwardly through the apertures 21 of the plate which is fixedly secured in the part 11. By this arrangement the bushing 14 is prevented from rotating with respect to the filling material and the filling material is fixedly held in position by those portions extending through the apertures of the plate 19 as well as by the natural engagement of the filling material with the interior of the hemisphere 11. Thereafter the upper hemisphere 10 may be cemented to the lower portion 11, as indicated at 24. The shell 10, 11 may be made of pyroxylin, imitation pearl or any other suitable material which will be pleasing in appearance.

The device shown in Figure 2 is then ready to be attached to a lever 25 which is exteriorly screw threaded, as indicated at 26 in Figure 1. The knob or handle may be applied to operating levers of various sizes, the adjustment being accomplished by inserting a sleeve of any desirable thickness, screw threaded exteriorly and interiorly, in the bushing 18.

Obviously the bushing 14 need not be hexagonal in form. It may be octagonal or

otherwise angularly shaped to make a non-rotative engagement between it and the hardened filling material. The shell member need not be hemispherical in shape and may assume any form desirable for the particular purpose for which the knob or handle is intended.

Referring now to the modified form shown in Figures 4 and 5, which is more particularly adapted for use in connection with operating levers which are interiorly screw threaded, the hemispherical portions 10 and 11 are exteriorly similar to the same parts heretofore described, and the lower portion 11 is also provided with an aperture 12. Interiorly of the part 11 is a nut 27 hexagonal or angular in cross section. Integral with the nut 27 is a screw threaded end 28 extending outwardly through the aperture 12. The screw threaded end 28 being of smaller diameter than the hexagonal nut 27, a shoulder 29 is formed by the lower surface of the nut 27, which shoulder is adapted to rest upon the inner surface of the hemisphere 11 adjacent to the opening 12. Extending inwardly from the wall 11, between the opening 12 and the upper margin of the hemisphere 11, and preferably nearer to said upper margin, are a plurality of studs 30.

In assembling the device the nut 27 with its screw threaded end 28 is positioned in the lower hemisphere 11, and the filling material 23 poured therein so as to engage the angular sides of the nut 27 and the studs 30 so that when the material becomes hardened, the nut cannot rotate relative thereto and the filling material is held in position in the shell 11 by the studs 30. Thereafter the upper hemisphere 10 is cemented to the lower portion, as indicated at 24. Obviously the disc 19 could also be used with the form of nut 27 provided with exterior screw threads, instead of with an interiorly screw threaded bushing such as shown in Figure 2.

I claim as my invention:

1. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the lever engaging means, and means extending inwardly from the shell member for engaging the filling material.

2. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, a screw threaded bushing of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the screw threaded bushing, and means extending inwardly from the shell member for engaging the filling material.

3. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the lever engaging means and means extending inwardly from the shell member for engaging the filling material, said lever engaging means comprising a screw threaded bushing having an angular outer surface and cylindrical ends, one of said cylindrical ends extending through said shell aperture.

4. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the lever engaging means, and means extending inwardly from the shell member for engaging the filling material, said lever engaging means comprising an interiorly screw threaded bushing, an angular body portion, cylindrical ends and a shoulder at each end of the angular body portion.

5. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the lever engaging means, and an apertured plate connected to the shell and in engagement with said lever engaging means.

6. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, a screw threaded bushing of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the screw threaded bushing and an apertured plate connected to the shell and in engagement with said bushing.

7. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means comprising an angularly shaped bushing having ends smaller in diameter than the body of the bushing, located in the shell and extending through said aperture, filling material in the shell engaging the walls of the bushing and an apertured plate connected to the lower shell and engaging one end of said bushing.

8. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means comprising an angularly shaped bushing having ends smaller in diameter than the body of the bushing located in the shell and extending through said aperture, filling material in the

shell engaging the walls of the bushing, and an apertured plate connected to the shell and resting upon a shoulder formed by the upper end of the bushing body where it merges into the smaller end portion.

9. A handle for operating-levers comprising an upper and a lower shell, the lower shell being apertured, lever engaging means of greater diameter in its body portion than the diameter of the aperture, located in the shell adjacent said aperture, filling material in the shell engaging the walls of the lever engaging means, and an apertured plate connected to the shell and in engagement with said lever engaging means, the filling material extending upwardly through said apertured plate.

In testimony, that I claim the foregoing as my invention I affix my signature this 13th day of March, 1928.

KARL EKLUND.