

May 2, 1944.

H. F. GEORGE

2,348,065

FLUSH TYPE DOOR HANDLE

Filed Feb. 8, 1943

2 Sheets-Sheet 1

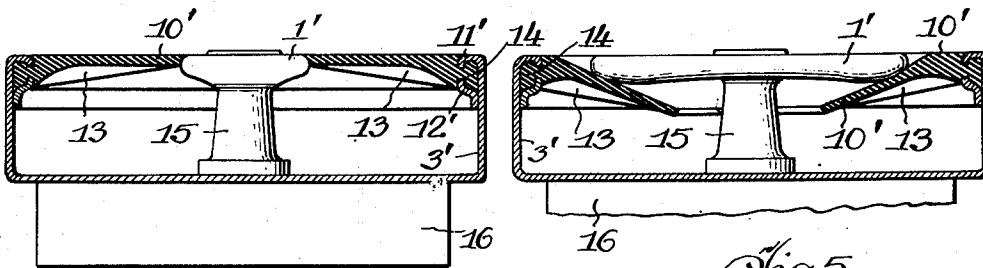
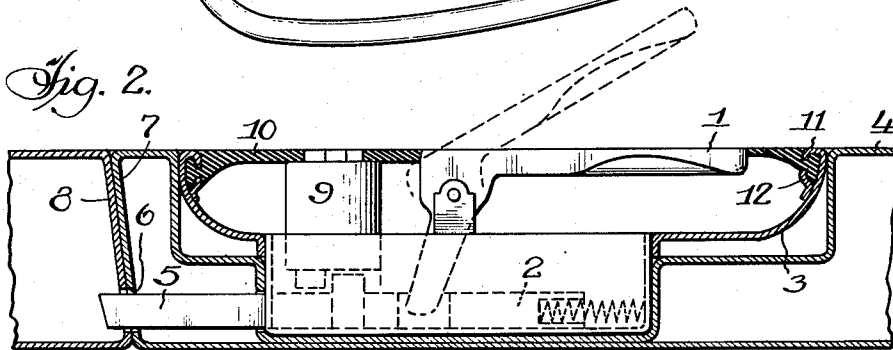
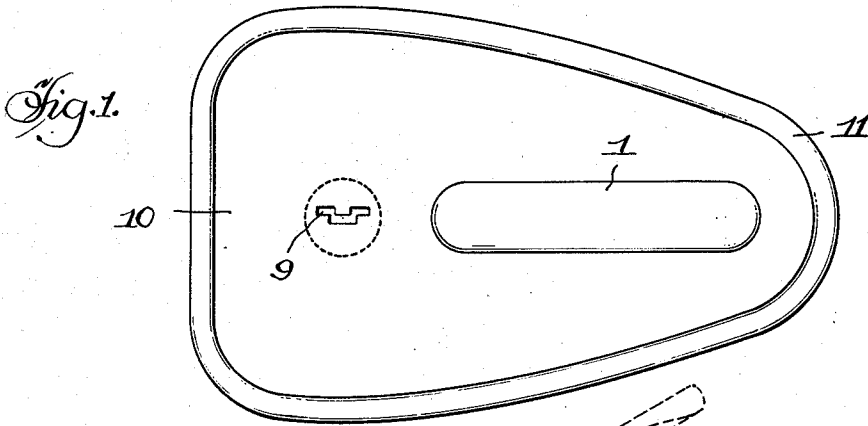


Fig. 4.

Fig. 3.

Witness:
Chas. F. Kessel

INVENTOR.
Harry F. George
BY
Parkinson & Lane
Attys.

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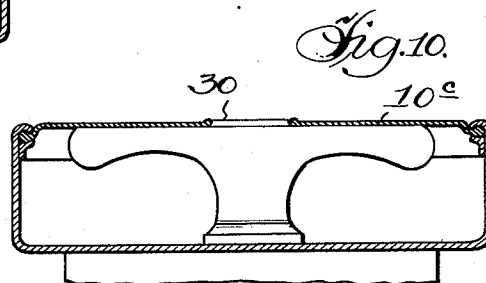
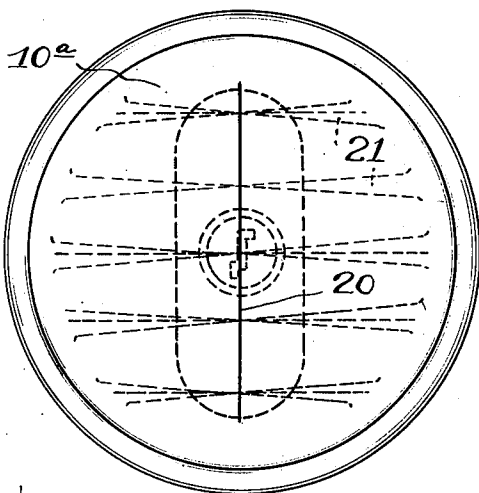
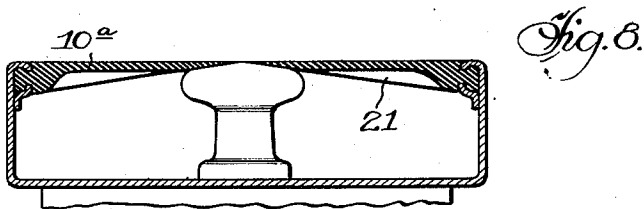
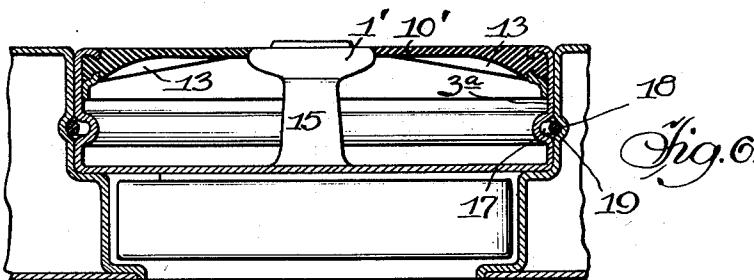
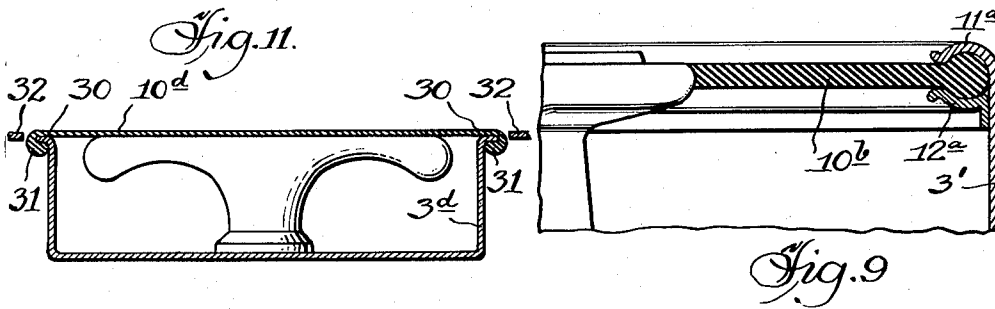
H. F. GEORGE

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FLUSH TYPE DOOR HANDLE

Filed Feb. 8, 1943

2 Sheets-Sheet 2



Witness:
Chas. K. Toursh.

INVENTOR.
Harry F. George
BY
Parkinson & Lane
Attys.

UNITED STATES PATENT OFFICE

2,348,065

FLUSH TYPE DOOR HANDLE

Harry F. George, Chicago, Ill.

Application February 8, 1943, Serial No. 475,125

16 Claims. (Cl. 292—1)

This invention relates to a door handle and more particularly to one that is substantially flush with the adjacent sides of the door, the handle being positioned in the cavity of a well, cup-member or depression, there being provided over the outer open side of the well, cup-member or depression, a sheet of flexible, resilient material that covers the space therein, and either covers, or surrounds the handle so that when the handle is grasped for operation by the fingers of the operator, the sheet of flexible, resilient material will readily yield inwardly to permit operation of the handle, and when the operator's fingers are removed from the handle the sheet will automatically return to its original flat position and cover the cavity.

In doors of automobiles, airplanes and other moving vehicles it is dangerous to have projecting door handles, as they would tend to catch into the clothing of persons standing near the vehicle when starting or stopping, as well as strike other objects, cause dents in nearby automobiles or other vehicles, cause a retarding action due to wind resistance when the vehicle is moving more or less rapidly, and other dangers and undesirable features that would be incident to outwardly projecting door handles and associated parts. In the present invention I have eliminated such dangers and undesirable features by mounting the door handle in a depression, so that its outer end comes substantially flush with the adjacent sides of the door or other casement, and covering the cavity of such depression with a flexible, resilient sheet of material that will yield when the handle is operated and return to normal position when the handle is released.

Among the objects of my invention are to make possible the above advantages, and overcome the above and other disadvantages, in a device of the class described.

Other objects, advantages and capabilities will later more fully appear.

My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawings, and while I have shown therein preferred embodiments I wish it understood that the same are susceptible of modification and change without departing from the spirit of my invention.

In the accompanying drawings:

Fig. 1 is a plan view of a well, handle and flexible, resilient sheet covering, of a handle construction embodying my invention.

Fig. 2 is a longitudinal section through a me-

dian plane of my device, certain of the parts being shown in elevation for convenience.

Fig. 3 is a fragmentary plan view of a modified form of my device.

Fig. 4 is a transverse section through a median plane of the device shown in Fig. 3, with certain parts shown in elevation for convenience, and showing the handle and covering sheet in normal position.

Fig. 5 is a view similar to Fig. 4, but showing the handle turned through ninety degrees to the position shown in dotted lines in Fig. 3, and showing the covering sheet in depressed position.

Fig. 6 is a longitudinal section through a median plane of a modified form of my device, and showing the handle in elevation.

Fig. 7 is a plan view of a further modified form of my invention.

Fig. 8 is a transverse section through the device of Fig. 7 but showing the handle in elevation.

Fig. 9 is a fragmentary sectional view of a further modification.

Fig. 10 is a transverse section through a still further modified form of my invention.

Fig. 11 is a transverse section through another modified form of my invention.

Referring more in detail to the drawings, Figs. 1 and 2 show a handle 1 and lock 2 mounted in the depression of a well or cup-member 3 secured in any desired manner in a door or the like 4, so that when the door handle is moved to closed position as shown in full lines in Fig. 2 it will be substantially flush with the adjacent sides of the door or the like. As any suitable locking or latch mechanism desired may be used, the same need not be described in detail, except to say in general that the latch bolt 5 will be longitudinally movable in an opening 6 in the side wall 7 of the door or the like, so as to be projected into or retracted from a registering opening in the side wall 8 of the adjacent portion of the car, airplane, or other vehicle or apparatus. Other forms of lock or latch may be used as best suited to the desired construction. As shown in dotted lines in Fig. 2 the handle 1 may be swung outwardly to withdraw the latch, and inwardly to the full line position to project the latch outwardly into holding position. Also any desired form of lock 9 may be used as desired for locking the latch against withdrawal.

The main feature of my invention is to provide a sheet 10 of flexible, resilient material to cover the outer end of the cavity of the well 3 so as to be substantially flush with the outer surface

of the door or the like as seen in Fig. 2. This sheet 10 may either cover the outer face of the handle as shown in Figs. 7, 8 and 10, or may have an opening therein of the same size and shape as the handle so that the handle will be positioned therein and be visible therethrough as shown in Figs. 1 and 2, to enable the handle to be quickly grasped for operation.

This sheet 10 may be of any desired thickness (preferably thin enough to be quietly and easily flexed by the operator's fingers when grasping the handle) and of a material that may readily flex, and resilient to return to its original position, such as rubber, plastic material, or any other material suitable for the purpose intended.

This sheet may be secured around its perimeter to the well in any desired manner. One form of securing means is shown in Fig. 2 to consist of an over-turned flange 11 at the outer edge of the well and a supporting rib 12 of metal or any other suitable and available material, secured in any desired manner to the well member 3. Between the flange 11 and supporting rib 12 the edge of the sheet 10 is mounted and held in place.

In the form of my invention shown in Figs. 1 and 2 the handle 1 is of the type that swings outwardly to operate the latch 5. However, my invention is adapted to other forms and types of handles. For example in Figs. 3, 4 and 5, I have shown a handle that rotates about an axis perpendicular to the plane of the handle. In other words, the handle rotates in its own plane. As shown in Figs. 3 and 4 the well 3' is circular in cross-section, its outer portion being formed with an over-turned flange 11' and a rib 12', similar to those in Fig. 2, to hold the perimeter of the flexible, resilient sheet 10'. The sheet 10' is thin enough to be easily flexed, and on its inner face is formed with circumferentially spaced apart ribs 13 to return the sheet to flat condition when the handle is returned to normal position and the operator's fingers removed, as shown in Fig. 4. Fig. 5 shows the handle turned through 90 degrees from the position shown in Fig. 4, and with the sheet and ribs flexed due to being pushed inwardly as the handle rotates. The sheet 10' is also flexible enough to be easily flexed inwardly by the operator's fingers when grasping the handle at the start of the turning operation.

Also if desired the perimetral edge portion 14 of the sheet may be slidably mounted between the flange 11' and rib 12' so that the sheet may rotatably slide therebetween as the handle is turned, so that the handle and sheet may rotate together and the well 3' remain stationary. In the form shown in Figs. 3, 4 and 5 the handle 1' is formed with a hub or stem 15 which is centrally located in the well to rotate therein, and which has a portion (not shown) extending into the latch casing 16 to operate the latch in any suitable manner desired.

In the form shown in Fig. 6 the well 3a is formed with a circumferential groove 17 in registry with the circumferential groove 18 of the door walls, between two which grooves is mounted a circularly bent spring wire 19, to hold the well in place and permit its removal, and also permit its rotation in the door. This construction permits the rotation of the handle 1', the sheet 10' and the well 3a together as a unit, and at the same time the flexing of the sheet downwardly around the handle by the operator's fingers in grasping the handle, the sheet returning to normal flat position when the fingers are removed.

In Figs. 7 and 8 are shown a modified form in which the sheet 10a covers the well entirely and is preferably formed centrally along the upper side of the handle with a slit 20 to assist in guiding the operator's fingers to proper position to grasp the handle, as well as to permit the material on the two sides of the slit to be distorted in grasping the handle. Sheet 10a on its inner face is formed with spaced apart ribs 21 to assist in returning it to original flat position when the handle is released. In the form of Figs. 7 and 8 the sheet may turn with relation to the well, or not, as desired.

In Fig. 9 is shown a slightly different construction for enabling the flexible sheet 10b to rotate with relation to the well 3'. In this form the perimetral portion of the sheet is of generally circular cross-section and slidably mounted between the circular curved flange 11a and the circularly curved rib 12a to circumferentially slide therein. The sheet will flex as in the other views and for a similar purpose.

In Fig. 10 is shown a form in which the sheet 10c is preferably more thin than the others so that it may entirely cover the handle, or almost entirely cover the handle, and is thin enough that it may be flexed around the edges of the handle when the handle is grasped for turning. In this form a mark or marks of different color than the sheet, may be applied to the sheet, to enable the operator to quickly locate the position of the handle to facilitate grasping it. In this form the sheet may have perimetral movement with relation to the well, or not, as desired. Also the portion 30 in which the keyhole of the lock is formed will be accessible through a hole in the sheet.

Preferably the handle will be spring controlled to cause it to return to normal position when released. The construction of the present invention, when the car, airplane, or the like, is in motion, provides a stream-lined device which eliminates drag from wind resistance, and also prevents the handle from catching on, or striking, other objects, and prevents rain, snow and the like from entering the well.

As shown in Fig. 11 the covering 10d for the well 3d or other depression may be of such nature that when the covering is worn out or otherwise damaged it may be replaced by a new one that will snap on over an edge flange rim, or any other suitable projecting part, which in Fig. 11 is shown as the annular or other shaped flange or rim 30. The covering 10d may be rubber, plastic or any suitable flexible material. Metal may also be used for the covering in any of the forms shown herein if of sufficient flexibility. In Fig. 11 the edge 31 of the covering may be of any desired shape to facilitate the snapping on or off for repair, renewal, inspection or other purpose. The well member may be of metal, plastic or other suitable material. The door body in Fig. 11 is indicated at 32.

Having described my invention, I claim:

1. In handle construction, a well member, a handle rotatably mounted in said well member for operating a latch, the handle being substantially flush with the well member open side, and a flexible member covering the open side of the well, the flexible member being resilient, yieldable and depressible into the well member by the operator's fingers to enable grasping of the handle.

2. In handle construction, in combination, a well member, a handle, and a resilient member

covering the open side of the well member, the resilient member being depressible into the well member by the operator's fingers to enable grasping of the handle.

3. In handle construction, in combination, a well member, a handle, and a resilient member covering the open side of the well member, said member having an opening to receive the handle.

4. In handle construction, a door having a handle depression, a handle having one face substantially flush with the edges of the open side of said depression, and a sheet of flexible, resilient material over the open side of said depression, said sheet being depressible into the depression by the operator's fingers to enable grasping of the handle.

5. In handle construction, a door having a handle depression, a handle having one face substantially flush with the edges of the open side of said depression, and a sheet of flexible, resilient material over the open side of said depression, said sheet having an opening of the configuration of the handle to receive the handle.

6. In handle construction, a door having a handle depression, a handle rotatably mounted in said depression, a sheet of thin resilient material connected to the perimeter of the edge of the open side of the depression, said sheet covering the spaces of the open side of the depression, and capable of being flexed by the fingers of the operator when grasping the handle.

7. In handle construction, a door having a handle depression, a handle rotatably mounted in said depression, a sheet of thin resilient material connected to the perimeter of the edge of the open side of the depression, said sheet covering the spaces of the open side of the depression, and capable of being flexed by the fingers of the operator when grasping the handle, said sheet being returnable to normal position when the operator's fingers are removed from the handle and the handle is in original position.

8. In handle construction, in combination, a handle receiving well member, having an open mouth, a handle movably mounted in said well member, a thin resilient sheet over the open mouth of the well member, said sheet being flexed by the operator's fingers when grasping the handle, and means slidably connecting the sheet to the well member to enable movement of the sheet with relation to the well member when returning the handle.

9. In handle construction, in combination, a supporting member having an opening therein, a well member rotatably mounted in said opening, a handle movably mounted in the well member, and a sheet of thin resilient material over the well member.

10. In handle construction, in combination, a well member, a handle rotatably mounted in the well member, and a thin resilient sheet over the well member and the handle, said sheet being depressible into the well member by the operator's

fingers to enable grasping and operation of the handle.

11. In handle construction, in combination, a handle supporting member having a depression, a handle movably mounted in said depression, and a thin resilient sheet covering the depression and the handle, said sheet having a slit over the handle to facilitate flexing the sheet by the operator's fingers when grasping the handle.

12. In handle construction, in combination, a door having a depression, a well member mounted in said depression, a flange on the outer edge of said well member, a rib spaced from said flange but parallel therewith, a handle movably mounted in said well member, a thin resilient sheet over the hollow of the well member, the perimeter of the sheet being seated in the space between said flange and said rib, said sheet being depressible into the well member by the operator's fingers to enable grasping and operation of the handle.

13. In handle construction, a door having a handle depression, a handle movably mounted in said depression and having one face substantially flush with the outer face of the door, and a sheet of flexible plastic material connected to the outer edge portion of the depression and having an opening of substantially the same size and shape as the handle so as to be flexed by the operator's fingers when grasping the handle and eliminate resistance of air in the depression and around the handle.

14. In handle construction, a door having a handle depression, a handle movably mounted in said depression and having one face substantially flush with the outer face of the door, and a sheet of rubber connected to the outer edge portion of the depression and having an opening of substantially the same size and shape as the handle so as to be flexed by the operator's fingers when grasping the handle and eliminate resistance of air in the depression and around the handle, said rubber sheet having spaced ribs on its inner face to facilitate the returning of the sheet to normal position when the handle is released.

15. In handle construction in combination, a door having a depression, a well member in said depression, a handle rotatably mounted in the well member, an annular guideway in the outer edge of the well member, a sheet of flexible material having its perimeter mounted in said guideway, said sheet flexing under pressure of the operator's fingers when grasping the handle.

16. In handle construction in combination, a door having a depression, a well member in said depression, a handle rotatably mounted in the well member, an annular guideway in the outer edge of the well member, a sheet of rubber having its perimeter mounted in said guideway, said sheet flexing under pressure of the operator's fingers when grasping the handle, the peripheral edge of the sheet being slidable in said guideway so that the sheet and handle may rotate approximately together with relation to the well member.

HARRY F. GEORGE.

CERTIFICATE OF CORRECTION.

Patent No. 2,348,065.

May 2, 1944.

HARRY F. GEORGE.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, first column, line 52, claim 8, for the word "returning" read --turning--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of June, A. D. 1944.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.