

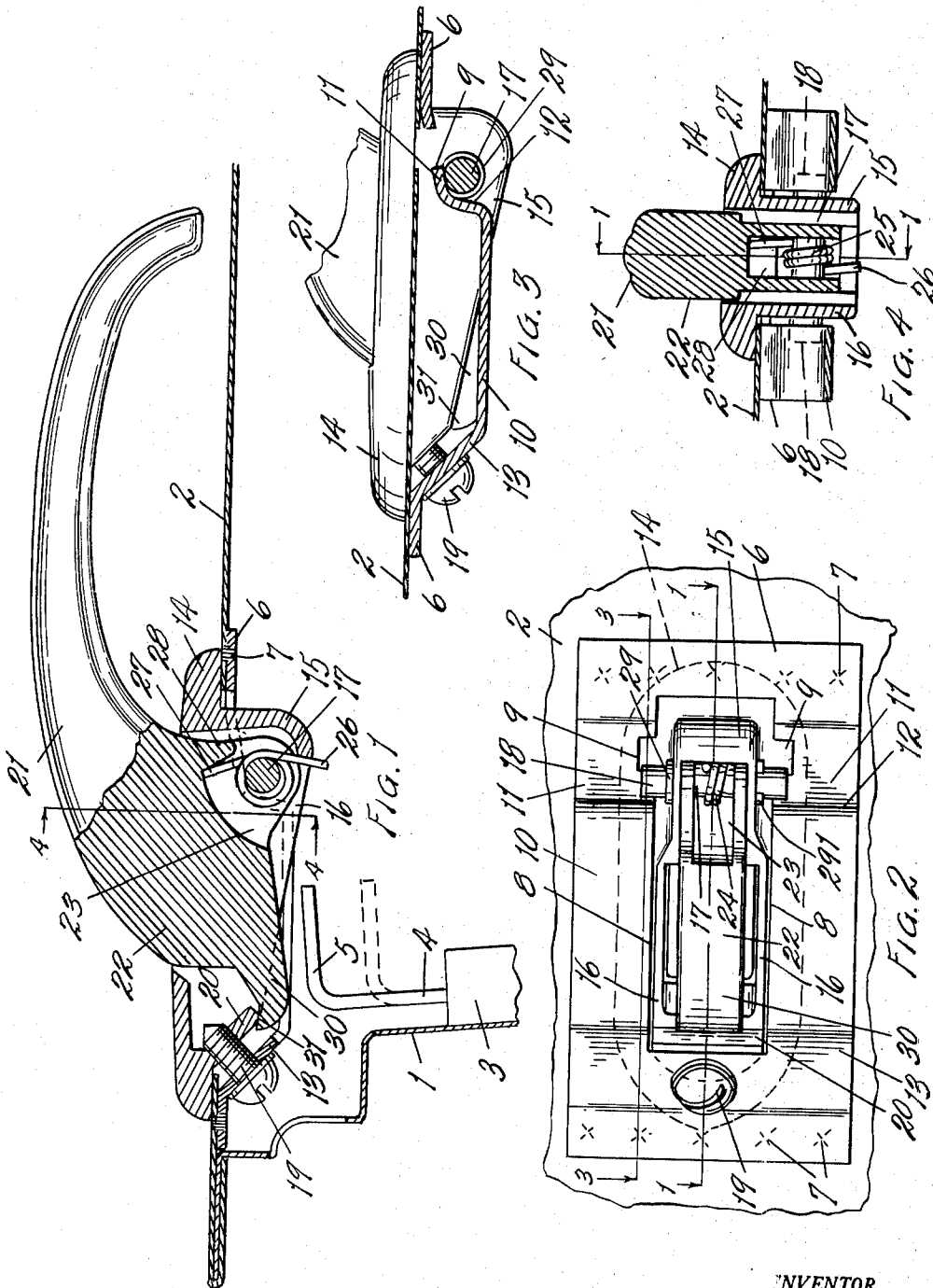
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DOOR HANDLE

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## UNITED STATES PATENT OFFICE

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## DOOR HANDLE

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This invention relates to improvements in door handles.

The main objects of this invention are:

First, to provide a door handle for motor vehicle doors, refrigerator doors and the like in which an outward pull on the handle serves to release the latch or bolt.

Second, to provide a handle assembly which may be quickly and easily mounted on a door, the mounting means being concealed and inaccessible when the door is closed.

Third, to provide a handle assembly having these advantages which is of few parts, the parts being economical to produce and assemble and at the same time provide a structure which is highly attractive in appearance.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary side elevational view of a handle embodying my invention mounted upon a door, a fragment of which is shown in section, portions of the handle assembly being broken away and partially in section on lines corresponding to lines 1—1 of Figs. 2 and 4.

Fig. 2 is a fragmentary inside view of the handle assembly in its relation to a panel of a door.

Fig. 3 is a fragmentary side elevational view partially in section on a line corresponding to line 3—3 of Fig. 2.

Fig. 4 is a fragmentary view in transverse section on a line corresponding to line 4—4 of Fig. 1.

In the accompanying drawing, 1 represents a door of an automobile having a chamber therein and an outer panel 2. A latch is conventionally indicated at 3, this latch being provided with a release member 4 having a foot portion 5 with which the handle is operatively associated. The supporting plate 6, which is desirably formed as a stamping, is mounted on the rear side of the panel 2, being preferably spot welded to panel 2 as indicated at 7. This supporting plate is provided with a longitudinally extending slot-like opening 8 having opposed notch-like enlargements 9 in its side edges adjacent its rear end. The supporting plate has a downward offset 10 therein conformed to provide rearwardly inclined cam portions 11 merging into rearwardly facing shoulder-like stop or abutment portions 12.

The front end of the offset 13 is outwardly in-

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clined. The escutcheon 14 has an inwardly projecting bracket member 15 which, in the embodiment illustrated, is formed integrally therewith as a die casting. This bracket member is conformed to provide spaced side members 16 and is of such dimensions as to be capable of being inserted through the opening in the supporting plate with parts thereof projecting inwardly at the rear of the offset of the supporting plate.

The handle pivot 17 is arranged to project through the side members of the escutcheon bracket member providing, in effect, projecting lug portions 18 which may be passed through the notches 9 and engaged with the cam portions 11 of the supporting plate by a forward shifting movement of the escutcheon thereby bringing the parts into camming engagement as shown in Fig. 3. The rearwardly facing shoulders 12 constitute stops or abutments limiting this forward movement. In Fig. 3 the pivot is not shown in complete engagement with the shoulders.

This forward clamping adjustment in the embodiment illustrated is secured by means of the screw 19 which is arranged through the inclined portion 13 of the supporting plate and having threaded engagement with the inclined portion 20 of the escutcheon bracket member opposed to the portion 13 of the supporting plate. This angular disposition of the screw serves to move the escutcheon longitudinally and also to move the front end of the escutcheon plate inwardly when the screw is tightened. This combined movement results in a secure clamping of the escutcheon against the outer side of the door panel 2, a single screw being all that is necessary to very effectively and securely adjust and retain the escutcheon with the handle mounted thereon.

In the embodiment illustrated, the handle 21 is a die casting and is provided with an integral pivot arm 22 disposed between the side members of the escutcheon bracket and swingably supported by the pivot 17.

The coil spring 25 is arranged on the pivot within the inwardly facing recess 23 of the handle pivot arm, one end 26 of the spring engaging the escutcheon bracket and the other end 27 engaging the rear wall 28 of the pivot arm recess (see Fig. 1). The pivot is retained by shoulder 29 and staking 291. The pivot arm is provided with an extension or nose piece 30 engageable with the latch release member 5. This extension also has a stop portion 31 coacting with the front end of the escutcheon bracket as shown in Fig. 1 to limit the return movement of the handle. With

this arrangement of parts, they may be very economically produced and assembled as a unit with the exception of the supporting plate which is installed on the door.

The escutcheon and handle as an assembled unit are quickly and effectively mounted by means of the single screw which is disposed to be engaged from the inner side of the door panel so that it is concealed and is inaccessible when the door is closed.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe other adaptations or embodiments which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A door handle comprising, in combination, a longitudinally slotted supporting plate, the slot having an enlargement adjacent its rear end, said supporting plate having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the slot merging into rearwardly facing shoulders and an outwardly inclined portion at the front end of the offset, an escutcheon having an inwardly projecting bracket member disposed through said slot in said plate and comprising spaced side members and provided with an outwardly inclined front portion opposed to and spaced from the outwardly inclined front portion of said supporting plate, a handle pivot disposed through and projecting from the side members of said bracket member, the enlargement of said slot being adapted to pass the pivot, the ends of the pivot being engageable with the said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot between said bracket side members, said pivot arm constituting a latch engaging element and being provided with a stop coacting with the said outwardly inclined portion at the front of the escutcheon member, a coil spring arranged on said pivot between the side portions of said pivot arm with one end in engagement with the pivot arm and the other with the escutcheon bracket member and acting to bias the handle to retracted position, and a screw disposed through said outwardly inclined portion at the front of said supporting plate and having threaded engagement with the outwardly inclined front portion of said escutcheon bracket member whereby the escutcheon with the handle mounted thereon is clamped in position with its pivot in camming engagement with the supporting plate.

2. A door handle comprising, in combination, a longitudinally slotted supporting plate, the slot having an enlargement adjacent its rear end, said supporting plate having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the slot merging into rearwardly facing shoulders and an outwardly inclined portion at the front end of the offset, an escutcheon having an inwardly projecting bracket member having spaced side members disposed through said slot in said plate and provided with an outwardly inclined front portion opposed to and spaced from the outwardly inclined front portion of said supporting plate, a handle pivot disposed through and projecting from the side members of said bracket member, the enlargement of said slot being adapted to pass the pivot, the ends of the pivot being engageable with the said cams

of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot, said pivot arm constituting a latch engaging element and being provided with a stop coacting with the said outwardly inclined portion at the front of the escutcheon member, a coil spring arranged on said pivot with one end in engagement with the pivot arm and the other with the escutcheon bracket member and acting to bias the handle to retracted position, and a screw disposed through said outwardly inclined portion at the front of said supporting plate and having threaded engagement with the outwardly inclined front portion of said escutcheon bracket member whereby the escutcheon with the handle mounted thereon is clamped in position with its pivot in camming engagement with the supporting plate.

3. A door handle comprising, in combination, a longitudinally slotted supporting plate, the slot having an enlargement adjacent its rear end, said supporting plate having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the slot, an escutcheon having an inwardly projecting bracket member disposed through said slot in said plate and comprising spaced side members and an outwardly inclined portion at the front of the escutcheon member, a handle pivot disposed through and projecting from the side members of said bracket member, the enlargement of said slot being adapted to pass the pivot, the ends of the pivot being engageable with the said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot between said bracket side members, said pivot arm constituting a latch engaging element and being provided with a stop coacting with the said outwardly inclined portion at the front of the escutcheon member, a coil spring arranged on said pivot between the side portions of said pivot arm with one end in engagement with the pivot arm and the other with the escutcheon bracket member and acting to bias the handle to retracted position, and means for drawing said escutcheon member forwardly whereby the escutcheon with the handle mounted thereon is clamped in position with its pivot in camming engagement with the cams of said supporting plate.

4. A door handle comprising, in combination, a longitudinally slotted supporting plate, the slot having an enlargement adjacent its rear end, said supporting plate having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the slot, an escutcheon having an inwardly projecting bracket member disposed through said slot in said plate, said bracket member having an outwardly inclined portion at the front end of said escutcheon, a handle pivot disposed through and projecting from the side members of said bracket member, the enlargement of said slot being adapted to pass the pivot, the ends of the pivot being engageable with the said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot, said pivot arm constituting a latch engaging element and being provided with a stop coacting with the said outwardly inclined portion at the front of the escutcheon member, a coil spring arranged on said pivot with one end in engagement with the pivot arm and the other with the escutcheon bracket member and acting to bias the handle to retracted position, and means for drawing said escutcheon member forwardly whereby the escutcheon with the handle mounted thereon

is clamped in position with its pivot in camming engagement with the cams of said supporting plate.

5. A door handle comprising a supporting plate having an opening therein and having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the opening, the cams merging into rearwardly facing shoulders, an escutcheon having an inwardly projecting bracket member disposed through said opening in said plate and comprising spaced side members, a handle pivot projecting laterally from the side members of said bracket member and providing lugs engageable with said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot between said bracket side members, a spring arranged on said pivot between the side portions of the pivot arm to bias the handle to retracted position, and an adjustable connection for the front end of said escutcheon to said supporting plate acting to impart longitudinal movement thereto.

6. A door handle comprising a supporting plate having an opening therein and having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the opening, an escutcheon having an inwardly projecting bracket member disposed through said opening in said plate and comprising spaced side members, a handle pivot projecting laterally from the side members of said bracket member and providing lugs engageable with said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm mounted on said pivot between said bracket side members, a spring arranged on said pivot between the side portions of the pivot arm to bias the handle to retracted position, and an adjustable connection for the front end of said escutcheon to said supporting plate acting to impart longitudinal movement thereto.

7. A door handle comprising a supporting plate having an opening therein and having an inwardly offset intermediate portion providing rearwardly inclined cams at the edges of the opening, an escutcheon having an inwardly projecting bracket member disposed through said opening in said plate and comprising spaced side members, lugs projecting laterally from said bracket side members engageable with said cams of said supporting plate, a handle provided with an inwardly projecting pivot arm pivotally mounted between said bracket side members, a pivot member for said pivot arm for pivotally supporting the same, said pivot member extending between said bracket side members, through the same and beyond the outer sides thereof to provide said cam engaging lugs, a spring arranged between the side portions of the pivot arm to bias the handle to retracted position, and an adjustable connection for the front end of said escutcheon to said supporting plate acting to impart longitudinal movement thereto.

8. A door handle comprising, in combination, a supporting plate having an opening therein and rearwardly inclined cams at the side edges of the opening merging into rearwardly facing shoulders, an escutcheon member having an inwardly projecting bracket member disposed through said opening in said plate, a handle pivot disposed transversely of the bracket member with its ends projecting therefrom, said opening being adapted to permit the passing of the pivot there-through at the rear of said cams, the ends of

the pivot being engageable with said cams when the escutcheon is moved forwardly, a handle provided with a pivot arm mounted on said handle pivot and constituting a latch actuating element, a coil spring arranged on said pivot and acting to bias the handle to retracted position, and a screw carried by said supporting plate and having threaded engagement with said escutcheon providing, when adjusted, a longitudinal movement of the escutcheon.

9. A door handle comprising, in combination, a supporting plate having an opening therein and rearwardly inclined cams at the side edges of the opening, an escutcheon member having an inwardly projecting bracket member disposed through said opening in said plate, a handle pivot disposed transversely of the bracket member with its ends projecting therefrom, said opening being adapted to permit the passing of the pivot therethrough at the rear of said cams, the ends of the pivot being engageable with said cams when the escutcheon is moved forwardly, a handle provided with a pivot arm mounted on said pivot and constituting a latch actuating element, and a screw means providing, when adjusted, a longitudinal movement of the escutcheon.

10. In a door handle, the combination of a supporting plate having an opening therein, said supporting plate having rearwardly inclined cams at the side edge of the opening, an escutcheon having an inwardly projecting bracket member disposed through said opening and adjustable longitudinally of the supporting plate, a handle pivot projecting laterally from the bracket member, its projecting ends constituting cam engaging lugs, a handle swingably mounted on said pivot, and means for adjusting said escutcheon longitudinally of the supporting plate for forcing said projecting ends of said pivot into engagement with said cams.

11. In a door handle, the combination of a supporting plate having an opening therein, said supporting plate having rearwardly inclined cams at the side edges of the opening merging into rearwardly facing shoulders, said plate being formed from an integral member having an inwardly bent intermediate portion to provide said cams and shoulders, an escutcheon having an inwardly projecting bracket disposed through said opening in said plate and provided with laterally projecting lugs coacting with said cams and engageable with said shoulders, said shoulders constituting stops therefor, a handle swingably mounted on said escutcheon, a spring acting to bias said handle to retracted position, and a screw adjustably connecting the front end of said supporting plate and said escutcheon disposed in a rearwardly inclined relation, said shoulders being disposed forwardly of said inclined cams whereby tightening of said screw operates first to engage said lugs with said cams and then with said shoulders to limit forward adjustment of said escutcheon.

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