June 22, 1954 F. H. CONDON 2,681,469

HANDLE CONNECTION

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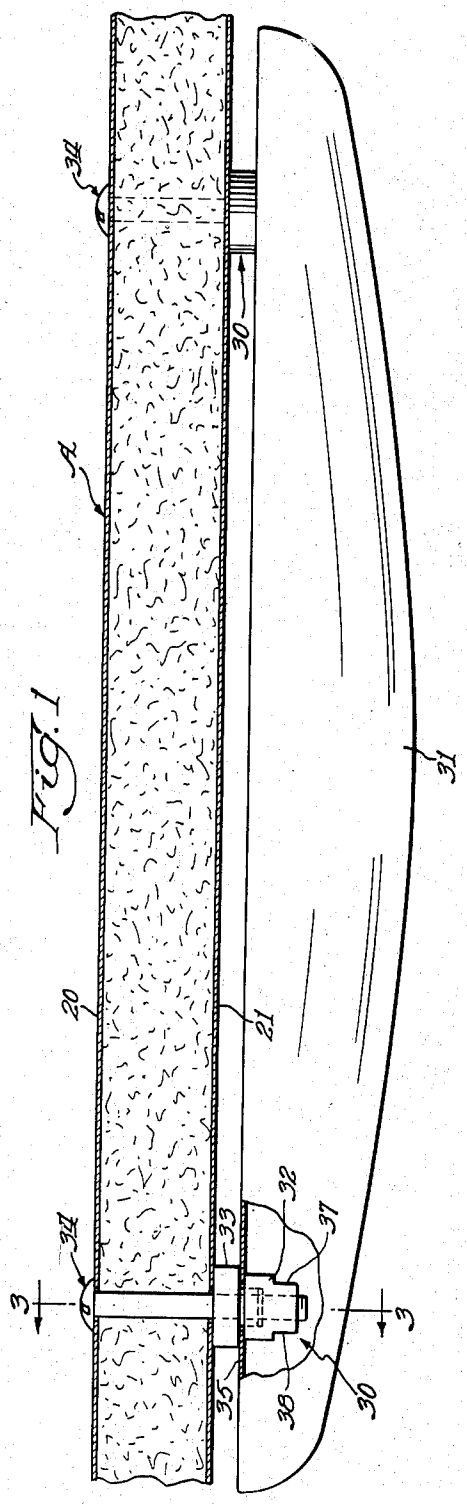


Fig. 1

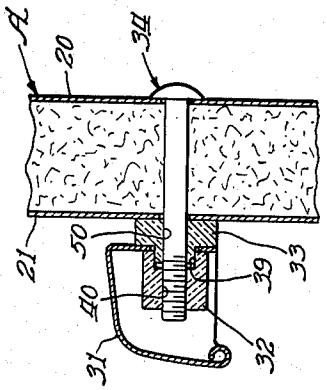


Fig. 3

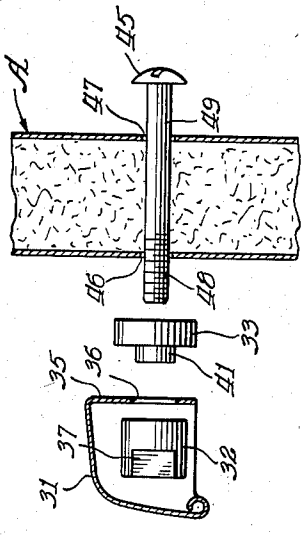


Fig. 2

Inventor:
Francis H. Condon
By Edmund O. Stultz Sample
Atty

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HANDLE CONNECTION

Francis H. Condon, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

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This invention relates to the combination of a door and a handle therefor particularly adapted to oven door for ranges.

More specifically stated, it is a general object and accomplishment of the invention to provide a door handle and securing means therefor which substantially eliminates heat conduction from the heated range compartment to the outer surface of the door and/or handle thereof.

An ancillary object and accomplishment of the invention is to provide a new and improved range door handle connection which is adapted to be economically manufactured and which is so designed as to permit the manufacture and assembly thereof in accordance with present day large scale mass production manufacturing methods of construction and assembly.

The invention seeks, as a further object and accomplishment, to provide a range door handle connection particularly characterized by a design arrangement to more advantageously and satisfactorily perform the functions required of it and adapted to provide a compact unit which will successfully combine the factors of structural simplicity and durability, and yet be economical to manufacture.

Additional objects, features and advantages of the invention disclosed herein will be apparent to persons skilled in the art after the construction and operation are understood from the within description.

It is preferred to accomplish the various objects of this invention and to practice the same in substantially the manner as hereinafter more fully described, and as more particularly pointed out in the appended claims.

Embodiments of the invention are illustrated in the accompanying drawing which forms a part hereof and wherein:

Fig. 1 is an elevational view of the handle and door connection embodying the features of this invention and the door proper is shown in section to more clearly show the operative association of the parts;

Fig. 2 is a composite exploded view of the elements comprising the range door handle contemplated by this invention; and

Fig. 3 is a sectional view of the handle and door connection depicted in Fig. 1 and being taken substantially on the plane of the line 3—3 in Fig. 1.

The drawings are to be understood to be more or less of a schematic character for the purpose of illustrating and disclosing typical or preferred forms of the improvements contemplated herein and in the drawings like reference characters identify the same parts in the several views.

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Heretofore, definite manufacturing problems have been encountered in establishing an efficient and economical assembly of handles to the range doors. Door sub-assemblies are usually manufactured in total, and for obvious reasons, the handles are connected to the door during final assembly operations, or, in some cases, are secured by the purchaser after shipment. Thus, it follows that such an assembly technique required a bolt, or other like securing means, to pass through the door from the interior of the range to the exterior thereof which presented a problem of isolation of attendant heat. This is particularly important if metal handles are employed.

In the exemplary embodiment of the invention depicted in Figs. 1 and 2, the reference character A designates a conventional range door comprising an inside panel 20 and an outside panel 21, each of which are formed of metal, and the reference character 30 designates in its entirety the range door handle connection with which the invention is particularly concerned and which comprises, in general, the handle 31, a female handle insert 32, a male handle insert 33, and a handle bolt 34, all illustrated separately in Fig. 2 and in assembled relationship in Fig. 1.

In this instance the handle 31 may be formed of a suitable metal to define the shape as shown or any other pleasing design appealing to the aesthetic senses of the user, but in each case may be provided with a flanged back plate 35 having apertures as at 36.

In order to provide heat insulating characteristics, the female handle insert 32 is preferably formed of a plastic composition by molding or otherwise, to define a substantially circular nut-like shape with opposed chamfered surfaces 37 and 38 disposed on the peripheral surface of this insert for advantageous receipt of a suitable wrench or the like, a substantially circular counter-bore 39 disposed at the end of the insert opposite to the chamfered surfaces 37 and 38, and a through bore 40 having threaded formations as shown.

The male handle insert 33 is formed of a similar plastic composition to define a substantially circular washer-like shape with an axially projecting circular-shaped stud 41 of lesser diameter than the main body of the insert and adapted to be received, in assembly, into the aperture 36 in the handle and into the counter-bore 39 in the female insert 32. As illustrated in Fig. 1, the washer-shaped main body of the male insert 33 functions as a spacer between the flange 35 of the handle and the exterior handle 21 of the range door A.

Attention is invited to Figs. 1 and 2 which respectively show the bolt 34 in assembled and unassembled positions and as comprising a head 45 having portions thereof adapted to engage adjacent portions of the inside door panel 20, a shank 49 adapted to pass through the apertures 46 and 47, respectively found in the outside panel 21 and in the inside panel 20, and having threaded formations 48 adapted to freely pass through the central through bore 50 of the male insert 33 and thereafter be received into the matching threaded formations disposed in the through bore 40 of the female insert 32.

Suitable insulation is disposed in the door A between the panels 21 and 20 and the bolt may be freely passed through this insulation in the assembly process of the handle connection contemplated by this invention.

Thus, because the bolt must of necessity have portions thereof in contact with the inner heat chamber of the range, heat will be conducted along the bolt structure toward the outside panel 21 but due to the heat insulating characteristics of the female insert 32 and the male insert 33 and the relative disposition and association of the parts thereof as shown, the conduction of objectionable heat to the handle will be defeated.

The instant range door handle connection, being formed of simple parts and readily available materials, lends itself to mass production manufacturing principles, thus affording a substantial saving in the manufacturing cost and assembly of the range.

From the foregoing disclosure, it may be observed that I have provided an improved range door handle connection which efficiently fulfills the objects thereof as hereinbefore stated and which provides numerous advantages which may be summarized as follows:

1. Structurally simple, efficient and durable;

2. Economical to manufacture and readily adapted to mass production manufacturing principles; and

3. The provision of a range door handle and securing means therefor which substantially eliminates heat conduction from the heated range compartment to the outer surface of the door and/or the handle thereof.

While I have illustrated preferred embodiments of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth but wish to avail myself of all changes within the scope of the appended claims.

I claim:

1. A heat insulated securing means for an elongated metal handle, comprising: in combination, a bolt with projecting threaded end portions disposed within said handle, a first washer-like shaped spacer member disposed exteriorly of said handle and formed of a material having relatively poor heat conducting characteristics and with an axially projecting stud and having a central through bore adapted to receive portions of said bolt, and a second nut-like shaped member disposed within said handle and formed of a material having relatively poor heat conducting characteristics and with opposed chamfered surfaces disposed on the peripheral surface thereof adapted for receipt of a wrench or the like, said second member having a counterbore adapted to receive in assembly the stud of said first member, and said second member having a threaded through bore adapted to receive the projecting threaded end portions of said bolt.

2. For a range door having separated inside and outside panels: an elongated metal handle for said range door; and a heat insulated connection for securing said metal handle to said door comprising a bolt adapted to pass through said door with the threaded end portions thereof projecting substantially from the outside panel of said door and into said handle, a male insert formed of a heat insulating material to define a washer-like shape with an axially projecting circular shaped stud of lesser diameter than the main body of the insert, said male insert having a circular through bore adapted to receive the projecting portions of the bolt, said washer-like shape being disposed exteriorly of said handle and between said handle and said outside panel to act as a spacer therefor, a female insert disposed within said handle and formed of a heat insulating material to define a substantially circular nut-like shape with opposed chamfered surfaces disposed on the peripheral surface thereof adapted for receipt of a wrench or the like, said female insert having a counterbore adapted to receive in assembly the stud of said male insert, said female insert having a threaded through bore adapted to receive the projecting threaded end portions of said bolt so as to secure said handle to said door in heat insulating relation.

3. A means for a heat insulated connection of a metal handle to a door, comprising a bolt with threaded end portions disposed within said handle, a male insert spacer disposed exteriorly of said handle and formed to define a washer-like shape with an axially projecting stud and having a central through bore adapted to receive said projecting portions of said bolt, a female insert disposed within said handle and formed to define a nut-like shape and having a counterbore adapted to receive in assembly the stud of said male insert, and said female insert having a threaded through bore adapted to receive the projecting threaded end portion of said bolt.

4. A heat insulated securing means for connecting an elongated metal handle to a door, said securing means being positioned adjacent each end of said elongated handle and each securing means comprising a bolt with threaded end portions disposed within said handle, a first member disposed exteriorly of said handle and formed of heat insulating material with an axially projecting stud and having a central through bore adapted to receive said projecting portions of said bolt, and a second member disposed within said handle and formed of heat insulating material and having a counterbore adapted to receive in assembly the stud of said first member, said second member having a threaded through bore adapted to receive the threaded end portions of said bolt to removably secure said handle to said door.

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