

A Door Handle And A Door Comprising The Same

Technical Field

[0001] The present invention relates to a door handle and a door comprising the same.

Background

[0002] A door is installed at an entrance of a room to prevent entry to the room or separate the room for its external environment. The door may be a hinged door that may be opened in one or two directions, i.e. inward the room and/or outward from the room, or a sliding door.

[0003] The door is usually made of wood. However, the door may be made of metal and other types of materials. To match the door size and shape of the entrance of the room, the amount of material used to make the door is relatively large. The material used to make the door may be expensive and any reduction in the use of the material would translate to lower costs to make the door. For example, the cost to make a door out of a large panel of wood would be higher than a door that is made by combining smaller panels of wood.

[0004] A door handle is used to operate the door, e.g. to open and close the door. The door handle is usually installed at a fixed height from the floor. Hence, children may not be able to reach the door handle and would not be able to open the door on their own. Also, often, a person may bump into a door handle and get hurt by the handle.

[0005] Therefore, it would be advantageous to solve the abovementioned problems.

Summary

[0006] According to various embodiments, a door handle for a door having a length and a width is provided. Door has a first portion and a second portion separated from the first portion, both extending in a longitudinal direction parallel to the length of the door. Door handle includes a first side and a second side opposite the first side; and a recess between the

first side and the second side, such that the first side is adapted to be connected to the first portion and the second side is adapted to be connected to the second portion, such that the door handle extends in the longitudinal direction and is adapted to be disposed between the first portion and second portion.

[0007] According to various embodiments, the door handle may further include a first bottom flange extending from the first side and adapted to engage to the first portion of the door and a second bottom flange extending from the second side and adapted to engage the second portion of the door.

[0008] According to various embodiments, the door handle may further include a first top flange extending from the first side and adapted to engage the first portion of the door and a second top flange extending from the second side and adapted to engage the second portion of the door.

[0009] According to various embodiments, the first side may include a first top edge and a first bottom edge opposite the first top edge, and the second side may include a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion may include a first top face and a first bottom face opposite the first top face and the second portion may include a second top face and a second bottom face opposite the second top face, such that the first bottom flange and the second bottom flange extend from the first bottom edge and the second bottom edge respectively and engage the bottom face of the first portion and the bottom face of the second portion respectively.

[0010] According to various embodiments, the first side may include a first top edge and a first bottom edge opposite the first top edge, and the second side may include a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion may include a first top face and a first bottom face opposite the first top face and the second portion may include a second top face and a second bottom face opposite the second top face, such that the first top flange and the second top flange extend from the first top edge and the second top edge respectively and engage the top face of the first portion and the top face of the second portion respectively.

[0011] According to various embodiments, the door handle may extend to the length of the door.

[0012] According to various embodiments, a door having a length and a width is provided. The door includes a first portion and a second portion separated from the first portion, both extending in a longitudinal direction parallel to the length of the door, a door handle extending in the longitudinal direction and is disposed between the first portion and the second portion, such that the door includes a first side and a second side opposite the first side and a recess between the first side and the second side, such that the first side is connected to the first portion and the second side is connected to the second portion.

[0013] According to various embodiments, the door may further include a first bottom flange extending from the first side and adapted to engage to the first portion of the door and a second bottom flange extending from the second side and adapted to engage the second portion of the door.

[0014] According to various embodiments, the door may further include a first top flange extending from the first side and adapted to engage the first portion of the door and a second top flange extending from the second side and adapted to engage the second portion of the door.

[0015] According to various embodiments, the first side may include a first top edge and a first bottom edge opposite the first top edge, and the second side may include a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion and the second portion, each may include a top face and a bottom face opposite the top face, such that the first bottom flange and the second bottom flange extend from the first bottom edge and the second bottom edge respectively and engage the bottom face of the first portion and the bottom face of the second portion respectively.

[0016] According to various embodiments, the first side may include a first top edge and a first bottom edge opposite the first top edge, and the second side comprise a second top edge

and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion and the second portion, each may include a top face and a bottom face opposite the top face, such that the first top flange and the second top flange extend from the first top edge and the second top edge respectively and engage the top face of the first portion and the top face of the second portion respectively.

[0017] According to various embodiments, the door handle may extend to the length of the door.

Brief Description of Drawings

[0018] Fig. 1 shows a sectional view of an exemplary embodiment of a door handle for a door.

[0019] Fig. 2 shows a sectional view of an exemplary embodiment of a door handle for a door.

[0020] Fig. 3 shows a front view of the embodiment of the door with the door handle in Fig. 2.

[0021] Fig. 4 shows a perspective view of a section of the door handle in Fig. 2.

Detailed Description

[0022] In the following exemplary embodiments, reference will be made to the figures, in which identical features are designated with like numerals.

[0023] Fig. 1 shows a sectional view of an exemplary embodiment of a door handle 100 for a door 10 having a length and a width, a first portion 10A and a second portion 10B separated from the first portion 10A, both extending in a longitudinal direction parallel to the length of the door 10. Door handle 100 includes a first side 100A and a second side 100B opposite the first side 100A, and a recess 100R between the first side 100A and the second side 100B,

such that the first side 100A is adapted to be connected to the first portion 10A and the second side 100B is adapted to be connected to the second portion 10B, such that the door handle 100 extends in the longitudinal direction and is adapted to be disposed between the first portion 10A and second portion 10B.

[0024] Door handle 100 may include a first side wall 102A, a second side wall 102B opposite the first side wall 102A and a bottom panel 104 having a first edge 104A and a second edge 104B opposite the first edge 104A, such that the first side wall 102A and the second side wall 102B extends from the first edge 104A and the second edge 104B respectively. First side wall 102A and the second side wall 102B may extend parallelly to each other and in the longitudinal direction. First side wall 102A and the second side wall 102B may include a first overhang 106A and a second overhang 106B extending therefrom respectively, such that the first overhang 106A and the second overhang 106B extend toward each other. First overhang 106A or second overhang 106B is used to pull the door 10 toward the user. Door handle 100 may be as thick as the door 10 or substantially as thick as the door 10. First side wall 102A and the second side wall 102B may be as tall as the thickness of the door 10. First portion 10A of the door 10 may be attached to the first side wall 102A and the second portion 10B of the door 10 may be attached to the second side wall 102B. Recess 100R may be formed by the first side wall 102A, the second side wall 102B, the bottom panel 104, the first overhang 106A and the second overhang 106B. Recess 100R may have a depth substantially the thickness of the door 10. Depth of the recess 100R and the thickness of the bottom panel 104 may form the thickness of door handle 100. As the thickness of the bottom panel 104 increases, the depth of the recess 100R decreases. Thickness of the bottom panel 104 may be made thicker to improve the strength of the door handle 100. Regardless the configuration, the thickness of the door handle 100 remains unchanged.

[0025] Fig. 2 shows a sectional view of an exemplary embodiment of a door handle 200 for a door 20. Door handle 200 may include a first side 200A adapted to be connected to the first portion 20A of the door 20 and a second side 200B adapted to be connected to the second portion 20B of the door 20. Door handle 200 may include a recess 200R between the first side 200A and the second side 200B. As shown in Fig. 2, the door handle 200 may be disposed between the first portion 20A and the second portion 20B of the door 20. First side 200A may include a first top edge 202AT and a first bottom edge 202AB opposite the first

top edge 202AT. Second side 200B may include a second top edge 202BT and a second bottom edge 202BB opposite the second top edge 202BT, each of the edges extending in the longitudinal direction. First edge 204A and the second edge 204B may be the same as the first bottom edge 202AB and the second bottom edge 202BB respectively. First portion 20A may include a first top face 20AT and a first bottom face 20AB opposite the first top face 20AT and the second portion 20B may include a second top face 20BT and a second bottom face 20BB opposite the second top face 20BT.

[0026] Door handle 200 may include a first top flange 212A extending from the first side 200A and adapted to engage the first portion 20A of the door 20 and a second top flange 212B extending from the second side 200B and adapted to engage the second portion 20B of the door 20. First top flange 212A may overlap the first portion 20A of the door 20. Second top flange 212B may overlap the second portion 20B of the door 20. First top flange 212A and the second top flange 212B may extend from the first top edge 202AT and the second top edge 202BT respectively and engage the first top face 20AT of the first portion 20A and the second top face 20BT of the second portion 20B respectively. By attaching the first top flange 212A to the first portion 20A and the second top flange 212B to the second portion 20B, the first portion 20A and the second portion 20B may be more securely connected to the door handle 200.

[0027] Door handle 200 may include a first bottom flange 214A extending from the first side 200A and adapted to engage to the first portion 20A of the door 20 and a second bottom flange 214B extending from the second side 200B and adapted to engage the second portion 20B of the door 20. First bottom flange 214A may overlap the first portion 20A of the door 20. Second bottom flange 214B may overlap the second portion 20B of the door 20. First bottom flange 214A and the second bottom flange 214B may extend from the first bottom edge 202AB and the second bottom edge 202BB respectively and engage the first bottom face 20AB of the first portion 20A and the second bottom face 20BB of the second portion 20B respectively. By attaching the first bottom flange 214A to the first portion 20A and the second bottom flange 214B to the second portion 20B, the first portion 20A and the second portion 20B may be more securely connected to the door handle 200. First top flange 212A may be parallel to the first bottom flange 214A. Second top flange 212B may be

parallel to the second bottom flange 214B. As shown in Fig. 2, the first top flange 212A and the first bottom flange 214A may extend in the opposite direction from the second top flange 212B and the second bottom flange 214B. First bottom flange 214A, the second bottom flange 214B and the bottom panel 104 may be formed as a unitary continuous flat panel. First top flange 212A may be narrower than the first bottom flange 214A. Second top flange 212B may be narrower than the second bottom flange 214B. However, the top flanges 212A, 212B may be of the same width as or wider than the bottom flanges 214A, 214B. First side wall 202A and the second side wall 202B may be curved and curve away from each other. The curved first side wall 202A and second side wall 202B may provide a more comfortable feel for the user when accessing the recess 200R of the door handle 200 to operate the door 20.

[0028] Door handle 200 may be secured to the first portion 20A and the second portion 20B of the door 20 via attaching elements (not shown in Fig. 2). Attaching elements may include screws, nails, adhesive, etc. Attaching elements may be inserted through at least one of the first top flange 212A, the first bottom flange 214A, the second top flange 212B, the second bottom flange 214B, the first side wall 202A and the second side wall 202B.

[0029] Fig. 3 shows a front view of the embodiment of the door 30 with the door handle 300 in Fig. 2. Door 30 has a length and a width. Door 30 includes a first portion 30A and a second portion 30B separated from the first portion 30A, both extending in a longitudinal direction parallel to the length of the door 30. Door handle 300 extends in the longitudinal direction and is disposed between the first portion 30A and the second portion 30B. Door 30 includes a first side 300A (not shown in Fig. 3) and a second side 300B (not shown in Fig. 3) opposite the first side 300A and a recess 300R between the first side 300A and the second side 300B, such that the first side 300A is connected to the first portion 30A and the second side 300B is connected to the second portion 30B. Door handle 300 may be connected to and between the first portion 30A and the second portion 30B of the door 30. As shown in Fig. 3, the door handle 300 may extend to the length of the door 30. In other words, the door handle 300 may be as long as the door 30.

[0030] The material used to make the door 30 may be divided into two portions, i.e. the first portion 30A and the second portion 30B, and hence smaller panels can be used to make the door 30. In addition, compared to a door that is made completely with the same material, less

material is used to make the door 30 of the above embodiment compared to a conventional door. As such, the costs of the material for making the door 30 is reduced. At the same time, the door handle 300 is resided within the door 30 and flushes with the first portion 30A and second portion 30B of the door. Hence, the door 30 does not cause a person to bump into the door handle 300 and get hurt. As the door handle 300 extends the length of the door 30, the door handle 300 extends from the floor to a door frame (not shown in Fig. 3) and therefore allows a person of any height to be able to open the door 30.

[0031] Fig. 4 shows a perspective view of a section of the door handle 400 in Fig. 2.

[0032] A skilled person would appreciate that the features described in one example may not be restricted to that example and may be combined with any one of the other examples.

[0033] The present invention relates to a door handle 100,200,300 and a door 10,20,30 generally as herein described, with reference to and/or illustrated in the accompanying drawings.

Claim

1. A door handle for a door having a length and a width, a first portion and a second portion separated from the first portion, both extending in a longitudinal direction parallel to the length of the door, the door handle comprising:
 - a first side and a second side opposite the first side; and
 - a recess between the first side and the second side, wherein the first side is adapted to be connected to the first portion and the second side is adapted to be connected to the second portion,
 - wherein the door handle extends in the longitudinal direction and is adapted to be disposed between the first portion and second portion.
2. The door handle according to claim 1, further comprising a first bottom flange extending from the first side and adapted to engage to the first portion of the door and a second bottom flange extending from the second side and adapted to engage the second portion of the door.
3. The door handle according to claim 1 or 2, further comprising a first top flange extending from the first side and adapted to engage the first portion of the door and a second top flange extending from the second side and adapted to engage the second portion of the door.
4. The door handle according to claim 2 or 3, wherein the first side comprises a first top edge and a first bottom edge opposite the first top edge, and the second side comprises a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion comprises a first top face and a first bottom face opposite the first top face and the second portion comprises a second top face and a second bottom face opposite the second top face, wherein the first bottom flange and the second bottom flange extend from the first bottom edge and the second bottom edge respectively and engage the bottom face of the first portion and the bottom face of the second portion respectively.

5. The door handle according to claim 3, wherein the first side comprises a first top edge and a first bottom edge opposite the first top edge, and the second side comprises a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion comprises a first top face and a first bottom face opposite the first top face and the second portion comprises a second top face and a second bottom face opposite the second top face, wherein the first top flange and the second top flange extend from the first top edge and the second top edge respectively and engage the top face of the first portion and the top face of the second portion respectively.

6. The door handle according to any one of claims 1 to 5, wherein the door handle extends to the length of the door.

7. A door having a length and a width, the door comprising:

a first portion and a second portion separated from the first portion, both extending in a longitudinal direction parallel to the length of the door,

a door handle extending in the longitudinal direction and is disposed between the first portion and the second portion, wherein the door comprises a first side and a second side opposite the first side and a recess between the first side and the second side, wherein the first side is connected to the first portion and the second side is connected to the second portion.

8. The door according to claim 7, further comprising a first bottom flange extending from the first side and adapted to engage to the first portion of the door and a second bottom flange extending from the second side and adapted to engage the second portion of the door.

9. The door according to claim 7 or 8, further comprising a first top flange extending from the first side and adapted to engage the first portion of the door and a second top flange extending from the second side and adapted to engage the second portion of the door.

10. The door according to claim 8 or 9, wherein the first side comprises a first top edge and a first bottom edge opposite the first top edge, and the second side comprises a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion and the second portion, each comprises a top

face and a bottom face opposite the top face, wherein the first bottom flange and the second bottom flange extend from the first bottom edge and the second bottom edge respectively and engage the bottom face of the first portion and the bottom face of the second portion respectively.

11. The door according to claim 9, wherein the first side comprises a first top edge and a first bottom edge opposite the first top edge, and the second side comprises a second top edge and a second bottom edge opposite the second top edge, each of the edges extending in the longitudinal direction, the first portion and the second portion, each comprises a top face and a bottom face opposite the top face, wherein the first top flange and the second top flange extend from the first top edge and the second top edge respectively and engage the top face of the first portion and the top face of the second portion respectively.

12. The door according to any one of claims 7 to 11, wherein the door handle extends to the length of the door.