

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Flushing Cisterns

We, SHIRES LIMITED, a Company registered under the Laws of Great Britain, of Greenbottom Works, Guiseley, Near Leeds, Yorkshire, do hereby declare the invention, 5 for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to flushing cisterns, 10 and is concerned with means for supporting on a wall a cistern formed of a moulded synthetic plastics material.

According to the present invention a cistern comprising a shell and a cover both of 15 plastics materials, has means for supporting it on a wall, including a bracket adapted to be secured to the wall and affording an upwardly projecting flange, and, projecting rearwardly from and formed integrally with 20 the rear wall of the shell, a member having a downwardly projecting flange adapted to hook over the upwardly projecting flange of the bracket, the bracket comprising a rail which not only affords the upwardly projecting 25 flange supporting the co-operating downwardly projecting flange at points distributed along the whole or the major part of the length of the cistern, but also affords an upper flange projecting forwardly above the 30 upwardly projecting flange, while the cover affords a rearwardly projecting rib which is engaged under the upper flange to prevent the back of the cover from being lifted from the shell.

35 The means for supporting such a cistern require to be chosen with some care, since, if the whole weight of the cistern and the water in it is to be carried, for example, by a couple of screws and the corresponding 40 forces are concentrated at two points of the wall of a moulded plastics cistern, the concentrated loads are liable to produce distortion of the material of the shell. In addition

means are generally needed to locate the lid as the weight of a plastics lid will generally 45 not be sufficient to do so. The arrangement in accordance with the invention provides a simple means of meeting these requirements, since the rib and flange can readily be formed along the back wall of the cistern 50 during the moulding operation and without involving any additional operation, and the rail, which can be formed, for example, of metal such as an aluminium alloy, distributes the load along the whole or major part 55 of the length of the back wall of the cistern.

The front portion of the cover may have a part engaging behind the upper edge of the wall of the shell to prevent forward movement of the cover and inadvertent dis- 60 engagement of the rib from under the upper flange.

The invention may be put into practice in various ways but one specific embodiment will be described by way of example with 65 reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a cistern, with the cover partly broken away, and

Figures 2 and 3 are enlarged detail sectional elevations respectively on the lines 2-2 70 and 3-3 of Figure 1.

The cistern comprises a shell on tank 10 and a lid on cover 11 of generally conventional shape both formed from a moulded 75 synthetic plastics material such as polypropylene. The cistern is provided with the usual ball cock and siphon unit but as these parts do not concern the present invention they are omitted from the drawings. 80

The invention is concerned with the manner of supporting the cistern on a wall 12 without imposing excessive local loading on the wall of the shell itself which would tend to cause distortion. Accordingly, as 85 indicated in Figure 2, the rear wall of the

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A



shell of the cistern is provided with a rib 15 projecting rearwardly from and formed integrally with its upper edge and the rib has a downwardly projecting flange 16.

- 5 A rail 20, which may be of extruded metal such as aluminium alloy or a rigid synthetic plastics material, is secured to the wall by screws 21 passing through holes in it. The rail is of what may be termed G section comprising a back wall or web 22 from the lower edge of which a bottom flange 23 projects forwardly, whilst a front flange 24 projects up from the forward edge of the bottom flange 23.

forwardly

- 15 As clearly shown in Figure 2 the downwardly projecting flange 16 of the shell hooks over the upwardly projecting flange 24 of the rail so as to support the rear wall of the shell at points distributed along substantially its whole length. Actually, for ease of moulding, the lower face of the rib 15 which engages the upper edge of the flange 24 may be formed with a number of small pockets so that it engages the flange 24 at a number of spaced areas rather than continuously along its whole length. The rib 15 and flange 16 on the shell may project slightly beyond the ends of the rail 20, the flange 16 being provided with slightly deeper end portions 18 which can bear against the ends of the bottom wall 23 of the rail so as to prevent endwise movement of the shell.

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- The flange 16 is provided with recesses 19 opposite the screws 21 to avoid fouling their heads should they project slightly.

- The rail 20 is also provided with a forwardly projecting upper flange 25 to assist in holding the cover in position. Thus the rear wall of the cover 11 is provided with a rearwardly projecting rib 31 which fits under the upper flange 25. As shown in Figure 3 other parts of the wall of the shell 10 are provided at their upper edge with a fin 32 projecting up into a narrow groove 33 in the cover. The fin and groove extend along the whole of the front edge of the cistern and substantially to the rear end of the sides. A gap in the fin is left at the mid point of each

side of the cistern as shown in Figure 1. At a point in the front part of each end, as shown in Figure 3, the cover is provided with a downwardly projecting lug 34 into which a self-tapping screw 35 is inserted through a hole in the shell.

Thus to apply the cover to the shell the cover is first moved back in an oblique position to engage the rib 31 under the upper flange 25 of the rail. Its forward part is then swung down to seat the groove 33 over the fin 32, and the screws 35 are then inserted in order to hold the front of the cover in position.

WHAT WE CLAIM IS:—

1. A cistern comprising a shell and a cover both of plastics materials, having means for supporting it on a wall, including a bracket adapted to be secured to the wall and affording an upwardly projecting flange, and, projecting rearwardly from and formed integrally with rear wall of the shell, a member having a downwardly projecting flange adapted to hook over the upwardly projecting flange of the bracket, the bracket comprising a rail which not only affords the upwardly projecting flange supporting the co-operating downwardly projecting flange at points distributed along the whole or the major part of the length of the cistern, but also affords an upper flange projecting forwardly above the upwardly projecting flange, while the cover affords a rearwardly projecting rib which is engaged under the upper flange to prevent the back of the cover from being lifted from the shell.

2. A cistern as claimed in Claim 1 in which the front portion of the cover has a part engaging behind the upper edge of the wall of the shell to prevent forward movement of the cover and inadvertent disengagement of the rib from under the upper flange.

3. A cistern having means for supporting it on a wall as specifically described herein with reference to the accompanying drawings.

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The flange 16 is provided with recesses 35 19 opposite the screws 21 to avoid fouling their heads should they project slightly.

The rail 20 is also provided with a forwardly projecting upper flange 25 to assist in holding the cover in position. Thus the rear wall of the cover 11 is provided with a rearwardly projecting rib 31 which fits under the upper flange 25. As shown in Figure 3 other parts of the wall of the shell 10 are provided at their upper edge with a fin 32 45 projecting up into a narrow groove 33 in the cover. The fin and groove extend along the whole of the front edge of the cistern and substantially to the rear end of the sides. A gap in the fin is left at the mid point of each

side of the cistern as shown in Figure 1. At 50 a point in the front part of each end, as shown in Figure 3, the cover is provided with a downwardly projecting lug 34 into which a self-tapping screw 35 is inserted through a hole in the shell. 55

Thus to apply the cover to the shell the cover is first moved back in an oblique position to engage the rib 31 under the upper flange 25 of the rail. Its forward part is then swung down to seat the groove 33 over 60 the fin 32, and the screws 35 are then inserted in order to hold the front of the cover in position.

WHAT WE CLAIM IS:—

1. A cistern comprising a shell and a 65 cover both of plastics materials, having means for supporting it on a wall, including a bracket adapted to be secured to the wall and affording an upwardly projecting flange, and, projecting rearwardly from and formed 70 integrally with rear wall of the shell, a member having a downwardly projecting flange adapted to hook over the upwardly projecting flange of the bracket, the bracket comprising a rail which not only affords the 75 upwardly projecting flange supporting the co-operating downwardly projecting flange at points distributed along the whole or the major part of the length of the cistern, but also affords an upper flange projecting forwardly above the upwardly projecting flange, 80 while the cover affords a rearwardly projecting rib which is engaged under the upper flange to prevent the back of the cover from being lifted from the shell. 85

2. A cistern as claimed in Claim 1 in which the front portion of the cover has a part engaging behind the upper edge of the wall of the shell to prevent forward movement of the cover and inadvertent dis- 90 engagement of the rib from under the upper flange.

3. A cistern having means for supporting it on a wall as specifically described herein with reference to the accompanying drawings. 95

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