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(54) Flood defence door assembly

(57) A flood defence door assembly comprises an upper door leaf (1) adapted to be hinged to a frame (7), and a lower door leaf (3). The lower door leaf (3) is adapted to be hinged to the frame (7) so as to open outwardly of a building, the lower door leaf being provided with laterally and downwardly extending sealing means (5) for sealing between the door leaf and the frame when the door leaf is in a closed configuration.

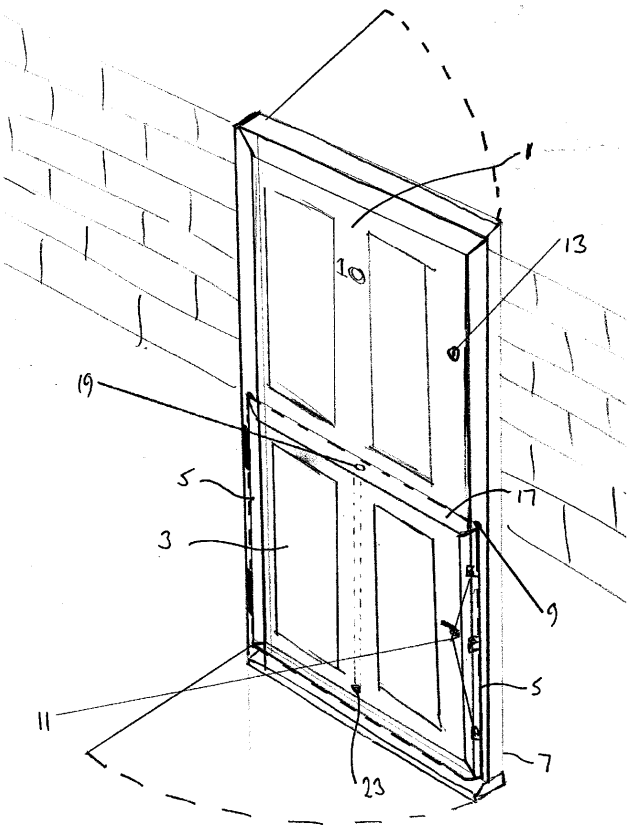

Fig. 1

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Description

[0001] This invention relates to a flood defence door assembly.

[0002] Conventional flood defences for door openings require flood prevention boards or closures to be secured to a door opening or frame or to a region of a property surrounding the door opening. Many potential users find such an arrangement aesthetically unattractive.

[0003] It is therefore an object of the present invention to provide a flood defence door assembly which overcomes, or at least ameliorates, the abovementioned disadvantage.

[0004] According to the present invention there is provided a flood defence door assembly comprising: an upper door leaf adapted to be hinged to a frame; and a lower door leaf adapted to be hinged to the frame so as to open outwardly of a building, the lower door being provided with laterally and downwardly extending sealing means for sealing between the door leaf and the frame when the door leaf is in a closed configuration.

[0005] The sealing means may abut in the closed configuration of the lower door leaf against a face of the frame that is external to the building.

[0006] The lower door leaf may be provided with a weep hole adapted to conduct liquid from an upper surface of the lower leaf to a lower region of the external surface thereof. The weep hole may open into a depression formed in an upper surface of the lower door leaf.

[0007] Locking means may be provided for locking the lower door leaf to the frame.

[0008] The upper door leaf may be adapted to be hinged to the frame so as to open inwardly of the building. In such a case, the lower door leaf may be provided with upwardly extending sealing means for sealing against an external surface of the upper door leaf. The upper door leaf may be provided with downwardly protruding sealing means for sealing against an internal surface of the lower door leaf.

[0009] Thus the present invention provides a way of avoiding the need for separate flood defences for doors.

[0010] For a better understanding of the present invention and to show more clearly how it may be carried into effect reference will now be made, by way of example, to the accompanying drawings in which:

[0011] Figure 1 is a diagrammatic perspective view of one embodiment of the flood defence door assembly according to the present invention;

[0012] Figure 2 is a sectional view of the flood defence door assembly shown in Figure 1;

[0013] Figure 3 is a plan view of an upper door leaf forming part of the flood defence door assembly shown in Figures 1 and 2;

[0014] Figure 4 is a plan view of a lower door leaf forming part of the flood defence door assembly shown in Figures 1 and 2;

[0015] Figure 5 is a side view, to a different scale of part of the flood defence door assembly shown in Figures 1 and 2; and

[0016] Figure 6 is an enlarged view of part of Figure 5.

[0017] The flood defence door assembly shown in the figures comprises an upper leaf 1 and a lower leaf 3. The lower leaf 3 is arranged to pivot outwardly relative to a building as shown by the arrows, while upper leaf 1 is arranged to pivot inwardly relative to the building (although the upper leaf could alternatively pivot outwardly) again as shown by the arrows.

[0018] The lower leaf 3 is provided with laterally and downwardly protruding seal portions 5 which seal against a door frame 7 which is provided in an opening of the building. Sealing means 9 is provided between the seal portions and the door frame. A conventional locking means 11, such as a three-point locking system is incorporated into the lower door leaf 3 and into the door frame 7 which, when in a locked configuration, urges the lower door leaf 3 towards the door frame 7 so as to compress the sealing means 9 and form a watertight seal between the lower leaf and the door frame. In the event of a flood, water will additionally urge the lower leaf towards the door frame further compressing the sealing means and ensuring there are no leaks between the lower leaf and the door frame. The locked lower leaf 3 further serves as a security measure inasmuch as it is only necessary for the upper leaf 1 to be opened, maintaining a partial barrier between an occupant of the building and a visitor.

[0019] The upper leaf 1 is generally arranged to pivot inwardly of the building in the manner of a conventional front door, although as an alternative it could pivot outwardly. The figures show the upper leaf pivoting inwardly. The upper leaf has a conventional door lock 13 and a seal portion 15 which extends downwardly from the lower edge of the upper leaf to protrude over the top edge of the lower leaf 3 on the internal face of the lower leaf. The lower leaf has a corresponding upwardly extending seal portion 17 which protrudes over the lower edge of the upper leaf on the external face of the upper leaf. The seal portions 15, 17 are provided with seals to seal against the respective leaf 1, 3. The lower leaf 3 is provided with a weep hole 19 which has an inlet from a depression 21 which extends along the upper edge and is positioned between the external and internal faces of the lower leaf. The weep hole 19 extends downwardly in the form of a tube through the lower leaf 3 and has an outlet 23 in the external face of the lower leaf a short distance above the lower edge thereof. Consequently, any rain falling against the upper leaf 1 and which for any reason may run between the seal portion 17 and the external face of the upper leaf will run into the weep hole and be discharged at the lower region of the lower leaf. In this way water or condensation can escape, but in the event of a flood the flood water 25 will find its own level within the weep hole without causing any damage to the lower leaf or the property.

Claims

1. A flood defence door assembly comprising: an upper door leaf (1) adapted to be hinged to a frame (7); and a lower door leaf (3) adapted to be hinged to the frame so as to open outwardly of a building, the lower door leaf being provided with laterally and downwardly extending sealing means (5) for sealing between the door leaf and the frame when the door leaf is in a closed configuration.

2. A door assembly as claimed in claim 1, wherein the sealing means (5) abuts in the closed configuration of the lower door leaf (3) against a face of the frame (7) that is external to the building.

3. A door assembly as claimed in claim 1 or 2, wherein the lower door leaf (3) is provided with a weep hole (19) adapted to conduct liquid from an upper surface of the lower leaf to a lower region of the external surface thereof.

4. A door assembly as claimed in claim 3, wherein the weep hole (19) opens into a depression (21) formed in an upper surface of the lower door leaf (3).

5. A door assembly as claimed in any preceding claim, wherein locking means (11) is provided for locking the lower door leaf (3) to the frame (7).

6. A door assembly as claimed in any preceding claim, wherein the upper door leaf (1) is adapted to be hinged to the frame (7) so as to open inwardly of the building.

7. A door assembly as claimed in claim 6, wherein the lower door leaf (3) is provided with upwardly extending sealing means (17) for sealing against an external surface of the upper door leaf (1).

8. A door assembly as claimed in claim 6 or 7, wherein the upper door leaf (1) is provided with downwardly protruding sealing means (15) for sealing against an internal surface of the lower door leaf (3).

9. A flood defence door assembly substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

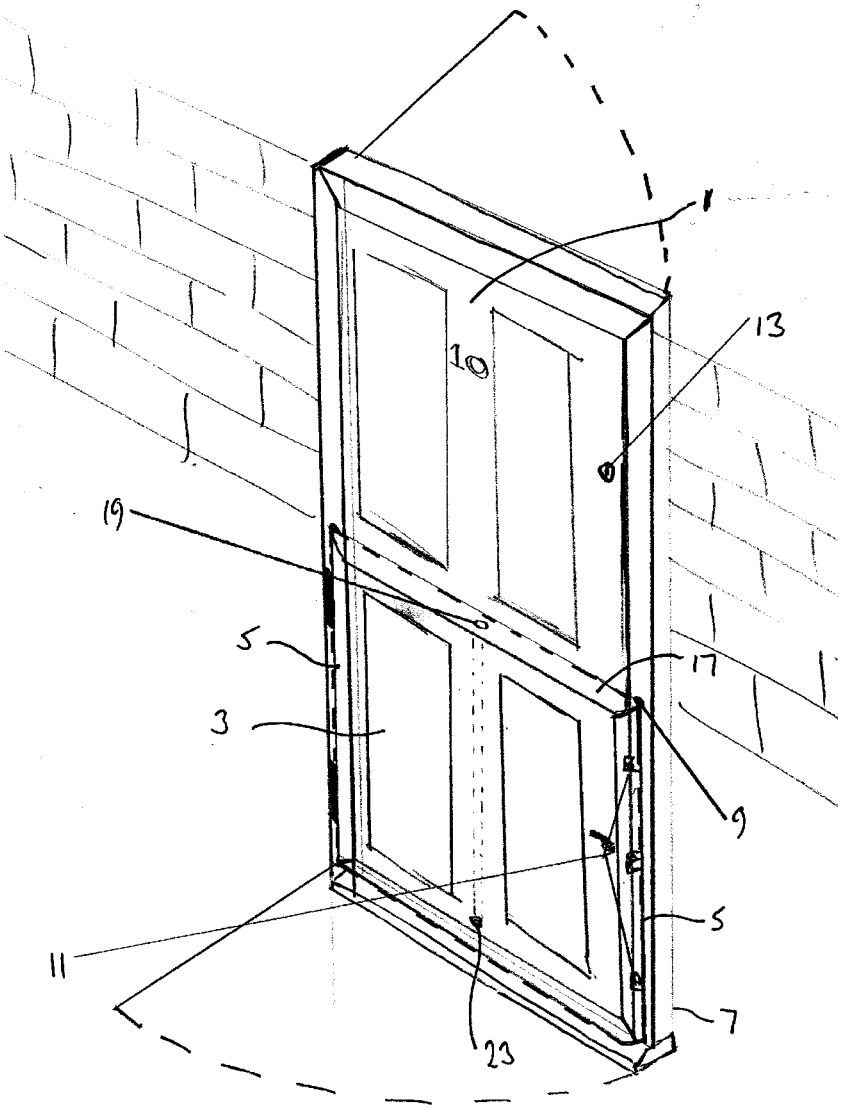

Fig. 1

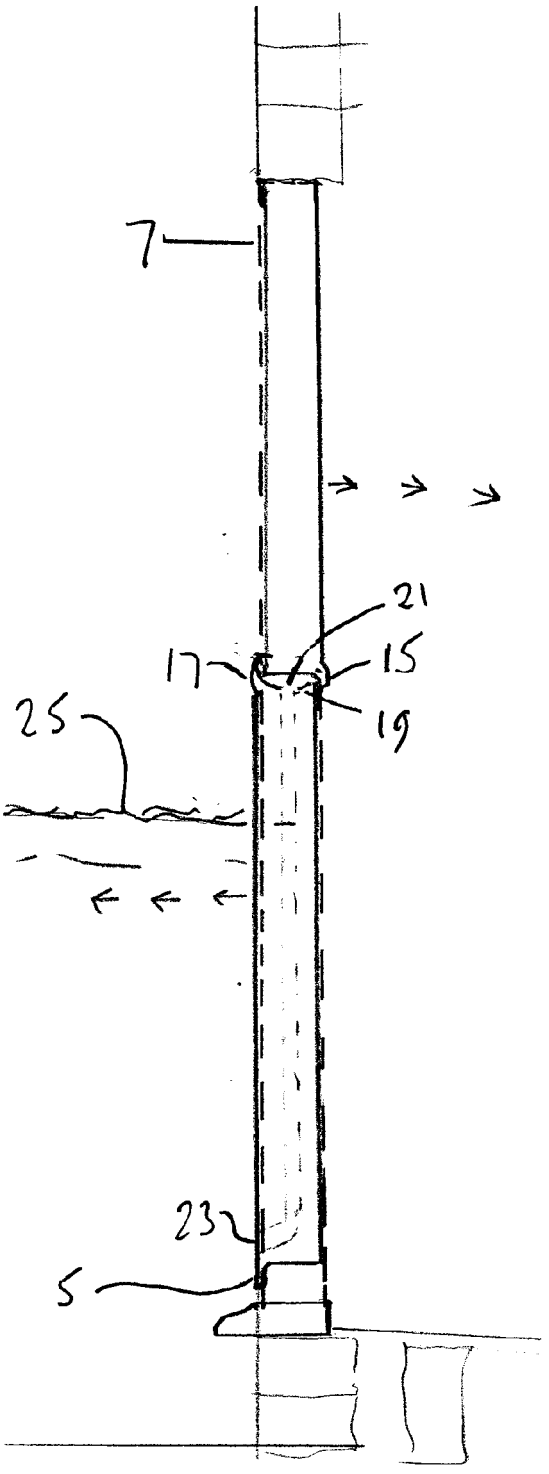

Fig. 2

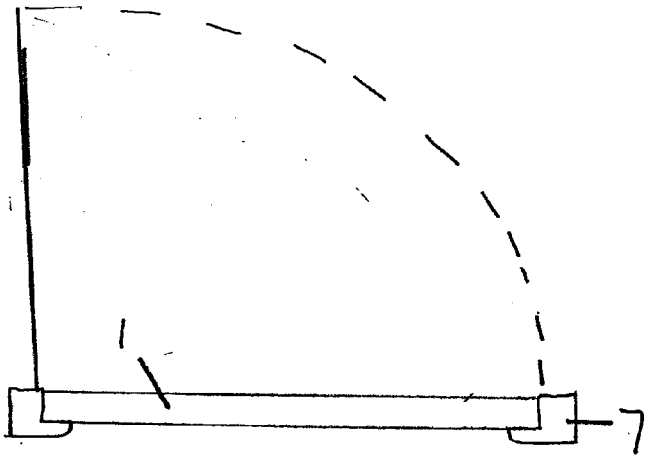

Fig. 3

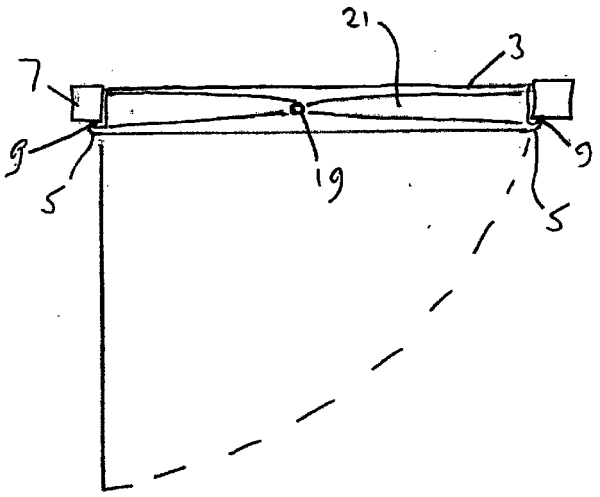

Fig. 4

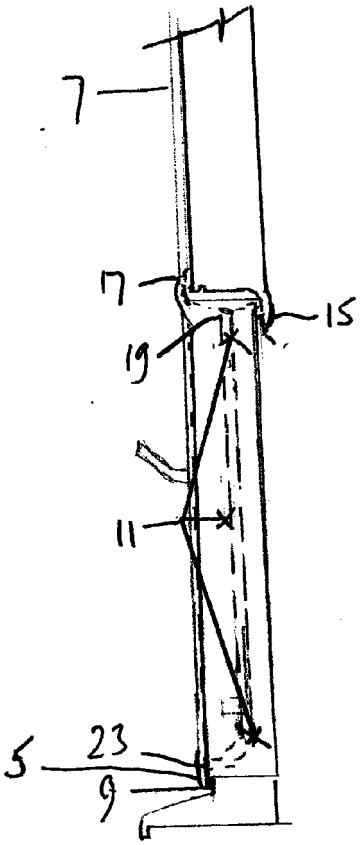

Fig. 5

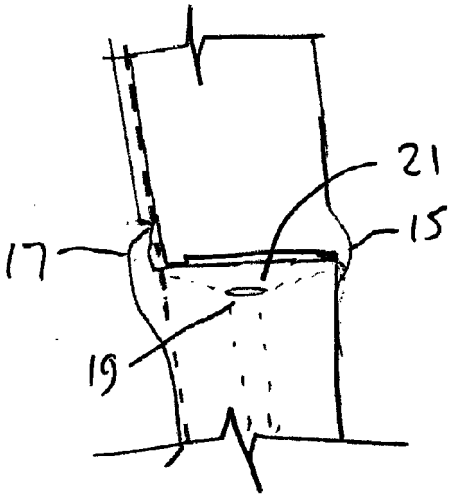

Fig. 6