

A PLASTIC THRESHOLD FOR BLOCKING WATER

BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention relates to a plastic threshold structure for blocking water, particularly to a structure which does not require wet cement and is suitable for dry installation.

(b) Description of the Prior Art

Conventional threshold for blocking water can be made of man-made marble, stainless steel or built by concrete cement. However, the construction work of the above-mentioned conventional thresholds has to be executed during the course of laying the door frames. This means that the installation work involves with mixing the concrete (and piling the bricks) first, and the prefabricated marble or stainless steel threshold is attached to the wet cement. This is the so-called wet-typed cement construction of the threshold. The threshold cannot be installed after the door frames and painting are completed. For this type of installation, it takes longer to build the threshold because of the heavy cement work involved. In addition, the cement work could be damaged by external vibration

before it dries out, thereby causing a gap (for leakage) in the threshold construction. Nonetheless, the physical sizes of the marble, stainless steel and bricks are bulky, making it hard for transportation.

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SUMMARY OF THE INVENTION

The main object according to the present invention is to provide a plastic threshold for blocking water. The structure consists of a plastic hollow threshold base and an inner bushing cooperating with a metallic securing plate. The inner bushing and the securing plate can be secured on the ground by fastening components, thereby allowing the threshold base to be inserted from the top into the inner bushing for securing. Bonding glue can be applied to enhance the securing of the structure. The structure can be easily installed after the door frames and walls are completed and painted, overcoming the inconvenience of traditional wet cement construction.

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Another object according to the present invention is to provide a plastic threshold for blocking water, in which retaining slots are provided in selected locations on both ends of the threshold base. Such retaining slots are provided to cooperate with retaining plates provided on the anti-slippage cover plate so that the threshold base can be positioned and secured in place. The end surface of the

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threshold base can have the anti-slippage plate for decoration and covering.

BRIEF DESCRIPTION OF THE DRAWINGS

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The invention will be more fully understood from the following detailed description thereof, taken in conjunction with the accompanying drawings, in which:

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FIG. 1 is a perspective fragmented view of the present invention.

FIG. 2 is a cross-sectional view of the assembly according to the present invention.

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FIG. 3 is cross-sectional view of the assembly having an anti-slippage plate.

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FIG. 4 is a perspective view of an embodiment installed at the door frame.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

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As shown in FIG. 1, the plastic threshold according to the present invention consists of a threshold base 1, an inner bushing 2, a securing plate 3 and an anti-slippage cover plate 4.

The threshold base 1 is a hollow body having the shape of an inverted "U", it is provided with appropriate thickness and strength. The base 1 can be formed into a double-layer plate body, so that suitable rib can be provided for strengthening. On both sides of the inner wall, stepped tooth slots 11 having inverted hooks are provided. In selected locations of the outside walls, retaining grooves 12 are respectively provided.

The inner bushing 2 is also a plate body having the shape of an inverted "U", its end surface is facing downward to touch on the ground, a hole 21 is provided on the end surface.

The securing plate 3 is also a plate body having the shape of an inverted "U", it is made to be inserted into the above-mentioned inner bushing 2, as is shown in FIG. 2. Both ends of the securing plate 3 are respectively provided with a retaining plate 31 which expands outward; the end surface is also provided with a hole 32, which corresponds to hole 21 of the inner bushing 2.

The anti-slippage plate 4 is a cover plate having the shape of an inverted "U", its two ends are respectively provided with a retaining plate 41 facing inward, and its surface can be appropriately fabricated into a rough

surface (by use of protruded particles or patterns).

By use of the above components, the securing plate 3 is first inserted into the inner bushing 2, and suitable fastening members 5 are used to feed through holes 21 and 32 so that they can be secured on the ground. The threshold base 1 is then pushed down, with appropriate pressure, to cover the exterior of the inner bushing 2. The retaining plates 31 on both ends of the securing plate 3 are allowed to engage with the inverted hooks provided on step tooth slots 11. After the assembly, the joints between the threshold base 1 and the door frame 6 are sealed with sealer 61 (such as silicone) to prevent the leaking and water penetration through the joints. The overall structure is simple to assemble and can be completed quickly, and it does not require the wet-type construction such as the filling of concrete.

The above threshold base 1 is formed into an elongated body, the total length of which is determined by the dimension of the door frame. The inner bushing 2 and the securing plate 3 do not have to have the same length as the threshold base 1, they can come in two or three segments, so that each segment can be integrated on the ground one by one at a time, thereby cooperating with threshold base 1 to give a secured assembly. In addition, after the inner bushing 2 is secured on the ground, bonding glue 7 can be

applied to its exterior wall. When the inner wall of threshold base 1 comes in contact with the exterior wall of inner bushing 2, the bonding glue is allowed to flow into the step toothed slots 11, providing a much stronger bonding effect.

The threshold base 1 and the inner bushing 2 of the plastic threshold according to the present invention are suitable to be molded from plastic; not only plastic is lightweight and rugged, but also the product can be produced in quantity to lower the cost. As for the securing plate 3, it should be made from metallic materials because of the retaining effect and the supporting strength required. The material for the anti-slippage plate 4 can be determined by practical needs. It is hereby point out that the use of materials is simply a matter of substitution.

In addition, the retaining grooves 12 provided on both exterior walls of threshold base 1 are used to cooperate with the anti-slippage plate 4 for covering. The end surface of the threshold base 1 can also be provided with a rough surface to replace the anti-slippage plate 4. This is another embodiment that does not depart from the scope of the invention. In addition, the fastening members 5 shown in Figure 1 can be a hollow anchor, which can be driven into the ground hole 8. When the bolt 51 is driven

into the anchor, the latter expands and provides a tight gripping. Nonetheless, the fastening members 5 can also be substituted by other means of securing device.

5 The design of the structure according to the present invention is to provide the dry-typed construction for the water-blocking threshold, it is particularly suitable to be installed after the construction and painting of the door frame and walls are completed. The structure provides a
10 quick construction process, and prevents the water-blocking threshold to be contaminated with paint and cement. The overall structure is very reasonable, and provides a simplified and secured effect.

15 Many changes and modifications in the above described embodiment of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only
20 by the scope of the appended claims.

WHAT IS CLAIMED IS:

25 1. A plastic threshold for blocking water comprising a threshold base, an inner bushing, a securing plate for said inner bushing in which:



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WHAT IS CLAIMED IS:

25 1. A plastic threshold for blocking water comprising a threshold base, an inner bushing, a securing plate for said inner bushing in which:



Said threshold base is a hollow body having the shape of an inverted "U", it is provided with appropriate thickness and strength, and step tooth slots having inverted hooks are provided on both sides of the inner wall;

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Said inner bushing is also a plate body having the shape of an inverted "U", its end surface is arranged to face downward touching the ground, a hole is provided on its end surface;

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Said securing plate is also a plate body having the shape of an inverted "U", it is made to be inserted into the above-mentioned inner bushing, both ends of the securing plate are respectively provided with a retaining plate which expands outward, the end surface is also provided with a hole, which corresponds to holes of said inner bushing;

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whereby said securing plate is first inserted into said inner bushing, and suitable fastening members are used to feed through the holes provided in said inner bushing and said securing plate so that they can be fastened on the ground; said threshold base is then pushed down, with appropriate pressure, to cover the exterior of said inner bushing, said retaining plates provided on both ends of the securing plate are allowed to engage with the inverted hooks provided on stepped tooth slots.

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2. A plastic threshold for blocking water as recited in Claim 1 wherein said threshold base can be formed into a double-layer plate body, so that suitable rib can be provided for strengthening.

3. A plastic threshold for blocking water as recited in Claim 1 wherein the end surface of the threshold can be provided with a rough surface to prevent slippage.

4. A plastic threshold for blocking water as recited in Claim 1 wherein retaining grooves are provided in selected locations of the outside walls of said threshold base, such retaining grooves are provided to retain an anti-slippage plate which serves as a cover plate, and the two ends of the anti-slippage plate are respectively provided with a retaining plate facing inward.

5. A plastic threshold for blocking water as recited in Claim 1 wherein said inner bushing and said securing plate can come in two or three segments, so that each segment can be integrated on the ground one by one at a time, thereby cooperating with said threshold base to give a secured assembly.

6. A plastic threshold for blocking water as recited in Claim 1 wherein bonding glue can be applied to the



exterior wall of said inner bushing, when the inner wall of said threshold base comes in contact with the exterior wall of said inner bushing, the bonding glue flows into the step tooth slots to provide a much stronger bonding effect.

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7. A plastic threshold for blocking water as recited in Claim 1 wherein the joints of the threshold assembly are sealed with appropriate amount of silicone.