

(12) UK Patent Application (19) GB (11) 2 297 112 (13) A

(43) Date of A Publication 24.07.1996

(21) Application No 9500647.4

(22) Date of Filing 13.01.1995

(71) Applicant(s)
Kevin Barrett
164 Hatmore Park, DERRY, Co Londonderry, BT48 0AY,
United Kingdom

(72) Inventor(s)
Kevin Barrett

(74) Agent and/or Address for Service
Kevin Barrett
164 Hatmore Park, DERRY, Co Londonderry, BT48 0AY,
United Kingdom

(51) INT CL⁶
E06B 1/70

(52) UK CL (Edition O)
E1J JGF

(56) Documents Cited
GB 2232434 A GB 2061360 A EP 0318130 A1
US 4686793 A

(58) Field of Search
UK CL (Edition O) E1J JGF
INT CL⁶ E06B 1/70
Online: World Patents Index, EDOC.

(54) Self-draining threshold weather excluder

(57) A door threshold weather excluder comprises a first component 1 in the form of a base which fixes to the step of an outside door opening and which has an internal sloped surface for water run-off created by moulding the back 3 of the base thicker than its front 4 and where the excluder is completed by providing the first component with a obtuse angled cover 7, containing internal strengthening webs 10, so that excess water flows through the cover to the front of the base and from there to the ground via vertical drain slots 6 in a front edge 5 of the first component, and where the two components are united with corrosion proof screws (9, figure 3) so as to aid easy removal of the cover for cleaning and de-silting.

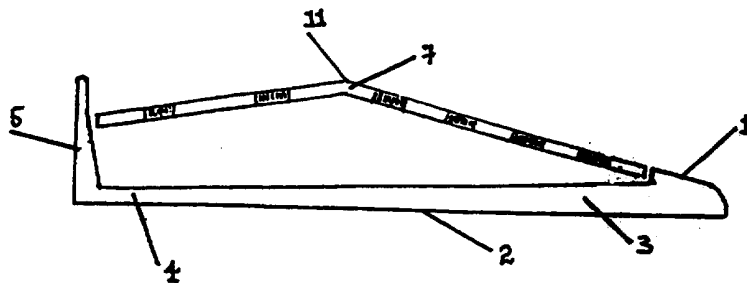


FIG. 1.

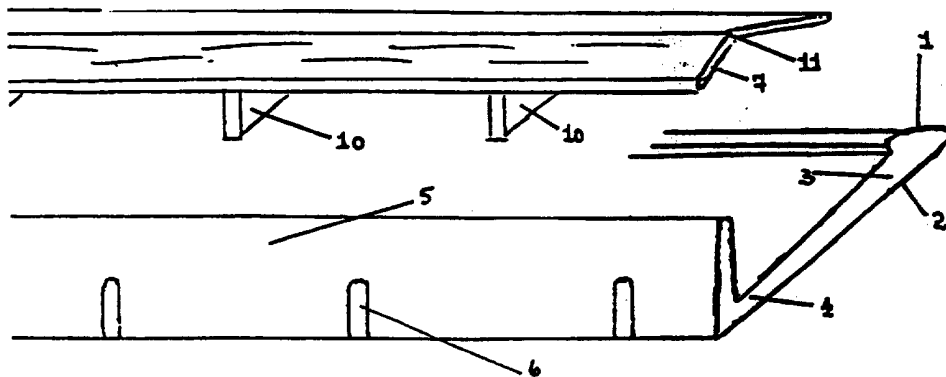


FIG. 5.

GB 2 297 112 A

1/2

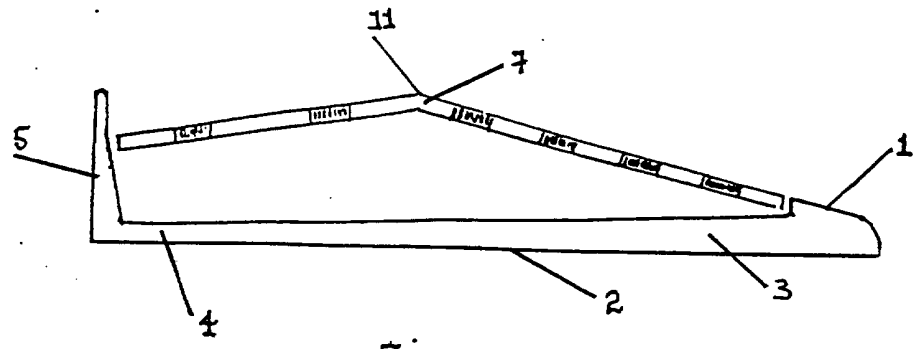


FIG. 1.

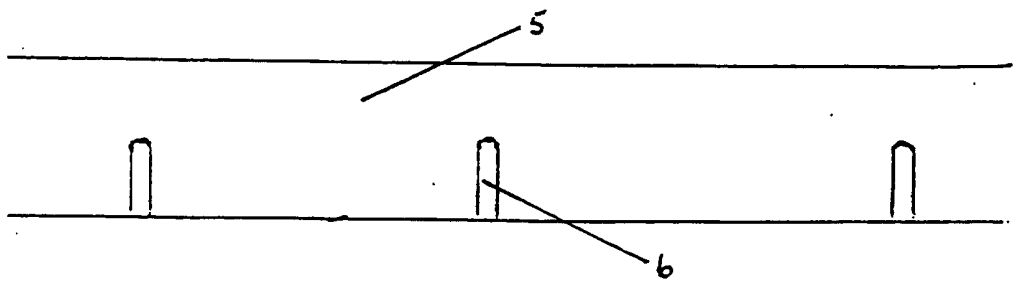


FIG. 2.

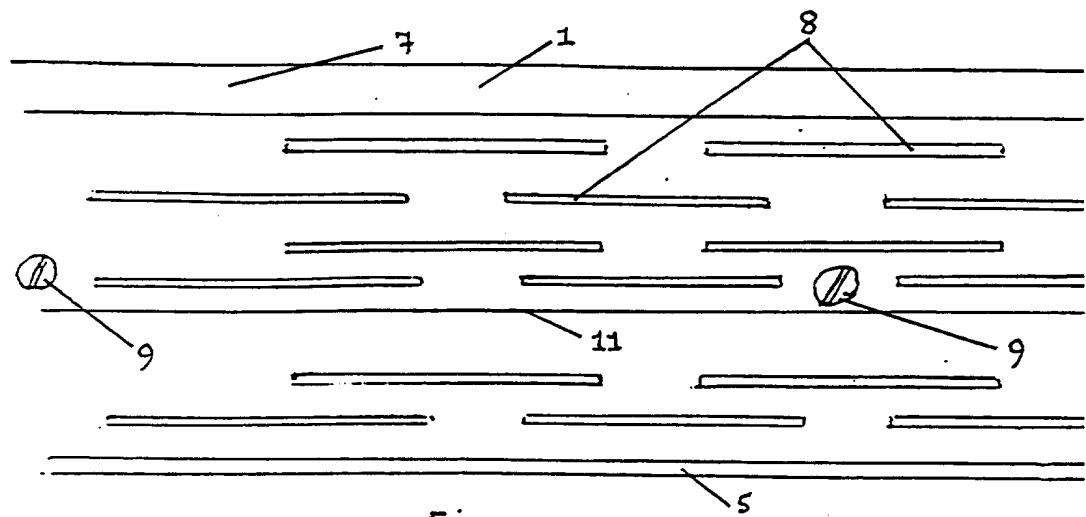


FIG. 3.

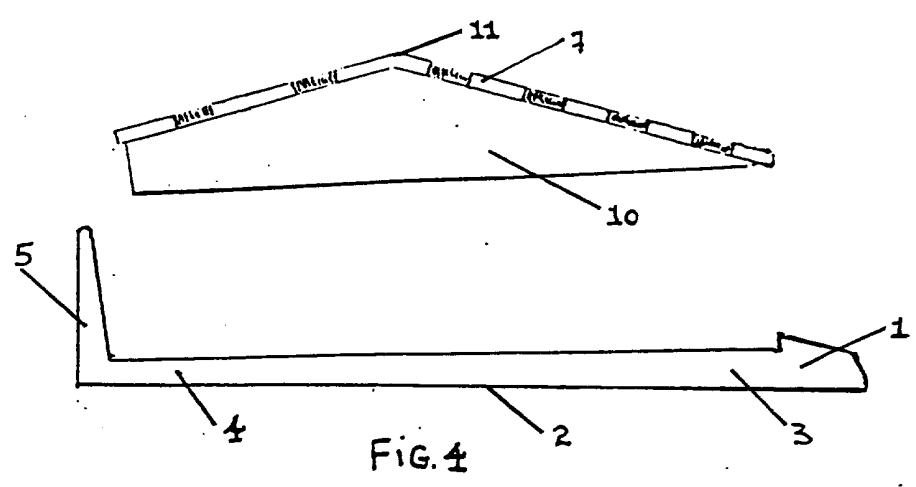


FIG. 4

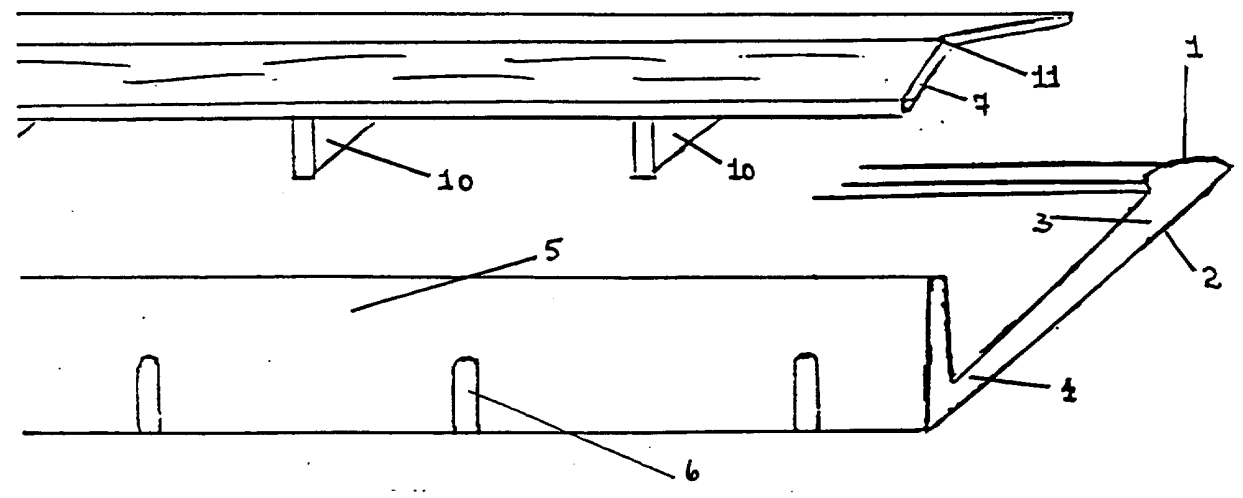


FIG. 5.

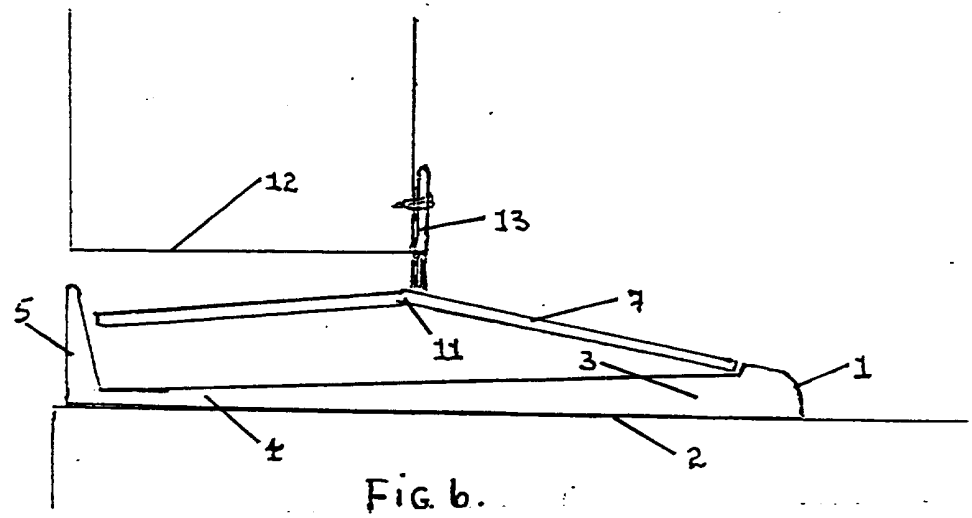


FIG. 6.

2297112

A DOOR WEATHER SADDLE

This invention relates to a door saddle and in particular to a saddle which is intended to be fitted to outside doors of houses and buildings so that condensate, or rainwater run-off, is collected at the bottom of the door and run into an integral water trough before being directed to the outside of the doorstep via drain slots. Wet weather is seldom accompanied by still conditions and even in the presence of slight breezes the rainwater which drains down the outside surface of an external door inevitably is blown inwards between the bottom of the door and the door tread or saddle. Much attention has been given to this water ingress nuisance and the prior art cites many examples of devices which have been produced, or tried, to collect this water and direct it to the outside of the house or building. For example, in CA 2036276 there is provided a sill for a swing door on a building where the bottom of the door swings against a flexible seal and where the sill member has drain holes under the flexible seal to collect water and pass it to the front of the swing doors. In GB 2125865 an extruded sill member is used to collect door drainage water but the member includes a thermal break to prevent the outside facing sill portion from extracting heat from the warmer inside member. Further in US.4831779 a door threshold combination comprises weatherseals around the entire door periphery and a water trough for collecting any water which leaks into and past the weatherseals. These devices of the prior art suffer from some disadvantages which are important ones in

the practice of maintaining the water repelling parameters of a door system. For example many seal the door bottom, on closing, with a flexible strip and therefore cause water to be held by capillary attraction between the strip and the sill and this water is pulled into the hallway every time the door is opened in wet weather. Others provide a sloping sill which concentrates the water flow from the door surface and allows it to be blown into the space between the door and the sill where it is held along the ever present flexible strip and thereafter pulled into the hallway every time the door is opened. Some provide treads with drain holes or slots which soon clog with street debris from footwear and do not provide easy cleaning features in their designs. The simplest provide Weather Bars which are fitted flush to the bottom of the door and, through time, with wood distortion rain-water penetration takes place with resultant damage to floor and carpets. Many of the devices which are fixed to the doorstep are of rectangular section and constitute a tripping hazard. These cited disadvantages are overcome in the present invention where there is provided a door weather saddle comprising a first component or base which is fixed to the horizontal step of the door and which is shaped or extruded in such a way that the internal base surface decreases in thickness from the back to the front of the step so that it is self-draining, via vertical slots, to the outside of the building and into which fits a second component in the form of an obtuse angled slotted cover which acts as a door saddle to prevent tripping accidents, in one instance, and a drainage cover in another and where the second

component is removably fixed to the first or base component by the use of fixing elements, such as screws, which allow for easy removal for cleaning.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:-

Figure 1 shows a section through the door weather saddle in a plane at right angles to the surface of the closed door.

Figure 2 is a front elevation of the door weather saddle viewed from the outside of the house or building.

Figure 3 is a plan view of the top surface of the saddle with its top plate in position fixed with screws.

Figure 4 shows a section of each component of the weather saddle in a position where each can be brought together and screw fixed to yield the device of Figure 1

Figure 5 shows in perspective the position of Figure 4 and illustrating the strengthening webs of the top slotted cover.

Figure 6 shows a section through a fitted device where the clearance between the apex of the saddle cover is closed by the use of a brush sealing strip,

Referring to the drawings the door weather saddle comprises a base component 1 which fixes to a horizontal doorstep because of its horizontally planar base 2 but which has an inclined top surface to this base because the material of construction is thicker in section at the side 3 than the side 4. This base component 1 has a front vertical face 5 which carries drainage slots 6 and when fitted to a door sys-

tem the base component 1 is topped with an obtuse angled cover 7 which is slotted at various positions 8 and which is held in place by the use of screw fixtures 9. Tread strength is obtained in this cover 7, which is the second component of the weather saddle, by the use of moulded webs 10 and when the whole saddle is fixed to a door threshold the apex 11 of the saddle cover just allows clearance of the door bottom 12 and final closure of the gap is accomplished by the employment of a brush sealing strip 13. When in use in a system the door is completely over the weather saddle which means that surface water at the front of the door is collected in the trough of the base component 1 and condensate on glass panels in the door, if present, is also collected in the same trough. The collected water in the trough flows towards the front of the unit and is directed to the outside of the step via the vertical drainage slots 6 and when silt or other foot traffic solids collect in the trough, say once per annum, the top component 7 is easily removed, by the use of the screw fixtures 9, and the trough cleaned by desludging. In practice it has been found that prototypes performed very well when made from polypropylene, uPVC, ABS and aluminium alloy.

CLAIMS

1. A door weather saddle comprises a first component or base which is fixed to the horizontal step of the door opening and which is shaped in such a way that its internal base surface decreases in material thickness from the back to the front of the step so that it is self-draining, via vertical slots, to the outside of the building and into which fits a second component in the form of an obtuse angled slotted cover which acts as a door saddle to prevent tripping accidents, in one instance, and a drainage cover in another and where the second component is removably fixed to the first or base component by the employment of fixing elements, such as screws, which allow for easy removal for cleaning.
2. A door weather saddle according to Claim 1 wherein the clearance space between the bottom of the door and the apex of the slotted cover, the second component, is closed by the use of a brush sealing strip,
3. A door weather saddle according to any of the above Claims in which the obtuse angled slotted cover has internal webs which endow it with rigidity and tread strength.
4. A door weather saddle according to Claim 3 wherein the slotted cover is fixed to the base, or first component, by the use of stainless steel or similar alloy screws which do not corrode in wet or moist environments and therefore always remain easy to remove and re-fit as required for cleaning purposes.

5. A door weather saddle substantially as described herein with reference to the Figures 1 to 6 of the accompanying drawings.



Application No: GB 9500647.4
Claims searched: 1-5

Examiner: John Rowlatt
Date of search: 23 April 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.O): E1J: JGF.
Int CI (Ed.6): E06B: 1/70.
Other: Online: World Patents Index, EDOC.

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB2232434A (NEILSON & BARCLAY LIMITED) - figure 1.	
A	GB2061360A (ALLPORT) - figure 2.	
A	EP0318130A1 (SLATER & McCONNELL) - figure 2.	
A	US4686793A (MILLS) - figure 2	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.