

Aug. 10, 1937.

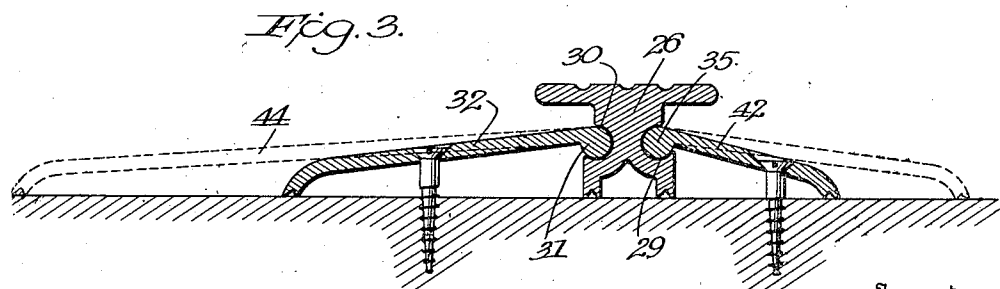
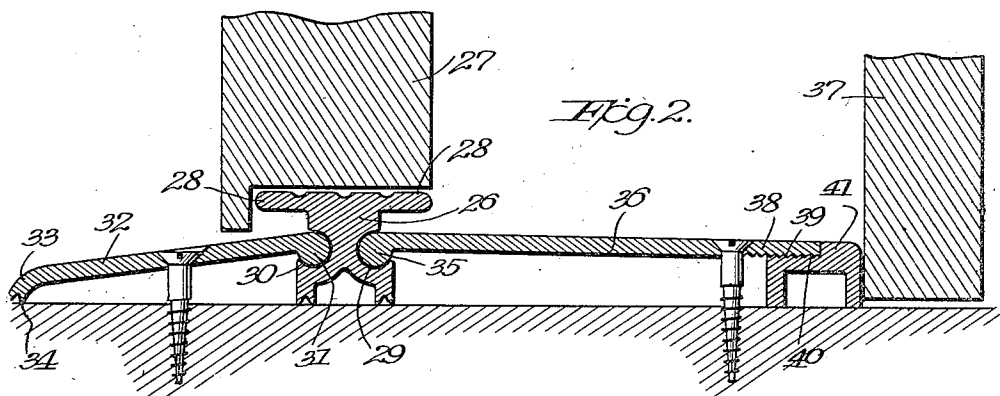
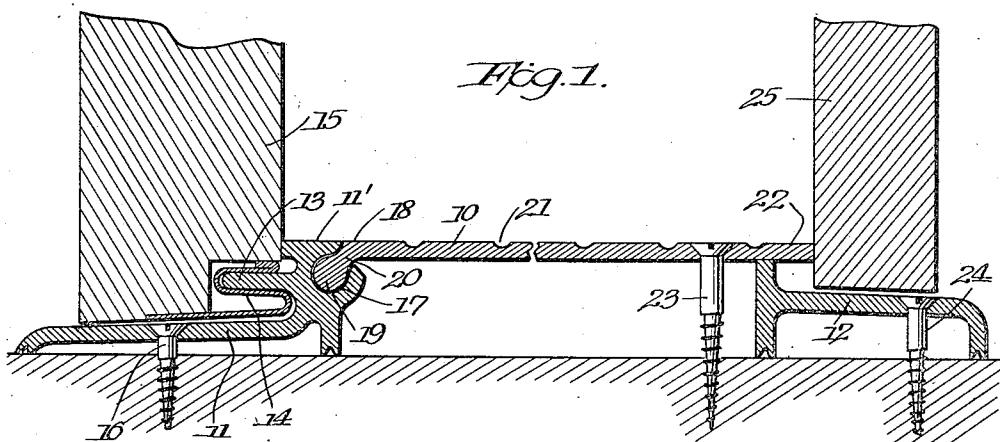
F. W. KAMMERER

2,089,380

METALLIC DOOR SADDLE

Filed March 23, 1936

2 Sheets-Sheet 1



Inventor

Fred W. Kammerer

By *Cushman, Sawyer & Cushman*
Attorneys

Aug. 10, 1937.

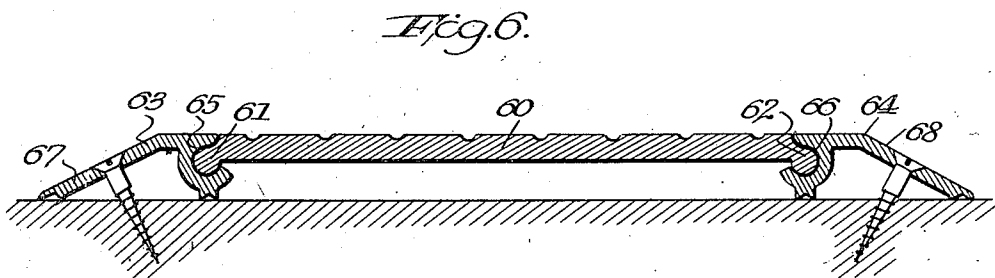
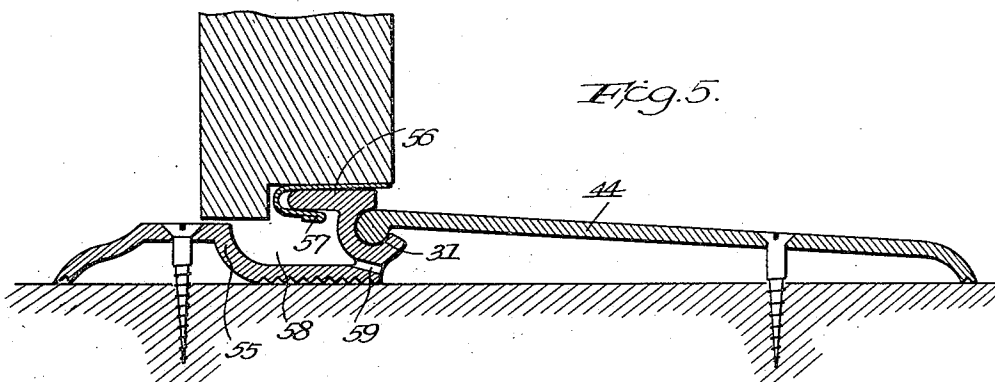
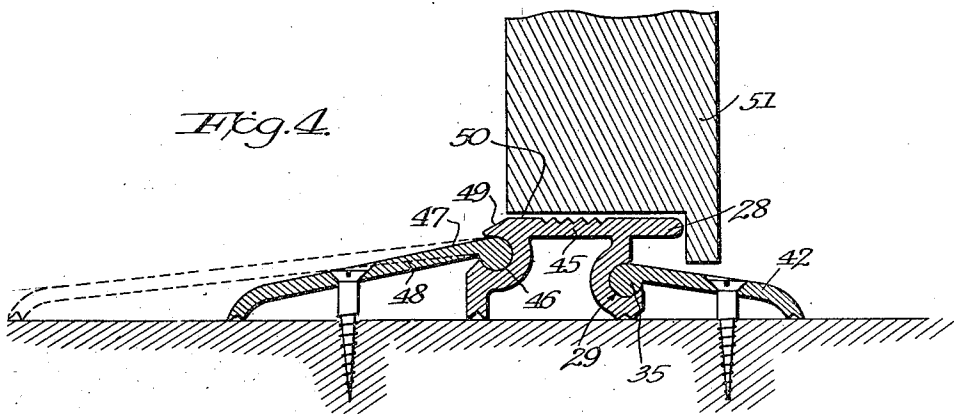
F. W. KAMMERER

2,089,380

METALLIC DOOR SADDLE

Filed March 23, 1936

2 Sheets-Sheet 2



Inventor

Fred W. Kammerer

By *Cushman, Doby, Cushman*
Attorneys

UNITED STATES PATENT OFFICE

2,089,380

METALLIC DOOR SADDLE

Fred W. Kammerer, New York, N. Y.

Application March 23, 1936, Serial No. 70,530

17 Claims. (Cl. 20-64)

This invention relates to metallic threshold constructions or door saddles. It is an object of the invention to provide an improved sectional door saddle, the parts of which may be readily assembled and taken apart. It is a further object to make the connecting means for the several sections of standard construction, so that different combinations and sizes of parts may be used to provide different types and sizes of door saddles.

In the past it has been the practice to make metallic door saddles, or thresholds, of bronze strip material of special cross sectional shape. These shapes have usually been made by an extrusion method, and, as is well known, such methods impose definite limitations as to the maximum size of the resulting product. Thus, there has been a definite limit to the width of metal thresholds which have been made by the extrusion process in the past.

It is an object of the present invention to make the door saddle of a plurality of sections so as to remove this size limitation.

It is a further object to make the several sections of the saddle in such a manner that each may seek its own supporting floor level, by relative movement with the others, and independently of the others. In order to accomplish this object, I preferably provide a pivotal connection between the sections, so that one section may move somewhat with respect to the other.

In the accompanying drawings a number of modifications of the present invention are shown by way of illustration, but it must be understood that the invention is not limited to the specific embodiments disclosed, but covers any equivalent construction embodying the principles set forth herein.

In the drawings:

Figure 1 is a cross sectional view of a door saddle in accordance with this invention.

Figure 2 is a similar view of a modified form.

Figure 3 is a similar view of the device of Figure 2, with a different form of side plate substituted.

Figures 4, 5 and 6 are cross sectional views of further modifications.

In Figure 1 the invention is shown as applied to a metal threshold construction of the type disclosed in my prior Patent No. 1,929,316, October 3, 1933. This construction comprises a central tread section 10, an outer side section 11, and an inner side section 12. The section 11 is formed with a flange 13 adapted to cooperate with a metal weatherstrip 14 carried

by the door 15 in the same manner as described in the aforesaid patent. The section 11 may be held in place by conventional wood screws 16, or any other suitable fastening elements.

The inner edge of the side section 11 is provided with a longitudinally extending, cross sectionally rounded re-entrant groove 17, and the central section adjacent its edge 18 is provided with an outwardly projecting, cross-sectionally rounded rib or bead 19, joining the section by a restricted neck portion 20. Thus the sections 10, 11 may be assembled before the saddle is put in place in the doorway, by sliding the bead 19 lengthwise into the groove 17. When thus assembled, the parts can only be taken apart by a similar endwise movement, because the cooperation between the restricted mouth of the groove and the narrow neck of the beaded portion prevents transverse movement of the parts.

The central tread portion 10 may conveniently be provided with anti-slipping means, such as the grooves 21, but, of course, any equivalent elements could be used. The inner edge 22 of the tread section may be supported by simply resting upon the side section 12, after the manner disclosed in the aforesaid patent, or a construction similar to that disclosed in Figure 6, and described below, could be substituted.

It should be noted that the upper surface of the central section 10 adjacent the edge 18 is substantially flush with the upper section 11 of the section 11. Wood screws 23, 24 or the like, may be used to hold the sections 10 and 12 in place.

As a result of the pivotal connection between the outer section 11 and the central section 10, the saddle construction of the present invention is enabled to compensate for substantial differences in the levels of the floor supporting the sections 11 and 12. For instance, if the floor under the screen door 25 is lower than the sill under the main door 15, the section 12 will be at a lower level, but this difference will be compensated for by a slight downward pivotal movement of the section 10. Thus, it is unnecessary, when working with the present invention, to "shim up" one side of the saddle so as to make the sections absolutely level. This feature is of particular advantage in connection with restoring or reconstructing old buildings, where it is often found that the floor levels inside and outside of a door neither match each other nor the level of the sill.

The form of the invention shown in Figure 2 comprises a central tread section 26 adapted to

be positioned on the sill beneath the door 27. This member comprises upper horizontally extending flanges 28, 28, serving to give a substantial width to the tread. Below these flanges the vertical faces of the section are provided with longitudinally extending circular grooves 29, 30. The inner groove 30 receives a marginal bead 31 of the inner side section 32. The latter section may terminate at its opposite margin in a down-turned portion 33 having relatively sharp teeth 34 on its undersurface, to grip the floor. The inner groove 29 may receive the elongated bead 35 of the side section 36 which substantially fills the space between the door 27 and the screen door 37. The undersurface of the section 36 adjacent the outer margin 38 may be provided with serrations 39 adapted to cooperate with complementary serrations 40 formed on the upper surface of an end member 41. The latter acts as an abutment or jamb for the screen door 37.

The form of the invention shown in Figure 3 is substantially the same as that shown in Figure 2, with the exception that, for the side section 36 and end section 41, a simple, one-piece side section 42 has been substituted. As indicated in dotted lines at 43, 44, various sizes of side sections may be combined with the central tread section 26. All of these members are provided with standard sizes of beaded edges 31, 35 and the tread sections 26 are all provided with standard grooves 29, 30. Therefore, any desired sizes of side plates 32, 42, 43, 44 may be combined with a tread section of the type shown at 26 to produce different types of saddles. The pivotal connection between the side plates and the central tread sections in all cases, will enable the saddle to compensate for differences in the levels of the floor surfaces supporting the sections.

In Figure 4, a specially constructed central tread section 45 is disclosed, and this form differs from the member 26 principally in that the groove 46 is raised somewhat, and the upper surface 47 of the side section 48 is substantially flush with a beveled portion 49 merging with the tread surface 50. This eliminates the flange 28 on the outside of the door sill, when an inwardly swinging door 51 is used. Some home owners object to an upstanding outwardly projecting flange on a door saddle because the same sometimes constitutes a stumbling block.

The form of saddle shown in Figure 5 is particularly useful in connection with inwardly swinging French doors. The main tread section 55 is provided with an inwardly projecting flange 56 adapted to cooperate with the weatherstrip 57 on the door. An upwardly opening enlarged groove 58 serves to catch and collect any water which may be driven over the sill and beneath the door. Apertures 59 at the bottom of the groove provide means of egress for such water, and it should be noted that these apertures extend to the outside of the saddle so that the water does not get into the interior of the building. The side or approach piece 44 fits in the groove 31 in substantially the manner previously described.

The form of the saddle shown in Figure 6 is particularly useful for two-directional swinging doors which do not require a jamb or abutment surface. The central tread section 60 is provided with beaded edges 61, 62 which function in a similar manner to the beaded edges previously described. Side sections 63, 64 have their inner faces provided with grooves 65, 66, to receive the beads 61, 62, respectively.

The outer faces of the side sections are downwardly inclined as shown at 67, 68. In this form of the invention the central tread section 60 is supported entirely by the side sections.

A common feature of all of the forms of the invention disclosed herein is that two or more sections of the assembled door saddle are connected together by means which will permit relative tilting movement between the sections, to compensate for differences in the levels of the floor supporting surface, under each section. Moreover, the connection, comprising a re-entrant groove on one section and a complementary rib on the other, prevents separation of the sections except by relative endwise movement, so that there is no danger of the sections coming apart after they have been assembled and placed in position in the building.

I claim:

1. A door saddle comprising a tread section, and a side section, and a connection between said sections to permit relative pivotal movement therebetween to compensate for differences in the levels of the surfaces supporting said sections, said connection serving to prevent lateral separation of the sections.

2. A door saddle comprising a tread section and a side section, one of said sections having a rounded socket formed therein and the other having a projection formed thereon, complementary in shape to said socket, whereby said sections may be pivotally connected together.

3. A door saddle comprising a tread section and a side section detachably connected thereto by endwise relative movement, one of said sections being formed with an elongated cross-sectionally rounded groove and the other section being formed with an elongated, complementary, cross sectionally rounded projection, said groove and projecting portions comprising a pivotal connection between the sections adapted to facilitate relative movement therebetween, to compensate for differences in the levels of the floor surfaces supporting said sections adjacent the door.

4. A door saddle comprising a tread section and a side section, one of said sections being provided with a cross sectionally rounded re-entrant groove, and the other of said sections being provided with a cross sectionally rounded, laterally projecting bead adapted to be inserted in said groove, the surfaces of the rib and groove being of substantially the same cross-sectional shape, whereby pivotal movement between the sections may be effected to compensate for differences in the levels of the floor surfaces supporting said sections adjacent the door.

5. A door saddle comprising a tread section and a side section, one of said sections being provided with an elongated groove terminating in a restricted mouth, the other of said sections being provided with an elongated bead having a restricted neck connecting the same to said section, said groove and bead being of substantially equal, circular cross sectional shape to permit pivotal movement between the sections to compensate for differences in the levels of the floor surfaces supporting said sections adjacent the door.

6. A door saddle comprising a central tread section and a pair of side sections extending therefrom in opposite directions and pivotally connected thereto to permit relative movement between the sections to compensate for differences in the levels of the floor at the door sill

and at points adjacent thereto, the pivotal connection between said sections comprising elongated, cross sectionally rounded complemental ribs and grooves formed integrally thereon.

7. A door saddle comprising a side section having a laterally projecting flange adapted to cooperate with a metal weatherstrip on a door, and a tread section connected to said side section for substantial pivotal movement with respect thereto, the connection serving to prevent lateral separation of the sections.

8. A door saddle comprising a side section having a laterally projecting flange adapted to cooperate with a metal weatherstrip on a door, a tread section connected to said side section for relative movement with respect thereto, the connection serving to prevent lateral separation of the sections, and another side section adapted to support the other edge of said tread section.

9. A door saddle comprising a side section provided with a horizontally projecting flange adapted to cooperate with a weatherstrip on a door, a central tread section having one of its edges connected to said side section for relative movement with respect thereto, the connection serving to prevent separation of the sections by relative movement in a lateral direction, and another side section adapted to support the opposite edge of said central section, said pivotal connection serving to permit relative movement between said sections to compensate for differences in the levels of the floor surfaces supporting said sections.

10. A door sill comprising a central tread section provided with a longitudinally extending cross sectionally rounded groove in its side face, and a side section provided with a longitudinally extending cross sectionally rounded marginal bead receivable in said groove to permit pivotal movement between said sections to compensate for differences in the levels of the floor surfaces supporting said sections.

11. A door saddle comprising a central tread section having its side faces shaped to provide longitudinally extending cross sectionally rounded grooves, and a pair of side sections, each provided with a longitudinally extending cross sectionally rounded marginal bead receivable in one of the grooves of said central section to provide a pivotal connection between said central section and said side sections.

12. A door saddle comprising a main tread section and a side section, one of said sections comprising an upwardly opening groove adapted to catch water and the like driven under the door and over said section and a plurality of apertures communicating with said groove to facilitate the escape of such water, and a pivotal connection between said tread section and said side section to permit relative movement therebetween, to compensate for differences in the levels of the floor surfaces supporting said sections.

13. A door saddle comprising an interior tread section and an exterior side approach section, said interior section having on its outer face, a

longitudinally extending cross sectionally rounded groove, and inwardly thereof, having an upwardly opening groove adapted to catch water driven under the door and over said section, said last mentioned groove communicating downwardly with a plurality of apertures extending outwardly under the first mentioned groove to permit the exterior escape of such water, said side approach section being provided with an elongated, cross sectionally rounded beaded marginal portion adapted to be pivotally received in said first mentioned groove, whereby said sections may be pivotally moved relative to each other to compensate for differences in the levels of the floor surfaces supporting said sections.

14. A door saddle comprising a plurality of sections having their elongated adjacent side faces provided with interlocking, interfitting rounded ribs and grooves, so constructed and arranged that said sections may be separated and assembled only by relative endwise movement, said interfitting ribs and grooves permitting relative pivotal movement of the sections to compensate for differences in the levels of the floor surfaces supporting the different sections, the separable character of said sections permitting a variety of combinations of widths and types of individual sections to change the character of the assembled saddle for different installations.

15. A door saddle comprising a central tread section terminating at its sides in elongated, cross sectionally rounded marginal beads, and a pair of said sections, said side sections having their side faces formed to provide elongated similarly cross sectionally rounded grooves adapted to receive the beads of said central section, said side sections further comprising downwardly projecting floor engaging members positioned below said grooves, whereby said central section, when pivotally connected to said grooves is supported along its edges in spaced relation to the floor.

16. A door saddle comprising a tread section having its side face shaped to provide a longitudinally extending cross sectionally rounded groove, a side section having one of its edges shaped to provide a longitudinally extending cross sectionally rounded bead receivable in said groove and having its under surface adjacent its other edge serrated, and a removable edge block disposed adjacent the last-mentioned edge and provided with serrations to receive the serrated under surface of said side section.

17. A sill construction for doors, windows, and the like comprising an inner section and an outer section, said sections being connected together for relative pivotal movement to compensate for differences in the levels of the surfaces supporting said sections, said pivotal connection comprising a cross sectionally rounded longitudinally extending groove in one section and an interfitting cross sectionally rounded rib formed adjacent the edge of the other section.

FRED W. KAMMERER.