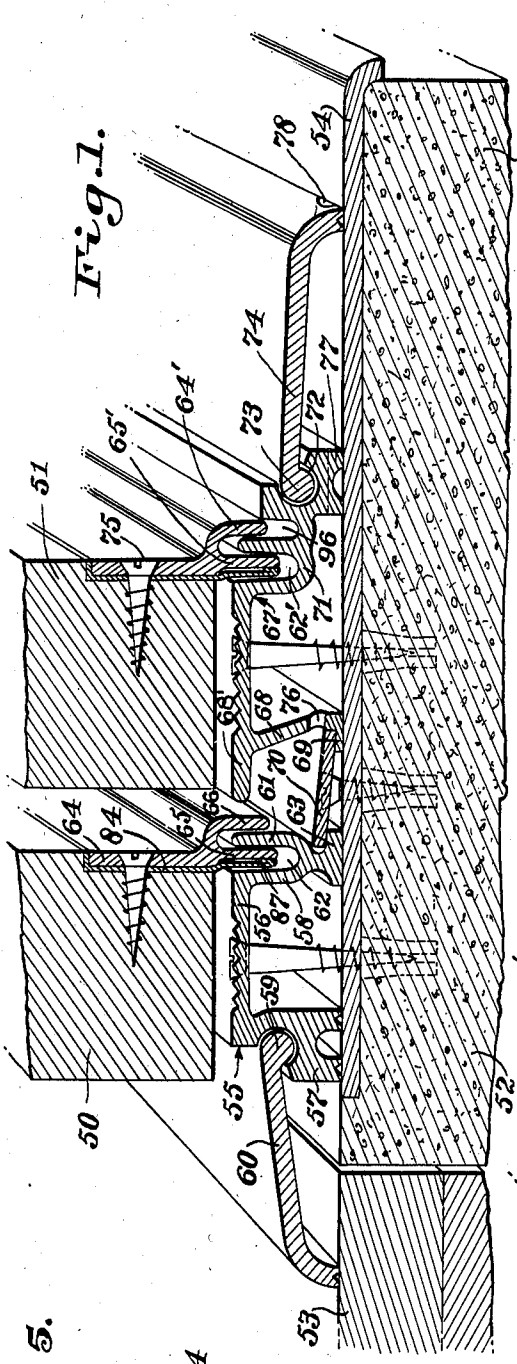
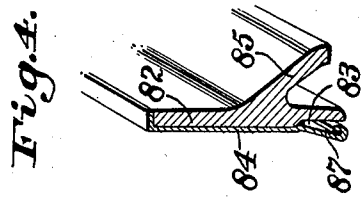
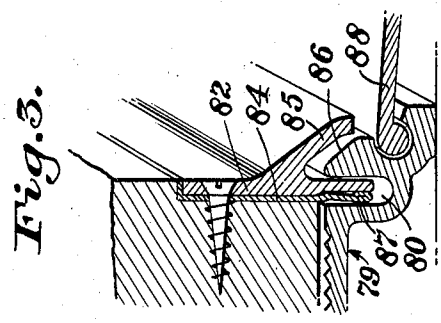
Feb. 24, 1942. F. W. KAMMERER 2,273,877

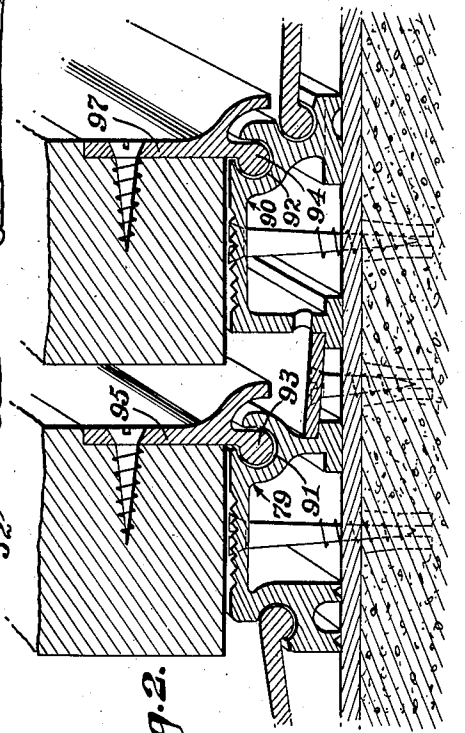
DOOR SADDLE

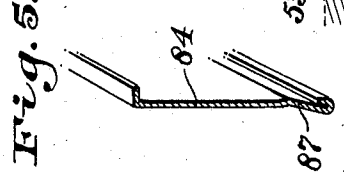
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DOOR SADDLE

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

Application May 4, 1939, Serial No. 271,797

13 Claims. (Cl. 20—64)

This application is a continuation-in-part of my prior-filed application Serial No. 157,793, filed August 7, 1937, for Door saddles.

The present invention relates to threshold constructions or door saddles, particularly adapted for use with horizontally sliding doors.

It is a primary object of the invention to provide threshold constructions for sliding doors and cooperating guide strips associated with, and adapted to be mounted upon, the sliding doors, to effect a substantially weather-tight joint between the door and threshold.

It is a further object of the invention to provide interfitting parts associated with sliding doors and thresholds which will facilitate the sliding movement of the doors relative to the thresholds.

It is a further object of the invention to provide, in an installation of the class described, a construction which will not jam in the event that the door sags somewhat, and which will permit some latitude in the hanging of the doors, whereby the necessity for exactness of fit is dispensed with.

In carrying out the invention, I preferably employ extruded metal elements of novel cross-sectional shape for the threshold construction and for the guide strips adapted to be secured to the horizontally sliding doors.

In the accompanying drrawing, a number of illustrative embodiments of the invention are disclosed, but it must be understood that the invention is not limited to the specific details shown therein and described below, since many variations will readily occur to one skilled in the art.

In the accompanying drawing:

Figure 1 is a transverse section and partial perspective of a threshold construction and cooperating parts, in accordance with a preferred form of the invention.

Figure 2 is a similar, fragmentary view of a modification.

Figure 3 is a view, similar to Figure 2, showing a further modification.

Figure 4 is a similar view of a guide strip used in the form of the invention shown in Figure 3, and

Figure 5 is a similar view of a weatherstrip which may be employed with the forms of the invention shown in Figures 1 and 3.

In Figure 1, there is disclosed an installation for double sliding doors, the doors being indicated at **50** and **51**, respectively. A threshold block **52** extends outwardly from the flooring **53** and is provided at its top, if desired, with a metal finishing plate **54**, disposed in the plane of the upper face of the flooring **53**.

A tread section **55** is disposed beneath the inner door **50** and comprises a horizontal top wall **56** from which depend the pedestals or flanges **57** and **58**. Pedestal **57** is formed with an upwardly opening, inwardly enlarging, longitudinally extending recess which receives the complementarily beaded edge **59** of a side section **60**, engagement being effected by relative longitudinal movement. The flange **58** is continued around and upwardly into the flange or tongue **61** to form a relatively narrow, upwardly opening channel **62**. At its base the flange or pedestal **58** has an outwardly and downwardly inclined shoulder **63**.

A strip **64** secured along and coextensive in length with the outer bottom margin of the door **50** has a downwardly projecting tongue or flange **65** of the same length, which is slidably received in channel **62**, the strip **64** also having a flange portion **66** of similar length extending outwardly and downwardly over the joint between the flange **65** and the channel **62**, to act as a raindrip.

In order to make the joint between the downwardly projecting flange **65** and the upwardly facing channel **62** weather-tight, a flexible strip of spring-bronze or other metallic weather-stripping **84** may be secured to the lower edge of the door, beneath the rigid strip **64**. The lower end **87** of the spring metal strip may project laterally into frictional contact with the adjacent face of the channel **62**, as indicated in Figures 1, 3, 4 and 5, thus forming an effective, weather-tight seal between the door and the tread section of the threshold.

A second tread section **67**, generally similar to the section **55**, is positioned in parallel relation to and in front of the latter. The pedestal portion **68** of section **67** is formed with a flange **68'** substantially closing the gap between the sections and with a foot **69** lower than the shoulder **63**. Resting on top of the foot **69** and shoulder **63** is a holding strip **70** which assumes the inclined position shown. The outer pedestal portion **71** of the saddle **67** is provided outwardly with a longitudinally extending recess **72** which receives the beaded edge **73** of a side section **74**. A strip **75**, the same as strip **64**, is secured along the lower outer margin of door **51** and is similarly guided in the groove or channel **62'** formed in the top of pedestal **71**. Pedestal **68** is provided with an opening **76**, pedestal **71** with a bottom transverse groove **77**, and the outer edge of the side sections **74** with a bottom transverse groove **78**, so that

water can drain from the channel between the two tread sections over the hold-down strip 70 and through the openings to the front of side section 74.

The outer tread section 67 preferably is provided with a second upwardly facing, elongated, longitudinally extending channel 96, in which the lower end of the outwardly and downwardly turned, raindrip flange 64' may project.

Preferably, the lower faces of the doors 50, 51 are spaced from the horizontal tread sections a distance equal to the spacing of the lower ends of the flanges 65, 65' from the bottoms of the channels 62, 62' to compensate for slight sagging of the doors and to avoid the necessity for an extremely nice fit of the parts.

In use the lower flanges 65, 65' of strips 64 and 75 slide in their respective channels or grooves, thereby positively guiding the lower edges of the doors and providing a weather seal, the doors being locked against any substantial transverse displacement relative to the treads.

In Figures 2, 3 and 4, modified forms of the invention are disclosed. In Figure 2, the tread sections 89, 90 are provided with upwardly facing, longitudinally extending, cross-sectionally rounded, re-entrant grooves 91, 92, adapted to receive the lower, cross-sectionally rounded, beaded edges 93, 94 of strips 95, 97 secured to the lower edges of the sliding doors. This construction is advantageous in some installations where positive means for preventing transverse separation of the strips and the tread sections is desired. The strips 95, 97 can be assembled only by relative endwise movement with respect to the tread sections. After the threshold has been secured in place, with the strips 95, 97 secured thereto, the doors are hung and the strips are then secured to the doors by wood screws or the like.

In the construction shown in Figures 3 and 4, reference numeral 79 designates a tread which presents a parallel walled upwardly opening channel 80 which receives the guide flange 81 of a strip 82, the lower inner margin of the latter being relieved at 83 and being lapped by the lower normally outwardly sprung margin of a weatherstrip 84 identical to the one used in the construction of Figure 1. The lower edge of the strip bears against the inner wall of the channel. Strip 82 has the outwardly and downwardly inclined raindrip 85 extending substantially parallel to the outer face of the upwardly projecting flange 86 of the tread section. The natural relation of the weatherstrip 84 is shown in Figure 4, while in Figure 5 I have shown the weatherstrip removed from the door and tread section.

The saddle and guide strip structures shown in Figure 3 differ from that of Figure 1 primarily in that the pedestal 79 has a rounded groove for the reception of a correspondingly shaped, beaded edge of a side section 88, and in that the upwardly projecting flange 86 is somewhat thicker than the corresponding flange 61 in Figure 1 and has a downwardly and outwardly inclined outer face. Moreover, the raindrip flange 85 has an outwardly and downwardly inclined outer face which meets the strip 82 on a oblique angle, which improves the appearance of the strip.

It will be understood that in the embodiments of Figures 1 and 3, substantial vertical movement of the doors relative to the saddle is possible without the guide tongues or flanges either abutting the bottom of channels or moving above the walls of the latter. The structures shown in these figures may be used in substitution for the outer saddle of Figure 2, and is shown as supporting an outer side section 88.

The structure of Figure 3 may, of course, also be readily adapted for a single door installation.

It will be understood that variations in the arrangement, form and combination of the parts may be made without departure from the invention, and as to these variables, I do not limit myself except as in the following claims.

I claim:

1. The combination with a sliding door, of a saddle having a raised tread section of substantial width disposed directly below the door and a longitudinally extending, upwardly facing, relatively narrow groove along one edge, and an extruded metal strip secured along and substantially coextensive in length with the lower edge of the door and including a first flange projecting into said upwardly facing channel in substantially weathertight relation, and a second flange integral with said strip projecting outwardly and downwardly and covering the joint between the first flange and the channel.

2. The combination with a sliding door, of a saddle comprising a tread section of substantial width directly underlying the door, downwardly projecting supporting flanges integral with said section, and an upwardly projecting flange integral with one of said supporting flanges and forming therewith, a narrow upwardly opening channel, and means secured to and substantially coextensive in length with the sliding door forming a downwardly projecting tongue extending into said channel in slidable relation with respect thereto, said means having an outwardly and downwardly turned flange integral with said tongue and extending over and covering the upwardly projecting flange of the saddle.

3. In combination, a threshold for a sliding door and a cooperating metallic strip carried by the lower edge of the door in slidable relation with respect to the threshold, said threshold comprising an extruded metal section having substantially parallel vertically disposed walls forming a narrow, longitudinally extending, upwardly opening channel therebetween, and a tread section of substantially the width of the door extending from one side of the channel, said strip comprising an extruded metal section including a downwardly projecting flange substantially coextensive in length with the door and having substantially parallel side faces disposed in said channel, and a laterally and downwardly projecting flange integral with said strip and the first-mentioned flange secured to one face of the door at the lower edge thereof and covering the joint between the first-mentioned flange and said channel.

4. In combination, a threshold for sliding doors and a cooperating metallic strip carried by and substantially coextensive in length with the lower edge of the door in slidable relation with respect to the threshold, said threshold comprising walls forming an elongated, re-entrant, cross-sectionally rounded, longitudinally extending groove along one edge thereof, said strip terminating at its lower end in a continuous enlarged, cross-sectionally rounded edge portion equal in length to the strip and disposed in said re-entrant groove for longitudinal sliding movement with respect thereto, and being adapted to prevent separation of the strip and threshold by relative transverse movement.

5. In combination, a threshold for a sliding door and an elongated metallic strip carried by

and substantially coextensive in length with the lower edge of the door and cooperating with the threshold for relatively sliding movement, said threshold comprising a horizontal tread section and a marginal pedestal section, the latter including an upwardly projecting flange having an inner wall spaced from the outer edge of the tread section and providing an upwardly opening longitudinally extending channel, said flange having an outer wall inclined downwardly and outwardly, said strip having an integral downwardly projecting flange coextensive in length with the strip and slidably disposed in said channel and an outwardly and integral downwardly inclined second flange of equal length overlying the inclined wall of the first flange and serving as a raindrip.

6. The combination with a threshold for a sliding door including surfaces forming an upwardly facing, relatively narrow, longitudinally extending channel, of an elongated substantially rigid extruded metal strip carried by and substantially coextensive in length with the lower edge of the sliding door and including a tongue of equal length disposed in said channel, and a flexible sheet metal weather strip of equal length as, and extending in substantially parallel relation to said tongue and frictionally engaging one wall of said channel and thereby forming a weather-tight joint between the door and the threshold.

7. The combination with a sliding door, of a saddle comprising a tread section having a horizontal top wall disposed under the door, said top wall having a depending flange under the outer edge of the door, the lower edge of said flange being continued around and upwardly into an upstanding tongue extending in parallel relation to said flange whereby a narrow upwardly open channel is provided, and means secured to the bottom portion of and substantially coextensive in length with the door and presenting a downwardly projecting tongue extending along the outer edge of the door and into said channel wherein it is slidable, said means also presenting a longitudinal flange integral with said downwardly projecting tongue and equal in length therewith and extending freely outwardly over said upstanding tongue and downwardly in front of the latter and adapted to serve as a raindrip.

8. The combination with a sliding door, of a saddle comprising a tread section having a horizontal top wall disposed under the door, said top wall having a depending flange under the outer edge of the door, the lower edge of said flange being continued around and upwardly into an upstanding tongue extending in parallel relation to said flange whereby a narrow upwardly open channel is provided, means secured to the bottom portion of the door and presenting a downwardly projecting tongue extending along the outer edge of the door and into said channel wherein it is slidable, said means also presenting a longitudinal flange extending freely outwardly over said upstanding tongue and downwardly in front of the latter and adapted to serve as a raindrip, a second similar saddle extending behind and parallel to the first, and a second sliding door equipped as the first for coperation with said second saddle, there being a channel between the two saddles and outwardly leading drainage provisions for the last-named channel formed in the first saddle.

9. The combination with a sliding door, of a saddle comprising a tread section having a horizontal top wall disposed under the door, said top wall having a depending flange under the outer edge of the door, the lower edge of said flange being continued around and upwardly into an upstanding tongue extending in parallel relation to said flange whereby a narrow upwardly open channel is provided, said tread section being provided outwardly of said tongue with a longitudinally extending, inwardly enlarged recess of arcuate contour cross-sectionally, the saddle including a side section having a bead complementary to said recess and engageable therein by relative longitudinal movement and when so engaged the two sections being pivotal relative to each other, and means secured to the bottom portion of the door and presenting a downwardly projecting tongue substantially coextensive in length with the door and extending along the outer edge of the door and into said channel wherein it is slidable, said means also presenting a longitudinal flange extending freely outwardly over said upstanding tongue and downwardly in front of the latter and adapted to serve as a raindrip.

10. The combination with a sliding door, of a saddle comprising a tread section having a horizontal top wall disposed under the door, said top wall having a depending flange under the outer edge of the door, the lower edge of said flange being continued around and upwardly into an upstanding tongue extending in parallel relation to said flange whereby a narrow upwardly open channel is provided, unitary means secured to the bottom portion of the door and presenting a downwardly projecting tongue substantially coextensive in length with the door and extending along the outer edge of the door and into said channel wherein it is slidable, said means also including an integral longitudinal flange extending freely outwardly over said upstanding tongue and downwardly in front of the latter and adapted to serve as a raindrip, and a separate, flexible weather strip secured to said means and extending along one side of said downwardly projecting tongue for cooperation with a wall of said channel.

11. A threshold construction for a pair of parallel horizontally sliding doors, comprising spaced, parallel, longitudinally extending tread sections disposed below the doors, each of said sections having a guiding channel along its outer edge and said doors having guide strips secured to their outer faces along and substantially coextensive in length with the lower edges thereof and including downwardly projecting flanges equal in length to the strips and slidably disposed in said channels, the outer tread section having along its inner upper edge, an integral inwardly projecting substantially horizontal flange, substantially closing the space between said sections.

12. In combination, a threshold for sliding doors and a cooperating extruded metal section substantially coextensive in length with and carried by one face of the door at the lower edge thereof in slidable relation with respect to the threshold, said threshold having walls forming an elongated, reentrant, cross-sectionally rounded, longitudinally extending groove along one side thereof, said extruded metal section carried by the door having a pair of flanges projecting downwardly in spaced relation, the inner flange having a cross-sectionally rounded head extending from end to end of the section and disposed in said reentrant groove for longitudinal sliding movement and being adapted to prevent separation of the strip and threshold by relative

transverse movement, the other flange on said section being spaced outwardly from the first-mentioned flange and being poistioned to conceal the connection between the first-mentioned flange and groove.

13. The combination with a sliding door, of a saddle comprising a tread section of substantial width directly underlying the door and spaced above the threshold, downwardly projecting supporting flanges integral with said section adjacent the opposite edges thereof, and an upwardly projecting flange integral with one of said supporting flanges, spaced outwardly therefrom and from the tread section at its upper end, and forming therewith, an upwardly opening channel of greater depth than width, and means secured to the sliding door forming a downwardly projecting tongue substantially coextensive in length with the door and extending into said channel in slidable relation with respect thereto.

FRED W. KAMMERER.