Dec. 13, 1932. J. COCO 1,890,672

DOOR SADDLE

Filed June 30, 1931

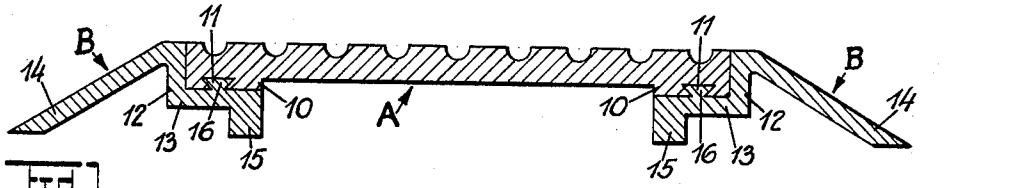


Fig. 1.

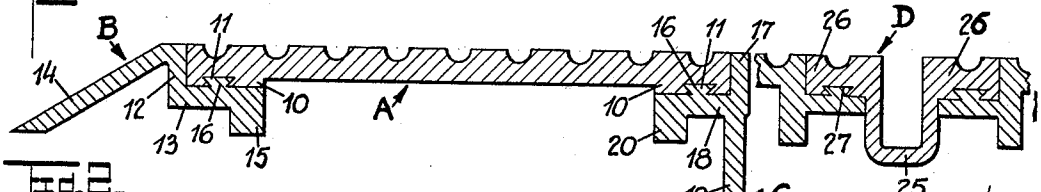


Fig. 2.

Fig. 4.

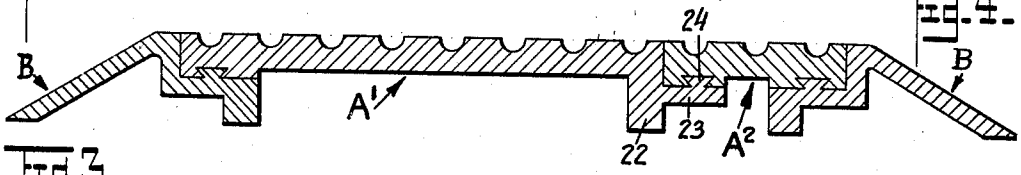


Fig. 3.

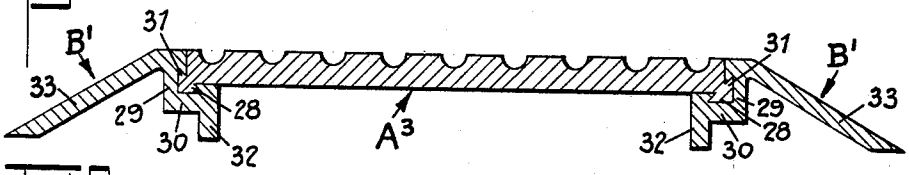


Fig. 5.

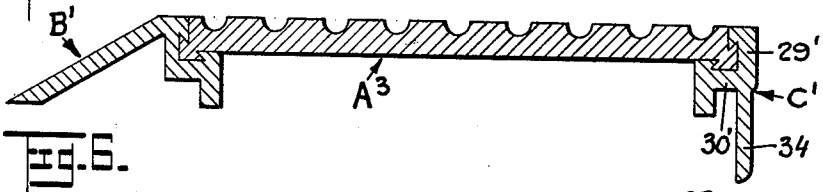


Fig. 6.

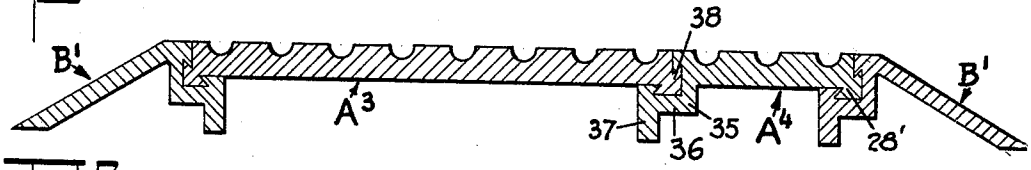


Fig. 7.

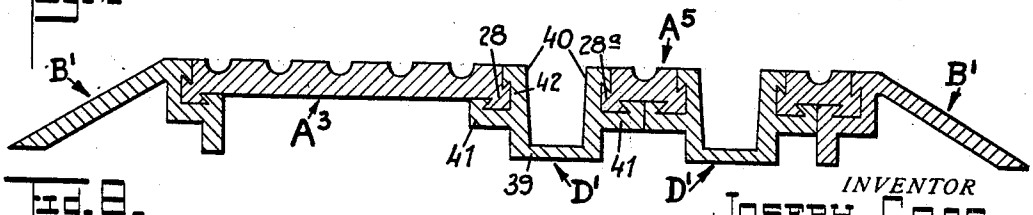


Fig. 8.

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UNITED STATES PATENT OFFICE

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DOOR SADDLE

Application filed June 30, 1931. Serial No. 547,884.

This invention relates to metallic saddles or sills for the door openings of either swinging or sliding doors, and has for its general object to provide a metallic door saddle or sill embodying a plurality of elements which may readily be combined in various different relations to afford a saddle or sill of practically any desired width, either without grooves in instances where the door or doors is or are of the swinging type, or with one or any desired plurality of grooves to accommodate the door or doors when the latter is or are of the sliding type.

A special object of the invention is to provide the saddle or sill elements with interfitting formations permitting quick, easy and firm interconnection of the elements in various different relations without the use of screws, bolts, rivets or other auxiliary fastening devices.

Another special object of the invention is to provide the saddle or sill elements with interfitting formations which are strong and sturdy and which are of such design as to permit economical production of the elements.

With the foregoing and other objects in view, which will become more fully apparent as the nature of the invention is better understood, the same consists in the novel constructions and combination and arrangement of features as will be hereinafter more fully described, illustrated in the accompanying drawing and defined in the appended claims.

In the drawing, wherein are illustrated certain practical embodiments of the invention, and wherein like characters of reference denote corresponding parts in related views:

Figure 1 is a cross section of door sill embodying a wear plate and a pair of approach plates constructed and assembled in accordance with one practical embodiment of the invention.

Figure 2 is a similar view illustrating an edging plate which may be used in lieu of one of the approach plates.

Figure 3 is a similar view illustrating a wear plate of slightly alternative form to be used when it is desirable to increase the width of the sill by combining therewith an auxiliary wear plate, the latter also being illustrated in this figure.

Figure 4 is a similar view illustrating a grooved door guide element combined with the wear plate.

Figure 5 is a view similar to Figure 1 illustrating an alternative construction of the interfitting formations of the sill or saddle elements.

Figure 6 is a view similar to Figure 2 illustrating an edging plate combined with the wear plate shown in Figure 5.

Figure 7 is a view similar to Figure 3 illustrating an auxiliary wear plate combined with the wear plate shown in Figure 5 to increase the width of the sill or saddle; and

Figure 8 is a view similar to Figure 4 illustrating a pair of grooved door guide elements combined with each other and with the wear plate shown in Figure 5.

Referring to the embodiment of the invention illustrated in Figures 1 and 2, A designates the wear plate, B, B a pair of approach plates, and C an edging plate, each of which may be formed from any suitable material such, for example, as bronze, into any desired length and width and of any desired thickness or weight to afford requisite strength and to provide for wear.

As illustrated in Figures 1 and 2 a pair of ribs 10, 10 project downwardly from the wear plate A along the opposite side edges thereof, and, as is understood, these ribs are coextensive in length with the wear plate. Formed in each rib throughout the length thereof is a dovetail slot 11 which opens at its narrowest side through the bottom of the rib as shown.

The approach plates B illustrated in Figures 1 and 2 each includes a vertical web portion 12 adapted to abut a side edge of the wear plate A, a horizontal flange 13 formed as an inwardly directed extension of the web 12 to underlie and form a seat for one of the ribs 10 of the wear plate, an approach flange 14 extending downwardly and outwardly from the top of the web 12, a stiffening rib 15 extending downwardly from the inner end portion of the flange 13, and a tongue 16 of dovetail cross section projecting upwardly

from the flange 13 to be received in the slot 11.

To assemble an approach plate B with the wear plate A at either side thereof, the two plates are placed in end to end relation with the tongue 16 of the approach plate alined with the slot 11 in the related rib 10 of the wear plate and the plates then are moved relatively inward whereby the tongue is caused to enter the slot and thus interlock the plates together.

A number of wear plates A of different widths may be provided and an approach plate B may be interengaged with any one of said plates in the manner stated at either or both sides thereof, Figure 1 of the drawing illustrating an approach plate at each side of the wear plate, and Figure 2 illustrating an approach plate at one side only of the wear plate and an edging plate C interengaged therewith at the opposite side thereof.

The edging plate C, which is adapted for use in instances where either or both sides of the wear plate terminate flush or substantially flush with a veritcal wall of a building structure, is understood to be coextensive in length with the wear plate and in cross section comprises a vertical flange 17 adapted to lie against the side edge of the wear plate and the outer edge of the rib 10, a horizontal flange 18 formed as an inward extension of the lower portion of the vertical flange 16 to underlie and form a seat for the rib 10 of the wear plate, a finishing and reinforcing flange 19 formed as a downward extension of the flange 17 flush or substantially flush with the outer face thereof, a reinforcing rib 20 formed as a downward extension at the inner end of the flange 18, and a tongue 21 of dovetail cross section projecting upwardly from the flange 18 to be received in the slot 11. Assembly of the edging plate with the wear plate is effected in the same manner as heretofore stated in respect to the approach plates B.

According to the embodiment of the invention illustrated in Figures 3 and 4, one side of the wear plate A1 is formed the same as the wear plate illustrated in Figures 1 and 2, but the opposite side thereof, instead of being provided with a downwardly directed rib having a dovetail groove therein, is provided with a relatively narrow downwardly directed reinforcing rib 22 and with a horizontal flange 23 formed as an outward extension of said rib and provided on the upper face thereof with an upwardly directed tongue 24 of dovetail cross section. Thus, the wear plate A1 is adapted to have interengaged therewith in the same manner as the approach and edging plates B and C are interengaged with the wear plate A, an auxiliary wear plate, designated as A2, of any suitable width and otherwise a duplicate of the wear plate A illustrated in Figure 1, the purpose of the auxiliary wear plate being to increase the width of the sill or saddle as is understood.

Since, as stated, the auxiliary wear plate A2 is to all intents and purposes a duplicate of the wear plate illustrated in Figure 1, it follows that the side thereof remote from the wear plate A1 may have interconnected therewith either an approach plate B or an edging plate C in the manner shown in Figures 1 and 2, respectively.

In instances where the saddle or sill is to be used in connection with sliding doors, such as the doors of elevators, and where it is desired to provide a door guide groove or grooves in the sill or saddle, the wear plate A, A1 or A2 obviously may have the grooves formed directly therein, or groove elements of the type illustrated in Figure 4 and designated generally as D may be formed for cooperation with either of said wear plates. The groove element D illustrated includes a U-shaped groove forming portion 25 having horizontal outwardly directed flanges 26 provided with dove-tail slots 27, one of which is adapted to receive the tongue 24 of a wear plate A2 and the other of which is adapted to receive the tongue 16 or 21 of an approach plate B or edging plate C, or the tongue of a suitably formed connecting member for joining two of the groove elements together.

Referring to the embodiment of the invention illustrated in Figures 5 to 8, it will be observed that the wear plate A3, instead of being formed like the wear plates A, A1 and A2, is provided at the lower, side corners thereof with dovetail tongues 28 of substantially triangular shape in cross section, and that the approach plates B1, edging plate C1, auxiliary wear plate A4 and the groove elements D1 are formed with slots of the same cross sectional size and shape to receive said tongues. In other words, referring to Figure 5, it will be observed that the wear plate A3 is provided at each of the two lower, side corners thereof with a tongue 28 which projects both laterally outward and downward from the wear plate, and that the upper and the inner edges of said tongue are directed downwardly and inwardly whereby the tongue possesses the duplex dovetail shape illustrated.

The approach plates B1 for use with the wear plate A3 each includes a vertical flange 29 and a horizontal inwardly directed flange 30, and at the junction of said flanges is formed an inwardly opening duplex dovetail groove 31 corresponding in sectional shape to the tongues 28. In addition, each approach plate is provided with a reinforcing and anchoring flange 32 extending downwardly from the horizontal flange 30, and with an approach flange 33 forming a downward and outward extension from the top of the vertical flange 29. Interconnection of the approach plates B1 with the wear plate

A3 is effected in the same manner as connection of the approach plates B with the wear plates A, A1 or A2; i. e., by alining the slots and tongues of said plates and moving the plates relatively inward.

The edging plate C1 illustrated in Figure 6 for use with the wear plate A3 is of the same construction as the approach plate B with the exception that the approach flange 33 is omitted and a vertical finishing flange 34 is provided as a downward extension of the horizontal flange 30′ of the edging plate flush or substantially flush with the outer face of the vertical flange 29′ of said plate.

As illustrated in Figure 7, the auxiliary wear plate A4 for use with the wear plate A3 is formed at one side in the same manner as either side of the wear plate A3; i. e., with a duplex dovetail tongue 28′ at the lower, side edge thereof, but at its other side is formed similarly to the approach and edging plates B1 and C1 for interfitting engagement with the tongue 28 of the wear plate A3. That is to say, the latter mentioned side of the auxiliary wear plate is formed with a vertical flange 35 extending downwardly from the under side thereof inwardly from the edge of the plate, and with a horizontal, outwardly directed flange 36 forming an extension of the flange 35 and provided with a downwardly directed reinforcing rib 37. A duplex dovetail slot 38 is formed at the junction of the flanges 35, 36 and this slot is adapted to receive a tongue 28 of the wear plate A3 as shown. A number of auxiliary wear plates A4 of various different widths are provided and obviously either a second auxiliary wear plate or an approach or edging plate may be connected with the auxiliary wear plate shown.

In Figure 8 of the drawing is illustrated a pair of groove elements D1 for use with a wear plate of the type shown in Figures 5 to 8. These groove elements which are duplicates of each other each comprises a U-shaped groove forming portion 39 inclusive of the spaced vertical flanges 40, 40 from each of which extends outwardy a horizontal flange 41, and at the junction of each pair of said flanges the groove element is formed with a dovetail duplex slot 42 to receive the tongue 28 of a wear plate A3 or the tongue 28*a* of an auxiliary wear plate A5 which is the same in all essential respects as the wear plate A3 but of different width. Thus, a groove element D1 may be connected either with the wear plate A3 or the auxiliary wear plate A4 in the same manner as any one of the elements B1, C1 or A4, and by means of the auxiliary wear plate A5 either a second groove element D1 or an approach or edging plate may be connected with the sill or saddle to provide a desired finish at the side thereof.

Obviously, various other shapes or elements than those illustrated may be provided for interlocking engagement with the shapes or elements shown and with one another in the same manner as the shapes illustrated and described, and obviously too the various shapes may have any desired finish, the grooves in the upper faces of the various wear plates illustrated in the present instance being merely an example of one practical finish for the tops of said plates.

Without further description it is believed that the construction, mode of assembly and the advantages of the present sectional door sill or saddle will be clearly understood, and while certain specific embodiments of the invention have been disclosed, it is pointed out that the same is capable of embodiment in alternative mechanical structures within the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A sectional structure of the character described comprising a plurality of separate elements, certain of said elements having vertical and lateral flanges abutting side and bottom faces, respectively, of other of said elements when the elements are in assembled relation, and interfitting tongue and slot formations on said elements for interlocking the same in assembled relation.

2. A sectional structure of the character described comprising a plate having side and bottom faces and further having a dovetail slot opening through the bottom face thereof, and an element for cooperation with said plate having vertical and lateral portions abutting the side and the bottom faces, respectively, of said plate and provided on the lateral portion thereof with a dovetail tongue disposed within the dovetail slot of the plate.

3. A sectional structure of the character described comprising a plate having a duplex dovetail tongue projecting outwardly beyond the side and downwardly below the bottom faces thereof, and a cooperating element having side and bottom faces abutting the side and bottom faces of said plate, respectively, and further having a duplex dovetail groove to receive said tongue to interlock said element with the plate.

4. A sectional structure of the character described comprising a plurality of saddle elements one of which is provided with a flange projecting laterally from a side edge thereof and provided with a dovetail tongue on the upper face thereof, another of said elements having the side and bottom edges thereof disposed in abutting relation to the side edge of said first mentioned element and the upper face of said flange, respectively, and having a dovetail slot formed therein and opening through the bottom thereof to receive said tongue.

5. A sectional structure of the character described comprising a plurality of saddle

elements certain of which are provided with duplex dovetail formations projecting laterally outward beyond the side edges and downward beyond the bottom faces of the elements, respectively, and other of said elements being inclusive of vertical and lateral portions to abut the side edges and bottom faces of the first mentioned elements, respectively, and being provided with duplex dove tail slots at the junction of the vertical and lateral portions thereof to receive the dovetail formations of said first mentioned elements.

In testimony whereof I affix my signature.

JOSEPH COCO.