

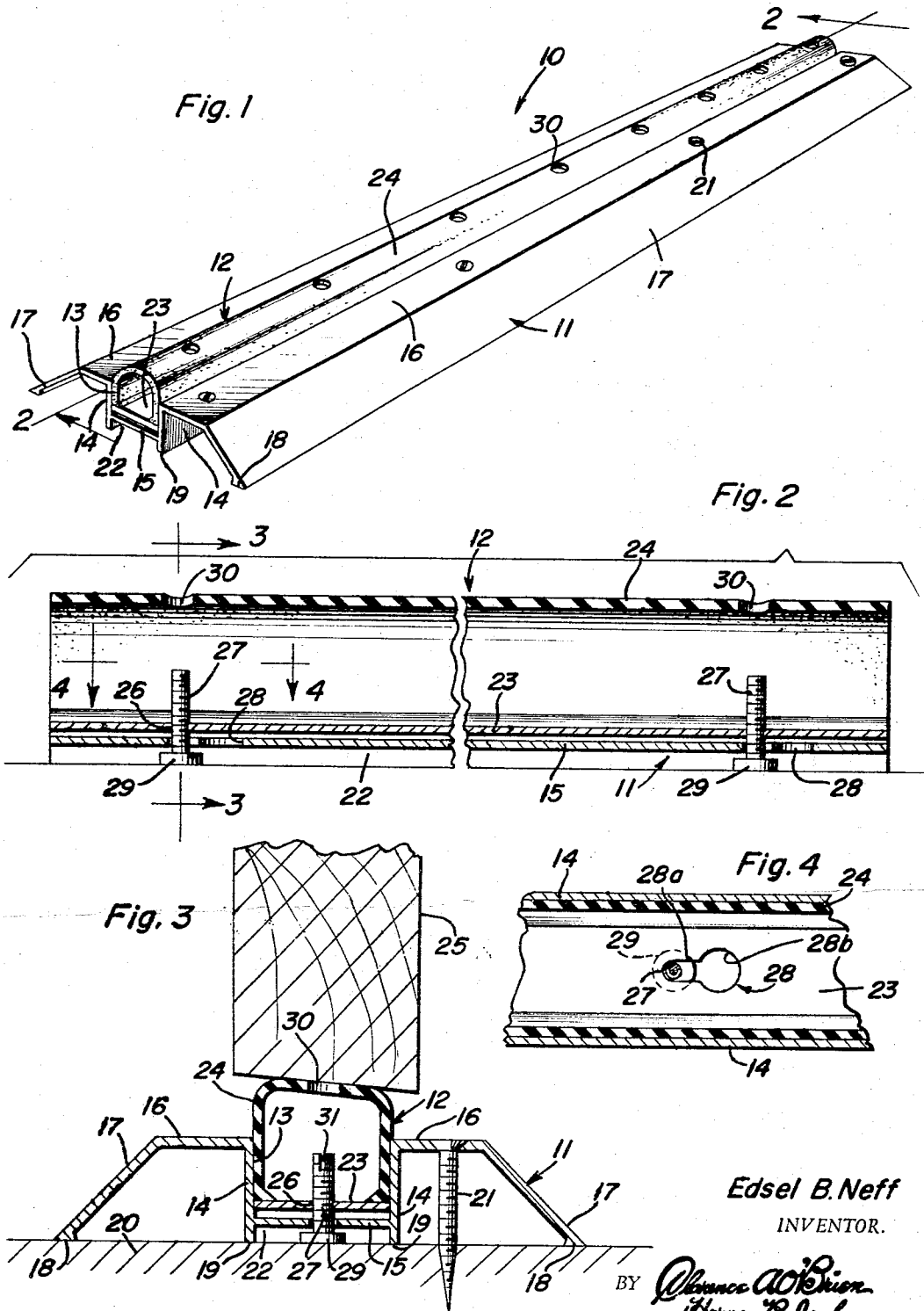
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ADJUSTABLE THRESHOLD

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This invention relates to new and useful improvements in adjustable thresholds, and the principal object of the invention is to provide an improved adjustable threshold structure which may be quickly and easily adjusted to assure proper sealing engagement with the lower edge of a door.

While adjustable thresholds as such are well known in the art, conventional devices of this type possess various disadvantages. In some instances, for example, the threshold may be raised or lowered, but only uniformly along its length. If one end of the threshold were to be adjusted to a higher position than the other end, the threshold would necessarily be subjected to longitudinal twisting or deformation which, of course, is not desirable. Other conventional thresholds provide for adjustment which can be made only once, and if a subsequent adjustment is to be made, longer screws are necessary for securing the threshold to the floor. Still other conventional thresholds utilize an arrangement in which it is necessary to provide holes or recesses in the floor to accommodate adjusting screws.

The present invention avoids all these disadvantages of conventional thresholds and provides a device which may be easily and repeatedly adjusted when necessary, and which may be readily mounted on a finished floor without mutilating the latter by formation of recesses to accommodate adjusting screws.

Another important feature of the invention resides in its particular construction which permits variable adjustment along the length of the threshold, as necessary for proper sealing.

Another important feature of the invention resides in the provision of an adjustable threshold having a main body fixed to the floor and formed with a longitudinal channel accommodating an adjustable threshold section. The arrangement is such that the section may not only be adjusted, but may also be readily removed from the main body of the threshold for purposes of convenient replacement of the adjustable section when it is worn.

Other advantages of the invention reside in its simple construction, efficient operation, in its durability, and in its adaptability to convenient and economical manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view showing the adjustable threshold of the invention;

FIGURE 2 is an enlarged, vertical longitudinal sectional view thereof, taken substantially in the plane of the line 2—2 in FIGURE 1;

FIGURE 3 is a cross-sectional view, taken substantially in the plane of the line 3—3 in FIGURE 2; and

FIGURE 4 is a fragmentary sectional detail, taken substantially in the plane of the line 4—4 in FIGURE 2.

Referring now to the accompanying drawings in detail, the adjustable threshold of the invention is designated generally by the reference numeral 10 and embodies in its construction two principal components, namely, a fixed threshold body 11 and an adjustable threshold section 12.

The threshold body 11 may conveniently be extruded from suitable material such as aluminum or other metal. The body 11 is horizontally elongated and provided with

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a central longitudinal channel 13 having an open top, a pair of side walls 14, and a connecting bottom wall 15. The extruded body 11 also includes a pair of top wall portions 16 connected to the upper ends of the side walls 14 at the opposite sides of the channel 13, and a pair of slanting sides 17 which extend downwardly from the top wall portions 16, as will be clearly apparent. The lower edges 18 of the sides 17 and the lower edges 19 of the side walls 14 are horizontally coplanar to rest upon the floor or doorway sill 20, to which the threshold body 11 is firmly secured by a plurality of wood screws 21 passing downwardly through suitable apertures formed in one of the top wall portions 16.

It will be apparent that the bottom wall 15 of the channel 13 is spaced above the lower edges 19 of the side walls 14 so as to provide a central, longitudinal recess 22 in the bottom of the body 11 below the channel 13. The purpose of this recess will be hereinafter described.

The adjustable threshold section 12 comprises an elongated, strap-like base member 23 which overlies the bottom wall 15 of the channel 13 and has secured thereto a deformable door engaging member 24. The member 24 may be formed from rubber or similar material and is preferably hollow as illustrated, having an inverted U-shaped cross-section with its lower edges bonded or otherwise suitably secured to the side edge portions of the base member 23, as will be apparent from FIGURE 3. It will be understood that the deformable member 24 projects upwardly from the channel 13 for sealing engagement with the lower edge of a door 25 in a manner which is well known in the art. The base member 23 of the threshold section 12 is provided at longitudinally spaced points with a plurality of screw threaded apertures 26 to receive vertically disposed adjustment screws 27. These screws pass downwardly through keyhole-shaped openings 28 provided in the bottom wall 15 and the lower ends of the screws 27 are provided with enlarged heads 29 which bear against the floor 20. It is to be noted that the heads 29 of the screws 27 are disposed entirely within the aforementioned recess 22 in the bottom of the body 11, so that it is not at all necessary to mutilate the floor 20 in order to accommodate the screws.

For purposes of adjustment, the screws 27 are accessible through a plurality of openings 30 formed in the door engaging member 24 in vertical alignment with the screws. Each screw is provided in its upper end with a kerf 31 to receive a screw driver inserted through the associated openings 30 in the member 24, as will be clearly understood. It will be apparent that by turning the screw in one direction or the other, the engagement of the screw with the screw threaded aperture 26 will cause the base member 23 to move upwardly or downwardly along the screw, carrying the deformable door engaging member 24 therewith.

Thus, the adjustable threshold section 12 may be raised or lowered with respect to the fixed body 11 into a proper sealing contact with the door 25. It is to be particularly noted that the section 12 may be adjusted as required at either or both of its ends, permitting one end to be higher than the other without any longitudinal twisting or other deformation of the threshold body 11. Also, while the adjusting screws 31 may be provided only at the end portions of the threshold, several such screws are preferably provided at spaced points along the length of the threshold in order to support the entire length of the threshold section 12 and prevent any sagging such as could occur if only two adjusting screws at the ends were present. Moreover, while the base member 23 of the adjustable section 12 may be substantially rigid and inflexible, on the other hand, the base member 23 may possess sufficient inherent flexibility to become longitudinally undulated, so to speak, in instances

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where one or more of the plurality of adjusting screws along the length of the base member may have to be set higher or lower than the others.

The aforementioned keyhole openings 28 in the bottom wall 15 of the channel 13 extend in a longitudinal direction in the channel and, as detailed in FIGURE 4, each such opening has a relatively small or narrow end 28a and a relatively wide or large end 28b. The end 28a of the keyhole opening is large enough to receive the associated adjusting screw 27, but is not large enough to pass the enlarged head 29 of the screw. The screw head 29, however, may be passed through the large end 28b of the opening, whereby to facilitate complete removal of the adjustable threshold section 12 from the threshold body 11. When the threshold is to be installed, the adjustable body section 12 is inserted into the channel 13 so that the screw heads 29 are in register with and may pass downwardly through the large end 28b of the keyhole openings 28 in the bottom wall 15. Then, the section 12 is slid longitudinally in the channel 13 by a short distance, sufficient for the adjusting screws 27 to enter the small ends 28a of the openings 28 and, with the screw heads 29 being disposed within the recess 22 below the narrow ends 28a of the openings, the adjustable threshold section 12 will be prevented from lifting out of the channel 13. The threshold may then be secured to the floor 20 by the screws 21 and a screw driver may then be inserted through the openings 30 in the member 24 to adjust the screws 27 as necessary for proper sealing engagement of the member 24 with the lower edge of the door 25.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An adjustable threshold comprising in combination, an elongated threshold body adapted to rest upon and be secured to a floor, said body being provided with a central longitudinal channel having an open top, a pair of side walls and a connecting bottom wall, said bottom wall being spaced above the bottom of said body to provide a central longitudinal recess in the bottom of the body below said channel, an adjustable threshold section extending longitudinally in said channel, said adjustable section including a strap-like base member overlying said bottom wall and a deformable door engaging member secured to said base member and projecting upwardly from said channel, said base member being provided with a plurality of screw threaded apertures, said door engaging member and said bottom wall being formed with openings in register with said apertures, and a plurality of adjusting screws engaging the screw threaded apertures in said base member and extending downwardly through the openings in said bottom wall to bear against the floor, said screws being accessible and adjustable through the openings in said door engaging member, whereby the adjustable threshold section may be raised and lowered in said channel relative to the threshold body.

2. The device as defined in claim 1 together with enlarged heads provided at the lower ends of said adjusting screws, said heads being disposed within said recess in the bottom of the threshold body and preventing lifting of the adjustable threshold section from said channel.

3. The device as defined in claim 2 wherein said openings in said bottom wall are elongated in the longitudinal direction of said threshold body and are keyhole-shaped to provide a relatively narrow end and a wide end in each opening, the narrow ends of the keyhole-shaped openings receiving said adjusting screws but not the enlarged screw

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heads therethrough and the wide ends of the openings permitting passage of the screw heads, whereby said adjustable threshold section may be removed from said channel upon longitudinal shifting thereof to a position wherein the screw heads are in register with the wide ends of the keyhole openings.

4. The device as defined in claim 1 wherein said threshold body comprises a hollow extrusion including slanted sides with floor engaging lower edges coplanar with lower edges of said side walls of said channel.

5. An adjustable threshold comprising in combination, an elongated threshold body formed from extruded material and provided with a central longitudinal channel having an open top, a pair of side walls and a connecting bottom wall, said body also including a pair of top wall portions connected to upper ends of said side walls at opposite sides of said channel and a pair of slanted sides extending downwardly from said top wall portions, said side walls and said sides having coplanar floor engaging lower edges and said bottom wall being spaced above the lower edges of the side walls to provide a central longitudinal recess in the bottom of the body below said channel, an adjustable threshold section extending longitudinally in said channel, said adjustable section including a strap-like base member overlying said bottom wall and a deformable door engaging member secured to said base member and projecting upwardly from said channel, said base member being provided with a plurality of screw threaded apertures, said door engaging member and said bottom wall being formed with openings in register with said apertures, and a plurality of adjusting screws engaging the screw threaded apertures in said base member and extending downwardly through the openings in said bottom wall to bear against the floor, said screws being accessible and adjustable through the openings in said door engaging member, whereby the adjustable threshold section may be raised and lowered in said channel relative to the threshold body.

6. The device as defined in claim 5 wherein one top wall portion of said threshold body is provided with a row of apertures, and mounting screws extending downwardly through said last mentioned apertures for securing the threshold body to a floor.

7. The device as defined in claim 5 together with enlarged heads provided at the lower ends of said adjusting screws, said heads being disposed within said recess in the bottom of the threshold body and preventing lifting of the adjustable threshold section from said channel.

8. The device as defined in claim 7 wherein said openings in said bottom wall are elongated in the longitudinal direction of said threshold body and are keyhole-shaped to provide a relatively narrow end and a wide end in each opening, the narrow ends of the keyhole-shaped openings receiving said adjusting screws but not the enlarged screw heads therethrough and the wide ends of the openings permitting passage of the screw heads, whereby said adjustable threshold section may be removed from said channel upon longitudinal shifting thereof to a position wherein the screw heads are in register with the wide ends of the keyhole openings.

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