Jan. 15, 1963 E. B. KLAAS 3,072,976

ADJUSTABLE THRESHOLD

Filed May 3, 1961

Fig. 2

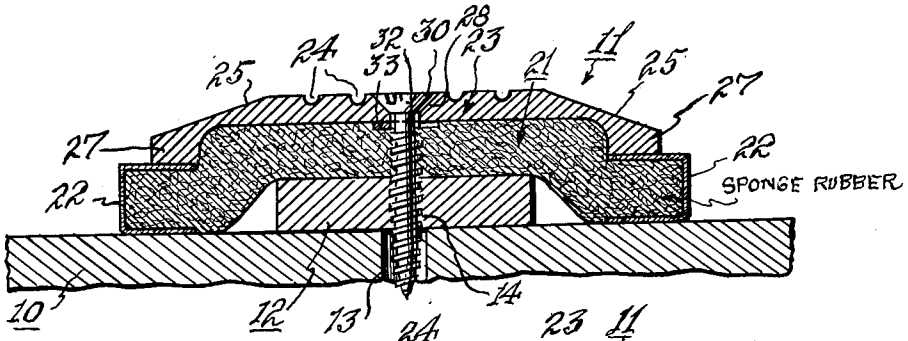


Fig. 1

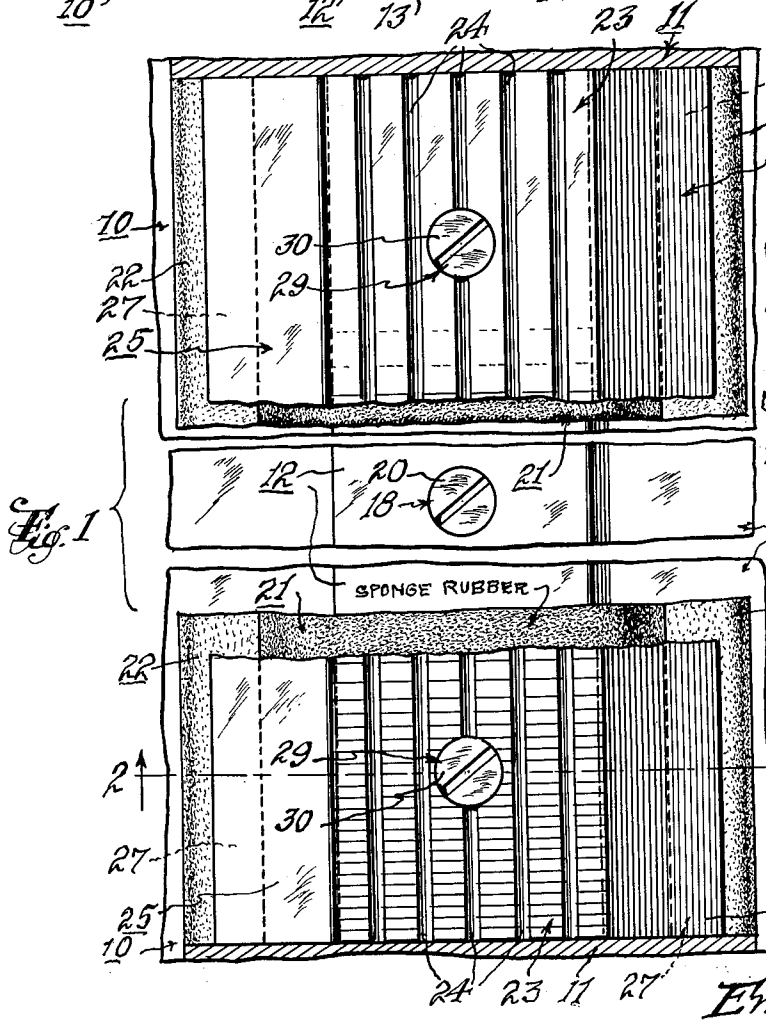


Fig. 3

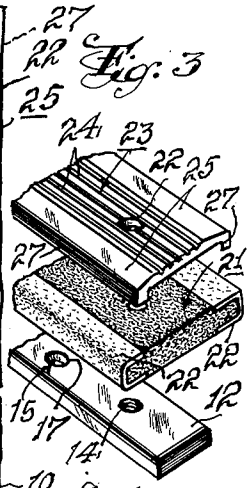


Fig. 5

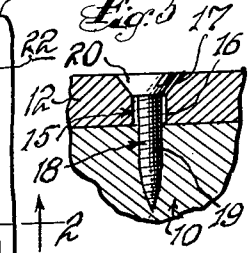


Fig. 4



INVENTOR.

Emil B. Klaas,

BY Victor J. Evans & Co.

ATTORNEYS.

United States Patent Office 3,072,976 Patented Jan. 15, 1963

3,072,976
ADJUSTABLE THRESHOLD

Emil B. Klaas, R.R. 1, Edwardsville, Ill.

Filed May 3, 1961, Ser. No. 107,527
3 Claims. (Cl. 20—64)

The present invention relates to an adjustable threshold for use with a door or the like.

The primary object of this invention is to provide a threshold that can be readily adjusted in order to compensate for uneven surfaces so that the threshold can be adjusted in order to snugly fit uneven portions of doorways or the like.

A further object is to provide an adjustable threshold which includes a bar that has a resilient pad arranged contiguous thereto, and wherein there is provided a top member or body member that is arranged above the resilient pad, the pad having protective cover members on the longitudinal side edge portions thereof, and wherein the present invention includes a novel means for adjusting the threshold so that the position of the parts can be regulated or varied as desired or required in order to insure that the proper fit will be effectuated.

A still further object is to provide an adjustable threshold of the type stated that can be used in conjunction with doors, windows or the like, and wherein the threshold is adjustable in order to permit the effective height thereof to be regulated as desired or required.

Another object is to provide an apparatus of the character described that may be utilized speedily and with precision by even inexperienced operators, and further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and conducive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIGURE 1 is a fragmentary top plan view of the adjustable threshold of the present invention, with parts broken away and in section.

FIGURE 2 is a sectional view taken on the line 2—2 of FIGURE 1.

FIGURE 3 is a fragmentary perspective view showing the parts separated or disassembled, and with parts broken away and in section.

FIGURE 4 is a perspective view of the retainer for one of the screw members.

FIGURE 5 is a fragmentary sectional view showing certain constructional details of the present invention.

Referring in detail to the drawings, the numeral 10 indicates a horizontally disposed base or floor surface, and the numeral 11 indicates the adjustable threshold of the present invention which is shown to comprise a bar 12 that has a rectangular cross section, FIGURE 2. The base 10 is provided with a plurality of spaced apart cutouts or openings 13 for a purpose to be later described. The bar 12 has a plurality of threaded apertures or openings 14 that are arranged in registry or alignment with the cutouts 13 in the base 10, for a purpose to be later described.

As shown in FIGURE 5, the bar 12 is provided with openings 15, and the openings 15 are shaped to include lower portions 16 of uniform diameter, and the openings 15 further include flaring upper portions 17 of increased diameter. As shown in the drawings, securing elements or screws 18 are provided, and these securing elements 18 include threaded shanks or stems 19 which extend through the portions 16 of the openings 15 and threadedly engage the base or floor 10, and the securing elements 18 further

include enlarged or upper tapered heads 20 that are snugly seated in the flaring portions 17 of the openings 15.

The numeral 21 indicates a pad which is arranged above the bar 12, and the pad 21 is adapted to be made of a suitable yieldable or resilient material such as sponge rubber, and as shown in FIGURE 2 for example the width of the pad 21 is greater than the width of the bar 12. Cover members or protective coverings 22 are suitably affixed to the longitudinal side edge portions of the pad 21. The numeral 23 indicates a top member or body member which is arranged above the pad 21, and the body member 23 is made of a rigid material such as a suitable metal, and the bar 12 is also adapted to be made of a rigid material, while the pad 21 is of yieldable or flexible material. As shown in the drawings the body member 23 is provided with spaced parallel grooves or recesses 24 which help provide a non-slipping surface, and the body member 23 is further provided with inclined or tapered side edge surfaces 25, and the body member 23 is further provided with a lower recessed portion 26 that is adapted to snugly receive therein an intermediate portion of the pad 21, and the body member 23 is shaped to include side portions or shouldered portions 27.

As shown in the drawings, the body member 23 is provided with flaring openings 28 which are arranged in registry or alignment with the apertures 14 and cutouts 13. Screw members or securing elements 29 have tapered upper heads 30 which are snugly seated in the openings 28, and the screw members 29 further include a threaded shank 31 which is arranged in threaded engagement with a corresponding threaded aperture 14 in the bar 12, and the lower end portions of the screw members 29 extend into the cutouts or openings 13 in the base or floor 10. There is provided in the upper portion of each shank 31 just below the head 30, an annular groove 32, and the numeral 33 indicates a retainer or split ring which is adapted to snugly engage the groove 32, as for example as shown in FIGURE 2.

From the foregoing, it is apparent that there has been provided an adjustable threshold which is especially suitable for use in doorways or the like, and wherein according to the present invention the effective height of the threshold 11 can be varied or changed in order to compensate for uneven surfaces. In use, with the parts arranged as shown in the drawings, it will be seen that the base or floor 10 is adapted to be provided with openings or cutouts such as the cutouts 13 which are spaced apart a suitable distance, and the bar 12 is arranged contiguous to the base 10, the threaded apertures 14 in the bar 12 registering with the cutouts 13 in the base 10. The rubber pad 21 is arranged above the bar 12, and as shown in FIGURE 2 the sides of the pad 21 extend beyond the sides of the bar 12, so that with the body member 23 positioned above the pad 21, by tightening the screws, the pad 21 will assume the position shown in FIGURE 2. Initially the pad 21 is of a shape such as that shown in FIGURE 3, but when the parts are properly assembled and when the screws are tightened, the sides of the pad 21 will be compressed downwardly, and the recessed portion 26 within the body member 23 will receive the central portion of the pad 21 in order to clamp the pad in position as shown in FIGURE 2.

The side edge portions of the pad 21 are provided with protective covers 22 which may be made of a suitable material, and such covers 22 help prevent the side edges or other parts of the pad from becoming torn or otherwise damaged. The body member 23 is provided with the grooves or recesses 24 which help prevent a person's feet from slipping on the threshold, and the inclined surfaces 25 help insure that a person's toe or toes will not accidentally catch on the threshold.

The bar 12 is secured in place to the base or floor 10 by

means of the securing elements or screws 18 which are arranged so that the top of the heads 20 is flush with the upper surface of the bar 12, and the screws 18 have their shanks 19 arranged in threaded engagement with the base 10 and this construction serves to insure that the bar 12 will be firmly anchored to the base 10.

The body member 23 is provided with the openings 28 through which extend the screw members 29, and the threaded shanks 31 of the screw members 29 are arranged in threaded engagement with the threaded apertures 14 in the bar 12, and the cutouts 13 provide clearance for the lower projecting end portions of the shanks 31. The tapering openings 28 snugly receive therein the heads 30 of the screw members 29, and the upper surfaces of the heads 30 are flush with the upper surface of the body member 23 so that there will be no projections to accidentally cause a person to trip or the like.

An important aspect of the present invention is the construction and provision of the screw members 29 which are provided with the annular grooves 32 that are just below the heads 30. Each of these grooves 32 is adapted to be engaged by a split ring or retainer 33, FIGURE 4, and this construction is such that the retainer 33 cooperates with the tapered heads 30 to clamp the screw members 29 to the body member 23. Thus, with the shank 31 arranged in threaded engagement with the aperture 14, it will be seen that by engaging a screw driver in the kerf or slot in the head 30 and rotating the screw member 29, the screw member 29 can be raised or lowered with respect to the bar 12, depending upon the direction of rotation of the screw member 29, and since the screw member 29 is clamped to the body member 23 by means of the retainer 33, it will be seen that this rotation of the screw member 29 will cause up or down adjustment of the body member 23. This therefore provides a highly effective and efficient means for moving the body member 23 up or down so that the effective height of the threshold can be changed or varied whereby the threshlod can be made to compensate for uneven surfaces in doorways or the like. Also, since by rotating the screw members 29, the body member 23 is raised or lowered, as the result of rotation of the screw member 29, it will be seen that the body member can be moved without depending upon the resiliency of the pad 21 to shift the position of the body member 23. Also, this construction permits any one or more of the screw members 29 to be independently turned or rotated without the necessity of rotating the other screw members 29 so that different portions of the body member 23 can be adjusted in order to position a section or portion of the body member 23 at a desired location as for example where there is an uneven surface to be taken care of.

The parts can be made of any suitable material and in different shapes or sizes.

The members 23 and 12 may be made of a suitable material such as aluminum, and the cushion or the pad 21 may be made of foam rubber or the like. The floor 10 may be of the wood type. The cutout or opening 13 is of a sufficiently large size so as to provide clearance for the lower end of the screw member 29 whereby the threshold may be adjusted or shifted slightly as desired or required. The members 33 constitute a locking ring for the previously described purpose. The covers 22 may be made of any suitable material such as metal, fiber like material or the like. The flexible shield 22 serves to cover the protruding edges of the sponge rubber 21, and this protective shield may be made of any suitable material such as metal, plastic, fiber or the like and such shields 22 provide increased durability and serviceability to the present invention. The locking ring nut 33 is arranged between the top of the sponge rubber padding 21 and the bottom part of the aluminum top section 23. The present invention is also adjustable so that when wear occurs, the threshold can be adjusted in order to compensate for such wear. Rotation of the screw members 29 causes adjustment of the member 23 so that the member 23 has a positive movement or action as the screw members are turned or rotated by a screw driver or the like.

Minor changes in shape, size and rearrangement of details coming within the field of the invention claimed may be resorted to in actual practice, if desired.

What is claimed is:

1. An adjustable threshold comprising a base provided with a plurality of spaced apart cutouts therein, a bar rectangular is cross section arranged contiguous to said base, said bar having a plurality of threaded apertures therein which register with said cutouts, said bar also having a plurality of openings therein which include lower portions of uniform diameter and upper portions of flaring enlarged configuration, securing elements including threaded shanks extending through the lower portions of said openings and said securing elements having their lower ends threadedly engaging said base, said securing elements further including enlarged heads on their upper ends seated in the upper flaring portions of said openings, a pad of yieldable material arranged above said bar and said pad being of a width which is greater than the width of said bar, a body member of rigid material arranged above said pad, there being a recess in the lower surface of said body member for receiving a portion of said pad, said body member having a plurality of spaced apart flaring openings therein which register with said apertures and cutouts, and screw members provided with tapered heads on the upper ends snugly seated in said last named openings, and each of said screw members further including a threaded shank extending through said pad and arranged in threaded engagement with said apertures, and said screw members having portions thereof projecting into the cutouts.

2. An adjustable threshold comprising a base provided with a plurality of spaced apart cutouts therein, a bar rectangular in cross section arranged contiguous to said base, said bar having a plurality of threaded apertures therein which register with said cutouts, said bar also having a plurality of openings therein which include lower portions of uniform diameter and upper portions of flaring enlarged configuration, securing elements including threaded shanks extending through the lower portions of said openings and said securing elements having their lower ends threadedly engaging said base, said securing elements further including enlarged heads on their upper ends seated in the upper flaring portions of said openings, a pad of yieldable material arranged above said bar and said pad being of a width which is greater than the width of said bar, a body member of rigid material arranged above said pad, there being a recess in the lower surface of said body member for receiving a portion of said pad, said body member having a plurality of spaced apart flaring openings therein which register with said apertures and cutouts, and screw members provided with tapered heads on their upper ends snugly seated in said last named openings, and each of said screw members further including a threaded shank extending through said pad and arranged in threaded engagement with said apertures, and said screw members having portions thereof projecting into the cutouts, there being a groove in the shank of each screw member just below the head of the screw member, and a split retainer arranged below said body member and engaging said groove.

3. The structure as defined in claim 2 and further including cover members on the longitudinal side edge portions of said pad.

References Cited in the file of this patent

UNITED STATES PATENTS

1,873,143	Olson et al.	Aug. 23, 1932
2,108,316	Love	Feb. 15, 1938
2,284,074	Stahl	May 26, 1942