Aug. 26, 1958 D. H. FULTON 2,848,766

METAL DOORSILL

Filed Oct. 18, 1956 2 Sheets-Sheet 1

FIG. 1.

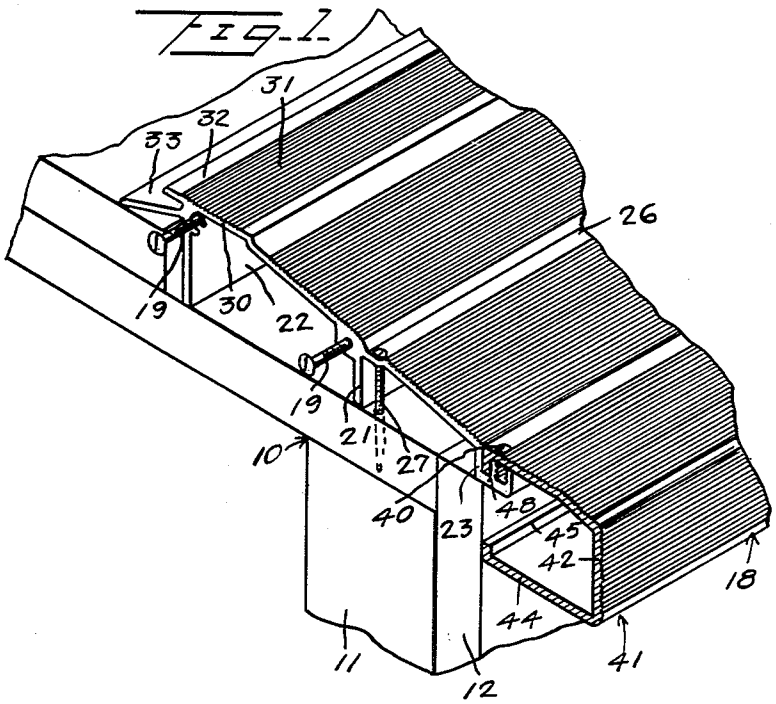


FIG. 3.

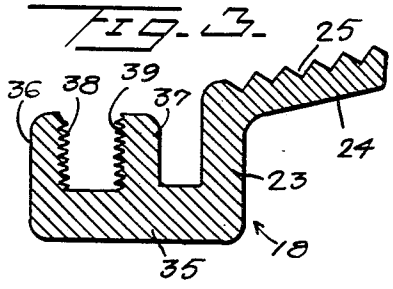
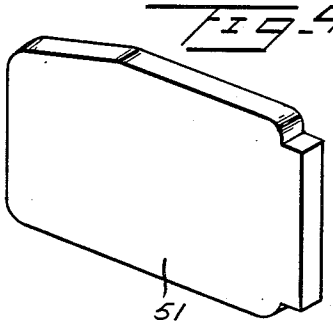


FIG. 4.



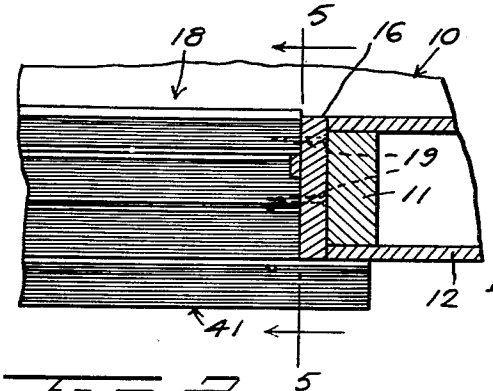


FIG. 2.

INVENTOR

DAVID H. FULTON

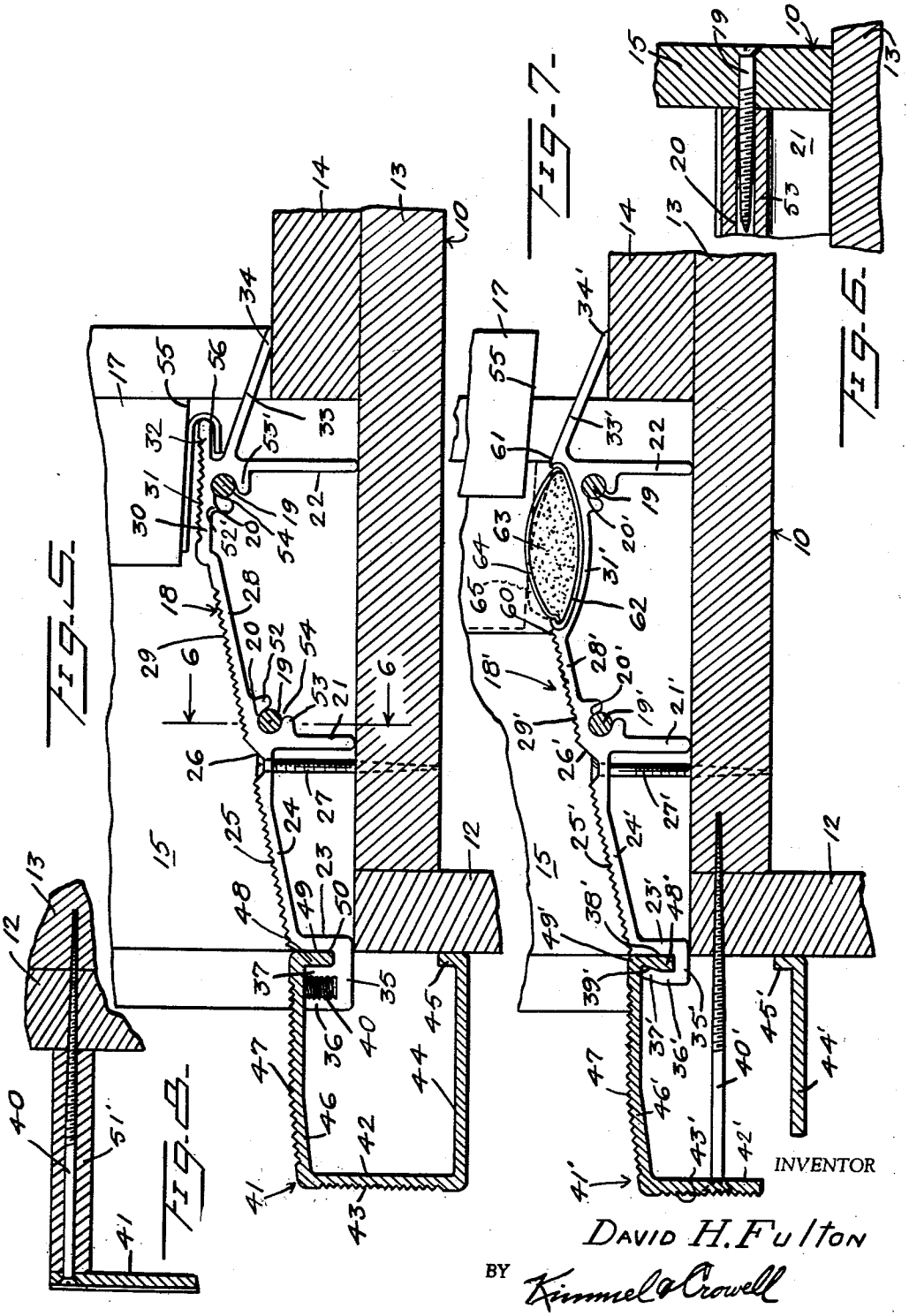
BY Kimmel & Crowell

ATTORNEYS

Aug. 26, 1958 D. H. FULTON 2,848,766

METAL DOORSILL

Filed Oct. 18, 1956 2 Sheets-Sheet 2



INVENTOR

DAVID H. FULTON

BY Kimmel & Crowell

ATTORNEYS

United States Patent Office

2,848,766

Patented Aug. 26, 1958

2,848,766

METAL DOORSILL

David H. Fulton, Bessemer, Ala., assignor of one-half to Ray E. Clarkson, Knoxville, Tenn.

Application October 18, 1956, Serial No. 616,707

5 Claims. (Cl. 20—64)

The present invention relates to metal doorsills, and more particularly to such devices combined with a threshold cooperating with a door.

The primary object of the invention is to provide a metallic combined sill and threshold for use in a doorway having means thereon for sealing the door and threshold together.

Another object of the invention is to provide a combined sill and threshold which is particularly adapted for use with prefabricated doors and doorframes serving to lock the lower ends of the doorframe jambs together.

A further object of the invention is to provide a combined doorsill and threshold formed of metal so shaped that it can be formed in a continuous extrusion process.

A still further object of the invention is to provide a combined doorsill and threshold formed of metal which is inexpensive to manufacture, simple to use, and which will be durable in long service.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a fragmentary perspective view of the invention.

Figure 2 is a fragmentary top plan view showing the door jambs in cross-section.

Figure 3 is an enlarged transverse cross-section of one detail of the invention.

Figure 4 is a perspective view of one of the end caps.

Figure 5 is a transverse cross-section taken along the line 5—5 of Figure 2, looking in the direction of the arrows.

Figure 6 is an enlarged fragmentary longitudinal cross-section taken along the line 6—6 of Figure 5, looking in the direction of the arrows.

Figure 7 is a view similar to Figure 5, illustrating a modified form of the invention.

Figure 8 is a horizontal cross-section illustrating a detail of the modified form of the invention shown in Figure 7.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally a building construction in which the invention is to be used.

The building construction 10 includes framing members 11, outside sheathing 12, a sub-floor 13, and a finish floor 14. Prefabricated door jambs 15 and 16 are positioned in spaced parallel relation extending perpendicularly upwardly from the sub-floor 13 and have a door 17 hingedly secured thereto by any suitable means (not shown).

The door jambs 15 and 16 are connected by a header (not shown). A combined doorsill and threshold, generally indicate at 18, is positioned between the door jambs 15 and 16 and secured thereto by means of screws 19 which extend through the jambs 15 and 16 into screw pockets 20, the structure of which will be more completely described below.

The combined doorsill and threshold 18 comprises a pair of longitudinally extending parallel spaced apart vertical webs 21 and 22, with the web 22 being somewhat taller than the web 21. A third web 23 extends parallel to and spaced apart from the web 21 oppositely of the web 22 and is somewhat shorter than the web 21. The lower ends of the webs 21, 22 and 23 are in horizontal alignment and are adapted to rest upon the sub-flooring 13 and the upper edge of the sheathing 12 in horizontal alignment with the upper surface of the sub-flooring 13.

A plate 34 is integrally formed with the upper end of the web 23 and the upper end of the web 21 extending therebetween at an angle to the horizontal. The upper surface of the plate 24 is serrated as at 25 to form a roughened tread surface. A V-shaped groove 26 is formed in the plate 24 adjacent the web 21 for the reception of flat bevel headed screws 27 extending downwardly through the plate 24 into the subflooring 13.

A plate 28 is integrally formed with the upper end of the web 21 in alignment with the plate 24 and extending oppositely thereto from the web 21. The plate 28 is provided with a serrated tread surface 29 identical to the tread surface 25. The plates 24 and 28 extend upwardly at an angle to the horizontal, as best seen in Figure 5.

A horizontal plate 30 has its outer edge integrally formed with the inner edge of the plate 28 in off-set relation thereto and has its upper surface serrated as at 31 to form a tread surface. The plate 30 extends inwardly from the web 22 to form a lip 32, as best seen in Figure 5. The plate 30 is formed integrally with the web 22 so that the webs 21, 22 and 23 are secured together in fixed relation.

A plate 33 is integrally formed with the inner upper edge of the web 22 and extends inwardly and downwardly therefrom to its inner terminal end 34 which engages the upper surface of the finish floor 14, as best seen in Figure 5.

A horizontal flange 35 extends forwardly from the lower end of the web 23 perpendicularly thereto. A pair of spaced vertical walls 36 and 37 extend upwardly from the flange 35 and are provided with facing longitudinally grooved surfaces 38 and 39, respectively, with the grooves offset so that a screw 40 can be received therebetween in threaded relation thereto.

An exterior sill member, generally indicated at 41, is provided with an outer vertical wall 42 serrated at 43 along its outer face. An integrally formed horizontal lower wall 44 extends from the lower edge of the vertical wall 42 and has an upwardly extending perpendicular flange 45 formed along the inner edge thereof.

The vertical wall 42 is provided at its upper edge with an integrally formed generally horizontal upper wall 46 which is serrated at 47 to form a tread surface. The upper wall 46 is provided at its inner end with a downwardly extending perpendicular flange 48 arranged in aligned relation to the flange 45, as best seen in Figure 5.

The flange 48 is received in a groove 49 formed between the web 23 and the wall 37 with the lower edge 50 thereof in engagement with the horizontal flange 35. The screw 40 extends through the wall 46 and secures the sill 41 to the remainder of the sill and threshold 18.

The sill member 41 is somewhat longer than the plates 25, 28 and 30 and extends beyond the jambs 15 and 16, as illustrated in Figure 2. An end cap 51, as illustrated in Figure 4, is positioned within the end of the sill member 41 at opposite ends thereof and is secured therein by any suitable means such as screws (not shown).

The sockets 20 for receiving the screws 19 are formed by a rib 52 extending downwardly from the plate 28,

and a second rib 52' extending downwardly from the plate 30 cooperating with ribs 53 and 53' extending horizontally from the webs 21 and 22, respectively. The ribs 52, 53 and the ribs 52', 53' form a generally cylindrical socket 20 therebetween open at 54 to permit formation thereof by extrusion processes.

The bottom edge 55 of the door 17 is slightly bevelled and is provided with a J-shaped weatherstrip member 56 extending longitudinally thereof to cooperate with the lip 32, as best seen in Figure 5.

Referring now to the modifications illustrated in Figures 7 and 8, a construction of combined doorsill and threshold 18' is shown. The combined door sill and threshold 18' includes spaced parallel vertically extending webs 21' and 22' with the web 22' being somewhat longer than the web 21'. A web 23' extends in spaced parallel relation to the web 21' oppositely of the web 22' and has an integral plate 24' extending inwardly from its upper edge to the upper edge of the web 21' with which it is integrally formed. The upper surface of the plate 24' is serrated as at 25' to form a tread surface and is provided with a V-shaped groove 26' extending longitudinally thereof adjacent the web 21' to receive an attaching bolt 27'.

A plate 28' extends integrally inwardly from the web 21' in alignment with the plate 24' and is provided with a longitudinally serrated upper tread surface 29'.

A longitudinally extending trough-shaped plate 30' is integrally formed with the inner edge of the plate 28' and extends inwardly therefrom in a generally arcuate form. The plate 30' has its inner edge integrally secured to the upper edge of the web 22' and carries a downwardly and inwardly extending plate 33' on its inner edge. The plate 33' slopes downwardly to its terminal end 34' in engagement with the finish floor 14, as best seen in Figure 7.

An inwardly overhanging lip 60 is formed at the juncture of the plate 28' and the plate 30', while an outwardly overhanging lip 61 is arranged in opposite parallel relation to the lip 60 at the juncture of the plates 30' and 33'. A base plate 62 is formed of resilient metal and has a sponge rubber mass 63 secured to its upper face.

A plastic cover 64 extends over the sponge rubber mass 63 in a generally transversely arcuate shape having its side edges secured to the plate 62 throughout their length. The resiliency of the plate 62 is such that it can be sprung into contacting relation with the plate 30' with its opposite side edges engaged beneath the overhanging lips 60 and 61.

The lower edge 55 of the door 17 is bevelled and engages against the plastic cover 64 to seal the door 17 to the combined sill and threshold 18'. The rubber mass 63 and the plastic cover 64 are adapted to be displaced by the door 17 to a position illustrated by broken lines at 65 so that a maximum contact will occur between the plastic cover 64 and the lower edge 55 of the door 17.

The combined doorsill and threshold 18' is provided with sockets 20' constructed identically to the sockets 20 of the preferred form of the invention to receive screws 19' extending through the jambs 15 and 16.

A horizontal flange 35' extends forwardly from the lower edge of the web 23' and is provided with an upwardly projecting integral wall 36' extending generally parallel to the web 23'. The wall 36' is provided with an inwardly bent upper end portion 37', as best seen in Figure 7. The wall 36' and its inwardly bent upper end portion 37' form a slot 38' having a reduced upper portion 39' when viewed in transverse cross-section.

A sill member, generally indicated at 41', consists of an outer vertical wall 42' serrated as at 43'. A lower wall 44' is provided with an upwardly projecting inner flange 45' formed integral therewith and is integrally joined at its outer edge to the lower end of the outer wall 42'. An upper wall 46' is serrated as at 47' and is integrally joined to the upper edge of the wall 42' extending inwardly therefrom.

A flange 48' extends downwardly from the inner end of the wall 46' in alignment with the flange 45' and is provided with a reduced neck portion 49' permitting the flange 48' to be seated in the slot 38' with its lower edge engaging against the flange 35'. A screw 40' extends inwardly through the outer vertical wall 42' into the sheathing 12 and sub-floor 13.

Referring now particularly to Figure 8, an end cap 51' is positioned within the end of the sill member 41' and secured therein by means of an elongated screw 40' which extends therethrough into the sheathing 12 and sub-floor 13.

In the use and operation of the invention, the building 10 is constructed in a conventional manner with the sub-floor 13 conventionally installed. The jambs 15 and 16 are assembled on a header (not shown) and the combined doorsill and threshold 18.

The preassembled construction is then positioned in the building 10 with the webs 21, 22 and 23 in engagement with the sub-floor 13, no special work being required on the sub-floor 13 to permit the installation of the preassembled construction. The combined sill and threshold 18 is secured to the sub-floor 13 by means of screws 27, and the construction of the building 10 proceeds in a conventional manner.

Modified forms of the invention illustrated in Figures 7 and 8 are installed in the same manner as described above differing only in the attaching feature of the sill member 41' and the weatherstrip arrangement cooperating with the door 17.

Having thus described the preferred embodiments of the invention, it should be understood that numerous other structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. A combination weather sealing doorsill and threshold comprising an elongated transversely sloping tread plate, a pair of elongated spaced apart parallel webs integrally depending from the lower side of said tread plate supporting said tread plate, a threshold integrally formed with the upper edge of said tread plate and extending laterally therefrom, a web integrally depending from said threshold and extending parallel to said pair of webs for supporting said threshold, a trim plate secured at one edge to said threshold and extending downwardly and outwardly therefrom, and a sill member detachably secured to said tread plate along the edge thereof opposite said threshold.

2. A device as claimed in claim 1 in which means are provided on said threshold for cooperating with the lower edge of a door to seal the door to said threshold.

3. A device as claimed in claim 1 wherein said sill member is detachably secured to said tread plate in depending relation thereto.

4. A device as claimed in claim 1 wherein means are provided on said tread plate and said webs for detachably securing a doorframe thereto.

5. A device as claimed in claim 2 wherein said sealing means comprises a sponge rubber body, a plastic covering positioned over said body in position for engaging the lower edge of a door, and means on said threshold for securing said rubber body and said plastic cover thereon.

References Cited in the file of this patent

UNITED STATES PATENTS

1,873,143	Olson et al.	Aug. 23, 1932
1,929,316	Kammerer	Oct. 3, 1933

UNITED STATES PATENT OFFICE

CERTIFICATION OF CORRECTION

Patent No. 2,848,766 August 26, 1958

David H. Fulton

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the grant, lines 2 and 11, and in the heading to the printed specification, line 4, name of assignee, for "Ray E. Clarkson", each occurrence, read -- Roy E. Clarkson --.

Signed and sealed this 20th day of June 1961.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents