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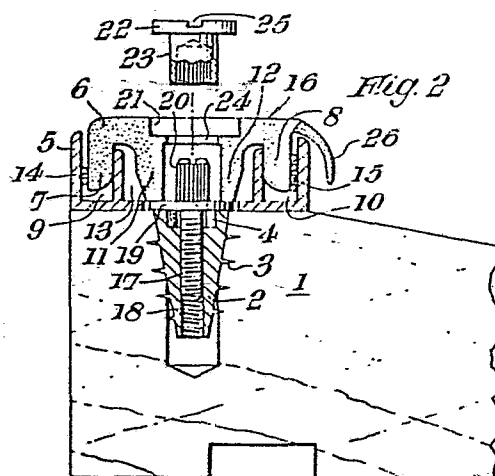
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54 **Improvements in or relating to draught excluding systems.**

57 A system as described for reducing draughts passing between the base of a door and the sill. The system includes an aluminium channel member (5) secured to the sill (1) and a vinyl channel member (6) having downwardly extending walls (7 and 8) located respectively in channels (9 and 10) of the aluminium member (5). A plurality of internally threaded tapered members (2) are fixed in the sill (1) and each cooperates with an externally threaded member (17) including a disc (19) and a knurled head (20). A tubular member (23) having a head (22) is fitted on each of the threaded members (17). As a result axial movement in both directions between the members (17) and the vinyl member (6) is prevented so that the vinyl member can be raised and lowered by rotation of the heads (22).



IMPROVEMENTS IN OR RELATING TO DRAUGHT EXCLUDING SYSTEMS

This invention relates to draught-excluding systems and it is an object of the invention to provide a system for use in conjunction with a door for closing an aperture in a building.

Various systems have been proposed for reducing draughts passing
5 between a door and a frame when the door is closed. A particular problem in connection with such systems is the provision of a draughtproof seal between the base of the door and the sill. Since the sill will be walked on, and will be subject to other wear, it must normally be flat and consist of wear-resistant material. Accordingly it is usual to provide any
10 draught-excluding system on the base of the door, for example in the form of downwardly extending flexible strips. However any such system can only be effective if the space between the base of the door and the sill is exactly correct for the flexible strips to make contact with the sill. For example, if the gap between the base of the door and the sill is too small, closure
15 of the door will be inhibited, whereas if the gap is too large, the draught-excluding system will be ineffective. Similarly, if the base of the door is not precisely parallel to the upper surface of the sill, the gap may be too narrow at one side of the door and too wide at the other side.

Accordingly it is an object of the present invention to provide a
20 draught-excluding system which does not suffer from this disadvantage, and to this end the invention is based on the idea of providing a sill, the height of which is adjustable.

From one aspect the invention consists in a draught-excluding system for use in conjunction with a door for closing an aperture in a
25 building, comprising a sill extending across the base of said aperture; a first longitudinally extending member secured to the upper surface of said sill and defining a plurality of channels extending parallel to the length

dimension of the sill; a second longitudinally extending member defining a plurality of channels, said second member being inverted with respect to said first member so that it has a flat upper surface and being arranged with at least two of its channel walls located within respective channels of said first member; a plurality of internally threaded members secured in
5 said sill at intervals along the length thereof; and a plurality of externally threaded members rotatably secured in said second member without freedom of axial motion relative thereto, each of said externally threaded members cooperating with a respective one of said internally threaded
10 members, whereby said upper surface of said second member can be raised and lowered above said sill by rotation of said externally threaded members.

From another aspect the invention consists in various modifications of the invention as defined in the preceding paragraph. For example, it is not essential for the externally threaded members to be
15 secured in the second member without freedom of axial motion in both directions. Thus each externally threaded member could be arranged so that rotation in one direction serves to lift the second member with respect to the first member, whereas rotation in the opposite direction merely allows the second member to be lowered with respect to the first member as a result
20 of downward pressure thereon. As a further example, the internally threaded members secured in the sill could conceivably be replaced by externally threaded members, while the externally threaded members associated with the second member would be replaced by internally threaded members.

25 Preferably the sill consists of hardwood, the first member is an aluminium extrusion, and the second member is a vinyl extrusion.

Preferably each of the externally threaded members includes a disc or washer secured thereto, or integrally formed therewith, said disc or washer being adapted to engage the bottom edges of two of the channel walls

of the second member. A plurality of holes are provided in the flat surface of the second member, one for each of the externally threaded members. Thus, if the upper end of the externally threaded member is provided with a cross cut, or the like, for engagement by a screwdriver, the height of the second member above the first member can readily be adjusted by rotating the externally threaded members. In addition, since there are a plurality of these externally threaded members, the angle of inclination of the second member can also be readily adjusted. In a modification of the embodiment just described, the upper end of each externally threaded member is knurled or splined to cooperate with a tubular member passing through the respective hole in the second member. Each of these tubular members may be formed with a screw head which fits in a counter bore in the upper surface of the second member. The internal dimensions of the tubular members are such that, once they have been pressed on to the top of the respective externally threaded members, they remain fixed thereto. Thus, in these circumstances, axial motion between the externally threaded members and the second member will be prevented in both directions.

From yet another aspect the invention consists in any features of novelty, taken singly or in combination, of the system shown in the accompanying diagrammatic drawings, in which:

Figure 1 is a cross-sectional view of an adjustable sill in accordance with the invention in combination with the lower part of a door in the closed position; and

Figure 2 is a cross-sectional view of the sill shown in Figure 1 on an enlarged scale and in greater detail.

The system illustrated includes a hardwood sill 1 in which is secured a plurality of tapered members 2. Each of these tapered members is provided with a coarse external thread 3, and the upper end of the tapered member is provided with a hexagonal opening 4 to receive a key. Thus the

tapered members 2 can be secured in suitable holes in the hardwood sill by means of the key.

The system illustrated also includes an aluminium channel member 5. This member is secured to the hardwood sill 1 by means of screws not shown. The system also includes a vinyl channel member 6 having two outer walls 7 and 8 located respectively in channels 9 and 10 of the aluminium member 5. The member 6 also has two further walls 11 and 12 which are located within the central channel 13 of the aluminium member 5. The outer surfaces of the walls 7 and 8 are provided with strips of relatively flexible material 14 and 15 to provide respectively draught- and weather-proof seals between the aluminium member and the vinyl member. The member 6 consists of hard vinyl material and the upper surface 16 constitutes the main wearing surface of the sill. It also cooperates with the underneath surface of the bottom member of a door to provide a draught-excluding system for the door opening.

The tapered members 2 are provided at intervals across the width of the doorway, and in each of these tapered members is a respective externally threaded member 17 cooperating with an internal thread 18 in the respective tapered member 2. Each of the threaded members 17 includes a disc 19 and a knurled head 20. As can be seen, the upper surface of each disc 19 cooperates with the bottom edges of the two walls 11 and 12 of the vinyl member 6.

The vinyl member 6 is formed with a plurality of counter bores 21 spaced at intervals to correspond to the spacing between the tapered members 2. Each of these counter bores is adapted to receive the head 22 of a tubular member 23. The vinyl member 6 is also drilled to provide holes 24 extending into the space between the walls 11 and 12 so that each tubular member 23 can pass through and engage the knurled top 20 of the respective threaded member 17. The internal diameter of the tubular member 23 is such

that, once it has been pressed on to the respective threaded member, the two parts are securely held together.

5 The top of each head 22 is provided with a diametral cut 25 so that each threaded member 17 can be rotated by means of a screwdriver, or the like, engaging in the cut 25. Rotation of the threaded member will cause the particular part of the vinyl member 6 to rise or fall with respect to the hardwood sill. Thus the height and inclination of the upper surface 16 of the vinyl member can be adjusted to correspond precisely to the underside of the door.

10 To provide additional weathering, a flexible flap 26 is attached to the vinyl member 6 and extends over the outside wall of the aluminium member 5. This flap, and the flexible strips 14 and 15, are preferably integrally moulded with the vinyl member 6 during the extrusion process.

CLAIMS

1. A draught-excluding system for use in conjunction with a door for closing an aperture in a building, comprising a sill extending across the base of said aperture; a first longitudinally extending member secured to the upper surface of said sill and defining a plurality of channels
5 extending parallel to the length dimension of the sill; a second longitudinally extending member defining a plurality of channels, said second member being inverted with respect to said first member so that it has a flat upper surface and being arranged with at least two of its channel walls located within respective channels of said first member; a plurality
10 of first threaded members secured in said sill at intervals along the length thereof; and a plurality of second threaded members each cooperating with a respective one of said first threaded members, and each provided with means for limiting axial movement thereof in the upward direction with respect to said second longitudinally extending member, whereby said upper surface of
15 said second longitudinally extending member can be raised above said sill by rotation of said second threaded members.
2. A draught-excluding system as claimed in Claim 1, wherein each of the second threaded members is also provided with means for limiting axial movement thereof in the downward direction with respect to said second
20 longitudinally extending member.
3. A draught-excluding system as claimed in Claim 1 or Claim 2, wherein each of the first threaded members is internally threaded and each of the second threaded members is externally threaded.
4. A draught-excluding system as claimed in any of the preceding Claims,
25 wherein the sill consists of hardwood, the first longitudinally extending member is an aluminium extrusion and the second longitudinally extending member is a vinyl extrusion.

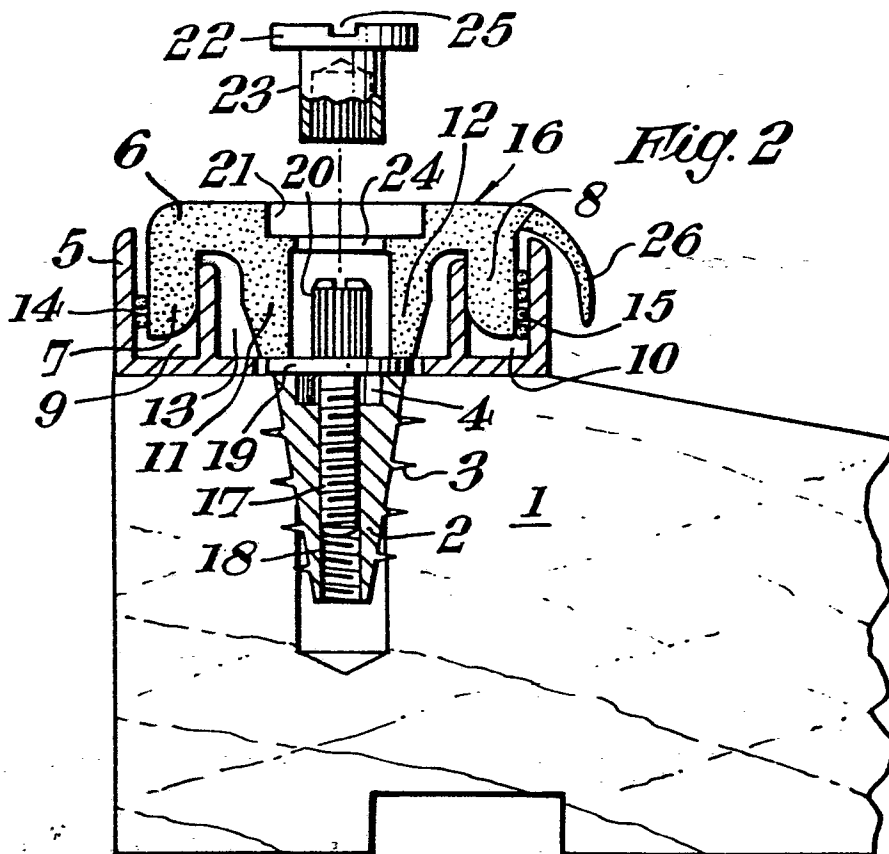
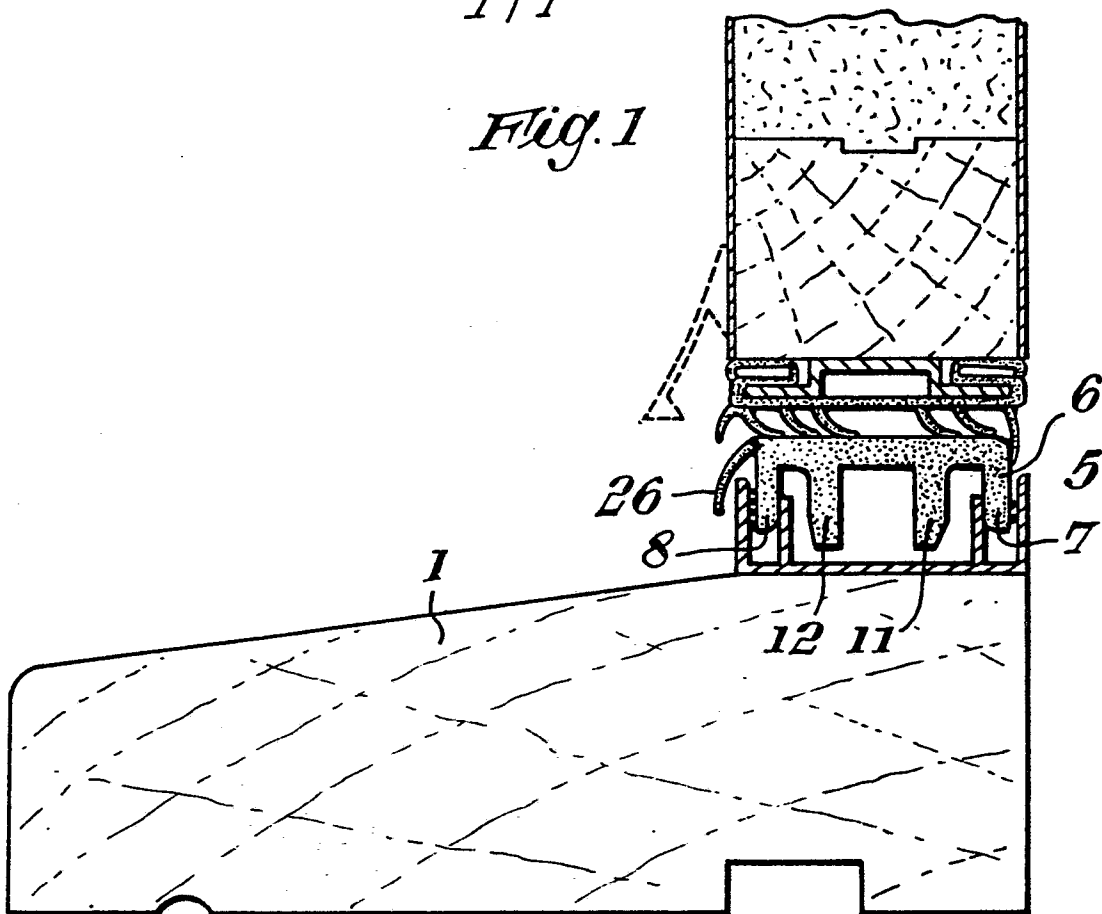
5. A draught-excluding system as claimed in any of the preceding Claims, wherein said means for limiting axial movement of each of the second threaded members in the upward direction comprises a disc or washer secured thereto, or integrally formed therewith, said disc or washer being adapted to engage the bottom edges of two of the channel walls of the second longitudinally extending member.
6. A draught-excluding system as claimed in Claim 2 or any of Claims 3 to 5 when dependent on Claim 2, wherein the upper end of each of the second threaded members is knurled or splined to cooperate with a tubular member passing through a respective hole in the second longitudinally extending member, each of these tubular members being formed with a screw head which fits in a counter bore in the upper surface of the second longitudinally extending member, the internal dimensions of the tubular members being such that once they have been pressed on to the top of the respective externally threaded members they remain fixed thereto, whereby axial motion between the second threaded members and the second longitudinally extending member will be prevented in both directions.
7. A draught-excluding system as claimed in any of the preceding Claims, wherein the first longitudinally extending member comprises two lateral channels and a central channel, the width of which is greater than the width of the two lateral channels.
8. A draught-excluding system as claimed in Claim 7, wherein said second longitudinally extending member has two lateral channels and a central channel, wherein the two outer walls of the lateral channels of the second longitudinally extending member are respectively accommodated in the lateral channels of the first longitudinally extending member and wherein the two walls defining the central channel of the second longitudinally extending member are both accommodated within the central channel of the first longitudinally extending member.

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9. A draught-excluding system as claimed in Claim 8, wherein the outer surfaces of the outer walls of the second longitudinally extending member are provided with strips of flexible material to provide draught and weatherproof sills between the first and second longitudinally extending members.
- 5 members.

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Fig. 1





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US-A-3 962 828 (McALLISTER) * Column 2, line 4 - column 3, line 13; figure *	1-5	E 06 B 1/70 E 06 B 7/23
Y		7,8	
A		9	
Y	US-A-4 214 405 (CHUPIK) * Figure 14 *	7,8	
A		1,9	
A	US-A-3 967 412 (GOVERNALE) * Column 1, line 49 - column 2, line 63; figures 1-6 *	1-3,5	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	US-A-3 448 543 (MULTER) * Column 2, lines 48-54; column 3, lines 4-11; column 5, lines 70-75; figures 1-4 *	9	E 06 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22-08-1985	Examiner DEPOORTER F.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			