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W. J. DENNIS

AUTOMATIC DOOR DRAFT STOP

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Fig. 1.

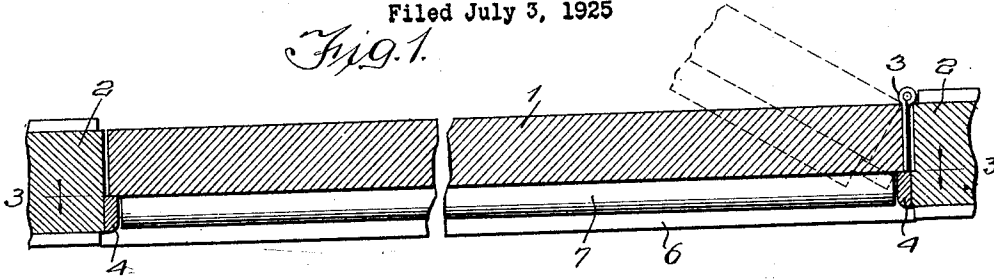


Fig. 2.

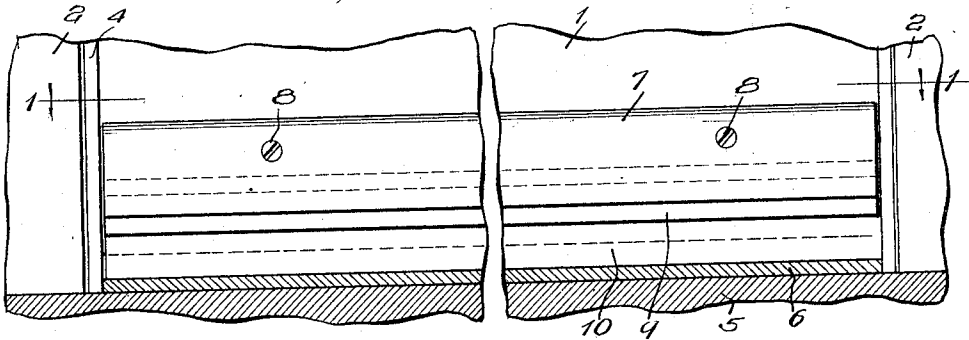


Fig. 3.

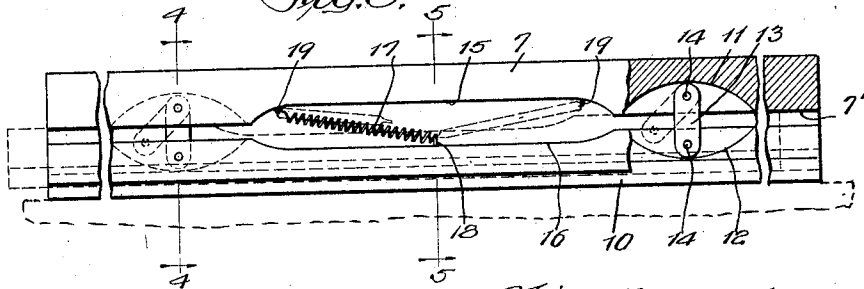


Fig. 4.

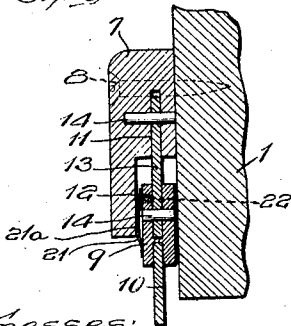
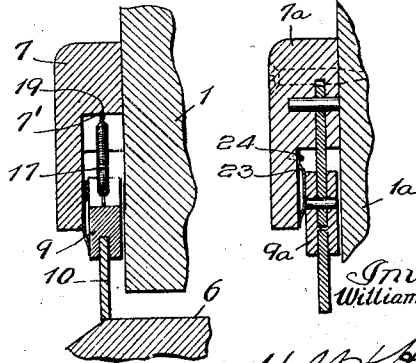


Fig. 5. Fig. 6



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AUTOMATIC DOOR DRAFT STOP.

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My invention belongs to that general class of devices known as door weather strips, and relates more particularly to an automatically operable device for closing the open space between the bottom of the door and the floor or door sill and preventing the admission of cold air, dust, etc., past the door. The invention has among its objects the production of a device of the kind described that is simple, inexpensive, compact, attractive, durable, efficient and satisfactory for use wherever found applicable. More particularly it has as an object the production of a device of the kind described which will be automatic in operation, that is, upon opening the door it will automatically adjust itself so as to clear the floor or sill and permit easy opening of the door and which, when the door is shut, will automatically seat on the floor or sill and closely fit the same. The same will fit sills that are worn or irregular. Another important object is the construction of a simple device of the kind described that will be applicable for use on the door, regardless of which edge of the door is hinged. Still another important object is to provide a device of the kind described of improved construction which will insure that the space between the lower edge of a door and its sill will be effectively sealed when the door is in its closed position. Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a sectional view taken substantially on line 1—1 of Fig. 2 through the door and a portion of the frame, showing a top plan view of the device applied to the door;

Fig. 2 is a view in elevation of the same;

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 3; and

Fig. 6 is a sectional view corresponding to Fig. 5 and illustrating another form of the invention.

Referring to the drawings, in which a preferred embodiment of my invention is shown, it may be mentioned that I have not endeavored to show with any degree of accuracy the door or door frame construction, it being understood that the same as shown is for the purpose of making clear the installation and operation of my improved device.

Referring particularly to Fig. 1, 1 represents a door arranged between the door side frames 2 and hinged at one side, for example, as indicated at 3. I have shown the frame provided with the usual stops 4 and the door sill 6 arranged on the floor 5 between the frames 2, it being understood, however, that in some instances the sill 6 may not be employed. The preceding briefly describes the structure to which my improved device is applied. As shown, 7 represents a plate formed of wood or other suitable material and secured to the door by means of screws 8 or their equivalent. The part 7 carries the automatically adjustable member 9 on which is arranged a strip of flexible material 10 such as rubber, felt or the like, which is adapted to contact and engage with the sill 6 or the floor as the case may be when the door is in its closed position. The members 7 and 9 are connected together by the desired number of links 13 of suitable size and shape which are shown projecting into recesses 11 and 12 in the parts 7 and 9, respectively, and pivotally secured to the parts by pins 14. This construction permits movement of the part 9 in either direction as indicated by the dotted lines in Fig. 3, in which the same is shown moved to the left. Obviously, a lengthwise movement of part 9 is accompanied by a vertical movement, being limited by the engagement of the top face of the part 9 with the shoulder 7' on the part 7. The parts 7 and 9 are also preferably formed with mating recesses or cut-outs as indicated at 15 and 16. Arranged within the recesses is a spring 17, the ends of which are connected to the two parts. As illustrated, I have shown one end of the spring secured at 18 to the part 9 and the other end of the spring secured to the part 7 at 19, 18 being generally a staple and 19 a hook. There is also provided an additional hook 19 to which the end of the spring may be connected at the opposite side of 18 as shown in Fig. 3. When the same is connected as shown, the tendency of the spring is to move the part as indicated in the dotted lines, while if the same is connected to the other

hook 19 on the opposite side, the same will draw the part 9 in a similar manner to the opposite side. This makes the device applicable for use on all doors, regardless of which way they swing as the spring 17 may be made adaptable by merely hooking the same on one side or the other as required.

Assuming the device is installed, as shown, when the door is closed the one end of the part 7 engages with the jamb 4 at the hinged side of the door, maintaining the parts as shown in Fig. 4 or Fig. 5, with the strip 10 in engagement with the sill or floor. As soon as the door is opened, however, the pull of the spring immediately moves part 7 to one side, thereby lifting the strip off of the sill or floor, permitting easy opening of the door and avoiding drag of the strip on the sill or floor. In closing the door, the final movement of the door moves part 9 lengthwise and brings the strip down on the sill or floor thoroughly sealing the opening thereat.

As before mentioned, the device is extremely simple, as well as inexpensive to manufacture as both parts 7 and 9 may be sawed out of a single piece without waste of material, and the parts may be easily slotted or grooved. It is not necessary for a dealer to keep a stock of lefts and rights as the one construction is applicable for all doors by merely hooking in the proper hook 19. There is nothing to get out of order, and skill is not required in installing. Anyone with a few simple instructions and a screw-driver can apply the same. It may, if necessary, be cut off on one or both ends in fitting to the door. In the preferred embodiment of my invention, I provide a metallic strip 21 or the equivalent between the parts 7 and 9. In Figs. 4 and 5 the strip 21 is secured to the part 9 by nails or screws 22. The weather strip 21 is preferably made of metal having some resiliency so that an arcuate portion 21^a forming part thereof will remain in contact with the part 7 when the part 9 is moved relatively thereto. This construction insures that the opening between the bottom edge of the door 1 and the sill 6 will be effectively sealed when the door is in its closed position, as air cannot pass around the part 9 to the space between the door and sill.

In Fig. 6 I have illustrated another form of the invention wherein the weather strip 21 is replaced by a substantially similar weather strip 23 which is secured by nails or screws 24 to a part 7^a, the part 7^a being

substantially identical with the part 7 shown in Figs. 1 to 5, inclusive, and being associated with a part 9^a and a door 1^a which are substantially identical with the part 9 and the door 1 shown in Figs. 1 to 5, inclusive. The weather strip 23 normally contacts the part 9^a in such manner that it effectively seals the opening between the lower edge of the door 1^a and its associated sill when the door is in its closed position.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. A door draft stop comprising a wood member adapted to be rigidly secured to the door adjacent the lower end thereof and provided with a longitudinal groove cut in the inner face and opening onto the lower edge thereof, a second member movable transversely and longitudinally of said groove and accommodated thereby, draft excluding material positioned between the members, pivoted links connecting said second member to the first mentioned member, a strip of yieldable material secured to said movable member and projecting therefrom, a spring, means for permanently connecting one end of the spring to the movable member, and spaced hooks carried by the first mentioned member and arranged upon opposite sides of the permanent connection of the spring whereby the other end of the spring may be detachably connected to one of said hooks to place the spring under tension.

2. A device of the kind described comprising a pair of cooperating parts with draft excluding material positioned between them, pivoted links connecting said parts, one of said parts being movable longitudinally and transversely of the other, a strip of yieldable material secured to said movable part and projecting therefrom, a spring, means for securing one end of said spring to one part, and means for securing the other end of the spring to the other end.

In testimony whereof, I have hereunto signed my name.

WILLIAM J. DENNIS.