May 10, 1966 S. G. SQUIRES 3,250,040

ADJUSTABLE DOOR SWEEP

Filed May 22, 1964

Fig. 1

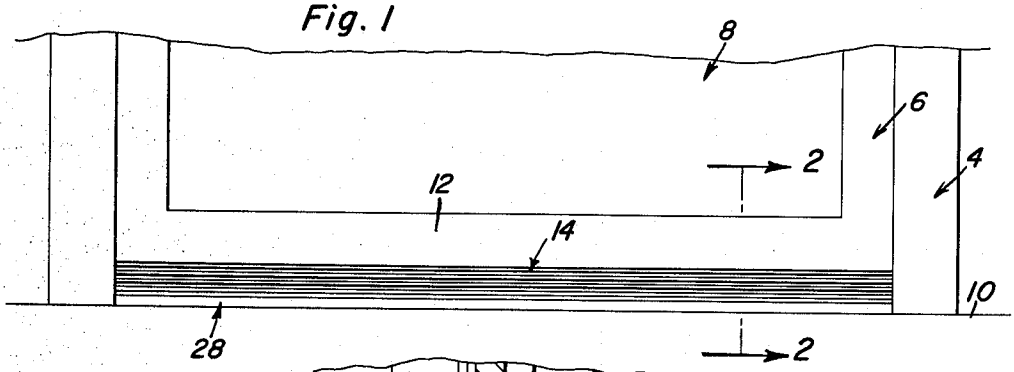


Fig. 2

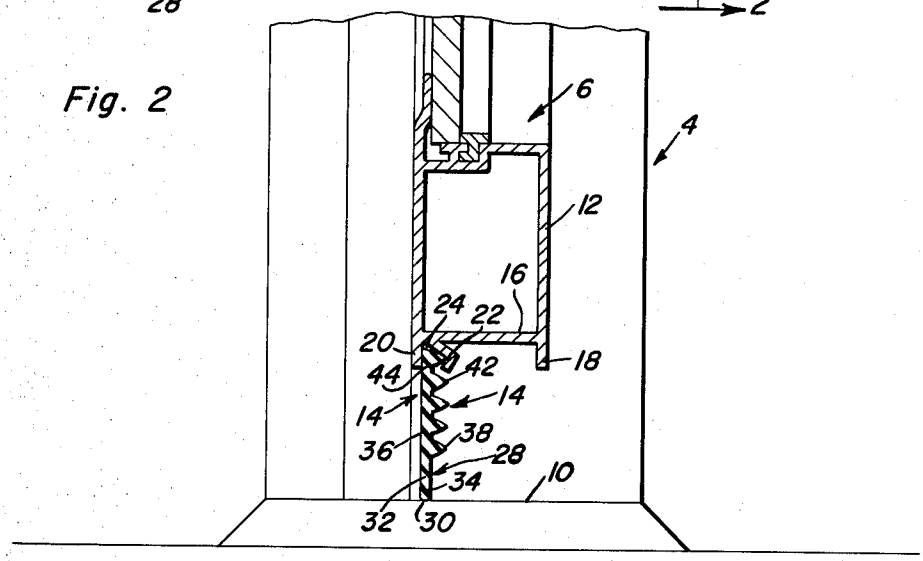
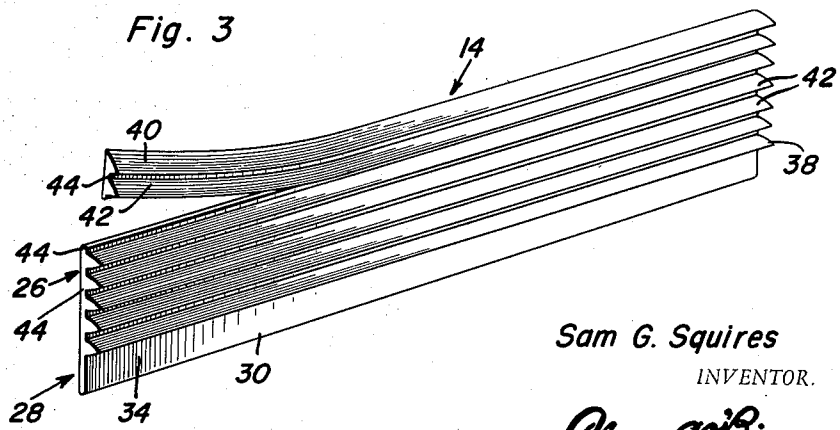


Fig. 3



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ADJUSTABLE DOOR SWEEP

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This invention relates, broadly construed, to storm doors and flexible weather stripping means for the bottom part of a door and wherein said means functions, as is usual, to span and seal an objectionable air gap between the underneath side of said bottom part and the top surface of the sill or threshold, and pertains, more particularly, to a significantly improved sweep-type weather strip.

Storm door manufactures and installers provide means, as is generally well known, to cope with their installation problems, one of which is to make sure that the ever-varying gap or opening between the door bottom and sill surface (which latter may be and often is unlevel and out-of-square with the cooperating door and frame components) is properly closed and sealed. It is common practice to use soft pliable rubber weather strips commonly known as readily attachable sweeps. The commonly used sweep comprises an elongated pliant gap-closing rubber strip or flap whose upper lengthwise edge is secured in one manner or another to the door bottom so that it depends therefrom and so that the deformable self-adapting bottom edge "sweeps" in and out over the sill surface when the door is opened and closed. Generally speaking, the gap to be spanned by the sweep may and does vary from ¼" to 1¼"; so, the sweep has to be such and so installed that the necessary gap-closing result is effectively taken care of.

Storm door manufacturers have attempted to solve this vertical sweep adjusting problem in one manner. On the other hand, it is the consensus of opinion that a more acceptable and satisfactory achievement is needed. Accordingly, it is the chief objective in the instant matter to improve upon prior art accomplishments by attaining the requisite vertical adjustment in a unique but highly practical and simple manner and to thus up-date and effectually solve the stated problem.

To the ends desired the herein disclosed sweep, an economical onepiece elongated pliant rubber weather strip, features a novel body portion provided across its lower lengthwise part with a deformable and conformable drag-flap. The body portion is the improved component in that it is expressly constructed for vertical adjustment to compensate for and cope with the aforementioned ever varying gaps.

Briefly, the overall improved concept comprises a storm door embodying a frame having a horizontal bottom member which when in use is spaced vertically from the top surface of the usual sill in a manner which leaves the usual gap between the underneath surface of said bottom member and top surface having integral built-in means for attachment and retention of a sill sweep, and a onepiece horizontally elongated gap-closing sweep commensurate in length with the length of said bottom frame member, said sweep comprising a flexible weather strip including a body portion and a flap portion extending across the bottom part of said body portion whereby the bottom edge contacts and sweeps back and forth over the sill's top surface to effect the desired weather proofing seal. The body portion spans the major part of said gap, the upper edge of said body portion being secured to said sweep-attaching and retaining means, said body portion embodying inherent

self-contained manually alterable properties whereby the vertical height can be adjusted to compensate for gaps presenting minor height adjustment problems.

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 view in elevation showing the lower portion of a storm door and illustrating the gap between the bottom of the door frame and sill and the improved adjustable door sweep and how it is constructed and used;

FIGURE 2 is an enlarged view taken on the section line 2—2 of FIGURE 1; and

FIGURE 3 is a view in perspective of the vertically adjustable door sweep by itself and which, at the left, shows two of the severable ribbed portions of the upper part of the body portion partially torn away for removal and disposal whereby to adjust the remaining sweep to the height desired.

With reference to FIG. 1 the numeral **4** designates a bottom portion of a fixed door frame with the associated frame **6** of a conventional-type storm door **8** fitted therein. The line **10** designates the top surface of a door sill. The underneath portion of the horizontal bottom frame member **12** is spaced above the surface **10** to define the gap which is to be spanned and sealed by the improved attachable, detachable and replaceable sweep-type weather strip **14**.

In connection with the weather strip **14** it is to be pointed out here that, generally speaking, it is analogous to currently used and known weather strips in that it is attached to the underneath side of the bottom frame member **12** and in the manner of an apron bridges and accordingly closes the undesirable air gap. Also and as will be hereinafter more fully appreciated this weather strip or sweep **14** is unique and original in that it is functionally designed and expressly constructed to take the place of weather strips commonly used and is adaptably adjustable to effectually span the stated gap merely by tearing (cutting or ripping) away an excess upper portion which is not required and then discarding the same.

With reference to FIG. 2 the bottom frame member terminates in a bottom channel comprising a web **16**, an inboard channel wall or flange **18** and an outboard wall or flange **20**. It will be noticed also that proximal to the flange **20** there is an oblique angled L-shaped longitudinal flange or cleat **22** which cooperates with the flange **20** in providing an open-ended groove or channel (substantially V-shaped in cross-section) denoted generally at **24**. It is into this channel that the upper longitudinal edge portion of the novel sweep **14** is to be fitted and used in the manner shown.

With reference now to the sweep per se it is fabricated from a type of flexible and pliant moldable rubber which is in common use as a sweep for aluminum and equivalent storm doors. To differentiate from the common rectangular flat-sided weather strip or sweep regularly employed the improved sweep **14** comprises a body portion **26** and a bottom deformable and conformable flap portion **28**. In practice the lower edge **30** of this flap is adapted to swish or sweep in and out against the surface **10** of the sill. Also and is customary the vertical surfaces or sides **32** and **34** (FIG. 2) are flat or planar. The body portion has a planar side **36** which is flush with the side **32**. However, the other side embodies the unique vertical adjust-

ment means which is characterized by a plurality of like spaced parallel ribs the lowermost one of which is denoted at **38**, the uppermost one at **40** and the intervening or intermediate ones at **42**. The top edge of the uppermost rib **40** constitutes the upper longitudinally alterable size-changing edge of the overall sweep. The ribs are preferably V-shaped in transverse cross-section and are of a length commensurate with the length of the flap **28** and body portion **36**. More particularly the converging lengthwise sides of the ribs are joined by a relatively narrow severable web **44**. Alternatively these severable or frangible webs are referred to as tearable and rippable. In any event and in keeping with the inventive concept it is within the purview thereof to alter the width or height of the vertically adjustable body portion **26** leaving the flap **28** intact. Accordingly, when correctly installed the flap is down when all circumstances are as shown in FIGS. 1 and 2. On the other hand, the upper lengthwise edge portion of the body part is "up" and is anchored and keyed in the keying channel **24**. In accordance with the freshly torn sweep or weather strip shown in FIG. 3 it will be evident that it lends itself to use as a satisfactory closure for gaps which vary approximately from one quarter of an inch to one inch and a quarter simply by tearing or cutting along or between a predetermined or selected rib or ribs. FIG. 3 shows the two ribs, the uppermost rib **40** and the so-called intermediate rib **42** both being ripped loose and torn off whereby the remaining ribs **42** and **38** therebelow are still intact.

All the user has to do is to measure the height of the gap, rip or tear off one, two or more ribs by way of the separable webs in the seemingly evident manner brought out in FIG. 3.

Assuming that the user of the sweep has installed the storm door **8** in the frame **4** and that the usual gap between the bottom frame member **12** exists as disclosed in FIGS. 1 and 2 and further assuming that the sweep has a body portion **26** made up of the seven ribs shown in FIG. 3 and flap at the bottom it has been ascertained that the sweep in its original form would be too wide or too high. Therefore, in order to accomplish the installation shown in FIG. 2 it then became necessary to reduce the height. Accordingly, the user would either tear or cut two of the topmost ribs away leaving the remaining five ribs. Then the remaining uppermost rib is installed and anchored in the channel **24** between the flanges **20** and **22**. The ribs are long and narrow that is of a cross-section that they are sufficiently stable to allow one to readily select the point of alteration, then catch hold of the desired ribs at one end of the strip or sweep as suggested in FIG. 2 and simply tear off the necessary rib or ribs. The fact that the ribs are V-shaped also facilitates reliable keying and anchoring of the attachable or anchorable rib in the keying channel **24**.

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. In combination, a storm door embodying a frame having a horizontal bottom frame member which when in use is spaced vertically from the top surface of the usual sill in a manner which leaves the usual gap between the underneath surface of said bottom member and top surface of said sill, said underneath surface having integral built-in means for attachment and retention of a sill sweep, said means comprising spaced elongated rigid flange members cooperating with each other and defining an open-ended sweep adapting, keying and anchoring channel, and a one piece horizontally elongated gap-closing sweep commensurate in length with the length of said bottom frame member, said sweep comprising a flexible weather strip including a body portion and a flap portion, said flap portion extending across the bottom part of said body portion whereby the bottom edge contacts and sweeps back and forth over the sill's top surface to effect the desired weather-proofing seal, said body portion spanning the major part of said gap, the upper edge of said body portion being secured to said sweep attaching and retaining means, said body portion embodying inherent self-contained manually alterable properties whereby the vertical height can be adjusted to compensate for gaps presenting minor height adjustment problems, said flap being highly elastic and deformable to serve its self-adapting sill-engaging function, said body portion being provided on one side with a plurality of duplicated outsanding spaced parallel ribs, at least the topmost rib being severable to thus decrease the vertical height of said body portion and permitting the next rib therebelow, in lieu of said topmost rib, to be removably lodged and keyed for retention in said keying channel.

2. In combination, a storm door embodying a frame having a horizontal bottom frame member which when in use is spaced vertically from the top surface of the usual sill in a manner which leaves the usual gap between the underneath surface of said bottom member and top surface of said sill, said underneath surface having integral built-in means for attachment thereto of a sill sweep, said means comprising spaced rigid flange members cooperating with each other and defining an elongated open-ended sweep adapting, keying and anchoring channel, and a one piece horizontally elnogated gap-closing sweep commensurate in length with the length of said bottom frame member, said sweep comprising a flexible weather strip including a body portion and a flap portion, the latter extending across the bottom part of said body portion whereby the bottom edge contacts and sweeps back and forth over the sill's top surface to effect the desired weather-proofing seal, said body portion spanning the major part of said gap, the upper edge of said body portion being secured to said sweep attaching and retaining means, said body portion embodying inherent self-contained manually alterable properties whereby the vertical height thereof can be adjusted to compensate for gaps presenting minor height adjustment problems, said flap being plain and flat faced on its leading and trailing surfaces, highly elastic and conformable in shape to varying and irregular sill surface requirements, also being appreciably less in height than the greater height of said body portion, the trailing surface of said body portion being corrugated lengthwise and providing a plurality of closely spaced outstanding parallel selectively usable ribs, the topmost rib being lodged and fittingly anchored in said keying channel.

3. An improved storm door sweep for ready attachment to sweep attaching and retaining means on the bottom member of a storm door comprising a one piece horizontally elongated gap-closing sweep characterized by a weather strip made of flexible sheet material and normally of a length commensurate with the length of the sill with which it is adapted to cooperate, said weather strip embodying an upper elongated body portion and an integral depending flap portion having a longitudinal bottom edge which is elongated and adapted to conformingly drag and sweep in and out across the top surface of a co-acting underlying sill, said flap being highly elastic and deformable to aptly perform its self-shaping sill engaging weather-proofing function, said flap being flat and smooth on its over-all leading and trailing surfaces, also being appreciably less in height than the significantly greater height of said body portion, the complete trailing surface of said body portion being corrugated lengthwise and providing a plurality of closely spaced outstanding parallel ribs, a topmost one of said ribs being designed and adapted to be lodged and fittingly anchored in a keying channel

provided therefor on the bottom portion of the aforementioned storm door, at least said topmost rib being joined to the body portion by a manually severable web, said topmost rib being not only severable but discardable is necessary, to in this manner decrease the vertical height of the body portion and permitting the rib which is below and next thereto to take the place of said topmost rib, that is, after the latter has been severed and detached, all of said ribs being V-shaped in cross-section from end to end and each rib being joined to the next adjacent rib by a frangible manually tearable web.

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