

Aug. 27, 1935.

R. B. CALCUTT

2,012,624

WEATHER STRIP

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FIG. 1.

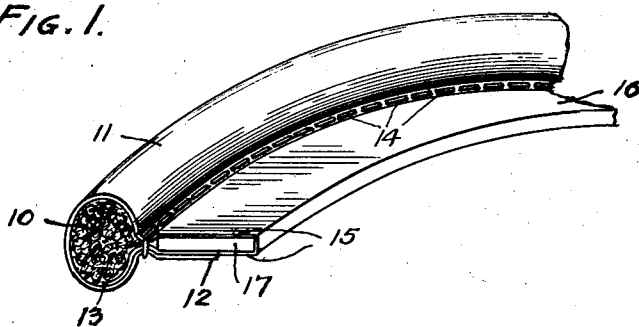


FIG. 2.

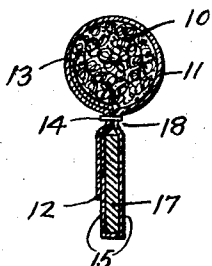


FIG. 3.

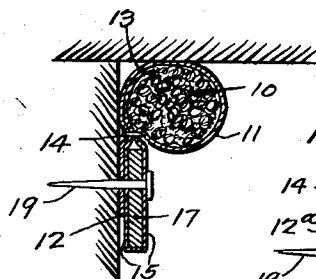


FIG. 4.

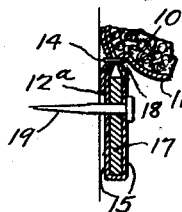


FIG. 6.

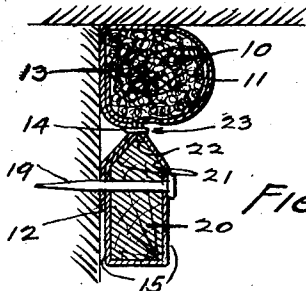
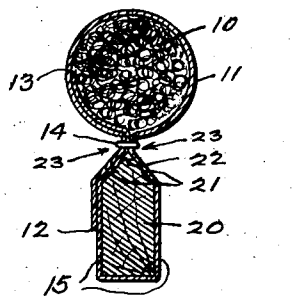
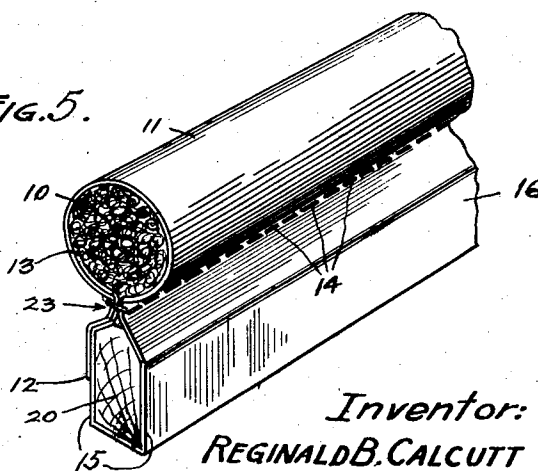


FIG. 5.



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2,012,624

WEATHER STRIP

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Application August 4, 1934, Serial No. 738,524

8 Claims. (Cl. 20-69)

My invention is an improvement in weather-strips and relates more particularly to structural details which afford convenient dependable means for readily attaching the strip to door frames, window frames, and the like.

As a part of my improvement I have provided a weather-strip that may be made in continuous lengths of one hundred feet or more which are wound upon a spool, reel, or the like, or it may be made in standard shorter lengths of say seven feet or the like.

One of the objects of the invention is to provide a tacking or attaching flap or fin that is sufficiently reinforced to provide a substantial "body" that will assist in maintaining the strip flatwise against the window frame or door frame to which it is secured and prevent bulging of the strip between the securing elements.

Another object of my invention is to provide a weather-strip, the several parts of which may be readily and quickly assembled in the process of manufacture and which will require practically a single operation to assemble, thereby materially reducing the cost of production. Other objects of my invention reside in providing a weather-strip that is novel in construction, is easy to attach, is effective in performing its functions, and which is economical to manufacture so that it may be sold for a reasonable retail price.

Still further objects will be apparent to others, skilled in the art, after my invention is understood.

I prefer to carry out my invention and to accomplish the many objects thereof in substantially the manner hereinafter fully described and as more particularly pointed out in the claims. Reference is herein made to the accompanying drawing that forms a part of this specification.

In the drawing:—

Fig. 1 is a view in perspective, showing a length of weather-strip made in accordance with one form of my invention.

Fig. 2 is a cross-sectional view of the structure shown in Fig. 1, drawn to an exaggerated scale and showing the stitching at the preferred location.

Fig. 3 is a sectional view showing the weather-strip in use attached to a door or window frame.

Fig. 4 is a cross-section of a modified arrangement of the cover for the flap or fin.

Fig. 5 is a view similar to Fig. 1, showing a slightly modified structure.

Fig. 6 is a cross-sectional view of the structure shown in Fig. 4, and drawn to an exaggerated scale.

Fig. 7 is a section of a window-frame or door-frame, showing the modified construction in use attached thereto.

The drawing is to be understood as being more or less schematic for the purpose of illustrating

typical or preferred forms in which my invention may be made, and in this drawing the same reference characters are employed to designate the same parts wherever they appear in the different views.

Referring first to Figs. 1 to 4, it will be seen the weather-strip therein shown is of a more or less flexible type and for this reason it may be readily wound upon a spool or reel for storage and ready handling. It is therefore made in continuous lengths of one-hundred to two-hundred feet so that it will fill a large spool or reel.

The structure shown in Figs. 1 to 4 consists of a length of a suitable cushioning material 10. This material may be what is commercially known as roving or wicking which consists of a plurality of twisted strands of soft cotton fibers that are used for example in mops, gaskets and other articles.

Obviously elongated strands of hair, wool or the like may also be employed, as may also rubber shreds, sponge rubber and similar materials. The cushion 10 is surrounded by a fabric covering 11 that is formed preferably of a cylindrical cross-section and the fabric may be of a woven character and it is preferably waterproofed or rubberized with the waterproofed or rubberized surface exposed. The roving and the covering fabric are cut in long lengths and fed through the stitcher in the process of manufacture.

The cylindrical covering 11 for the cushion is preferably formed or located intermediate the longitudinal edges of the fabric and the edges of said fabric, designated as 12 and 13, preferably overlap each other to a substantial extent and are held together by a continuous row of stitches 14 that extend the entire length of the weather-strip. The stitching, in forming the cylindrical covering will slightly compress the cushion into the rounded shape in cross-section.

In order to form the overlapped portion above mentioned, the fabric is folded back upon itself so that a wide hem 15 is provided that is disposed longitudinally of the cushion and its covering and which projects laterally to provide a fin 16 through which the attaching means, such as small nails or brads, are driven to secure the weather-strip in place.

The hem surrounds a strip of reinforcement 17 that is preferably an elongated piece of cardboard, straw-board, press-board, rubber-sheeting or the like that may be readily flexed or bent at an acute angle, if desired, such as when a portion of the weather-strip is disposed in the corner of a door-frame or window-frame.

In fabricating the article above described, the work is done upon a sewing-machine with proper feeders for feeding the cushion material 10 and the reinforcing strip 17, as well as the fabric which provides the cylindrical covering for the

cushion and the hem in which the reinforcing strip 17 is disposed. Such machines are available upon the market and it will be seen that one and the same operation is required to feed the three strips or lengths of material and to secure them together by a single row of stitches. In Fig. 2 the stitches are placed between the inner edge of the reinforcing strip 17 and the cylinder cover 11 so that the stitches draw the fabric together in the manner shown thereby providing a narrow neck 18 or shallow channel which permits the distortion in the cross-section of the weather-strip when in use as shown in Fig. 3.

The securing means, which is in the form of a small nail or brad 19, preferably passes through the fabric forming the hem and the overlapped edge 12, as well as the filler 17, but it may be found desirable to shorten this overlapped edge as indicated at 12^a in Figure 4 so that a nail or brad 19 does not pass through said edge 12.

In Figs. 5, 6 and 7 the weather-strip is formed in the same manner as hereinbefore described with the exception that the hem 15 is made somewhat larger and in place of the relatively thin flat strip of straw-board and the like I have substituted a strip 20 of soft, light, pliable wood.

As seen, the edge of the wood strip which is next the stitching is provided with tapered edges 21 that converge to an apex 22 next the stitching and provides the neck portion and a relatively wide channel or groove 23 upon each side which will permit distortion of the cross section of the weather-strip when in use. In attaching this modified construction the nail or brad 19 is preferably driven through the attaching fin and thereby pierces the wood strip 20 in the manner shown in Fig. 7. The weather strip just described is adapted for manufacture in convenient lengths of say seven feet, and is not as flexible as the strip hereinbefore described insofar as its lateral bending is concerned.

In both types, however, it will be obvious that the stiffened fin provides ready means for securing the weather-strip in position and successfully avoids any bulging of the strip away from the support at places between the nails as is so common in weather-strips now available. I do not limit myself to any particular type or kind of material used in either the cushion or the filler in the hem as it is obvious any material that is adapted for the purpose may be employed.

What I claim is:—

1. A weather-strip comprising a length of fabric over-lapped and stitched intermediate its longitudinal edges to provide a pocket of cylindrical cross-section and a flat hem extending laterally therefrom, cushioning material enclosed entirely within said pocket, and a flat strip of reinforcing material enclosed in said hem close to said pocket and disposed edgewise towards the cushioning material.

2. A weather-strip comprising an elongated yieldable cushion, a sheet of fabric forming a substantially cylindrical cover around said cushion, a longitudinal fin of fabric disposed lateral to said cushion, a substantially flat reinforcing strip enclosed within said fin close to and disposed edgewise towards said cushion, and common means spaced from the adjacent edge of said reinforcing strip for maintaining said reinforcing strip in said edgewise position and for maintaining said covering fabric in cylindrical formation around said cushion.

3. A weather-strip comprising an elongated yieldable cushion of substantially cylindrical cross-section, a strip of fabric enveloping said cushion, a longitudinal fin of fabric disposed lateral to said cushion, a separate reinforcing strip cooperating with said fin and disposed edgewise with respect to said cushion, and means for maintaining the fabric in position around said cushion, said means being located between the cushion and the adjacent edge of said reinforcing strip.

4. A weather-strip comprising an elongated yieldable cushion of substantially cylindrical cross-section, a strip of fabric enveloping said cushion, a longitudinal fin of fabric disposed lateral to said cushion, a separate reinforcing strip enclosed within said fin and disposed edgewise with respect to said cushion, and means for maintaining the fabric in position around said cushion, said means being located between the cushion and the adjacent edge of said reinforcing strip.

5. A weather-strip comprising an elongated yieldable cushion of substantially cylindrical cross-section, a strip of fabric having a cylindrical portion enveloping said cushion and having flaps providing a longitudinal fin projecting lateral from the cylindrical portion, a separate reinforcing strip cooperating with said fin and disposed edgewise with respect to said cushion, and means passing through the fabric between the cushion and the adjacent edge of the reinforcing strip to maintain the cylindrical portion of the fabric in position around the cushion.

6. A weather-strip comprising an elongated yieldable cushion of substantially cylindrical cross-section, a strip of fabric having a cylindrical portion enveloping said cushion and having flaps providing a longitudinal fin projecting lateral from the cylindrical portion, a separate reinforcing strip enclosed within said fin and disposed edgewise with respect to said cushion, and means passing through the fabric between the cushion and the adjacent edge of the reinforcing strip to maintain the cylindrical portion of the fabric in position around the cushion.

7. A weather-strip comprising an elongated yieldable cushion, a strip of fabric having the portion intermediate its width enveloping said cushion, the longitudinal edge portions of said fabric strip being overlapped to provide a hollow longitudinal fin projecting lateral to said cushion, a reinforcing strip enclosed within said hollow fin, and means passing through the fabric between the cushion and the adjacent edge of the reinforcing strip to maintain the fabric in position around said cushion and said reinforcing strip.

8. A weather-strip comprising an elongated yieldable cushion, a strip of fabric having the portion intermediate its width enveloping said cushion, one longitudinal edge of the fabric extending lateral to the cushion and folded back upon itself to provide a hollow longitudinal fin, the other longitudinal edge of the fabric overlapping the first-mentioned edge, a row of stitches through the plies of fabric adjacent the cushion to maintain the cushion in shape, and a separate reinforcing strip within said fin and lying between the row of stitches and the fold which forms the outer edge of the fin.

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