

No Model.)

G. L. THOMAS.
PNEUMATIC WEATHER STRIP.

No. 494,351

Patented Mar. 28, 1893.

Fig. 1.

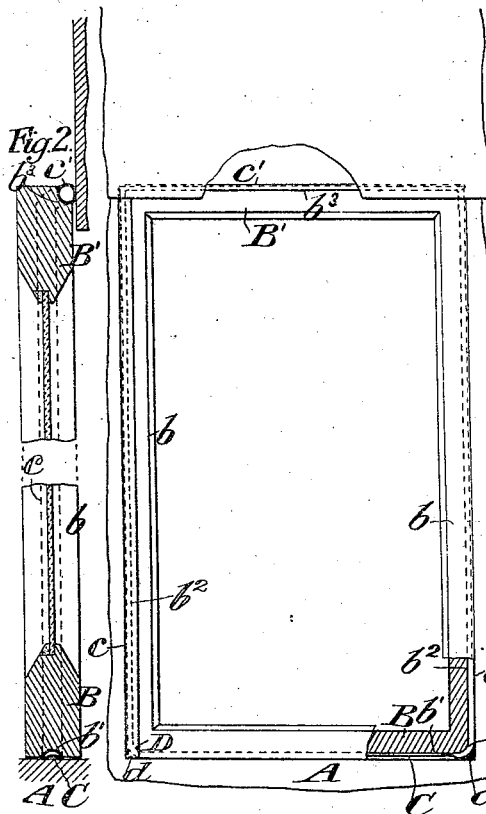


Fig. 4.

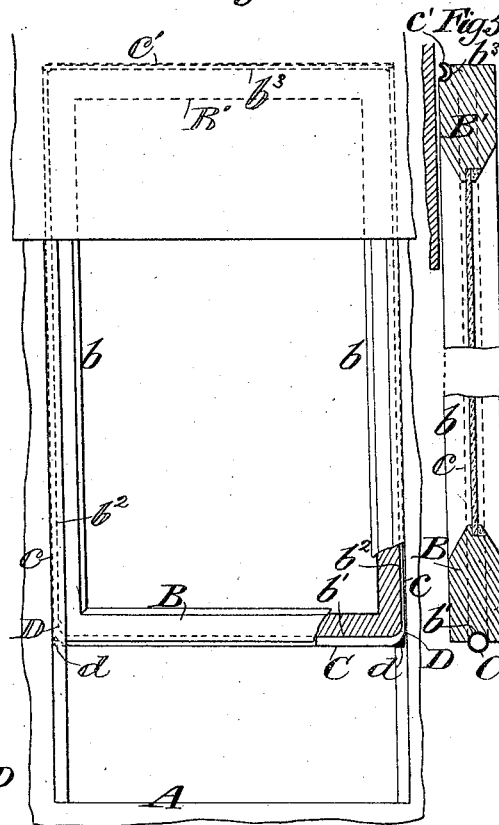


Fig. 3.

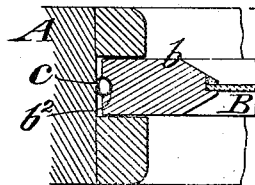


Fig. 6.

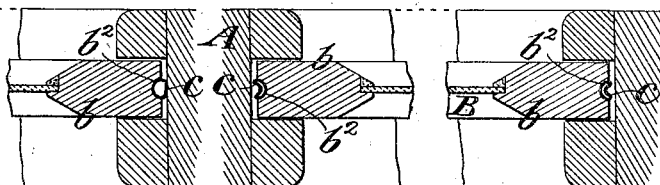
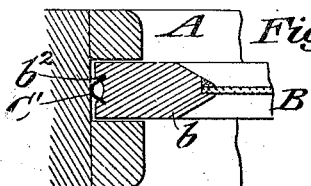


Fig. 7.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE L. THOMAS, OF BROOKLYN, NEW YORK.

PNEUMATIC WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 494,351, dated March 28, 1893.

Application filed May 2, 1892. Serial No. 431,413. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. THOMAS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Pneumatic Weather-Strips, of which the following is a specification.

My invention relates to an improvement in pneumatic weather strips in which a collapsible and expansible strip of material is caused to expand and fill the interstices between the window sash and frame when the window is closed and to collapse and relieve the window when the latter is opened.

A practical embodiment of my invention is represented in the accompanying drawings in which,

Figure 1 is a view of a window sash in front elevation, partly in section, showing it in its frame and in closed adjustment. Fig. 2 is a view in vertical section from front to rear. Fig. 3 is a view in horizontal section from front to rear. Figs. 4, 5 and 6 are similar views showing the position of the parts when the window sash is raised, and Fig. 7 is a view in detail of a modification.

The window frame is denoted by A, the bottom of the window sash by B, its top by B' and its sides by b.

In the form which I have chosen to represent my invention I have shown the window as consisting of a single sash, such for example as is commonly employed in windows of railway cars, but the invention is applicable as well to windows composed of more than one sash. The elastic strip which I prefer to employ consists of flexible tube, such for example as a tube of india rubber, adapted to rest in a groove formed in the outer edges of the bottoms and sides of the window sash.

The portion of the elastic tube which extends along the groove b' in the bottom of the window sash is denoted by C, the portions of said tube which extend along the grooves b^2 at the sides of the sash are denoted by c and the portion of said tube which extends along the top of the sash in the groove b^3 is denoted by c'. While the grooves b' and b^2 are formed in the outer edges of the sash, the groove b^3 across the top of the sash is preferably formed in either the front or back face of the said top portion in order to come opposite the frame or portion of another sash which com-

monly overlaps the top of the sash. The tube C, c, c' is preferably formed with a continuous hollow interior throughout its length, and it may be sprung onto the sash into position for use. Before the tube is sealed to inclose the air within it, it is desirable that it be placed in position, as for example upon a trial sash, so that when its bottom portion C is collapsed, its side portion and top portion will be inflated, or when its top and side portions are partially or entirely collapsed, its bottom portion will be inflated for the following reasons:

When the window is raised from its seat, it is desirable that the tube along its sides should collapse sufficiently to prevent undue sliding friction and this will be readily accomplished if the air which inflated the sides and top is allowed to rush into the bottom portion and inflate it. On the other hand when the window is closed and the tube at the bottom of the sash is thereby collapsed, the air driven therefrom will escape along up the previously collapsed side portions and will inflate them, thereby tightly sealing the joint between the sides and top of the sash and the frame in proximity thereto.

For the purposes of rendering the window perfectly free to be raised and lowered without any considerable friction from the side tubes, the side portions of the tube may be made thinner than the bottom portion and the latter will thereby have a normal tendency to expand as soon as the window is raised slightly and will thereby draw the air into the vacuum thus produced and cause the thinner or more flexible sides to so collapse as to substantially free them from contact with the side frames.

Instead of a complete tube, the elastic strip might have its edges secured air tight to the edge of the window sash and inclose, in conjunction with the edge of the sash a hollow air space which might serve to distend and collapse the strip as the window is lowered or raised in a manner quite similar to that hereinabove described. Such an arrangement is represented in Fig. 7 in which the strip is denoted by C' having its edges secured air tight to the edge of the sash.

For applying the hereinabove described strip to windows in common use, it is desir-

able that the grooves at their lower corners should be round, as shown at D, Fig. 1, and in order to carry the strip out flush into the corner of the frame, the strip may be provided with a corner piece of elastic material.

The hereinabove described strip not only serves as an effective dust and weather guard but it also serves as an effective cushion to prevent the jarring and rattling of windows in cars, houses or elsewhere and at the same time it is located in such a position as to be effectively housed against deterioration under the influence of the weather.

It is obvious that slight changes might be resorted to in the form and arrangement of the strip without departing from the spirit

and scope of my invention, hence I do not wish to be limited strictly to the structure herein set forth, but

What I claim is—

A weather strip comprising an expansible and collapsible tube inclosing a body of fluid, the inclosed body of fluid having such a relation to the interior space of the tube that when one portion of the tube is distended another portion will be collapsed, substantially as set forth.

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Witnesses:

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