March 30, 1937. F. W. KAMMERER 2,075,616

METAL WEATHER STRIP FOR MECHANICALLY BALANCED WINDOWS

Filed April 1, 1936

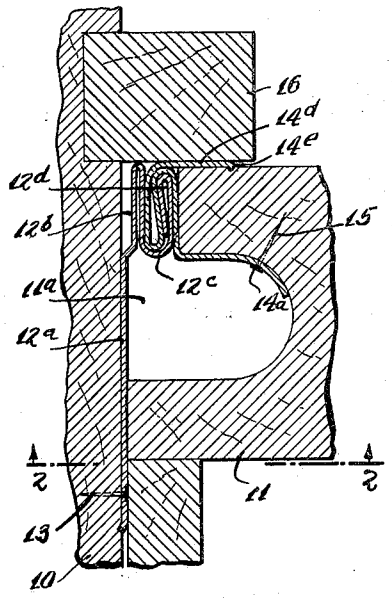


Fig. 1.

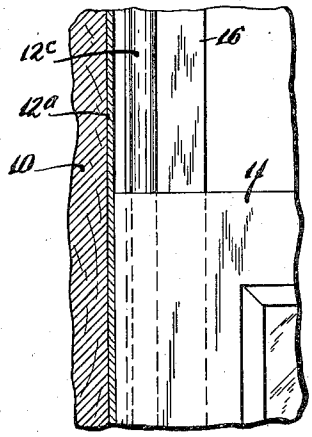


Fig. 2.

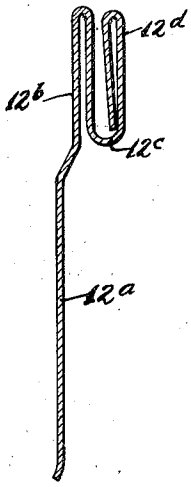


Fig. 3.

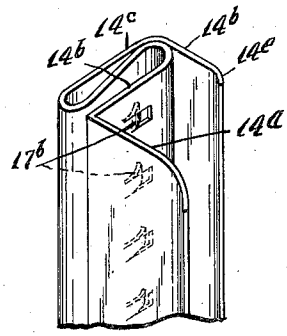


Fig. 6.

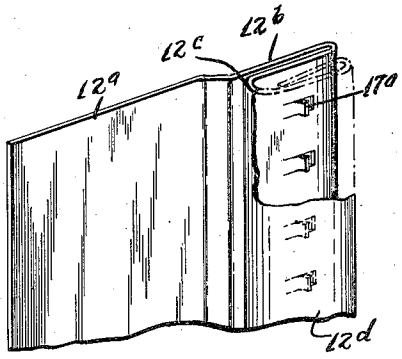


Fig. 5.

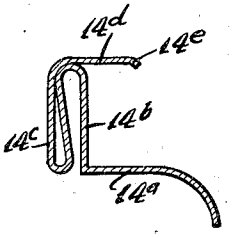


Fig. 4.

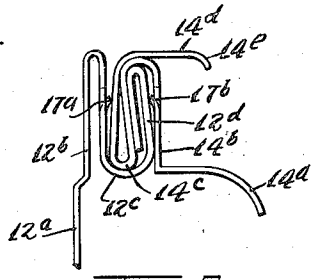


Fig. 8.

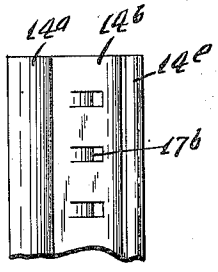


Fig. 7.

INVENTOR
Fred W. Kammerer
BY Zoltan A. Polacsek
ATTORNEY

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METAL WEATHER STRIP FOR MECHANICALLY BALANCED WINDOWS

Fred W. Kammerer, New York, N. Y.

Application April 1, 1936, Serial No. 72,033

5 Claims. (Cl. 20—69)

This invention relates to new and useful improvements in metal weather strips for mechanically balanced windows.

The invention has for an object the application of metal weather strips to double hung windows which are of simple form and which act very efficiently.

More specifically, the invention particularly contemplates the combination of the weather strips with window sashes having completely grooved edges which accommodate a suitable balancing mechanism. Heretofore, weather strips were applied only to window sashes having partially grooved edges. This invention contemplates forming the weather strips with a portion which may be engaged into the completely grooved edges and secured in position.

Another object of the invention is the provision of a plurality of resilient tongues or similar parts stamped from portions of the material of the weather strips and engaging other portions, in a manner so as to reduce the frictional resistance between the parts.

Still further the invention proposes the construction of a device as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a fragmentary horizontal sectional view of a portion of a window frame and a sash, and weather strips constructed according to this invention applied thereto.

Fig. 2 is a fragmentary sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal sectional view of the frame weather strip.

Fig. 4 is a horizontal sectional view of the sash weather strip.

Fig. 5 is a perspective view of a frame weather strip constructed according to a modification of the invention.

Fig. 6 is a perspective view of a sash weather strip constructed according to a modification of the invention.

Fig. 7 is a fragmentary elevational view of Fig. 6.

Fig. 8 is a horizontal sectional view of the weather strips shown in Figs. 5 and 6 shown engaged with each other.

The metal weather strips, according to this invention, are intended to be used in combination with a window frame 10 having a sash 11 slidably associated with it. The invention relates only to sashes 11 which are formed with edges of complete side grooves 11a, from top to bottom of the sashes, in which suitable balancing mechanisms are provided. Heretofore, these edge grooves were solely used to accommodate the balancing mechanism which support the sashes.

The metal weather strips according to this invention are used in combination with a window frame and sash. One of these strips comprises a frame strip having a broad base portion 12a attached at one edge portion by nails 13 to the frame 10. This broad base 12a is bent at its free end to grip the frame and extends substantially the entire thickness of the window sash and extends across the groove 11a. It continues into an inwardly offset portion 12b which continues into a rearwardly directed U-shaped socket portion 12c, adjacent the guiding strip 16.

Another of the strips is a sash strip and is provided for the sash of the window and has a narrow base portion 14a adapted to extend into the groove 11a and to be secured fixedly in position by nails 15 or other fastening elements. This narrow base 14a continues into a portion 14b parallel to and opposed to the offset portion 12b. This portion 14b continues into a hollow plug portion 14c adapted to slidably engage the U-shaped socket portion 12c. This plug portion 14c continues into a face portion 14d adapted to engage a portion of the face of the sash 11.

The U-shaped portion 12c of the frame strip continues into an outer face portion 12d which is substantially parallel to the offset continuation 12b. The U-shaped portion 12c has its arms converging so as to better grip the plug portion 14c.

This plug portion 14c is thicker at the outer edge than at the inner edge. The free edge of the face portion 14d is bent inwards into a small resilient flange portion 14e which serves to hold the sash 11 spaced from the adjacent guiding strip 16 of the window frame and closes the gap between sash 11 and guiding strip 16. This is clearly shown in Fig. 1. The narrow base portion 14a is shaped to conform with the face of the grooves 11a.

In Fig. 1 the sash is shown in operative position with the window strips in place. It should be noted that the plug portion 14c is engaged into the socket portion 12c.

In Figs. 5-8 inclusive a modified form of the invention has been disclosed in which a plurality of tongues 17a and 17b are stamped from portions of the center strips and act against other portions to control or adjust the frictional resistance between the strips when they are sliding. More particularly, the tongues 17a are stamped from one of the arms of the U-shaped socket 12c and are adapted to engage against one of the sides of the plug portion 14c. The tongues 17b are stamped from the portion 14b and are adapted to frictionally and resiliently engage against the portion 12d. Normally, these tongues hold the weather strips in relative spaced positions and greatly reduce the frictional resistance to sliding. Should the sashes be forced in one direction or the other these tongues are capable of flexing and bending without permanent injury.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention what I claim as new and desire to secure by United States Letters Patent is:—

1. The combination with a window frame and a sash slidably mounted therein, said sash having a completely grooved edge, of a frame strip having a broad base portion attached at one edge upon said frame and extending across said grooved edge and continuing into an inward offset portion which continues into a U-shaped socket portion, and a sash strip having a portion attached within said groove and extending outwards and continuing into a narrow base portion parallel to said offset portion and which continues into a plug portion adapted to slidably engage said socket portion, and a face portion continuing from said plug portion and engaging the face of said sash, said face portion having an edge turned inwards towards said sash, and a plurality of tongues stamped from said strips, the tongues from one strip engaging portions of the other strips for frictionally and resiliently holding the strips relative to each other.

2. The combination with a window frame and a sash slidably mounted therein, said sash having a completely grooved edge, of a frame strip having a broad base portion attached at one edge upon said frame and extending across said grooved edge and continuing into an inward offset portion which continues into a U-shaped socket portion, and a sash strip having a portion attached within said groove and extending outwards and continuing into a narrow base portion parallel to said offset portion and which continues into a plug portion adapted to slidably engage said socket portion, and a face portion continuing from said plug portion and engaging the face of said sash, said face portion having an edge turned inwards towards said sash, and a plurality of tongues stamped from said strips, the tongues from one strip engaging portions of the other strips for frictionally and resiliently holding the strips relative to each other, certain of said tongues being arranged upon one of the arms of said U-shaped socket and engaging one side of said plug portion.

3. The combination with a window frame and a sash slidably mounted therein, said sash having a completely grooved edge, of a frame strip having a broad base portion attached at one edge upon said frame and extending across said grooved edge and continuing into an inward offset portion which continues into a U-shaped socket portion, and a sash strip having a portion attached within said groove and extending outwards and continuing into a narrow base portion parallel to said offset portion and which continues into a plug portion adapted to slidably engage said socket portion, and a face portion continuing from said plug portion and engaging the face of said sash, said face portion having an edge turned inwards towards said sash, and a plurality of tongues stamped from said strips, the tongues from one strip engaging portions of the other strips for frictionally and resiliently holding the strips relative to each other, certain of said tongues being stamped from that portion of the sash strip which is opposed to the said offset portion, and engage against the outer face of said frame strip.

4. The combination with a window sash having a grooved edge with the material to one side of said groove recessed, a sash strip having a portion attached within said groove and extending outwards of said groove and continuing into a base portion flat against said recessed portion, a plug portion continuing from and substantially parallel to said base portion and adapted to engage a frame strip in order to make said sash and window frame weatherproof, and a face portion continuing from said plug portion and extending substantially at right angles to said offset portion and engaging the face of said sash.

5. The combination with a window sash having a grooved edge with the material to one side of said groove recessed, a sash strip having a portion attached within said groove and extending outwards of said groove and continuing into a base portion flat against said recessed portion, a plug portion continuing from and substantially parallel to said base portion and adapted to engage a frame strip in order to make said sash and window frame weatherproof, a face portion continuing from said plug portion and extending substantially at right angles to said offset portion and engaging the face of said sash, and a means for mounting said sash strip on said sash comprising, fastening elements within said grooved edge for securing the strip in position, and inturned edge portions on said face portion adapted to engage said sash to freely secure said sash strip to allow movement of said strip to prevent the said strip from being bent out of shape.

FRED W. KAMMERER.