July 1, 1941. G. CERNY 2,247,435

WEATHER STRIP

Filed March 25, 1940

Fig. 1.

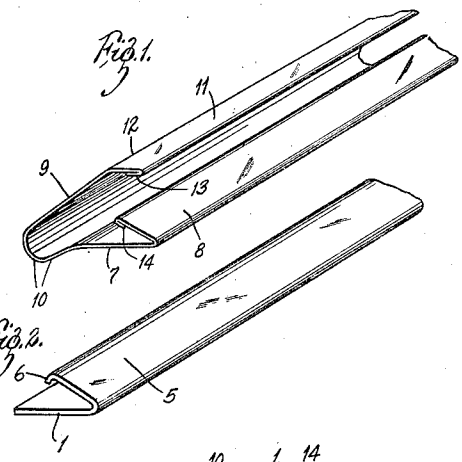


Fig. 2.

Fig. 3.

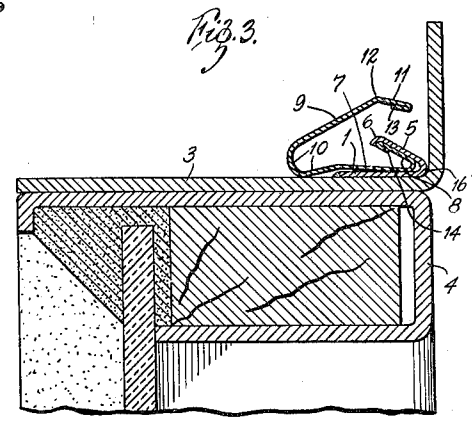


Fig. 4.

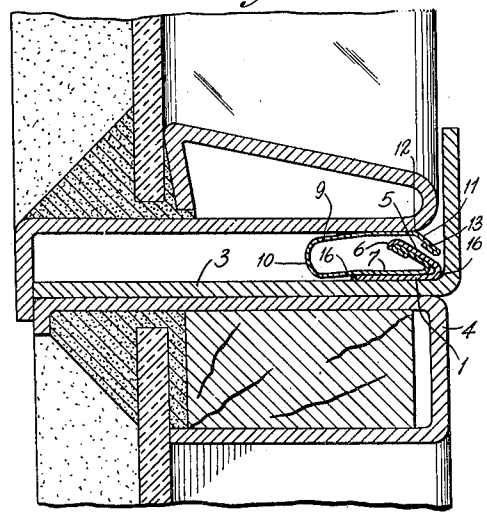


Fig. 5.

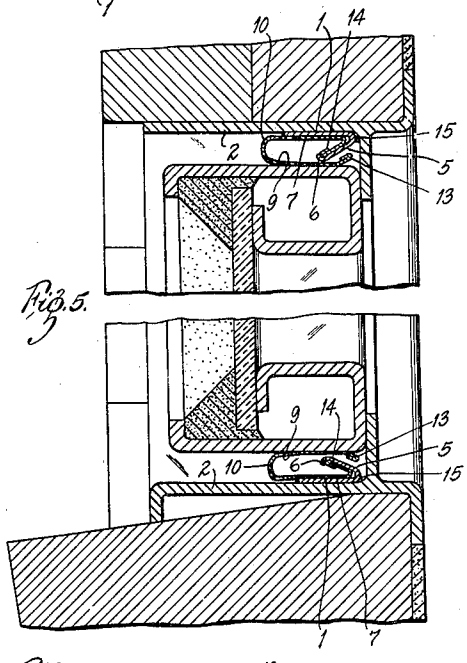


Fig. 6.

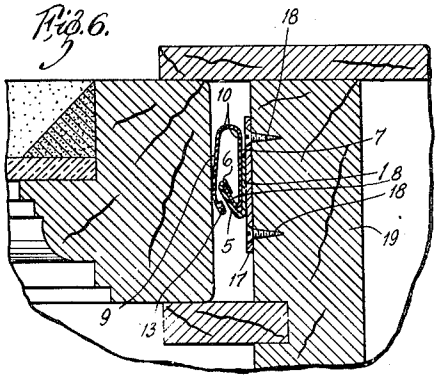
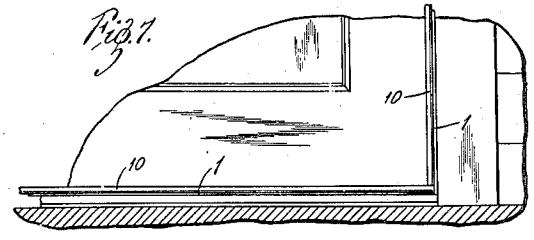


Fig. 7.



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Patented July 1, 1941

2,247,435

UNITED STATES PATENT OFFICE

2,247,435

WEATHER STRIP

George Cerny, St. Louis, Mo., assignor to Pauly Jail Building Company, St. Louis, Mo., a corporation of Missouri

Application March 25, 1940, Serial No. 325,749

2 Claims. (Cl. 189—65)

This invention relates to weatherstrips.

Objects of the invention are to provide an improved weatherstrip for use in sealing the joint between a window sash and window frame irrespective of whether the window is of the pivoted swinging type or is of the sliding type, and which may also be used satisfactorily for forming a seal between a door and the door frame; and to provide an improved weatherstrip comprising a holding member adapted to be welded to a metallic frame, or to a support for attachment to a frame, irrespective of the material of which the frame is composed, without being subjected to distortion caused or created by fastening screws or the like, and a resilient sealing element having detachable telescopic engagement with said holding member and adapted to form sealing contact with the window sash or with a door.

Another object of the invention is to provide an improved weatherstrip comprising a holding member adapted to be attached to a window frame or to a door frame, or the like, and having a resilient arm diverging therefrom, in combination with a metallic weatherstrip having a portion adapted to be telescopically engaged between said arm and said holding member and retained thereby in permanent position to perform its intended function, and having a portion adapted to be pressed by the resiliency of the device against the adjacent edge of the window sash or door.

Other objects and advantages of the invention should be readily apparent from the following description, reference being made to the annexed drawing, in which—

Fig. 1 is a perspective view of a portion of a weatherstrip provided with means for telescopically engaging a holding member.

Fig. 2 is a perspective view of a portion of the holding member with which the weatherstrip shown in Fig. 1 is adapted to be engaged.

Fig. 3 is an enlarged sectional view showing my improved weatherstrip in connection with a metallic window part, the cooperating window being omitted and the weatherstrip being extended.

Fig. 4 is a similar sectional view showing the weatherstrip compressed by the cooperating window.

Fig. 5 is a broken sectional view showing a pair of weatherstrips for sealing the horizontal edges of a pivoted window section.

Fig. 6 is a horizontal sectional view showing my improved weatherstrip attached to a window frame in which a sliding window sash is mounted.

Fig. 7 is a view showing a portion of a door and door frame equipped with my improved weatherstrip.

This is a continuation, in part, of my application Serial No. 295,902, filed September 21, 1939, for Window operator.

The holding member 1 is made of a strip of metal and is adapted to be attached by welding to a metallic window frame 2 (Fig. 5), or to be attached by welding to a metallic part 3 secured to a window sash portion 4, as disclosed in my said application Serial No. 295,902. The holding member 1 is parallel with the sash of the window with which the weatherstrip is intended to cooperate, and is formed with an integral resilient arm 5 diverging from one edge thereof and provided with a longitudinal flange 6 extending from the margin of the arm 5 toward the holding member 1. By making the holding member 1 and its integrally attached arm 5 imperforate, distortions and strains resulting from punching holes through said member 1 are avoided. Said member 1 may be welded directly on the smooth surfaces of the window frame parts 2 or upon similar smooth surfaces of the window sash parts 3 without being strained or distorted. This leaves the arm 5 freely resilient for attachment of the resilient metallic weatherstrip by telescopic engagement.

The weatherstrip proper comprises a resilient strip of sheet metal bent to provide a flat portion 7 having a width approximately equal to the width of the holding member 1; a portion 8 extending angularly from one edge of the portion 7 at an angle at least as great as the angle between the holding member 1 and the arm 5; and an arm 9 connected by curved portions 10 with the edge of the portion 7 opposite from the portion 8. The arm 9 may be provided with an angularly extended margin 11 defined from the arm 9 by a curved formation 12 and having its edge 13 doubled under said margin 11 for strengthening purposes. Also, the free margin 14 of the portion 8 may be folded against the underside of said portion 8 for additional strength, etc.

After the holding member 1 has been attached to the frame 2 by welds 15, or to the sash part 3 by similar welds 16, the weatherstrip proper is secured to said holding member by pressing it into telescopic engagement with said holding member. When the parts are engaged in this manner, the reinforced margin of the portion 8

abuts against the flange 6, thereby effectively preventing disengagement of the parts, the pressure of the portion 8 against the arm 5 by the inherent resiliency of these parts further securing the weatherstrip to the holding member. When the swinging window section 4 is closed, the arm 9 is bent to a further extent toward the portion 7, as should be understood by reference to Figs. 4 and 5, thereby providing an effective and substantially hermetic seal.

As shown in Fig. 6, my improved weatherstrip may be used with equal advantage in connection with a wood window frame and window sash. When mounted in a wood window frame, the holding member 1 may be welded to a metallic attaching strip 17 and thereby maintained imperforate, with the attendant advantages. The attaching strip 17 may be secured by fasteners 18 to the wood window frame 19 without distorting or stressing any of the cooperating parts of the weatherstrip. Also, the weatherstrip may be mounted within a door frame, as diagrammatically shown in Fig. 1, irrespective of whether either the door or the frame or both are made of wood or metal.

It should now be apparent that this invention attains all of its objects and advantages with a high degree of efficiency, and may be made and sold at permissible cost. Variations in the construction and arrangement of the device may be made within the scope of equivalent limits without departure from the nature and principle of the invention as defined by the appended claims.

I claim:

1. A weatherstrip comprising a metallic holding member adapted to be welded to a support and having a resilient arm diverging from one edge thereof and separated therefrom by an acute angle and provided with a flange along the edge thereof extending toward said member; a resilient metallic strip comprising a flat portion approximately equal to the width of and seated against said member, a portion extending angularly from one edge thereof and seated against the inner surface of said arm and having its edge engaging and held from displacement by said flange, a curved portion in connection with said strip laterally beyond the edges of said member and said arm, and a curved arm integrally united with said last named portion substantially covering said first named arm and separated therefrom by a space leaving said last named arm free to be flexed toward said first named arm by pressure of the adjacent edge of a window sash or door.

2. A weatherstrip comprising a metallic holding member having a V-shape in cross-section and adapted to be welded to a support and provided with a flange along the edge of one arm thereof extending toward the other arm; a resilient metallic strip comprising a V-shaped portion along one edge extending into said V-shaped holding member and the edge of one arm engaging said flange, and a curved portion integrally united with said V-shaped portion of said strip laterally beyond the edges of the arms of said holding member and substantially covering said first named arm and separated therefrom by a space, leaving said curved portion of said strip free to be flexed toward said holding member by pressure of the adjacent edge of a window or door.

GEORGE CERNY.