March 25, 1941. F. J. ROBINSON 2,236,250

WINDOW FRAME CONSTRUCTION

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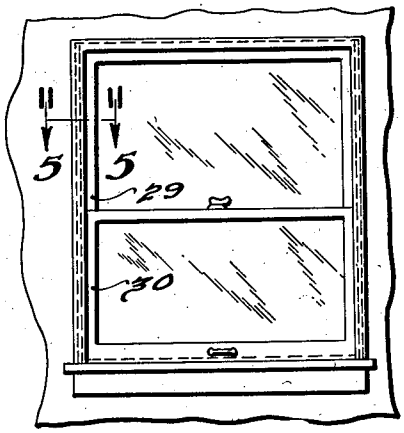



FIG. 1.

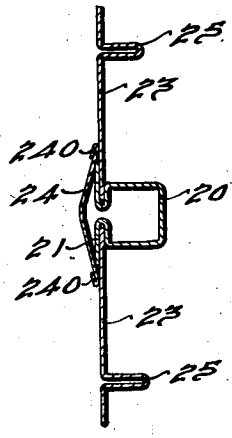



FIG. 2.

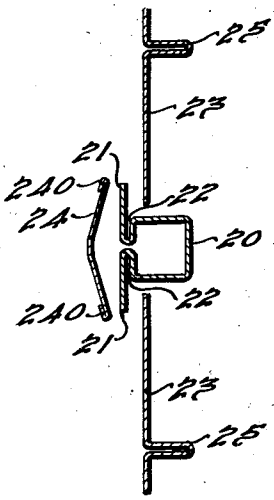



FIG. 3.

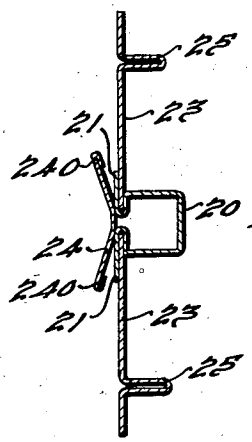



FIG. 4.

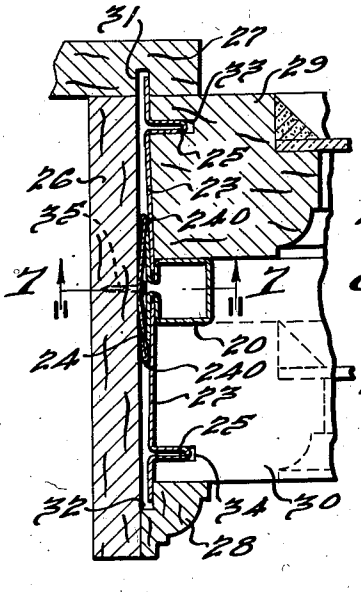



FIG. 5.

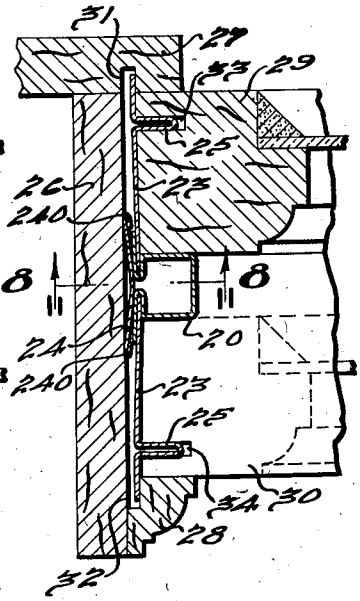



FIG. 6.

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WINDOW FRAME CONSTRUCTION

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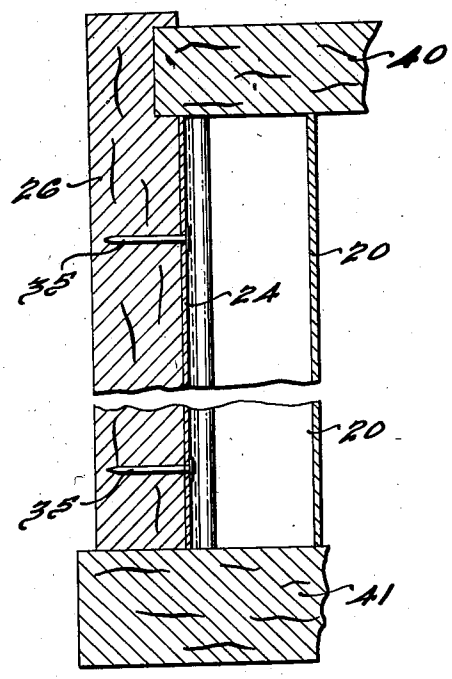



FIG. 7.

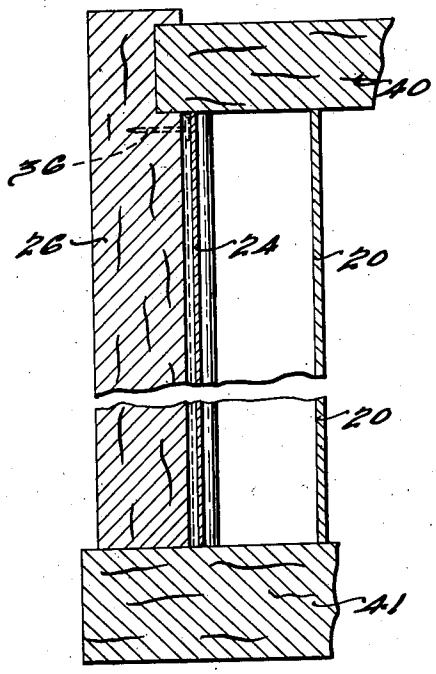



FIG. 8.

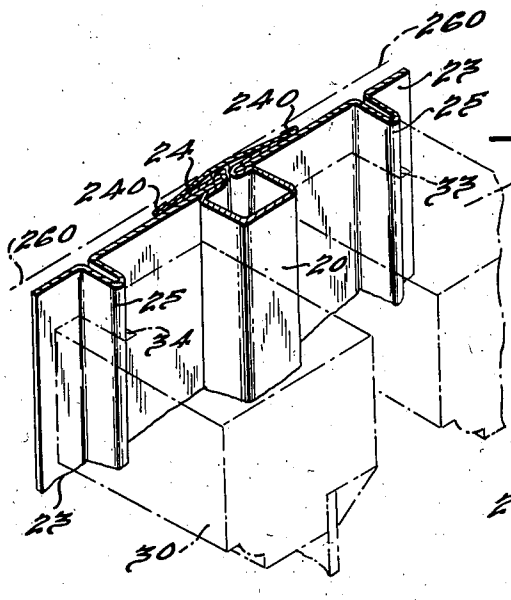



FIG. 9.

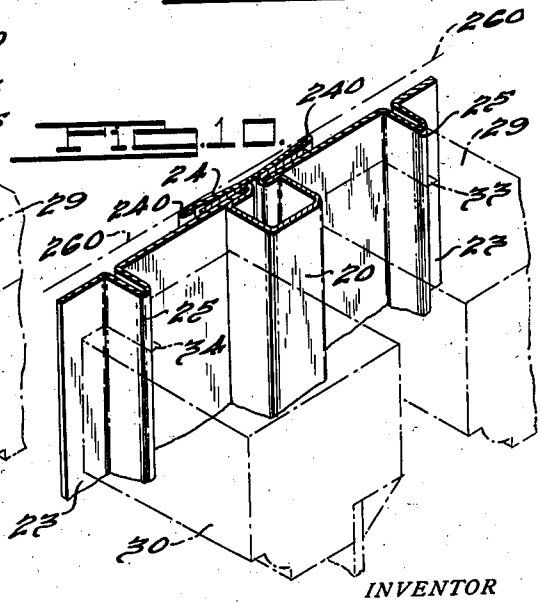



FIG. 10.

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2,236,250

# UNITED STATES PATENT OFFICE

2,236,250

## WINDOW FRAME CONSTRUCTION

Frederick J. Robinson, Detroit, Mich.

Application May 22, 1939, Serial No. 274,917

3 Claims. (Cl. 20—12)

This invention relates to metal weatherstripping for double hung window construction and is an improvement over the invention disclosed and claimed in the pending application for patent of the applicant, Frederick J. Robinson, Serial No. 230,173, filed September 16, 1938 entitled Window frame construction.

It has been conventional practice to nail or screw metal frame lining or weatherstripping and parting stops to a window frame being lined or weatherstripped. When it becomes necessary to remove sash in order to replace a worn or broken sash cord or balance, the frame lining or weatherstripping and parting stops must be removed. The removal of the frame lining or weatherstripping and parting stops generally destroys them or bends them to such an extent that they cause binding of the cash when replaced. Also, the window frame onto which parting stops, frame lining or weatherstripping is secured generally warps and causes binding of sash mounted in the window frame.

When weatherstripping is installed in remodeling or repair jobs, the window frames are generally bulged, warped, or dented which pulls weatherstripping when nailed thereto out of alignment with respect to the saw cut or kerf in the sash which receives the rib of the weatherstripping with the consequence that the said kerfs must be quite wide and the fit between the sash and the weatherstrip ribs must be quite free to permit easy sliding of the sash with respect thereto whereupon much of the effectiveness of rib type weatherstripping is lost. Much time is spent in cutting and fitting frame lining or weatherstripping in both new and alteration jobs to compensate for irregularities in the window frames to which it is applied.

With the foregoing in view, one object of the invention is to provide a metal weatherstripping or frame lining including a metal parting strip which, as a unit, is entirely self-adjusting to irregularities in a window frame in which it is mounted and to irregularities in the sash hung in the said window frame.

Another object of the invention is to provide the combination of a metal parting strip and metal weatherstripping which is self-adjusting laterally with respect to the window frame and which will automatically compensate for any irregularities and warping of the face of the window frame or edge of the sash hung therein.

Another object of the invention is to provide a metal weatherstripping or metal frame lining including a parting strip therefor which may be easily and readily installed, removed for maintenance and reinstalled without damage to the said weatherstripping or frame lining and parting stop.

Another object of the invention is to provide, in combination of a metal weatherstrip or metal frame lining and a parting stop which is universally self-adjusting with respect to irregularities and warping of the window frame and sash slidably mounted therein.

Another object of the invention is to provide, in double hung window construction, the combination of a metal parting strip and metal weatherstripping slidably engaged in the base of the said parting strip and in kerfs in the blind and trim stops of the window frame, and resilient means disposed between said parting strip and weatherstripping adapted to react against the window frame and urge the said parting strip and weatherstripping against the edge of sash hung in the said window frame which simultaneously provides a weatherproof seal between the said lining or weatherstripping and the window frame which compensates for irregularities in the said window frame and sash whereby to permit warping and swelling of the said window frame and sash without interfering with the sliding of the sash in the weatherstripped window frame.

Other objects of the invention will become apparent by reference to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a more or less diagrammatic elevational view of a double hung sash and frame with the invention applied thereto.

Fig. 2 is a detailed sectional view of a weatherstripping unit embodying the invention.

Fig. 3 is an exploded sectional view of the novel weatherstripping unit disclosed in Fig. 2 clearly showing the various parts thereof.

Fig. 4 is a detailed sectional view of a modified form of the frame lining unit embodying the invention which is essentially similar to the embodiment of the invention disclosed in Figs. 2 and 3 with the single exception that the resilient means employed is reversed with respect to the parting strip and weatherstripping element thereof.

Fig. 5 is a horizontal sectional view taken on the line 5—5 of Fig. 1 showing an installation of the weatherstripping unit embodying the invention disclosed in Figs. 2 and 3.

Fig. 6 is a horizontal sectional view similar to

Fig. 5 showing an installation of the weatherstripping unit embodying the invention in a window frame when the resilient member of the said weatherstripping unit is positioned as disclosed in Fig. 4 with respect to the parting strip and weatherstripping elements thereof.

Fig. 7 is an enlarged vertical sectional view taken on the line 7—7 of Fig. 5 showing how the embodiment of the invention disclosed in Figs. 2, 3 and 5 is mounted in a window frame to permit free horizontal movement of the parting strip and weatherstripping elements of the said weatherstripping unit.

Fig. 8 is an enlarged vertical sectional view taken on the line 8—8 of Fig. 6 showing how the embodiment of the invention disclosed in Figs. 4 and 6 is mounted in a window frame to permit free horizontal movement of the parting strip and weatherstripping elements of the said weatherstripping unit.

Figs. 9 and 10 are enlarged views in perspective showing in detail the construction disclosed in Figs. 5 and 6 respectively.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views, the novel weatherstripping units disclosed therein are preferably formed of sheet galvanized iron, zinc, aluminum, copper, brass, bronze or other metal which will not rust readily and which will continually present a smooth surface against which wood sash may slide freely. The spring sealing element of the novel weatherstripping units is preferably formed of thin resilient sheet brass or bronze, however, any resilient sheet material may be used therefor.

The novel weatherstripping unit disclosed in Figs. 2 and 3 is composed of a square or rectangular shaped sheet metal parting strip **20** having a base **21** formed integral therewith in such a manner as to provide a pair of outwardly disposed continuous slots **22** of a width to slidably receive the inner edge of the metal weatherstripping **23** as best shown in Fig. 2, the said slots **22** in the parting strip **20** being sufficiently deep to permit the said weatherstripping **23** to maintain engagement therewith and at the same time admit of lateral adjustment between the said parting strips **20** and the weatherstripping **23** engaged in each side thereof.

A generally U-shaped or trough-shaped resilient seal **24** preferably having the outer edges **240** thereof rolled to reduce friction between the said resilient seal **24** and the weatherstripping **23** to a minimum is positioned centrally along the back or base of the parting strip **20** with the said outer rolled edges **240** thereof in contact with the back of the weatherstripping **23** as best shown in Fig. 2. The weatherstripping **23** may, of course, be provided with the usual ribs **25**, however, any type of weatherstripping may be employed provided the said weatherstripping has a straight inner edge which may be telescoped into the outwardly disposed continuous slots **22** of the metal parting strip **20**.

Referring now to Figs. 5, 7 and 9, the weatherstripping unit consisting of a parting strip **20**, two pieces of ribbed weatherstripping **23** and a resilient seal **24** is assembled together as indicated in Fig. 2 and is positioned against a window frame **26** centrally between the blind stop **27** and the trim stop **28**, the said trim stop **28** being previously temporarily removed to admit of hanging the upper sash **29** and the lower sash **30** and to permit the outer edges of the said weatherstripping **23** to be positioned in suitable saw cuts or kerfs **31** and **32** provided in the said blind stop **27** and trim stop **28** respectively. The said upper sash **29** and lower sash **30** are each provided with suitable saw cuts or kerfs **33** and **34** respectively to receive the ribs **25** of the weatherstripping **23**. After the upper sash **29** is properly lined up to slide in the channel formed by the parting strip **20**, weatherstripping **23** and the blind stop **27**, and after the lower sash **30** is properly lined up to slide in the channel formed by the parting strip **20**, weatherstripping **23** and the trim stop **28**, the trim stop **38** which, up to this time has been merely tacked during erection, is secured nailed to the window frame **26**. Although not absolutely essential, the U-shaped resilient seal **24** may be tacked or otherwise secured to the window frame **26** as indicated in Figs. 5 and 6 midway between the blind stop **27** and the trim stop **38** prior to assembling the parting strip **20** and the weatherstripping **23** together which will assure the substantially central location of the resilient seal **24** with respect to the parting strip **20** and the weatherstripping **23** as indicated in Figs. 2, 5 and 9. The tacks **35** employed to secure the resilient seal **24** to the window frame **26** are positioned laterally central between the outer rolled edges **240** thereof so as not to interfere with the spring action thereof. The said tacks **35** are preferably equally spaced vertically between the head **40** and the sill **41** of the window frame **26**.

It will be particularly note that, when the sash **29** and **30** are placed against the face of the weatherstripping **23** with the rib **25** of each piece of weatherstripping **23** positioned in one of the saw cuts or kerfs **33** and **34** in the said sash **29** and **30** respectively, the said sash **29** and **30** urges the weatherstripping **23** toward the window frame **26** and causes the continuous rolled edges **240** of the said U-shaped resilient seal **24** to contact the back of the weatherstripping **23** whereby to provide a positive air and moisture seal between the back of the said weatherstripping and the window frame against which the said resilient seal bears which is universally self-adjusting with respect to the irregularities and the warping of the window frame with respect to the sash slidably mounted therein, see Fig. 9 in which the face of the window frame **26** is designated by the dot and dash line **260—260**.

If the said window frame **26** and/or the sash **29** and **30** become warped or swelled with respect to each other, or if the window frame **26** and/or the sash **30** are constructed slightly out of alignment or become warped or swelled with respect to the blind and trim stops **27** and **28** respectively, the novel weatherstripping unit disclosed in Figs. 2 and 3 compensates for any irregularity that may develop between the sash **29** and **30**, the window frame **26** and the blind and trim stops **27** and **28** respectively and for any misalignment thereof in any direction whatsoever, and, at the same time, a positive weathertight seal is maintained between the sash **29** and **30** and the window frame **26** thus assuring at all times complete effectiveness of the weatherstripping **23**.

The modification of the invention disclosed in Figs. 4, 6, 8 and 10 is substantially the same as the embodiment of the invention disclosed in Figs. 2, 3, 5, 7 and 9, the single difference being that the U-shaped or trough-shaped resilient seal **24** is reversed so that the continuous rolled edges **240** thereof are urged into contact with the window frame **26** when the sash **29** and **30** urges

the weatherstripping **23** toward the window frame **26** which causes the base **21** of the metal parting strip **20** to contact the central portion or base of the said resilient seal **24** whereby to provide a positive air and moisture seal between the back of the said weatherstripping and the window frame against which the said resilient seal bears which is universally self-adjusting with respect to the irregularities and warping of the window frame with respect to the sash slidably mounted therein, see Fig. 10 in which the face of the window frame **26** is designated by the dot and dash line **260—260**.

In installing the novel weatherstripping unit disclosed herein in the manner shown in Figs. 6, 8 and 10, the resilient seal **24** need not be secured to the window frame **26**, however, as a matter of convenience in erection, it may be desired to tack the said resilient seal **24** in place, in which event, it is preferable that only one tack **36** be employed which is driven through the resilient seal **24** substantially at the top thereof and adjacent one of its rolled edges **240** and into the window frame **26** near its head **40**. The tacking of the resilient seal **24** as indicated in Fig. 8 and herein above described does not interfere with the resiliency or functioning of the resilient seal **24** when the novel weatherstripping unit disclosed herein is erected as shown in Figs. 4, 6, 8 and 10.

Although the installation of the novel weatherstripping unit has been described to be accomplished in certain particular manners hereinbefore, it is obvious that the installation thereof may be accomplished otherwise to provide like and equivalent results.

Although but one embodiment of the invention and one modification thereof have been disclosed and described herein in detail, it is obvious that many changes may be made in the size, shape, details and arrangement of the various elements of the invention without departing from the spirit thereof, and it is not intended to limit the scope of the invention except as defined by the appended claims.

I claim:

1. In combination with a window frame, a weatherstripping unit composed of a parting strip having a pair of longitudinal outwardly disposed slots formed therein adjacent the base thereof, ribbed weatherstripping disposed on each side of said parting strip with the inner edge thereof slidably positioned in the slots in the said parting strip, and a resilient U-shaped seal laterally co-extensive with the base of said parting strip disposed centrally with respect to the said weatherstripping unit between said weatherstripping unit and said window frame, the outer edges of the said weatherstripping unit being retained in suitable kerfs in the blind and trim stops of the said window frame.

2. Weatherstripping and parting strip means for wood frame and sash construction employing kerfed trim and blind stops comprising, in combination, a parting strip having a pair of longitudinal outwardly disposed slots formed therein adjacent the base thereof, weatherstripping disposed on each side of said parting strip with the inner edge thereof slidably positioned in the slots in the said parting strip and the outer edges of said weatherstrip positioned in the kerfs in said blind and trim stops, and a U-shaped resilient seal provided with said parting strip and weatherstripping means positioned against said window frame between said blind and trim stops and behind said weatherstripping and parting strip means whereby to react against the said window frame and urge the said weatherstripping against sash hung in said window frame and thereby provide a weather seal between said parting strip and weatherstripping means and said window frame which simultaneously permits a limited universal horizontal movement of said parting strip and weatherstripping with respect to each other and said window frame and sash.

3. Weatherstripping and parting strip means for wood frame and sash construction employing kerfed trim and blind stops comprising, in combination, a parting strip having a pair of longitudinal outwardly disposed slots formed therein adjacent the base thereof, weatherstripping disposed on each side of said parting strip with the inner edge thereof slidably positioned in the slots in the said parting strip and the outer edges of said weatherstrip positioned in the kerfs in said blind and trim stops, and a U-shaped resilient seal having rolled longitudinal edges provided with said parting strip and weatherstripping means positioned against said window frame between said blind and trim stops and behind said weatherstripping and parting strip means whereby to react against the said window frame and urge the said weatherstripping against sash hung in said window frame and thereby provide a weather seal between said parting strip and weatherstripping means and said window frame which simultaneously permits a limited universal horizontal movement of said parting strip and weatherstripping with respect to each other and said window frame and sash.

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