Dec. 25, 1956 J. D. FULLER 2,775,004

WINDOW CONSTRUCTION

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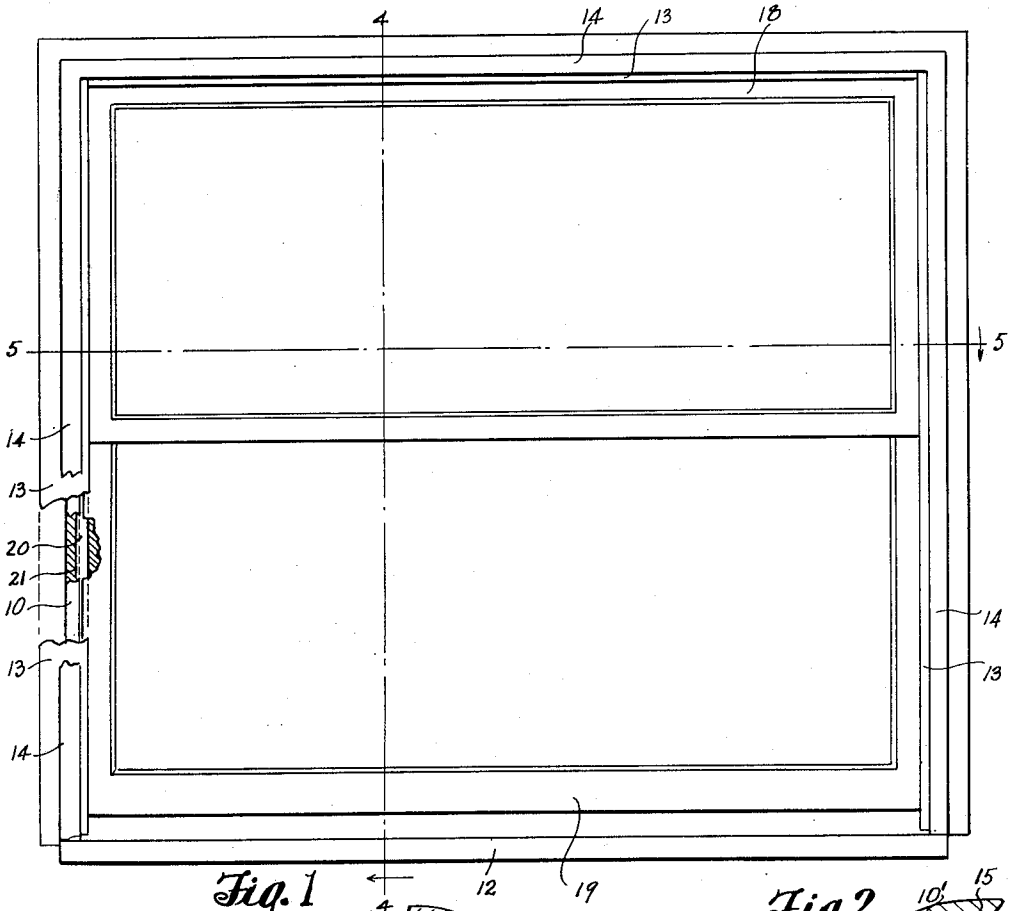


Fig. 1

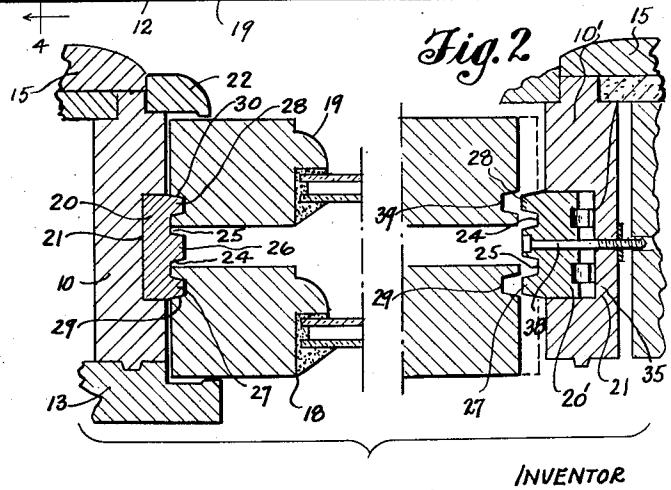


Fig. 2

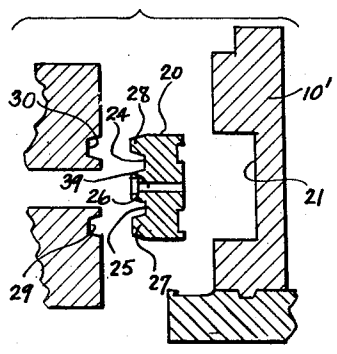


Fig. 3

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Fig. 4

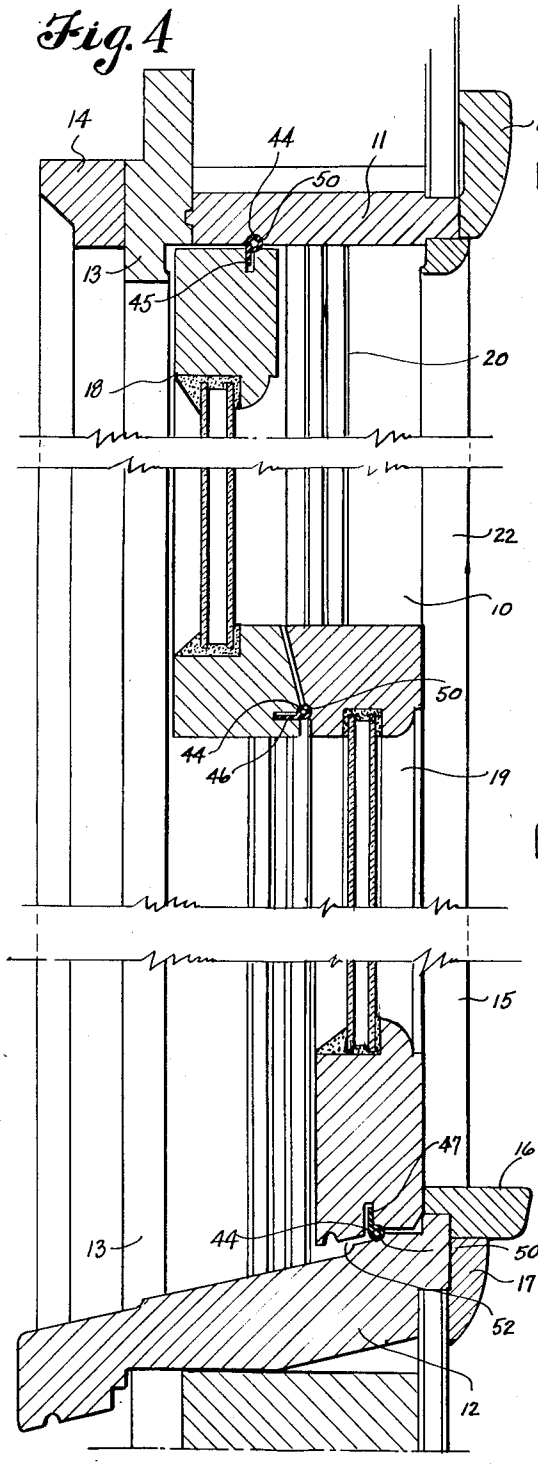


Fig. 5

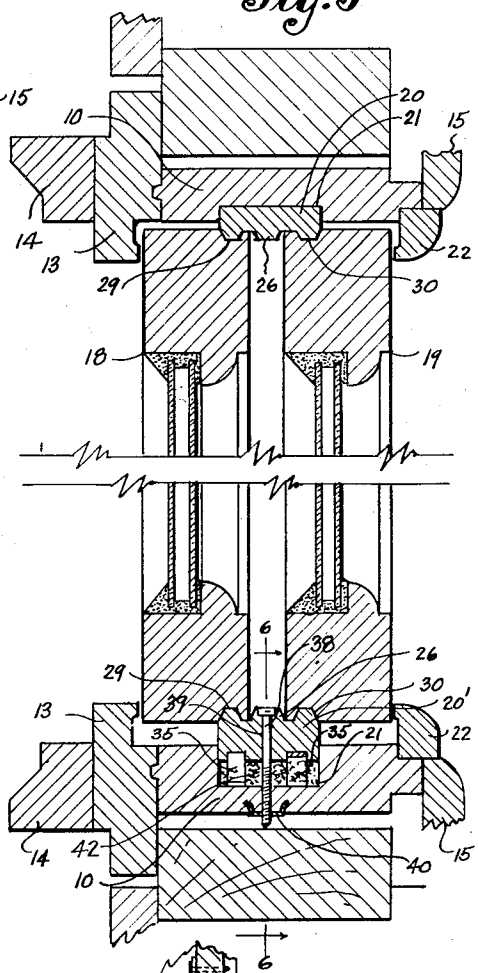
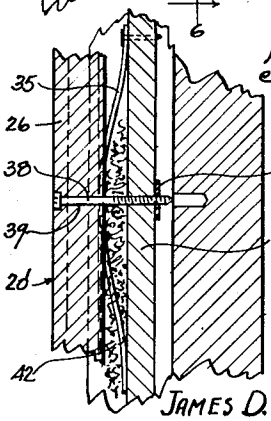


Fig. 6



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WINDOW CONSTRUCTION

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Application November 30, 1953, Serial No. 395,020

1 Claim. (Cl. 20—52.2)

This invention relates to improvements in wooden window frames. More particularly it has reference to improvements in features of construction of those parts comprised in the frame structure that are closely associated with the slidably mounted window sash.

The principal objects of the present invention are: to provide improvements in the frame structure that will eliminate that sticking of the slidably mounted sash that results from the application of paint to the frame and sash; to eliminate to a maximum degree, various other causes of friction and sticking that usually make sash adjustment difficult; to provide means for a better sealing of joints against wind and weather and without detriment to the ease of adjusting the sash between open and closed position; to provide for better drainage of water from the weather exposed side of the sash; to make possible the easy removal from and easy installation of the sash in the frame structure without requiring removal of the present parting or "glide" strips; and to provide various other improvements and advantages in window frame construction. The present application is a continuation in part of my co-pending application filed on July 25, 1950, under Serial No. 175,722, and which has now become abandoned, and is an improvement on the structure shown therein.

More specifically stated, the various objects and advantages of the present invention reside in the provision of a window frame having upper and lower sliding sash that are spaced and guided by means of parting strips of special form, herein referred to as "glide strips," at least one of which strips is yieldingly mounted and may be depressed into a strip containing groove in the corresponding jamb to make possible the quick and easy removal of the sash from the frame when such is desired, and wherein the "glide strip" is designed to normally coact with and retain the sash in the clear of stops and jambs to that extent required to prevent friction or the sticking together of painted surfaces, and to insure ease and freedom of sash adjustment. Furthermore, to provide novel means for effecting weather tight joints between sash and stops without undue friction.

Further objects and advantages of the invention reside in the special form of "glide strip" employed, and manner of mounting it.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is an elevation of a window frame fitted with sliding upper and lower sash and embodying the various improvements of the present invention therein.

Fig. 2 is a horizontal, cross-sectional detail through opposite side jambs of the frame, particularly showing the "glide strips" and their association with the sash and jambs; this view showing one of the "glide strips" as depressed in its containing channel.

Fig. 3 is a horizontal, sectional detail of one of the "glide strips" and the jamb as channeled to receive it.

Fig. 4 is a vertical section taken on line 4—4 in Fig. 1.

Fig. 5 is a horizontal section on line 5—5 in Fig. 1, but with both sash adjusted to the same level to show each in cross-section.

Fig. 6 is a horizontal section taken on line 6—6 in Fig. 5 to show the "glide strip" engaging springs.

Referring more in detail to the drawings:

In Fig. 1, I have shown a wooden window frame embodying the improvements of the present invention therein. This frame comprises opposite side jambs **10—10'**, a lintel **11** and a sill **12**; these parts being best shown in Figs. 4 and 5. Applied to the jambs, about the outside of the frame, are blind stop strips **13** and upon these strips finishing moldings **14** are applied in the usual way.

At the inside of the frame, at opposite sides and across the top thereof, casings may be applied in the usual way, for example as shown at **15**. Also, the window stool **16** and apron **17**, as shown at the lower end of the frame, may be applied.

It is shown in Fig. 1, that the window frame contains glazed upper and lower sash, designated generally by numerals **18** and **19**, respectively. These sash are slidably mounted in the frame for vertical adjustment between open and closed positions. The upper sash **18** is mounted for guided travel between the blind stop strips, at opposite sides of the frame, and the present "glide strips" **20—20'** that are set in grooves or channels **21** formed in the side jambs **10—10'** of the frame as seen in Fig. 5. The lower sash, **19**, likewise, is guided in its travel by the glide strips and stop strips **22** that are fixed to the jamb faces along their inner edges, as shown in Fig. 2.

One of the main features of the present invention is the combination of the present "glide strips" and sash. These strips are so constructed as to serve not only as parting beads for the sash but also to hold the sash in the clear of the jamb surfaces and stop strips for their easy adjustment and to avoid sticking by reason of painted surfaces. In cross section, each glide strip is formed on its outer face with two laterally spaced, longitudinal channels **24** and **25** which define a central longitudinal rib **26**, from end to end of the strip, and coextensive opposite edge ribs **27** and **28**. Each of these ribs, **26**, **27** and **28** has its opposite side wall surfaces beveled, or sloped, to give the ribs the outwardly tapered, wedge-shaped form shown best in Fig. 3.

The vertical side rails of the sash **18** and **19** are longitudinally channeled along their outer surfaces, as shown at **29—30** in Fig. 2. These channels normally slidably contain the ribs **27** and **28** of the glide strips therein. The ribs **26** of the opposite glide strips, as applied to opposite jambs, serve as parting beads between the two sashes.

It will be observed by reference to Figs. 2 and 5, that the glide strips not only space the two sash, as do the ordinarily used parting beads, but also, by reason of the ribs **27** and **28** thereof being fitted in the sash channels **29** and **30**, hold the sash free and clear of the jambs and stops; this being well shown in Fig. 5.

It is also a feature of this particular construction and combination, that one of the glide strips, here shown to be strip **20'**, is yieldingly mounted in its jamb channel in a manner that permits it to be depressed into the channel to such extent that the sash rail can clear it, thus permitting the sash, upon removal of one of the strips **22**, to be easily removed from the frame to the inside thereof.

In the Fig. 2 it is seen that the glide strip **20** at the left side is seated in the jamb channel **21** provided for it. The channel **21**, as provided in the opposite jamb, is of substantially greater depth, and contains the glide strip therein, but not normally seated; there being substantial clearance between the bottom of the channel and under or bottom surface of the strip as noted in Fig. 5.

Leaf springs 35 as shown in Figs. 5 and 6 are disposed under tension between the glide strips 20' and bottom of the channel, at intervals along the strip, to urge the glide strips outwardly. Adjusting screws 38 are applied through holes 39, formed in the strips at intervals therealong, and threaded into the jambs and into anchor clips 40 as seen in Figs. 5 and 6. These screws have heads seated in sockets in the outer faces of the ribs 26 of the glide strips to which a screw driver can be applied to adjust the screws inwardly and thus pull the strip down into the channel as in Fig. 2 when it is desired to clear the sash for removal. Also, the screws are adjustable as a means of limiting the outward adjustment of the strips as effected by the springs 35.

These glide strips are preferably made of Alaska yellow cedar. They are unpainted and are impregnated with a toxic solution combined with paraffine, and the ribs thereof are designed to fit accurately within the sash channels 29 and 30. The springs 35, as adjusted by the screws 38, provide just the exact tension or pressure desired. Practically all friction is eliminated and a weather tight joint is provided by this particular use of the glide strips.

To further seal the joints back of the adjustable glide strips the space back of each strip is filled with glass wool insulation, as designated at 42 in Figs. 5 and 6. It will be understood that if a sash should swell or shrink, the springs 35 will automatically keep the tension practically the same at all times.

The horizontal joints at the top, check rail, and bottom of the sash are sealed with flexible, extruded rubber strips 44 applied as shown in Fig. 4 at 45, 46 and 47, respectively. These strips are attached to the sash and fit in female grooves 50 made in the frame, making an unusually tight and water resistant joint.

The sill is given considerable slope and a space is provided, as at 52, in Fig. 4, between the under surface of the sill and bottom rail of sash 19. Water drains out naturally and air circulates under the sash up to the rubber weather stripping, keeping the sash dry and preventing formation of ice in cold weather.

The sash may be counterbalanced by use of overhead spring balances, or by other suitable means not herein shown.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

A window frame and sliding sash combination comprising a frame with opposite side jambs, each formed on its inside with a longitudinal channel, parting strips fitted in said channels, each formed along its opposite longitudinal edges with projecting ribs, an upper and a lower sash contained in the frame for up and down adjustment between the jambs, each sash having longitudinal channels in the outer faces of its side rails containing corresponding ribs of the opposite parting strips therein to mount and guide the sash in its adjustment, one of said strips being adjustable into and from its jamb channel to seat its ribs in the sash channels or to disengage them from the sash for removal of the sash from the frame, said adjustable parting strip having parallel longitudinal channels formed in its inner face, bowed leaf springs arranged along the parallel channels with their ends seated against the bases of the jamb channel in which the strip is contained, and their central portions contained in the parallel channels and bearing against the strip to urge it outwardly, and adjusting screws arranged along the strip, and passing therethrough between the channels and through the jamb and nuts fixed in the jamb and into which the screws are threaded for adjustment of the parting strip.

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