Feb. 21, 1956 J. SYLVAN 2,735,707

SASH LATCHING MECHANISM

Filed June 17, 1952

FIG. 1

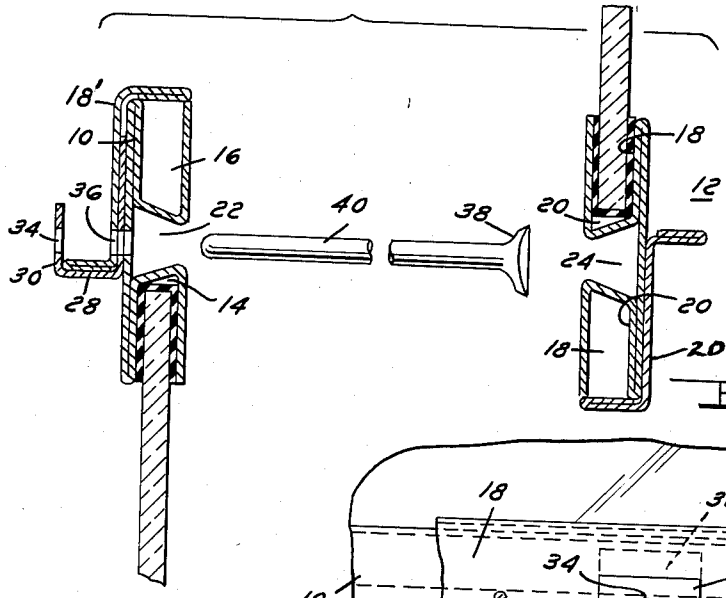


FIG. 2

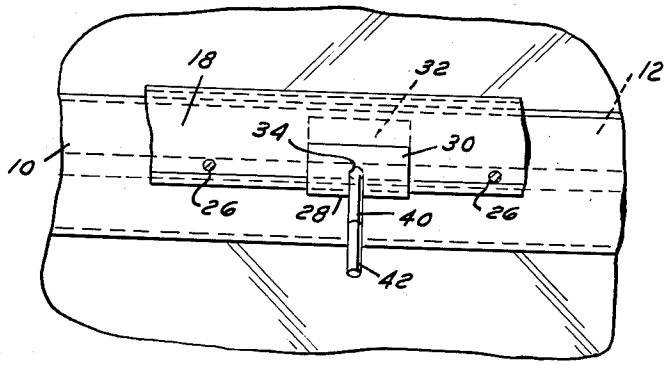


FIG. 3

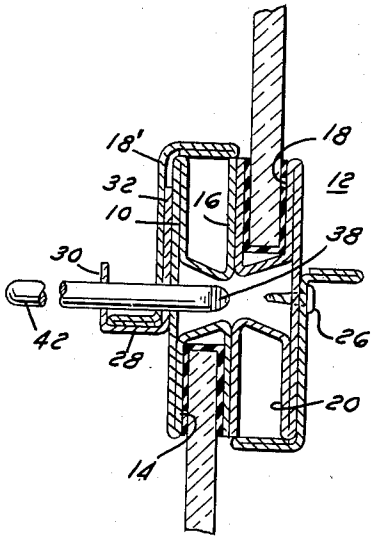
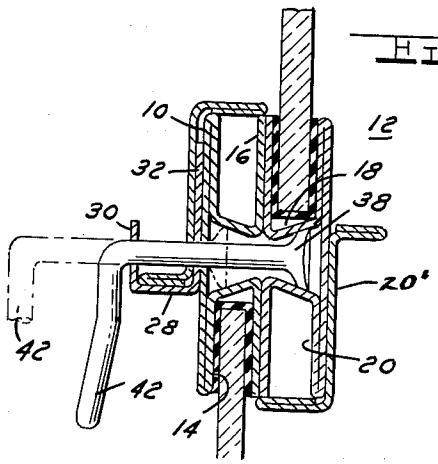


FIG. 4



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SASH LATCHING MECHANISM

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Application June 17, 1952, Serial No. 293,887

4 Claims. (Cl. 292—57)

This invention relates to locks or latches and especially to that type employed in locking together a pair of cooperating closure members such as an upper sash and a lower sash of a window.

The latch herein described is particularly well adapted for use with the type of window sash disclosed in my copending application, Serial No. 261,979, filed December 17, 1951. Sashes of the type therein, and herein described, are provided with meeting rails having linear complementary channels opening toward each other and adapted to be brought into registration when the meeting rails are aligned. The latch disclosed in this application utilizes these channels in locking the sashes together.

The described complementary channels are side opening channels in the sashes. Such channels are each provided with side walls which converge as they project away from the bottom of the channel. An object of this invention is to provide a latch which is carried by one of the meeting rails and which is shiftable to engage the converging side walls of the other meeting rail channel to hold the sashes securely together at the meeting rails.

A further object is to provide a latch to secure upper and lower sashes having meeting rails of the character above described, in a closed position by providing a beveled head in one end of the latch which is adapted to be inserted within the channel of the meeting rail of one sash, and locked therein by turning said head while within said channel.

A further object is to provide a latch for locking in the closed position an upper sash and a lower sash having meeting rails as above described, wherein the latch is received transversely through the meeting rail of one sash and adapted to engage within the linear channel in the meeting rail of the other sash.

A meritorious feature of this invention is to provide a latch having a beveled end portion for locking in the closed position an upper sash and a lower sash which sash have meeting rails as above described and wherein the latch is movable to one position to engage the linear channel in the meeting rail in one of the sash to lock the sashes together and movable to another position where said beveled end portion is completely received within the linear channel in the meeting rail of the other sash to free the cooperating sashes for movement.

A further meritorious feature is to provide a latch which will cooperate with meeting rails of the character referred to such that when two cooperating closures are locked together they will not rattle and the latch will hold them securely and yieldably together.

Other objects, advantages and meritorious features of this invention will more fully appear in the following specification, claims and drawings, wherein:

Fig. 1 is a separated sectional view of the meeting rails of upper and lower sash and associated latch;

Fig. 2 is a fragmentary elevation of the meeting rail

of one of the sash showing the latch and supporting means therefor;

Fig. 3 is a sectional view through the meeting rails of the upper and lower sash showing the latch in a partially retracted or unlocked position;

Fig. 4 is a similar sectional view through the meeting rails of the upper and lower sash showing the latch in the extended or locked position.

It will be understood that while the invention is shown embodied in two window sashes slidably mounted in sash guide channels of opposed jamb faces of a window frame, it is adapted for association with other cooperating closures. Each of the cooperating pair of sashes includes a pair of opposed side rails, a meeting rail, and another transverse rail which will be a header rail or a sill rail depending upon whether it is the upper or the lower sash. Only the meeting rails are of importance in this invention. Generally indicated as **10** and **12** are the meeting rails of a lower sash and an upper sash respectively.

The meeting rails of both sashes are here shown as formed either of formed resilient sheet metal strips or extruded metal sections. The metal of which the meeting rails are formed is shaped to provide two edge channels in each rail. The edge channels of the meeting rail in the lower sash are indicated as **14** and **16**. The edge channels of the meeting rail in the upper sash are indicated as **18** and **20**. These two channels of each of the rails are disposed back to back and are substantially identical. Each channel opens through its linear edge of the strip. Either channel is adapted to receive the edge of a glass pane mounted in the sash.

These channels are so formed that the bottom portions of the two channels of each rail are spaced apart to provide a third and side opening channel in each rail of the lower sash and the upper sash. These side opening channels are numbered **22** and **24** in the lower and the upper sash respectively. These channels **22** and **24** open toward each other through a lateral face of each rail. The side walls of channels **22** and **24** are formed by the bottoms of the opposed edge channels. As will be noted from the figures the side walls of the side opening channels converge inwardly toward the mouth of the side opening channel.

Handles **18'** and **20'** on the lower and the upper sash respectively are formed of metal strips, substantially Z-shaped in cross section. These handles, which extend throughout the length of the meeting rails, are secured thereto by rivets, screws or the like, such as **26** in Figs. 2 and 3.

A latch support **28** is provided with one upstanding leg **30**, and another upstanding leg **32** grippingly received and held between the handle **18'** and the meeting rail. A perforation **34** in leg **30** is aligned with a perforation **36** in the handle **18'**, and a perforation in leg **32** of the latch support, and also of the meeting rail.

A latch, or latch pin, is formed of metal and has a flared head portion **38**, a rod like body portion **40**, and a handle **42**. The latch, prior to assembly in the latch support and meeting rail, is shown in Fig. 1, and upon assembly is shown in Figs. 2, 3 and 4. That end of the body **40** opposite the head portion **38** is bent at an angle as shown in Fig. 4 to form the handle **42**.

Fig. 4, in dotted outline, shows the latch in the open or retracted position, with the beveled head lying seated in the lower sash meeting rail channel **22**. In positive outline Fig. 4 shows the latch in the locked or extended position with the beveled head engaging the converging walls of the channel **24** in the meeting rail of the upper sash. Upon rotation of the latch 90°, or from the positions shown in Fig. 4, to that shown in Fig. 3, the latch may be extended or retracted. From the position shown

in Fig. 3, the latch may be extended into the meeting rail channel of the adjacent sash and rotated to the position shown in positive outline in Fig. 4. Because of the beveled shape of the head **38**, and the convergence of the walls of the meeting rail channel, as the latch is rotated to the position shown in positive outline in Fig. 4, the meeting rails of the two sashes are drawn together and held against rattling or slidable movement.

Owing to the resilient character of the metal of which the meeting rails are formed, a certain resiliency of the converging side walls of the channels **22** and **24** is present, as well as a resiliency in the latch support **28** and upstanding leg **30**. This resiliency or limited flexibility provides sufficient resisting yield that as the latch is rotated to the locked position of Fig. 4, it thereby yieldingly urges the meeting rails together. The converging shape of the side walls of channels **22** and **24**, together with the resilient nature of the metal, allows the latch or side walls of the channels to become worn through prolonged use and yet still function as designed.

What I claim is:

1. A latch for a pair of slidable sashes provided with cooperating meeting rails each having a linear channel formed in its meeting face comprising: latch means mounted in the bottom wall of one of said channels and supported thereon for shiftable lateral movement therethrough to be extended between and engage the walls of the other of said channels when the meeting rails are aligned to lock the sashes together or to be withdrawn completely into the channel within which it is mounted to release the other sash.

2. A latch for relatively shiftable upper and lower sashes having cooperating meeting rails defining a pair of inwardly opening linear channels having bottom walls and resilient converging side walls, comprising: a latch having an enlarged end portion, said latch mounted on one meeting rail and rotatable and shiftable to project its enlarged end from the channel of the rail in which mounted into the channel of the other rail, said head being engageable with the resilient converging walls of the other rail as the latch is rotated to urge the rails toward each other and yieldably resist rotation of the latch.

3. In a window having upper and lower slidable sash provided with cooperating complementary meeting rails each shaped to define a channel extending lengthwise of the rail and opening through the meeting face of the rail and disposed in opposition and registration when the meeting rails are disposed in opposition and registration with each channel having a bottom portion of substantially greater width than the mouth of the channel and having resilient side walls extending convergingly away from the bottom portion toward the mouth thereof, a latch supported to project through the bottom of the channel of one rail and having a head adapted to be disposed within said channel, said head having a dimension in one direction less than the width of the mouth of the channel whereby the head in one position may pass therethrough and having a dimension in another direction greater than the width of the mouth of the channel whereby the head in such other position will not pass therethrough, said latch being axially slidable and rotatable whereby the head of the latch may be moved from its position within the channel of one meeting rail to a position within the channel of the cooperating meeting rail and rotated therein to a position of engagement with the resilient converging walls of the channel to tension the rails toward each other.

4. A latch for relatively shiftable upper and lower sashes having cooperating meeting rails comprising, in combination: a yieldably flexible part mounted on one rail on the side opposite the cooperating rail and resistingly movable toward and away from such cooperating rail, said cooperating rail shaped to define an inwardly opening channel having a bottom wall and resilient converging side walls with the mouth of the channel opening toward said one rail, a latch extending through said part and provided with a handle at one end and an enlarged head at the other end and rotatable and linearly shiftable toward and away from said cooperating rail, the head of the latch being receivable within said channel when rotated to one position and upon rotation to another position while within the channel being adapted to abut the converging resilient walls and urge the handle against the resilient part, said part and the converging walls cooperatively resistingly yieldable to resist rotation of the latch and tension the rails toward each other.

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