Oct. 24, 1939. W. OWEN 2,177,001

DOUBLE GLAZED WINDOW

Filed May 7, 1938

Fig. 1.

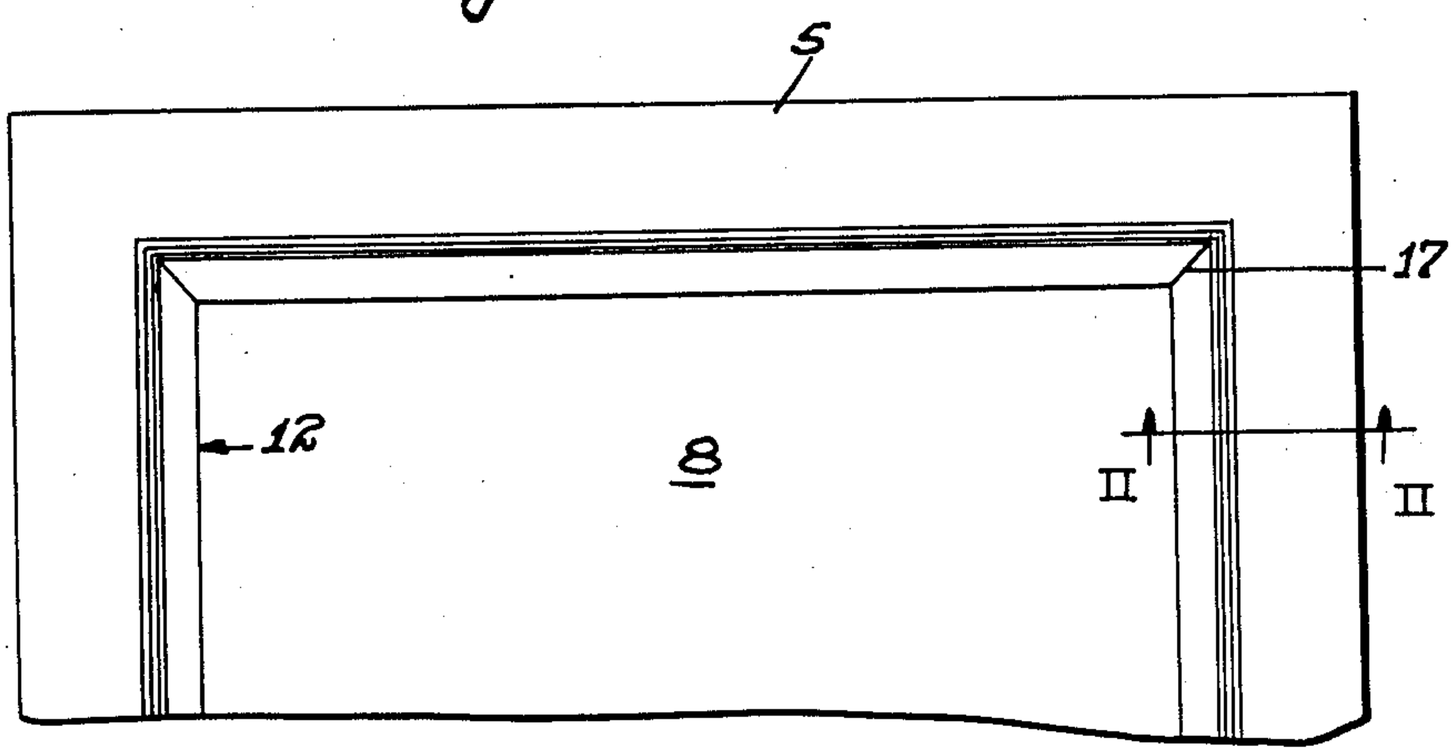


Fig. 2.

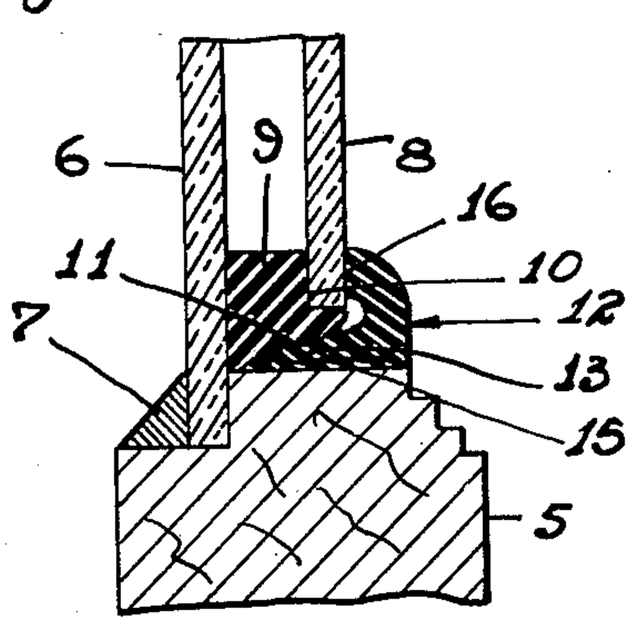


Fig. 4.

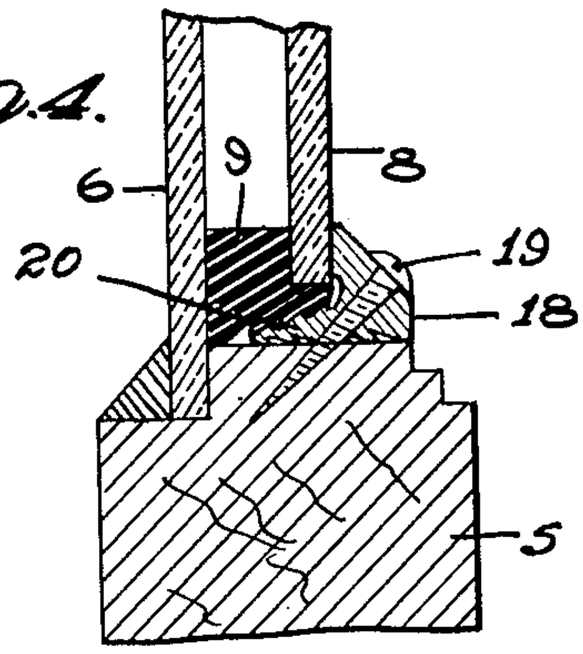
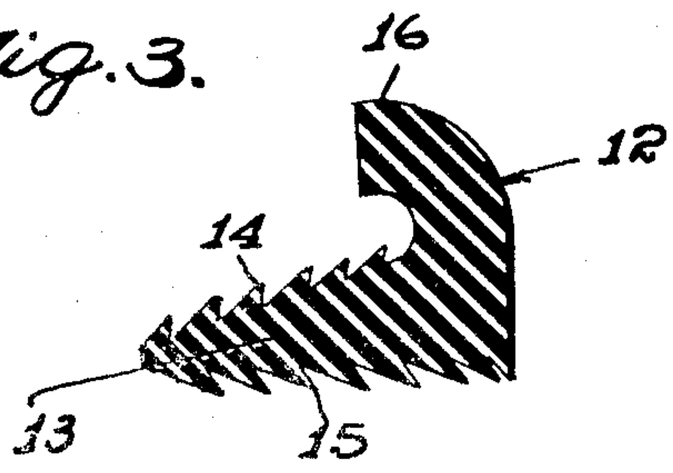


Fig. 3.



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2,177,001

DOUBLE GLAZED WINDOW

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Application May 7, 1938, Serial No. 206,588

5 Claims. (Cl. 20—56.5)

The invention relates to double glazed windows, and particularly to means for applying a second sheet or pane of glass to existing single glazed windows employing wood sash. The invention has for its principal objects, the provision of an improved construction of the type specified, (1) which is easily applied to and removed from the ordinary sash, (2) which requires no screws or carpentry work in installing, (3) which is more secure against accidental displacement than the frictional rubber holding strips heretofore proposed for making a similar type of installation, and (4) which can be installed satisfactorily, even though there is some departure from exact pane size due to inaccuracy in cutting. Certain embodiments of the invention are shown in the accompanying drawing, wherein:

Figure 1 is a partial front elevation looking toward the inner side of the window. Fig. 2 is a section on the line II—II of Fig. 1. Fig. 3 is a section through one of the locking strips. And Fig. 4 is a section through a modification.

Referring to the drawing, 5 is the sash, and 6 is the outer pane of the window mounted with relative permanence in the sash and secured in position by the putty 7 or other fastening means. Mounted inward of the pane 6, in parallel therewith, is the second pane 8 secured so that it is easily removable as hereinafter set forth. Extending around the periphery of the two panes at their edges, is the rubber spacer 9, which may be all in one piece or in four sections, one for each side of the window. This spacer is rabbeted to receive the edge of the pane 8, as indicated at 10, and has its lower face 11 provided with longitudinally extending teeth, which are inclined somewhat toward the pane 6 to give a better locking effect when the locking strips are applied. This face 11 is also inclined upward to provide a wedge shaped locking recess for the locking strips.

The pane 8 is secured in position by means of the locking strips 12, preferably of rubber and having the flanges 13 of wedge shape corresponding to the shape of the recess beneath the spacer. The upper and lower faces of the flange 13 are provided with the sets of teeth 14 and 15 extending longitudinally thereof and inclined to the right as shown, the upper set 14 being adapted to interlock with the teeth on the lower face of the spacer. The member 12 is also provided with a lip 16 extending longitudinally of the strip and adapted to engage the edge of the pane 8 in opposition to the rabbet in which the pane is seated. Preferably one locking strip is used for each side of the window, as indicated in Fig. 1, such strips meeting along their ends, as indicated by the lines 17. After the spacer 9 and pane have been positioned, as indicated in Fig. 2, the four locking strips 12 are pushed tightly in position, so that the portion of the spacer 9 lying between the lip 16 and the pane 6 is compressed and an upward compression is also provided on the portion of the spacer lying between the flange 13 and the edge of the pane 8. This insures a good seal around the entire edge of the pane 8, and the parts are locked securely in position, due to the interengagement of the teeth 14 with the teeth on the spacer and because of the frictional grip of the teeth 15 upon the wall of the sash. The arrangement provides for the ready removal of the pane 8 for cleaning when this becomes necessary, all that is necessary being to pull out the strips 12 beginning at one end thereof and working progressively around the window. The thickness of rubber between the edge of the pane 8 and the wall of the sash in opposition thereto is such that even though the pane 8 is not cut exactly to size, it can still be made tight and secure due to the compressibility of the rubber and to the wedge locking arrangement. While the locking members 12 are preferably made of rubber, they may also be made of hard material, such as metal, hard rubber, fiber or the like.

Fig. 4 illustrates a modification which involves a departure in so far as the locking members 18 are concerned. In this case, the locking members are of metal, such as aluminum, and are held in place by the fastening members 19, which may be either screws or nails. After the members 18 have been forced into position to compress the rubber spacer 9, the screws 19 are applied, thus giving some additional security and at the same time permitting the ready removal of the locking strips when it becomes necessary to clean the inner surfaces of the glass panes. In this case, as in the first construction, the flanges 20 of the locking strips are preferably provided with teeth so inclined that when the members are pushed into position, they tend to bite into the spacer and into the wood sash and hold the locking members in position, it being possible to make a relatively secure mounting, even without the use of the securing members 19.

What I claim is:

1. In combination with a window sash having a permanently mounted pane on its outer side and provided with an opening outward of said pane bounded by a wall extending transversely

of the plane of the pane, a second pane mounted in the sash opening on the inner side of the first pane in parallel therewith, a rubber spacer between the panes at their edges having a rabbet in which the edge of the second pane is mounted, and having its face next to the sash wall inclined away from such wall to provide a wedge shaped recess, said face of the spacer being provided with longitudinally extending teeth, and a locking member for the second pane having a wedge shaped flange toothed on its side next to the spacer so as to interlock with the toothed face of the spacer, such locking member being provided with an edge portion which engages the edge of the second pane in opposition to the rabbet in the spacer.

2. In combination with a window sash having a permanently mounted pane on its outer side and provided with an opening outward of said pane bounded by a wall extending transversely of the plane of the pane, a second pane mounted in the sash opening on the inner side of the first pane in parallel therewith, a rubber spacer between the panes at their edges having a rabbet in which the edge of the second pane is mounted and having its face next to the sash wall inclined away from such wall to provide a wedge shaped recess, said face of the spacer being provided with longitudinally extending teeth, and a rubber locking member for the second pane having a wedge shaped flange toothed on its side next to the spacer so as to interlock with the toothed face of the spacer, such locking member being provided with an edge portion which engages the edge of the second pane in opposition to the rabbet in the spacer.

3. In combination with a window sash having a permanently mounted pane on its outer side and provided with an opening outward of said pane bounded by a wall extending transversely of the plane of the pane, a second pane mounted in the sash opening on the inner side of the first pane in parallel therewith, a rubber spacer between the panes at their edges having a rabbet in which the edge of the second pane is mounted and having its face next to the sash wall inclined away from such wall to provide a wedge shaped recess, said face of the spacer being provided with longitudinally extending teeth, and a locking member of strong hard material for the second pane having a wedge shaped flange toothed on its side next to the spacer so as to interlock with the toothed face of the spacer, such locking member being provided with an edge portion which engages the edge of the second pane in opposition to the rabbet in the spacer.

4. In combination with a window sash having a permanently mounted pane on its outer side and provided with an opening outward of said pane bounded by a wall extending transversely of the plane of the pane, a second pane mounted in the sash opening on the inner side of the first pane in parallel therewith, a rubber spacer between the panes at their edges having a rabbet in which the edge of the second pane is mounted and having its face next to the sash wall inclined away from such wall to provide a wedge shaped recess, said face of the spacer being provided with longitudinally extending teeth, a metal locking member for the second pane having a wedge shaped flange toothed on its side next to the spacer so as to interlock with the toothed face of the spacer, such locking member being provided with an edge portion which engages the edge of the second pane in opposition to the rabbet in the spacer, and fastening means for the locking member extending therethrough and into the sash.

5. In combination with a window sash having a permanently mounted pane on its outer side and provided with an opening outward of said pane bounded by a wall extending transversely of the plane of the pane, a second pane mounted in the sash opening on the inner side of the first pane in parallel therewith, a rubber spacer between the panes at their edges having a rabbet in which the edge of the second pane is mounted and having its face next to the sash wall inclined away from such wall to provide a wedge shaped recess, and a locking member for the second pane having a wedge shaped flange adapted to fit into the wedge shaped recess and provided with an edge portion which engages the edge of the second pane in opposition to the rabbet in the spacer, said locking member when in position serving to compress the portion of the spacer lying between the two panes and also the portion thereof lying in the plane of the second pane intermediate the edge thereof and said wedge shaped flange on the locking member.

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