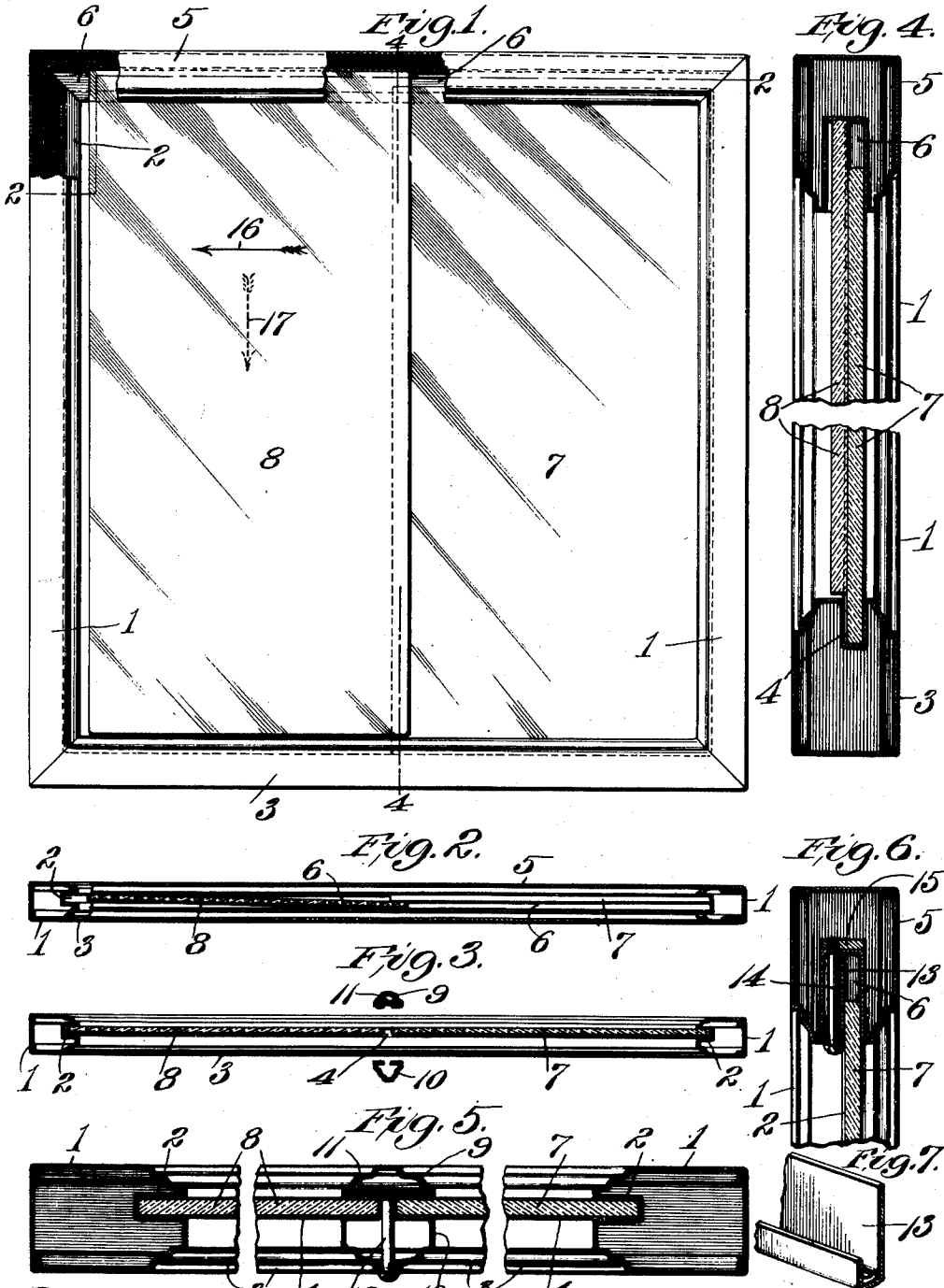


J. F. RUTH.
WINDOW.
APPLICATION FILED JAN. 30, 1911.

1,042,974.

Patented Oct. 29, 1912.



Attest:
W. H. Hest.
E. L. Wallace-

Inventor:
John F. Ruth,
by Higdon Longene
Attys.

UNITED STATES PATENT OFFICE.

JOHN F. RUTH, OF ST. LOUIS, MISSOURI.

WINDOW.

1,042,974.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed January 30, 1911. Serial No. 605,481.

To all whom it may concern:

Be it known that I, JOHN F. RUTH, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Windows, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in windows, and is especially directed to an improved construction of window in which there is more than one pane of glass in a single sash.

The object of my invention is to so construct the grooved stiles and rails of the sash so that the panes of glass may overlap at their central portions when being placed in the sash instead of reducing the width of panes of glass as is the present custom. And a further object of my invention is to construct a window of a given size in such manner as to afford a greater glazed area and employ a mullion of considerably decreased width over the mullions as employed in the art.

With the above purposes in view my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation with parts broken away and illustrates the construction permitting the panes of glass to overlap as when being applied to the sash with arrows indicating the movements of the second pane of glass; Fig. 2 is a sectional plan taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional plan illustrating the two panes of glass fully seated; Fig. 4 is an enlarged, transverse, sectional view taken on the line 4—4 of Fig. 1; Fig. 5 is an enlarged, detail, sectional plan of the complete assembled window; Fig. 6 is an enlarged, detail, sectional elevation illustrating the removable filler for securing the upper margin of the glass in the upper rail; and Fig. 7 is a detail perspective of a portion of the filler.

Referring by numerals to the accompanying drawings: 1—1 designates the stiles of a window sash which are or may be of ordinary construction, but, as shown, are of the hollow or metallic type and on the inside face of each stile there is a groove 2 extending the full length of the stile.

3 designates the lower rail of the sash which is identical in construction with the stiles 1 and 2 and is provided with a groove 4 of the same dimensions as the grooves 2—2 in the stiles and alines with the groove in the stiles.

5 designates the top rail of the sash and 6 the groove therein, the rail 5 being identical in construction with the bottom rail of the stiles, except for the dimensions of the groove 6, which groove has a width at least double the width of the grooves in the stiles and bottom rail, and also a depth at least double the depths of the grooves in the stiles and bottom rail and one of the vertical walls of the groove 6, preferably the outside wall, alines with the corresponding walls of the grooves in the stiles and bottom rail.

7 and 8 designates the panes of glass which are of a combined width equal to the distance between the bottoms of the grooves in the stiles except for a distance equal to the width of a securing device for the mullions, as will be hereinafter made clear, and the panes of glass are of a length less than the distance between the bottoms of the grooves 6 in the upper rail and 4 in the lower rail.

9 designates one of the members of the mullion and 10 the other member of the mullion. The mullion members are each preferably constructed of a single piece of sheet metal and are formed hollow as shown, the member 9 embracing and inclosing a metallic strip 11 in which there are formed screw seats, and the member 10 is perforated coincident with the screw seats in the member 11 through which perforations the bolts 12 are inserted, and to connect and secure the members 9 and 10 together the bolt is threaded into the screw seats in the strip 11 carried by the member 9.

13 designates the filler which is preferably formed of a single piece of sheet metal and of a length to extend between the stiles. The filler consists of an upright portion approximately equal to the depth of the groove 6 in the top rail, a right angled, horizontal portion approximately equal to the width of the groove minus the thickness of the pane of glass, and a short upright section paralleling the first mentioned upright portion. This filler is for the purpose of securing the upper margin of the panes of glass in the groove in the top rail of greater width than the thickness of the glass and the filler is

secured in place by means of a bolt 14 having an enlarged head which engages the outer face of the right angled portion of the filler and which bolt is seated in a metallic strip 15 carried by the bottom wall of the groove and preferably lying between the wall of the groove and the end wall of the sash, the bottom wall of the groove being perforated coincident with the screw seats for receiving the bolts 14.

In carrying out my invention the essential features of the window are a sash having, in the bottom rail and the stiles, grooves of sufficient width and depth to receive and embrace the lower and side margins of the panes of glass; and a groove in the upper rail of sufficient width to permit of the overlapping of the panes of glass and of sufficient depth to permit the panes of glass to be lifted free from the groove in the lower rail. In this connection it might be stated that the groove in the upper rail need have no bottom and the strip 15 may be secured to the inner face of the upper rail proper if the strip be employed and, in fact, the strip may, in some instances be dispensed with, the screw seats for the bolts 14 made in the upper rail.

The essentials of the panes of glass are that they be of sufficient length as to be embraced by the grooves in the upper and lower rails and be of sufficient width to be firmly seated in the vertical grooves of the stiles leaving the space between their inner margins sufficient only to permit of the insertion of a mullion-securing device. The essentials of the mullions are that it be made in two parts which overlie the innermost margins of the two panes of glass, the parts having sufficient width to engage and hold the inner margins of the panes of glass and of a length to extend between the upper and lower rails of the sash.

The operation of securing the panes of glass in place is as follows: The pane 7 is first placed with its upper margin in the groove in the upper rail and elevated a sufficient distance to permit its lower margin to be above the lower rail. The pane is then moved toward the right until its right hand margin is firmly seated in the groove 2 of the right hand stile and the whole pane is then lowered to its resting place with its lower margin in the groove 4 of the lower rail.

The pane of glass 8 is first placed in the position as shown in Fig. 1, its inner margin overlapping the inner margin of the pane 7, the width of the groove 6 permitting such an overlapping, the pane of glass 8 is then moved in the direction of the arrow 16 until its left hand margin is firmly seated in the groove 2 of the left hand stile, and the right hand margin of the pane is beyond the inner margin of the pane of glass

7. The pane of glass 8 is then moved in the direction of the arrow 17 with its lower margin fully seated in the groove 4 of the lower rail. The mullion is then applied, as shown in Fig. 5.

It is to be observed particularly that my peculiar construction of sash permits of the introduction of panes of glass whose combined widths are approximately the full width of the sash, whereas in the art the panes of glass are of considerably less width than the sash so that they may be introduced into place without overlapping. Thus, in the art the mullion is of considerable width and hence the glass area is lessened.

By my improved construction, as previously stated, I obtain a maximum of glass area and employ a mullion of a minimum width.

I claim:

1. In a window, a sash having grooves to receive the marginal portions of panes of glass, one of said grooves having a width greater than the other grooves, so that panes of glass, the combined widths of which are approximately equal to the distances between two of the members of the sash and the depths of their grooves, may be introduced in said grooves.

2. In a window, a sash having grooves to receive the marginal portions of panes of glass, one of said grooves having a width greater than the other grooves, so that panes of glass, the combined widths of which are approximately equal to the distances between two of the members of the sash and the depths of their grooves, may be introduced in said grooves, and means for securing the margins of the panes not secured in said grooves.

3. In a window, a sash, all of the members of which are grooved in their inner margins, three of the members having grooves of the same dimensions, the fourth member having a groove of greater transverse dimension than the three grooves, a two-part mullion, and means for securing the parts of the mullion together.

4. In a window, a sash, three of the members of which have grooves of the same dimensions, the fourth member having a groove of greater width and depth than the three grooves, a two-part mullion, and means for securing the parts of the mullion together.

5. In a window, a sash, two of the opposing members of which have grooves of approximately the same dimensions, the third member having a groove of approximately the same dimensions as the first mentioned grooves, and the fourth member having a groove of greater width and depth than the other grooves, a mullion, and a removable filler for securing glass in the groove of greatest width.

6. In a window, a sash grooved to receive
and embrace the marginal portions of panes
of glass, one of the grooves being of dimen-
sions to permit raising of the panes of glass
5 free from the groove in the opposing sash
member and to permit overlapping the panes
of glass at the approximate longitudinal
center of the sash, for the purposes stated.

In testimony whereof, I have signed my
name to this specification, in presence of two 10
subscribing witnesses.

JOHN F. RUTH.

Witnesses:

E. E. LONGAN,
E. L. WALLACE.