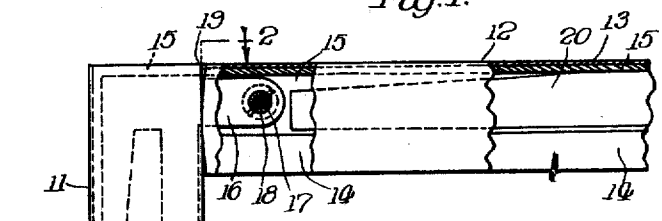
Jan. 8, 1924. 1,479,799

G. H. FORSYTH

WINDOW SASH

Filed Aug. 15, 1919

Fig. 1.



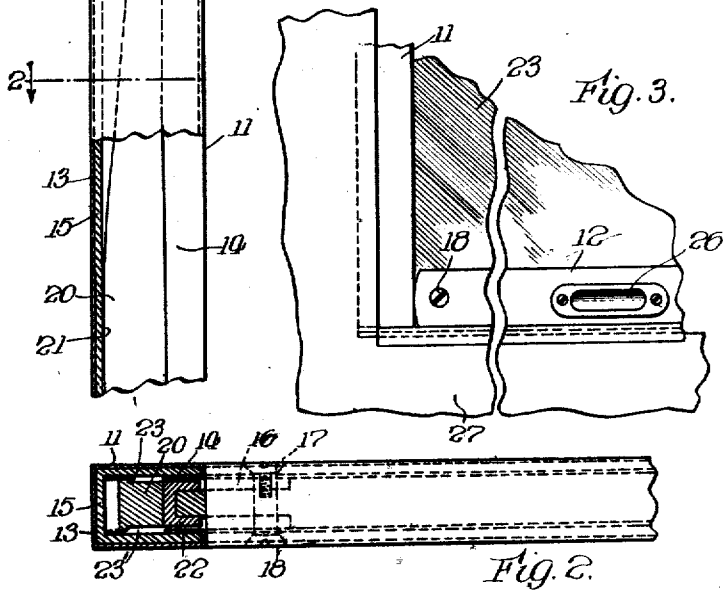


Fig. 3.

Fig. 2.

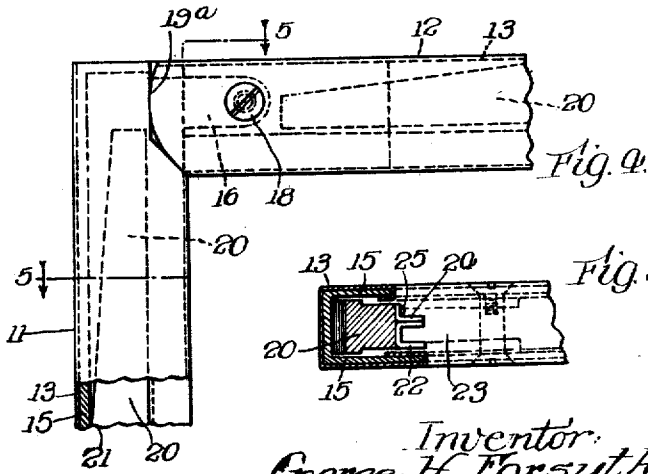


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE H. FORSYTH, OF CHICAGO, ILLINOIS.

WINDOW SASH.

Application filed August 15, 1919. Serial No. 317,644.

To all whom it may concern:

Be it known that I, GEORGE H. FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Window Sashes, of which the following is a specification.

My invention relates to the mounting of glass and screen closures for openings and more particularly to the construction of sash for use in situations where, due to distortion of the framed openings by uneven settling of the supporting structure, as a building, or to strains incident to use, as in a car, the general angular relation of the sides of the frame is changed. In such cases, the glass or screen mesh, referred to herein generically as a sheet, will not fit at all times unless provision is made for the maintenance of the angular relation of the same irrespective of the distortion of the frame.

By the present invention I provide a sash sufficiently flexible to accommodate itself to the frame and, in combination therewith, sheet holding members having fixed relation to the sheet of glass or mesh and having such adjustable relation to the sash as automatically to compensate for distortions of the latter.

In order that the invention may be readily understood by those skilled in the art to which it appertains, divers embodiments of the same are set forth in the accompanying drawings and in the following detailed description based thereon. As, obviously, the invention is susceptible of embodiment in other structural forms, without departure from the essence thereof, the drawings and description are to be taken in an illustrative and not in an unnecessarily limiting sense.

In the drawings—

Fig. 1 is a fragmentary side elevation of a sash corner with portions thereof shown in dotted lines;

Fig. 2 is a section on the irregular line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1, showing the lower corner of the sash mounted in its frame;

Fig. 4 is a view similar to Fig. 1 but showing the invention embodied in a sash having detachable glazing beads;

Fig. 5 is a section on the irregular line 5—5 of Fig. 4;

Having reference in detail to the drawings, the sash is shown as composed of stiles 11 and rails 12 of general channel formation inwardly opening and constructed of thin sheet metal 13 with the edges inturned at 14 to embrace the edges of heavier reinforcing channels 15 as best shown in Fig. 2. The upper and lower ends of the stiles are provided with projecting tongues 16 forming continuations of the reinforcements 15 and offset slightly inwardly towards each other so as to fit snugly between the corresponding reinforcing channel walls 15 of the rails. The tongues and side walls are transversely apertured for the reception of a connecting member preferably in the form of male and female screws 17, 18. The ends of the rails are slightly curved as indicated at 19 to permit of a slight angular adjustment between the rail and stile.

From the description thus far given it will be clear that the sash as a whole is capable of slight deformation from the rectangular to enable it to be fitted within a frame which is slightly off square. To enable the sheet of glass or mesh within the sash to maintain its rectangular shape in spite of any slight distortion of the frame and sash, an adjustable relation between the glass or mesh and the sash is provided for as follows:

Within each of the stiles 11 and rails 12 there is loosely disposed a camber strip 20 which bears with the intermediate arched portion thereof on the bottom of the channel as indicated at 21 thus constituting of the camber strip 20 a rocker member which may shift longitudinally and the ends of which may move inwardly and outwardly in the channels towards and from the bottom so as to modify the normal parallel relation between the axis of the strip 20 and that of the stile or rail. This camber strip serves as a bearing or point of attachment for the U-shaped strip of rubber 22

with which the edge of the sheet of glass 23 is provided, the camber strip 20 thus serving as a support for the sheet of glass. This is most clearly shown in Fig. 2 of the drawings. The camber strip 20 is slightly cut away along its two edges as is indicated at 23′ to enable the ends of the same to move inwardly and outwardly without interfering with the inturned marginal edges 14 of the sheet metal forming the frame.

The construction shown in cross section in Fig. 2 of the drawing is that of what is known in the trade as a "beadless" sash; that is to say, a sash which has no removable glazing beads but the rails and stiles of which must be disassociated in order to permit insertion of the glass or provision made at one side or end for sliding the glass into place. In Figs. 4 and 5 is shown the application of the same construction to a sash having a removable glazing bead indicated at 24. Here, as in the former case, the glass supporting rubber strip 22 bears at one side against the permanent bead of the sash and at its bottom rests upon the camber strip 20. Upon the other side, however, the rubber strip is held in place by the removable glazing bead 24 which is fixedly attached to the camber strip 20 by means of the screw 25. In this case as illustrated in Fig. 4 of the drawings the meeting ends of both the stile and rail may be slightly rounded or cut away to interfit one with the other, to provide for angular displacement of the two. This construction is shown by the line 19^a in Fig. 4.

In Fig. 3 the finger piece or lift of the sash is indicated at 26 and the window frame at 27. The invention described enables the sheet of glass or of screen mesh to maintain its rectangular shape notwithstanding any canting or yielding of the sash from the rectangular to fit the window frame which is off square.

I claim:

1. In a sash, the combination of stiles and rails connected for relative angular movement, and sheet supporting members fulcrumed intermediate their lengths on the stiles and rails whereby to provide an angular adjustability of the sheet relative to the sash in the plane of the opening.

2. In a sash, the combination of stiles and rails flexibly connected at the corners, and sheet supporting members rockingly supported by the stiles and rails whereby to provide an angular adjustability of the sheet relative to the sash in the plane of the opening.

3. A sash comprising stile and rail members and angularly yieldable in the sash plane, sheet holding camber strips rockingly seated intermediate their length on the sash members, and a sheet carried by the camber strips, whereby to provide an angular adjustability of the sheet relative to the sash in the plane of the opening.

4. In a sash, the combination of stile and rail members flexibly connected at the corners, and sheet holding camber strips rockingly seated intermediate their length on the sash members, and a sheet disposed between and in contact with the camber strips, whereby to provide an angular adjustability to the sheet relative to the sash in the plane of the opening.

5. In a sash, the combination of stile and rail members flexibly connected at the corners and of inwardly opening channel formation, sheet holding camber strips rockingly seated intermediate their length on the channel bottoms, and a sheet carried by the camber strips, whereby to provide an angular adjustability of the sheet relative to the sash in the plane of the opening.

6. The combination with a foundation element and a sheet element carried thereby, of a sheet supporting strip disposed between a sheet edge, and the foundation element, said strip adapted to have guided motion with respect to the foundation element to provide angular and longitudinal displacement therebetween, whereby to permit adjustability of the sheet with respect to the foundation element in the plane of the sheet.

7. The combination of a frame affording an inwardly presented channel, a sheet element embraced therein, and sheet-supporting strips disposed between the sheet edges and the adjacent sides of the frame and having rocking bearing on the bottom of the frame channel whereby to provide an angular adjustability of the sheet relative to the frame in the plane of the opening.

8. The combination in a sash having flexibly joined members affording inwardly presented channels, and a sheet embraced therein, of sheet supporting strips disposed between the sheet edges and the sash members, said strips being capable of longitudinal displacement in the channels and having a rocking surface engagement with the bottoms of said channels, whereby to permit adjustability of the sheet member with respect to the sash in the plane of the opening.

9. The combination in a sash comprising stiles and rails flexibly connected at the corners, of a sheet embraced therein, and sheet-supporting members yieldingly interposed between the sheet and sash members whereby to provide angular adjustability of the sheet relative to the sash in the plane of the opening.

10. In a sash, the combination of rail and stile members angularly yieldable in the sash plane, and a sheet member yieldingly mounted within the sash for angular movement in the sash plane.

11. A sash comprising rails and stiles an-

gularly distortable in the sash plane to conform to irregularities of a window frame, and a sheet yieldingly mounted within the sash for angular movement in the sash plane to compensate for angular distortions of the sash.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE H. FORSYTH.

Witnesses:
LEWIS T. GREIST,
FRANCES K. GILLESPIE.