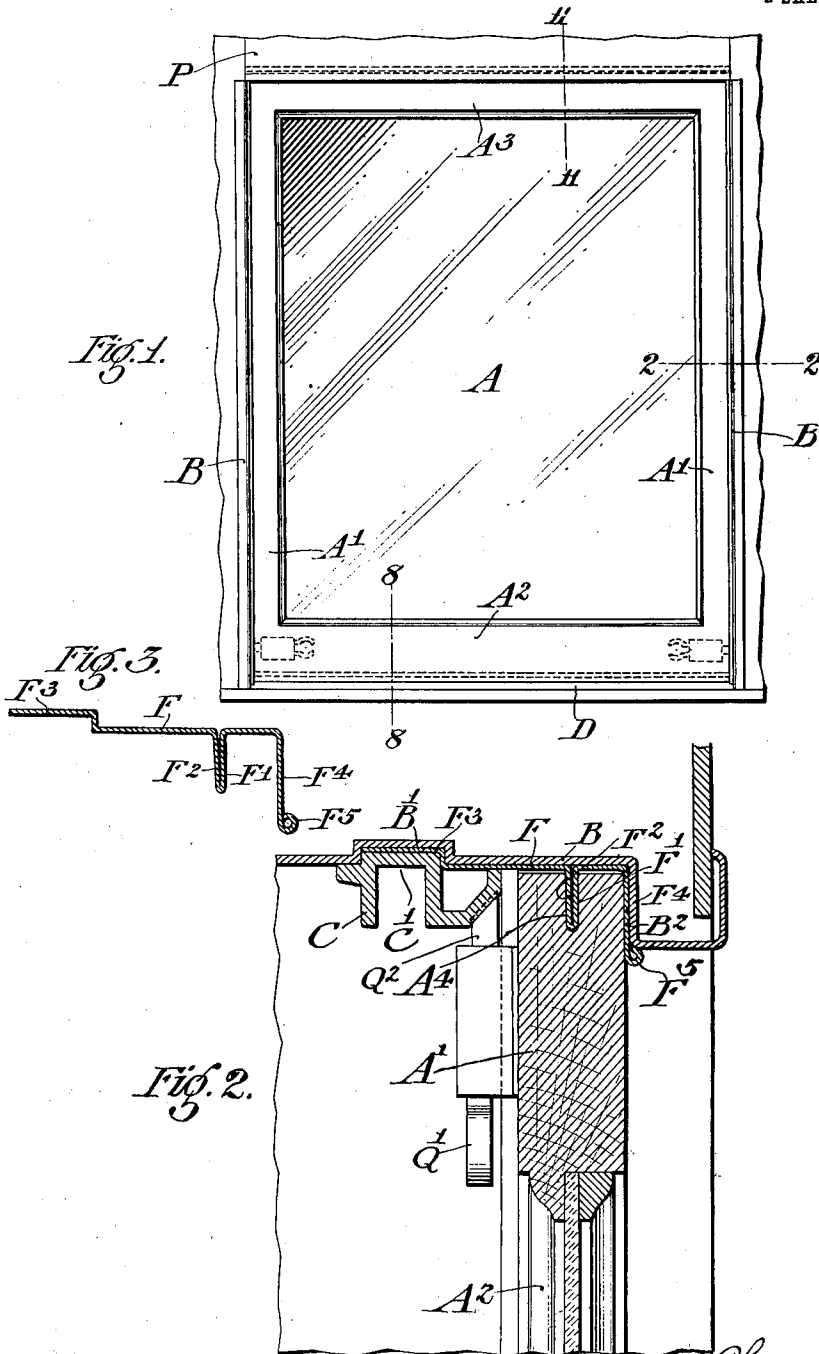


C. W. RENNER.
 WINDOW CONSTRUCTION.
 APPLICATION FILED FEB. 11, 1911.

1,111,547.

Patented Sept. 22, 1914.

2 SHEETS—SHEET 1.



Witnesses
Stewart
David S. Williams

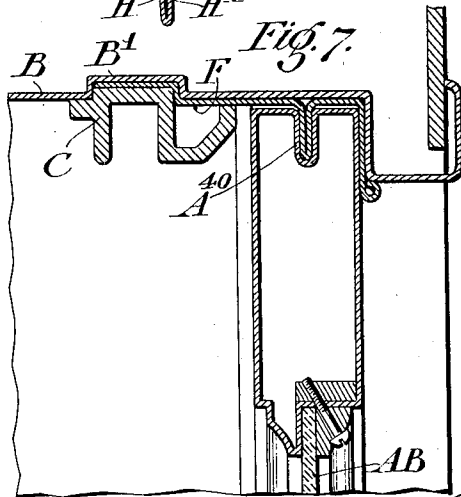
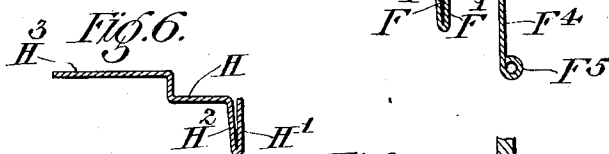
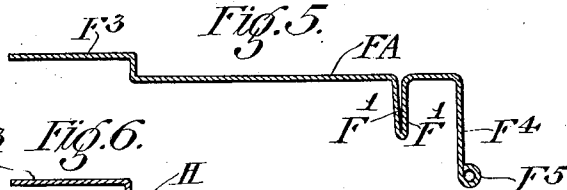
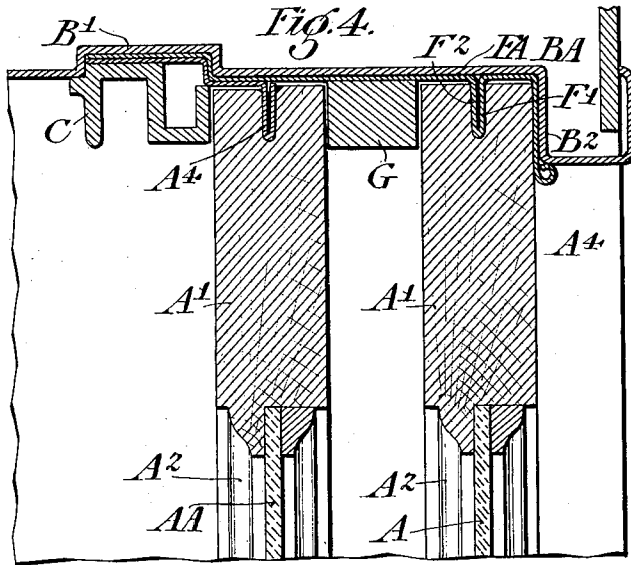
Inventor
Charles W. Renner
 by *Finn J. Chamber*
his Attorney

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2 SHEETS—SHEET 2.



Wm. H. Stewart
 Inventor

Inventor
 Charles W. Renner
 by Francis J. Chandler
 Attorney

UNITED STATES PATENT OFFICE.

CHARLES W. RENNER, OF ALTOONA, PENNSYLVANIA.

WINDOW CONSTRUCTION.

1,111,547.

Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed February 11, 1911. Serial No. 607,899.

To all whom it may concern:

Be it known that I, CHARLES W. RENNER, a citizen of the United States of America, residing in Altoona, in the county of Blair and State of Pennsylvania, have invented a certain new and useful Improvement in Window Construction, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My present invention consists in certain features of construction and arrangement primarily devised for the purpose of obtaining thoroughly tight joints between a window sash and its casing when the window is closed and for insuring easy operation of the window in opening and closing it.

The invention was especially devised, and is peculiarly adapted for use in connection with the windows of railway steel passenger cars.

The various features of construction and arrangement which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of the invention and the advantages possessed by it, reference should be had to the accompanying drawings and descriptive matter in which I have illustrated and described forms of apparatus embodying my invention.

Of the drawings, Figure 1 is a partial side elevation of a steel passenger car. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section taken similarly to Fig. 2 of the weather strip and sash guide detached from the window casing. Fig. 4 is a view taken similarly to Fig. 2 but so as to show in section both sashes of a double sash window construction. Fig. 5 is a section of one combined weather strip and sash guide employed in Fig. 4. Fig. 6 is a section of a second form of weather strip and sash guide employed in Fig. 4. Fig. 7 is a view taken similarly to Fig. 2 showing the use of the invention in connection with a metallic window sash.

In the drawings, and referring first to the construction shown in Figs. 1, 2 and 3, A represents a car window A' A' the sides, A² the bottom, and A³ the top of the window sash. As shown in Figs. 1, 2 and 3 the window sash proper is formed of wood. The

casing of the window is formed by metal posts B, B, a metal sill D and a metal top piece P, all of the type in use in steel railway passenger cars.

Each steel window post, or casing frame side B has a channel B' formed in its face (see Fig. 2) and is formed with a flange or shoulder B² which lies in front of the outer face of the corresponding side of the window sash at the margin of the latter. Interposed between the window sash and each window post B is a strip F formed of non-corroding metal such as copper, brass, or zinc and comprising an offset portion F³ received in the channel B', a flange portion F⁴ which abuts against the shoulder B² of the window post B, and a connecting body portion which lies between the edge of the window sash and the corresponding faces of the window post B, and is formed with a fold. The two sides F' and F² of this fold approach closely to each other as shown in Fig. 3, and preferably with the side or web F' normally perpendicular to the body portion, and the side or web F² slightly inclined to the side F'. The sides of the sash A' are each formed with a narrow groove A⁴ in which the fold portion F' F² of the corresponding member F is received, and the parts are so proportioned that the sides F' F² of each fold form a resilient rib compressed by the walls of the corresponding slot A⁴. The portion of the window sash between each slot A⁴ and the outer face of the sash is snugly received between the fold portion F' F² of the corresponding member F and its flange F⁴. Each window strip F is held in place by means of a corresponding metal curtain guide strip C which enters the channel B' and bears against the portion F³ of the member F and is held in place by screws C'.

With the construction described, a perfectly tight joint between the window sash and each window casing side or post B is obtained by the resilient engagement between the wall of the slot A⁴ and the fold sides F' F² of the member F. At the same time there is no objectionable friction between the sides of the window sash and the parts connected to the casing, since the strip F is formed of noncorroding resilient material and is comparatively smooth. The beads F⁵ at the edge of each flange F⁴ fitting snugly against the corner of the shoulder B² of the window post B prevents any

objectionable admission of moisture between the weather strip F and the window post B, and I have found in the practical use of the invention that no appreciable corroding of the surface of the shoulder B² has taken place in months of actual service.

In Figs. 4, 5 and 6, I have shown an arrangement for use in which there are two movable window sashes in each window opening as shown in Figs. 4, 5 and 6. The two window sashes A and AA may each be identical with the sash A as shown in Figs. 1, 2 and 3. In Fig. 4, a combined weather strip and guide FA is employed which may be identical in form with the strip F already described, except that the distance between the offset portion F³ and the fold F² is greater in Fig. 4 than in Figs. 1, 2 and 3. The window post BA in Fig. 4 differs from the window post B of Fig. 2 only that the distance between the channel B¹ and the shoulder B² is greater in Fig. 4 than in Fig. 2. In the construction shown in Figs. 4, 5 and 6, the grooves A⁴ in the sash sides A¹ of the window AA receive the fold portion of a window strip and guide member H formed of noncorroding metal and differing from the members F and FA principally in that the strip H comprises nothing corresponding to the flange F⁴, bead F⁵, and body portion to the right of the fold H¹, H², as viewed in Figs. 4 and 6. The offset portions H³ and F³ of the strips FA and H of Figs. 4, 5 and 6 are both secured in the channel B¹ by the curtain strip C. In Fig. 4 a guide strip G is secured to the window post BA between the two sashes, but under ordinary circumstances, this strip is practically without function and I so proportion and arrange the weather strip and guides that there is always clearance between the adjacent surfaces of the window sash and the sides of the strips G.

The construction shown in Fig. 7 differs from that shown in Fig. 1 in that the sash frame of the window AB shown, is in the form of a hollow metal structure. The metal sash is provided in its side edges with grooves A⁴⁰ corresponding to the grooves A⁴ of the constructions previously described.

In Figs. 1, 2 and 3, I have shown in detail, sash locks applied directly to the window sash each comprising a casing Q, finger levers Q¹, and a sliding bolt Q². The latter is advantageously beveled at its operating end and adapted to take in a correspondingly beveled socket formed in the curtain guide strip C, the sash lock thus tending to wedge the sash away from the curtain guide strip.

The construction for forming a tight joint at the top of the window disclosed, but not claimed herein, is claimed in my application Serial No. 681,909, filed March 6th, 1912.

Those skilled in the art will understand that with the construction described, tight

joints are obtained and the opening and closing of the window made easy, and that when the various weather strip members are made of non-corrodible material, the parts will last almost indefinitely.

While in accordance with the provisions of the statute I have illustrated and described the best forms of my invention now known to me, it will be apparent to those skilled in the art that changes may be made in the form of the apparatus disclosed without departing from the spirit of my invention, and that under some circumstances, certain features of the invention may be used with advantage without a corresponding use of other features.

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

1. A window construction comprising in combination a sash having longitudinal grooves formed in its side edges a window casing receiving said sash and having metallic sides each formed with a shoulder at its outer edge, and a channel separated from said shoulder by a distance not less than the thickness of said sash, and a guide and weather strip for each casing side each formed of non-corroding metal with an offset portion entering the channel and a flange portion forming a facing for the shoulder of the corresponding casing side and having an intermediate fold to provide a compressible rib entering the groove in the corresponding side edge of the sash.

2. A window construction comprising in combination a sash having longitudinal grooves formed in its side edges, a window casing comprising metallic window posts each formed with a shoulder at its outer edge overlapping the outer face of the sash at its side edges and also having a channel formed in it at a distance from said shoulder greater than the thickness of said sash, and a combined sash guide and weather strip for each window post, each formed of noncorroding sheet metal and each comprising an offset portion entering said channel, a flange portion forming a facing for said shoulder and having a bead at its edge closing the outer edge of the joint between the body of said flange and said shoulder, said strip comprising also a body portion connecting said offset portion and said flange having a fold in it forming a compressible rib entering the groove formed in the corresponding side edge of the sash, the said channel in each window post being adapted to receive a curtain guide member by which the corresponding strip may be secured in place.

3. A window construction comprising a pair of window sashes each having longitudinal grooves formed in its side edges, a pair of metallic window posts each formed

with a shoulder at its outer edge overlapping the face of the outer sash at its margin, and a sash guide and weather strip for each window post each comprising a flange portion forming a facing for said shoulder and body portion interposed between the sashes and the window post, and having a fold in it forming a compressible rib entering the corresponding groove in the side edge of the outer sash, a second sash guide and weather strip for each window post comprising a body portion bearing against the body portion of the first mentioned strip and a fold portion forming a compressible rib entering the groove formed in the corresponding edge of the inner window sash.

4. A window construction comprising a pair of window sashes each having longitudinal grooves formed in its side edges, a pair of metallic window posts each formed with a shoulder at its outer edge overlapping the face of the outer sash at its margin and each formed with a channel separated from said shoulder by a distance exceeding the combined thickness of the sashes, and a

sash guide and weather strip for each window post each comprising an offset portion entering said channel, a flange portion forming a facing for said shoulder and a connecting body portion having a fold in it forming a compressible rib entering the corresponding groove in the side edge of the outer sash, and a second sash guide and weather strip for each window post comprising an offset portion entering said channel and a body portion bearing against the body portion of the first mentioned strip and a fold portion forming a compressible rib entering the groove formed in the corresponding edge of the inner window sash, the said channel in each window post being also adapted to receive a curtain guide strip covering the portions of said sash guide and weather strips entering said channel and parallel to the bottom thereof.

CHARLES W. RENNER.

Witnesses:

JAMES GEISER,
EDWARD H. BREISACHER.