

No. 791,437.

PATENTED MAY 30, 1905.

E. G. BUDD.
METALLIC WINDOW SASH FRAME.
APPLICATION FILED JUNE 30, 1904.

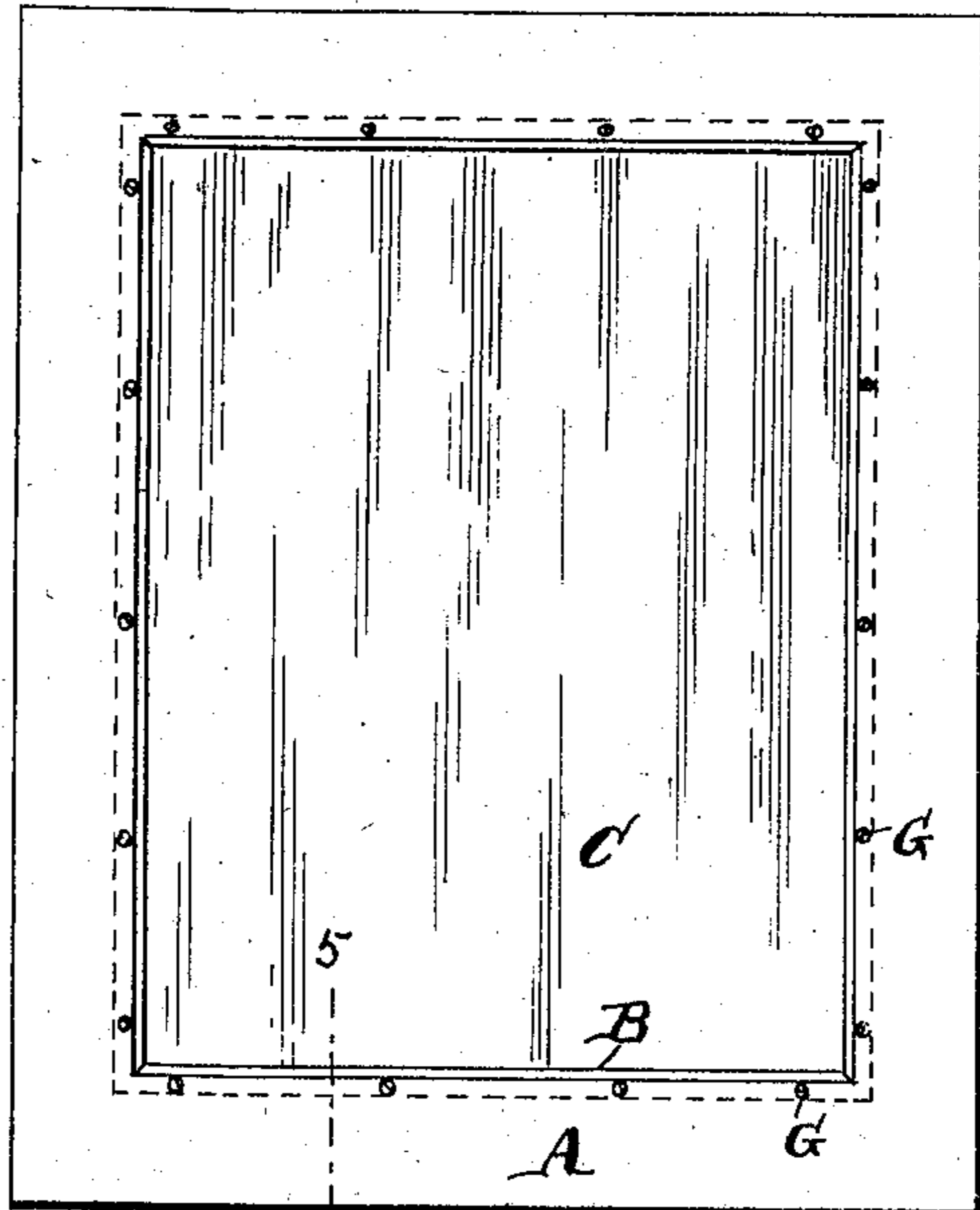


FIG. 1

FIG. 3

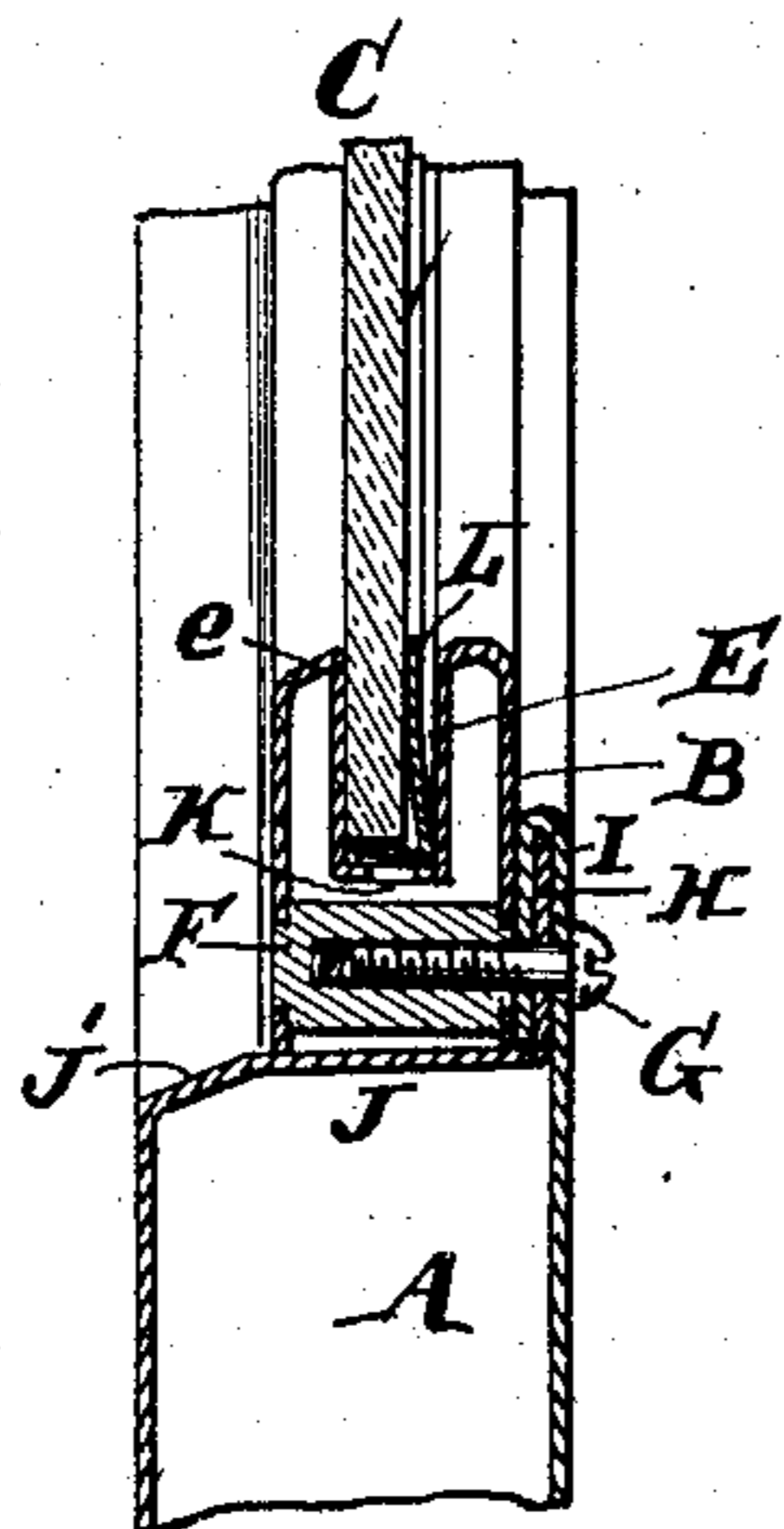
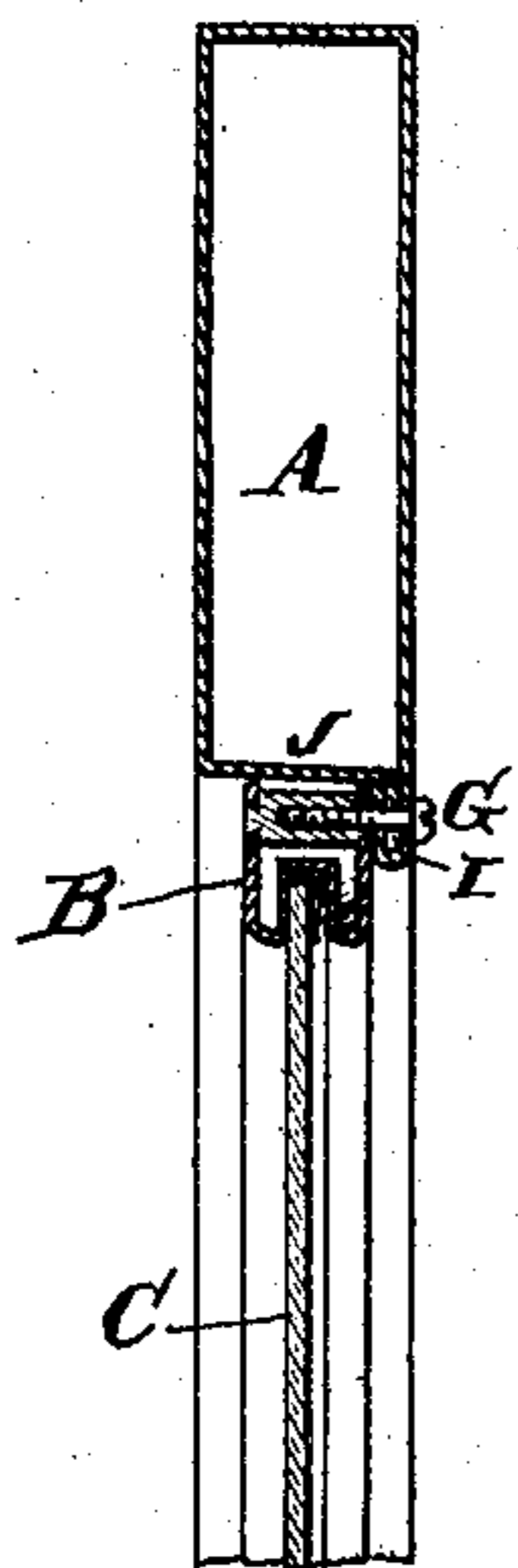


FIG. 5

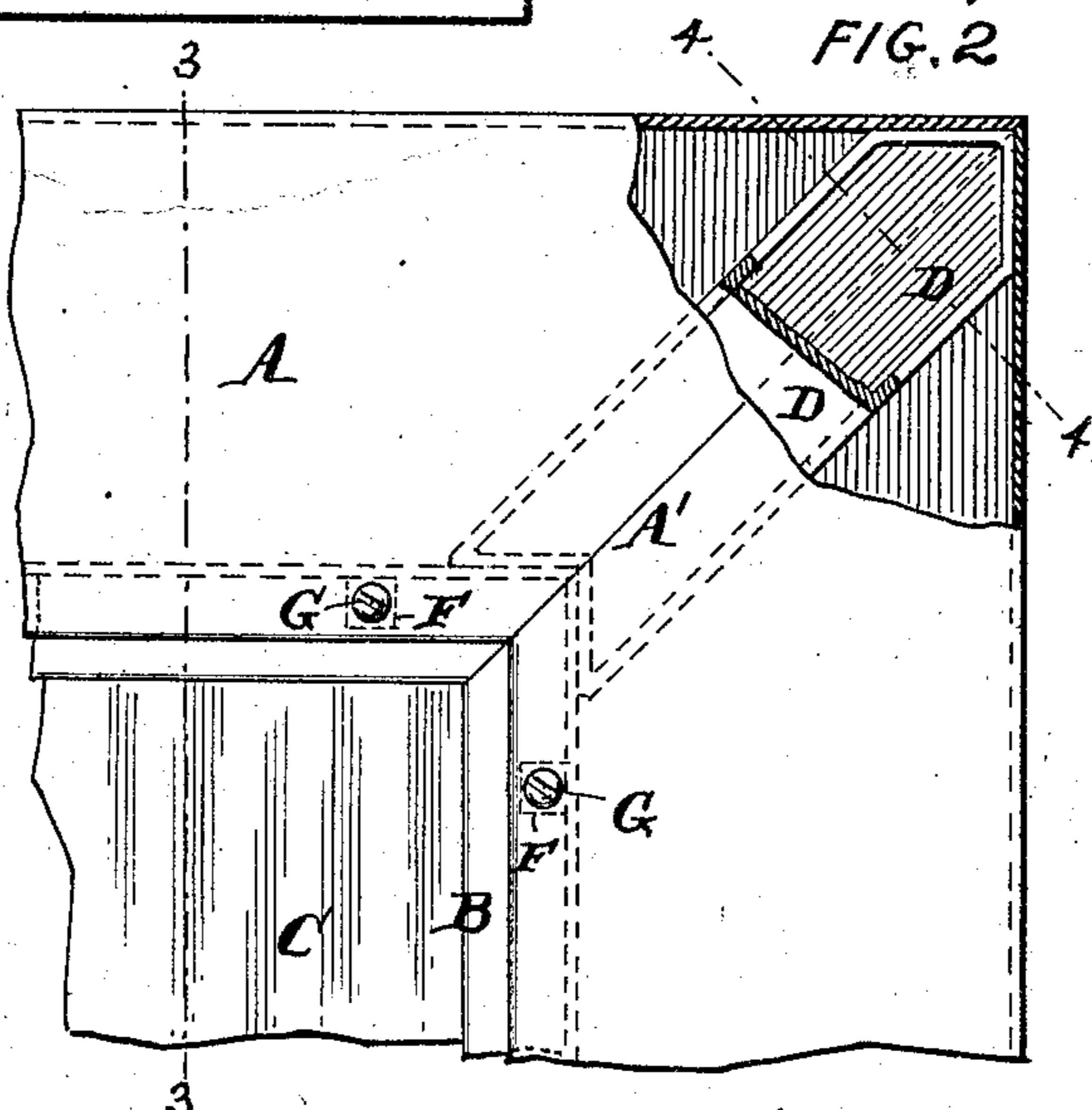


FIG. 2

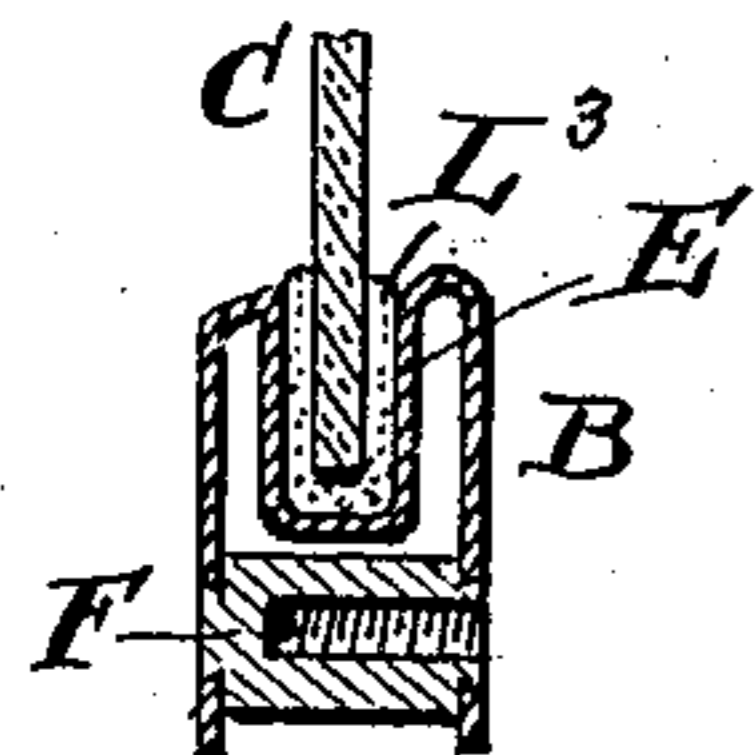


FIG. 8

FIG. 6

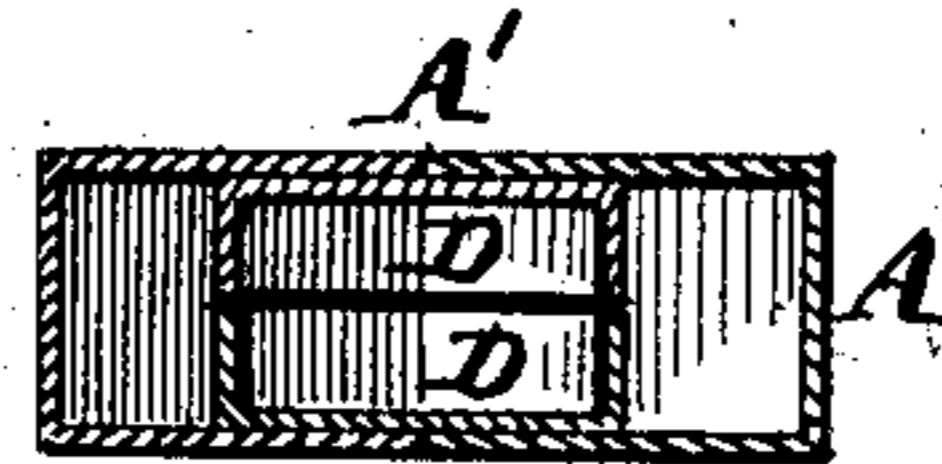
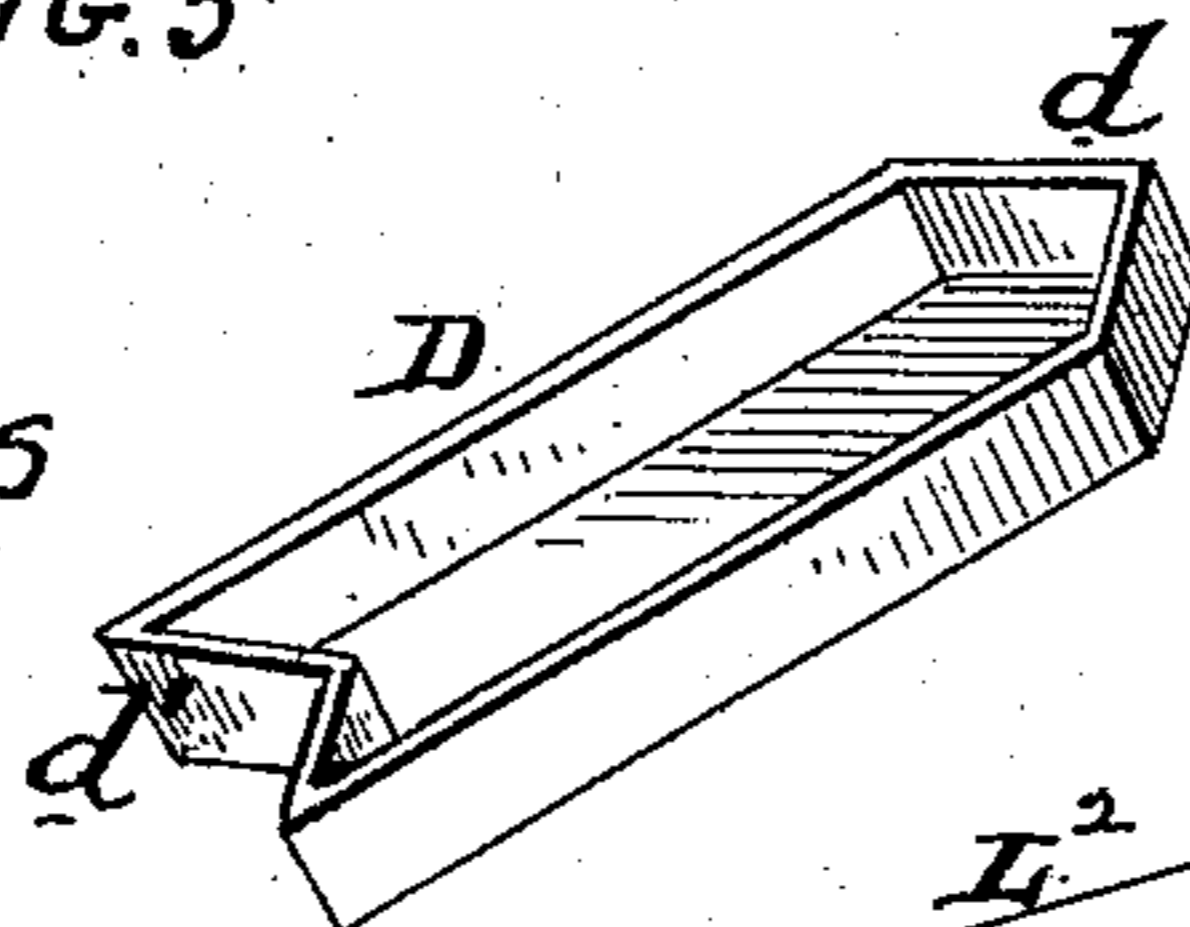


FIG. 4

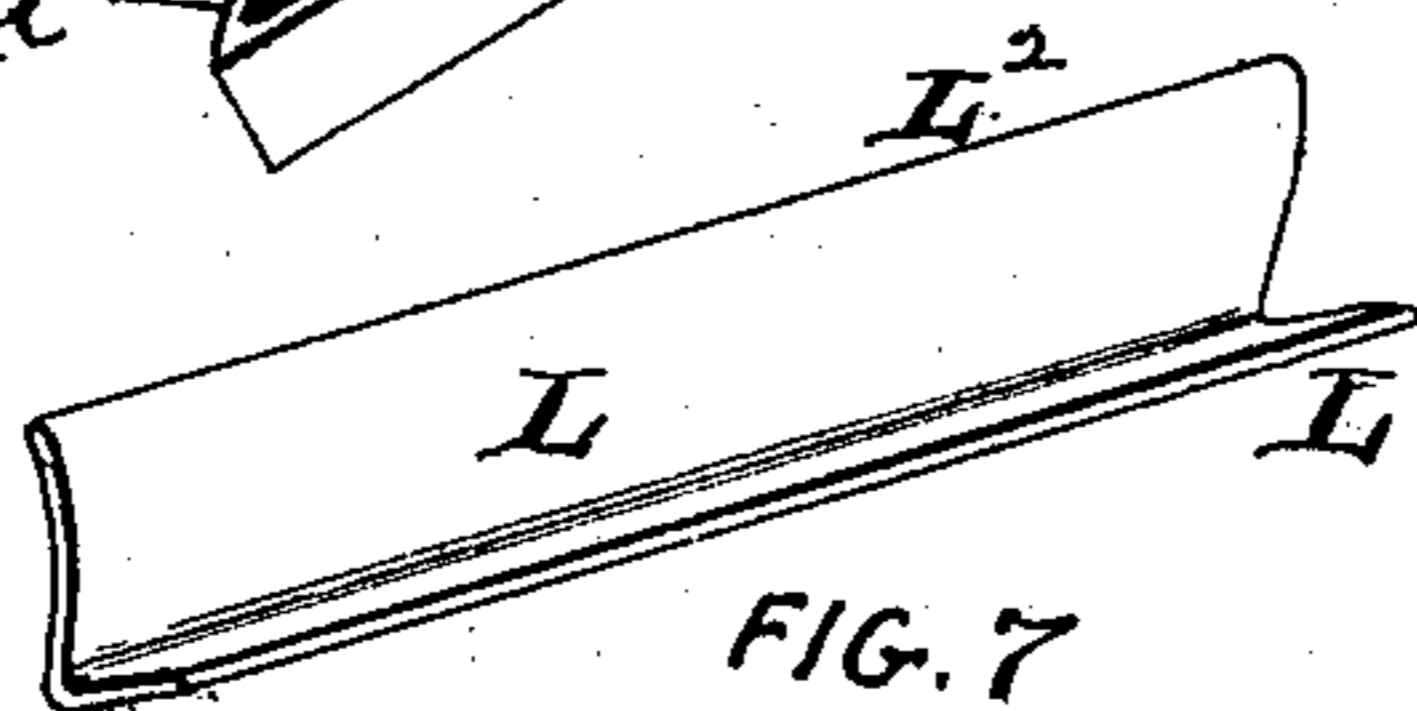


FIG. 7

Attest
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UNITED STATES PATENT OFFICE.

EDWARD G. BUDD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR,
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METALLIC WINDOW-SASH FRAME.

SPECIFICATION forming part of Letters Patent No. 791,437, dated May 30, 1905.

Application filed June 30, 1904. Serial No. 214,775.

To all whom it may concern:

Be it known that I, EDWARD G. BUDD, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improve-
5 ment in Metallic Window-Sash Frames, of which the following is a specification.

My invention has reference to metallic window-sash frames; and it consists of cer-
tain improvements, which are fully set forth
10 in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a construction of metallic window-sash frame
15 which is especially adapted to railway-car purposes and embodying lightness in construction, rigidity in use, and which shall be reasonably cheap to manufacture. Metallic window-sash frames of this character are fire-
20 proof, and hence especially desirable in fire-proof car construction.

More specifically, the object of my inven-
tion is to provide a means for holding the glass in a window-sash frame constructed of
25 metal and prevent all rattling and penetration of moisture.

In carrying out my invention I provide a sheet-metal window-sash frame having its sides, top, and bottom in the form of a rec-
30 tangular box-shaped structure having an inwardly-directed flange and combine therewith glass-supporting frames provided with grooves and adapted to be clamped against the flange by screws. I further provide in
35 the preferred form of my invention spring clamping-strips arranged within the groove of the glass-supporting frames and having such construction that the pressure on the edge of the glass against the said clamping-
40 strips will cause a pressure to be applied against the face of the glass to force it positively against the outer wall of the groove to make a practically rain-proof joint.

My invention also comprehends in addi-
45 tion to the features above set forth various de-

tails of construction, which, together with the said features specified above, will be better understood by reference to the drawings, in which—

Figure 1 is a front elevation of a window-
sash-frame structure embodying my inven-
tion. Fig. 2 is an enlarged view of one cor-
ner of same with a part broken away. Fig.
3 is a sectional elevation of Fig. 2 on line 3 3.
Fig. 4 is a cross-section on line 4 4 of Fig. 3.
Fig. 5 is a cross-section on line 5 5 of Fig. 1.
Fig. 6 is a perspective view of one of the box-
shaped miter-joint frames, and Fig. 7 is a
perspective view of one of the clamping-strips.

A is a box-shaped metallic sash-frame
60 made of sheet metal bent into rectangular form and united in a flange comprising the lap-joint portions H and I, the latter being bent over the former. This flange projects inward toward the glass-opening. The win-
65 dow-frame is made up of four box-frame structures having miter-joints, as at A', and these structures are secured together by introducing two oppositely - directed box-
shaped braces D, stamped from sheet metal
70 and provided at one end with an outwardly-directed V-shaped portion *d* and at the other end with a depressed V-shaped portion *d'*, said parts fitting snugly to the interior of the box-shaped structures adjacent to the mi-
75 tered joint, as shown in Fig. 2. These parts are then brazed or otherwise firmly united together in any suitable manner. Where the work is carefully done, the joint is not
80 perceptible when the frame is painted.

The inner wall J of the box-shaped frame, or that adjacent to the glass, is slightly inclined from the flange outwardly, and at the bottom part of the window-frame this incline may be continued in a greater incline, as
85 at J', this latter not being necessary on the sides and top. The location of the incline at the bottom is with the object of shedding the water due to rain.

B represents U-shaped glass-supporting 90

frames formed of sheet metal, having the groove E formed therein of somewhat greater width than the thickness of the glass and of a depth sufficiently great to form a space between the edge of the glass C and the bottom of the groove. There are four of these frames B, mitered to fit together and against the face of the flange H I of the rectangular window-frame. These frames B are provided at intervals with spacing-blocks F, which are riveted to the two parallel walls, as shown in Fig. 5, and screws G pass through the flange H I and into the said blocks F to clamp the said glass-supporting frames B tightly to the flange of the rectangular window-frame. The edges of the frame B rest upon the inclined wall J, and when the said frames are clamped against the flange H I the inclination of the part J causes the frame B to clamp itself tightly on the rectangular frame A, and thereby make it a tight joint, which when painted will not permit the inflow of moisture.

It will be seen from the above construction that the glass will be firmly clamped in position and held against all rattling, and yet in case of breakage it will not be a difficult matter to remove the frames B for the purpose of replacing the broken glass with a new pane.

L is a spring clamping-strip, preferably formed of bronze and is made L-shaped, so as to have the lower leg L' adapted to rest against the edge of the glass C and the upper and longer leg L² adapted to be forced against the face of the glass to press it over against the outer wall of the groove E, as shown in Fig. 5, to make a practically watertight joint. The outer edge of the frame B adjacent to the glass C is preferably made beveled, as at e, so as to readily shed the water that may beat upon the glass and flow down over it. In the bottom frame B the floor of the groove may be perforated, as at K, to allow any water to pass through and escape. It is quite evident that, if desired, the groove E may be filled with putty or suitable cement, such as employed in securing glass to window-frames, although ordinarily no such cement will be necessary.

Broadly considered, my invention comprehends the employment of the sheet-metal glass-supporting frame B, having grooves to receive the glass and adapted to be clamped to a rectangular window-sash frame preferably formed of sheet metal, and the particular construction illustrated is given as an example of a suitable manner of carrying my invention into practice. I therefore do not confine myself to the minor details of construction, as they may be modified in various ways without departing from the spirit of the invention.

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

1. A rectangular window-sash frame, combined with a glass, sheet-metal glass-supporting frames having grooves to receive the edges of the glass, and means arranged between the bottom of the groove and the sash-frame and out of contact with the glass for securing the said glass-supporting frames to the rectangular window-sash frame.

2. A rectangular window-sash frame having an inwardly-directed flange, combined with a glass, sheet-metal glass-supporting frames having grooves to receive the edges of the glass, and means extending through the flange and supporting-frames outside of the glass-receiving grooves for securing the said glass-supporting frames to the flange of the rectangular window-sash frame.

3. A rectangular window-sash frame having an inwardly-directed flange, combined with a glass, sheet-metal glass-supporting frames having grooves to receive the edges of the glass, and means for securing the said glass-supporting frames to the flange of the rectangular frame consisting of spacing-pieces secured to the glass-supporting frames and clamping-screws extending through the flange of the window-sash frame and into the spacing-pieces.

4. A rectangular window-sash frame, combined with a glass, sheet-metal glass-supporting frames having grooves to receive the edges of the glass, means for securing the said window-glass-supporting frames to the rectangular window-sash frame, and clamping-strips L arranged within the grooves of the glass-supporting frames having two legs one adapted to press upon the edge of the glass and the other upon its face to clamp the glass against one of the walls of the groove.

5. The combination of a rectangular sash-frame formed of sheet metal bent into a box-frame and having the edges united in the form of an inwardly-directed flange H I, combined with glass-supporting frames B made of sheet metal and formed with grooves E, and backwardly-extending water portions of greater depth than the grooves a glass C fitting into the grooves of the frames B, and means passing through the flange of the window-frame and below the bottom of the grooves for clamping the frames B to said flange.

6. A rectangular sash-frame formed of sheet metal bent into a box-frame and having the edges united in the form of an inwardly-directed flange H I and the walls J adjacent to the flange made inclined from the flange outward, in combination with glass-supporting frames B having edges resting upon the inclined wall J, and clamping means for clamping the said frame B against said

inclined wall J and to the flange of the window-frame.

5 7. A window-sash frame formed of sheet metal and consisting of four box-shaped sections or frames united in mitered joints as at A' and secured together at each corner by two oppositely-directed independent internal box-shaped braces D, D, having outwardly-directed V-shaped ends *d* and in-

wardly-directed V-shaped ends *d'* substantially as shown and secured to the interior surface of the said window-frame sections.

In testimony of which invention I hereunto set my hand.

EDWARD G. BUDD.

Witnesses:

R. M. HUNTER,

R. M. KELLY.