

Jan. 11, 1938.

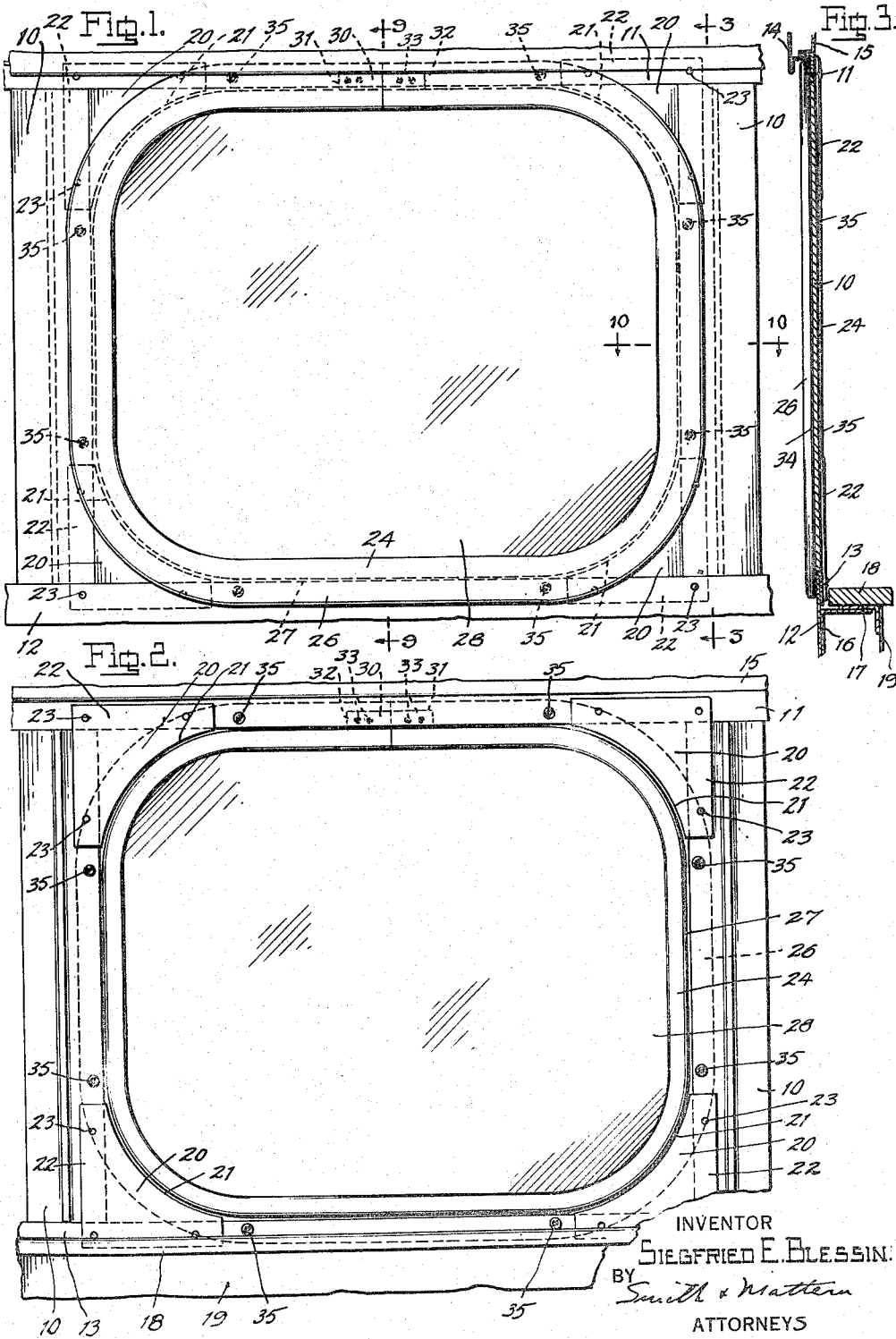
S. E. BLESSIN

2,105,180

CAR WINDOW STRUCTURE

Filed July 9, 1936

2 Sheets-Sheet 1



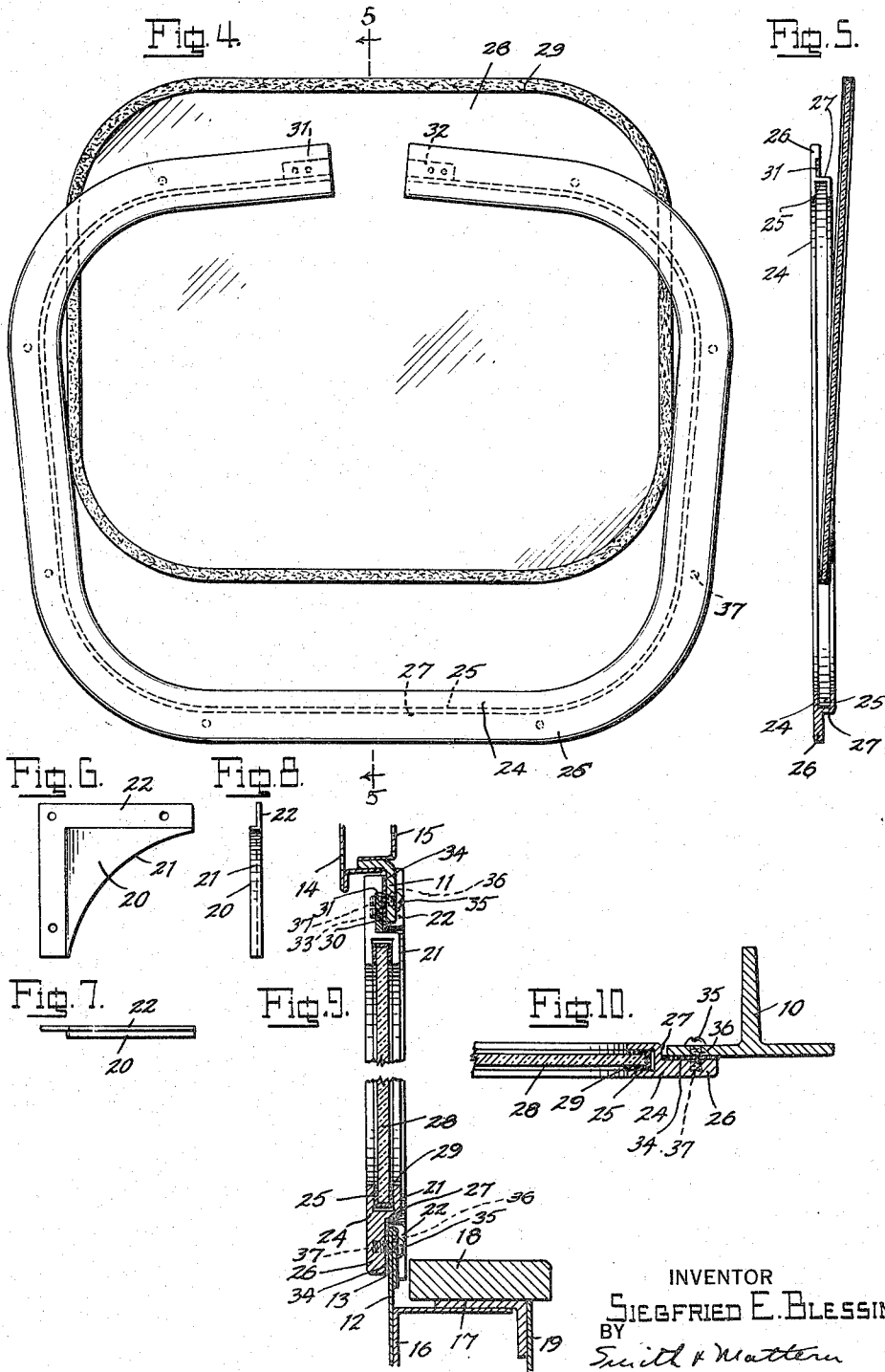
Jan. 11, 1938.

S. E. BLESSIN
CAR WINDOW STRUCTURE

2,105,180

Filed July 9, 1936

2 Sheets-Sheet 2



INVENTOR
SIEGFRIED E. BLESSIN.
BY
Smith & Mattern
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,105,180

CAR WINDOW STRUCTURE

Siegfried E. Blessin, Summit, N. J., assignor to
The National Lock Washer Company, Newark,
N. J., a corporation of New Jersey

Application July 9, 1936, Serial No. 89,843

8 Claims. (Cl. 189-64)

The present invention relates to an improve-
ment in car window structure, particularly for
use in railroad passenger cars, busses, or the like,
wherein the window is a fixed installation, as
distinguished from windows which may be raised
or lowered, this type of fixed installation being
used especially in air-conditioned cars. It is desir-
able both from the standpoint of providing a
window of attractive appearance which will har-
monize with streamline design, and also a window
which may be easily cleaned to provide a sash
having rounded corners. The structure of the
window opening as incorporated in the frame
work of the car is such that the opening has
square corners, and it is an object of the present
invention to provide a combination frame and
sash structure in which the window opening hav-
ing square corners may have the sash having
rounded corners fitted therein in such manner as
to provide a rigid, solid structure and one which
is entirely finished in appearance. To this end
it is proposed in the illustrated embodiment of
the invention to provide corner pieces serving as
fillers for the corners of the window opening
as well as structural reinforcements.

Another object is to provide an improved form
of sash structure in which the frame may be
formed of one piece of material if desired, and
will permit of the ready insertion of the pane
of glass as well as its convenient removal in the
event of breakage.

A further object is to provide a structure of this
character which will be weather-proof and en-
tirely free from looseness and rattling.

With the above and other objects in view an
embodiment of the invention is shown in the ac-
companying drawings, and this embodiment will
be hereinafter more fully described with reference
thereto and the invention will be finally pointed
out in the claims.

In the drawings:

Fig. 1 is an outside elevation of a window struc-
ture according to the illustrated exemplary em-
bodiment of the invention.

Fig. 2 is an inside elevation.

Fig. 3 is a vertical sectional view taken along
the line 3-3 of Fig. 1.

Fig. 4 is a front elevation of the sash frame and
sash glass showing the frame spread preparatory
to receiving the glass.

Fig. 5 is a vertical sectional view taken along
the line 5-5 of Fig. 4.

Fig. 6 is an outside elevation of one of the
corner filler pieces.

Fig. 7 is a top edge view thereof.

Fig. 8 is an inner edge view.

Fig. 9 is a vertical sectional view, enlarged and
with the intermediate portion broken away, taken
along the line 9-9 of Fig. 1.

Fig. 10 is a horizontal sectional view taken
along the line 10-10 of Fig. 1.

Similar reference characters indicate corre-
sponding parts throughout the several figures of
the drawings.

Referring to the drawings the window frame
structure comprises vertical uprights 10-10 dis-
posed in spaced relation and defining the vertical
edges of the window opening, these uprights being
shown as of T-shape in cross-section with the
flange extending inwardly, but which may be of
any suitable form, an upper horizontal frame
member 11 of inverted L-shape in cross-section,
defining the upper edge of the window opening,
and a lower horizontal frame member 12, shown
as formed of sheet metal bent upon itself at its
upper edge, as at 13, the thickness of this upper
portion of the lower frame member being substan-
tially equal to the thickness of the vertical frame
members 10-10 and the upper horizontal frame
member 11. The upper frame member 11 has
secured to the underside of its outwardly project-
ing flange the base flange of an outer sheathing
14 and to the upper side base flange of an inner
sheathing 15. The lower frame member 12 is
connected by an angular sheet metal member 16
to angle frame member 17 extending horizontally
of the car and upon which the sill 18 is mounted
at the upper side and the inner sheathing 19 is
mounted at the inner side.

In each of the four corners of the window open-
ing there is secured a corner filler member 20
having a rounded inner edge 21 adapted to
merge into the straight edges of the window
opening and to conform to the corner of the
window sash, as will hereinafter more fully
appear. The filler member is provided with a
right angularly shaped outwardly projecting
flange 22 which extends beyond the edge of
the window opening and is secured to the inner
surface of the window frame structure by means
of rivets 23. The outer surface of the insert
member is flush with the outer surfaces of the
vertical and horizontal members of the window
frame structure, so that at the outer side of the
window the frame structure, with the fillers in-
corporated therein, presents a smooth, continuous
and finished surface.

The window sash comprises a frame 24, prefer-
ably formed of one strip of material bent to shape
and adapted to have its ends joined centrally

of the upper part of the frame, the cross-section of the material being such as to provide a U-shaped sash glass receiving portion, providing a channel 25 for receiving the edge of the sash glass, and an outwardly projecting flange 26, the outer surface of which is continuous with the outer surface of the channel portion, while the inner surface extends to a shoulder 27 forming the base of the channel portion. The sash glass 28 having rounded corners is provided at its edge with a U-shaped glazing strip 29, and is inserted into the frame by first spreading the sides of the frame, as shown in Fig. 4, the rounded corners of the sash frame permitting the latter to be readily inserted in this manner. The sides of the frame are then drawn together and are secured by a connecting strip 30 disposed in recesses 31 and 32 in the butted ends of the frame and secured by screws 33.

The shoulder 27 of the sash is slightly less in its dimensions than the window opening and is engaged and positioned in the window opening, as shown in Fig. 2, the flange 26 of the sash being disposed at the outer side of the window structure and engaging the outer surface of the window structure in surrounding relation to the window opening.

It will be noted that at the corners the flange of the sash structure is at the outer side of the flush surfaces of the vertical and horizontal frame members and the filler member, while the flanges 22 of the filler members are at the inner side of the frame structure, thus providing binding flanges at each side of the frame which insure an absolutely rigid structure.

A weather strip 34 of felt, rubber, or the like, is provided upon the inner surface of the flange 26 and is tightly compacted between the frame structure and the flange upon securing the sash in place by means of the screws 35, which latter are engaged through holes 36 in the frame structure and screwed into threaded sockets 37 at the inner side of the flange 26 of the sash. It will be noted that the screw heads are at the inner side structure, so that the sash may be assembled from the inner side and at the same time the outside of the window structure is entirely free of screw heads, providing a window structure of very attractive and clear design at the outside, and one which prevents removal of the sash from the outside.

In practice the inner side of the window frame will be covered with suitable covering or sheathing, but as this forms no part of the invention it has not been illustrated.

While I have shown the sash frame as made of one piece, it will be understood that if desired it may be of any other suitable structure, as for instance a two-piece frame, in which case the two pieces of the frame may be joined together along the vertical center line of the upper and lower portions, in a similar manner to the joining of the upper portion as shown in the illustrated embodiment.

I have illustrated and described a preferred and satisfactory embodiment of my invention, but it will be obvious that changes may be made therein within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions meeting the ends of said upright portions and form-

ing therewith a window opening having right angular corners, filler members secured in said corners, each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and a window sash engaged and secured in said opening comprising a frame having rounded corners corresponding in configuration to said window opening, and a sash glass carried by said frame.

2. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions defining a window opening having square corners, their outer surfaces being in flush relation, filler members secured in said corners having right angular sides adapted to engage said corners, their outer surfaces being in flush relation to the outer surfaces of said frame portions, said filler members each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and a window sash engaged and secured in said opening comprising a frame having rounded corners corresponding in configuration to said opening, said frame having a flange extending beyond the edges of said opening and engaging the outer flush surfaces of said frame portions and insert members and a sash glass carried by said frame.

3. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions defining a window opening having square corners, their outer surfaces being in flush relation, filler members secured in said corners having right angular sides adapted to engage said corners, their outer surfaces being in flush relation to the outer surfaces of said frame portions, said filler members each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and a window sash engaged and secured in said opening comprising a frame having rounded corners corresponding in configuration to said opening, said frame having a flange extending beyond the edges of said opening and engaging the outer flush surfaces of said frame portions and insert members, screws engaged through said frame portions from the inner side and screwed into said flange and a sash glass carried by said frame.

4. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions defining a window opening having square corners, their outer surfaces being in flush relation, filler members secured in said corners having right angular sides adapted to engage said corners, their outer surfaces being in flush relation to the outer surfaces of said frame portions, said filler members each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and each having a flange extending beyond said window opening and secured at the inner side of said frame portions, and a window sash engaged and secured in said opening comprising a frame having rounded corners corresponding in configuration to said opening, said frame having a flange extending beyond the edges of said opening and engaging the outer flush surfaces of said frame portions

and insert members, and a sash glass carried by said frame.

5 5. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions defining a window opening having square corners, their outer surfaces being in flush relation, filler members secured in said corners having right angular sides adapted to engage said corners, 10 their outer surfaces being in flush relation to the outer surfaces of said frame portions, said filler members each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and 15 each having a flange extending beyond said window opening and secured at the inner side of said frame portions, and a window sash engaged and secured in said opening comprising a frame having rounded corners corresponding in configuration to said opening, said frame having a flange extending beyond the edges of said opening and engaging the outer flush surfaces of said frame portions and insert members, screws engaged 20 through said frame portions from the inner side and screwed into said frame and a sash glass carried by said frame.

6. In a car window structure, a window frame comprising vertical upright frame portions and 30 horizontal upper and lower frame portions defining a window opening having square corners, their outer surfaces being in flush relation, filler members secured in said corners having right angular sides adapted to engage said corners, 35 their outer surfaces being in flush relation to the outer surfaces of said frame portions, said filler members each having a curved side extending between adjacent sides of said window opening and adapted to give to each of the corners of said window opening a rounded configuration, and a 40 window sash engaged and secured in said opening

comprising a frame having rounded corners corresponding in configuration to said opening, said frame having a flange extending beyond the edges of said opening and engaging the outer flush surfaces of said frame portions and insert members, 5 weather stripping disposed between said flange and said outer surfaces of said frame portion, screws engaged through said frame portions from the inner side and screwed into said flange and a sash glass carried by said frame. 10

7. In a car window structure, a window frame comprising vertical upright frame portions and horizontal upper and lower frame portions defining a window opening having square corners, filler members secured in said corners, each having a curved side extending between adjacent 15 sides of said window opening and adapted to give to the corners of said window opening a rounded configuration, and a window sash engaged and secured in said opening comprising a one piece 20 frame having rounded corners corresponding in configuration to said window opening, and a sash glass carried by said frame, said frame being split and separable at one side to permit bending outwardly of two opposed sides to enable said 25 sash glass to be inserted or removed.

8. In a car window corner structure, right angular frame portions meeting at their ends and forming a right angular corner opening, a filler member secured in said corner having right angular 30 sides adapted to engage said corner and having a curved side extending between the adjacent sides of said square corner opening and adapted to give to said corner opening a rounded configuration, and a window sash engaged and secured in 35 said corner opening comprising a frame having a corner corresponding in configuration to said corner opening, and a sash glass carried by said frame.

SIEGFRIED E. BLESSIN. 40