

June 8, 1937.

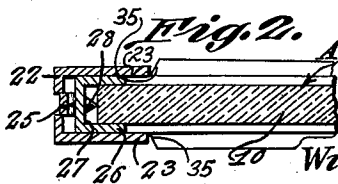
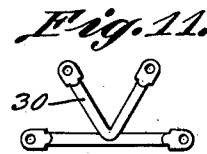
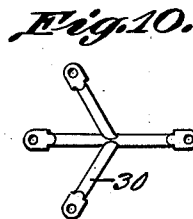
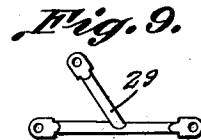
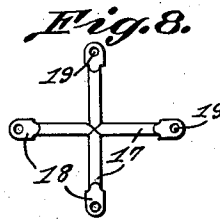
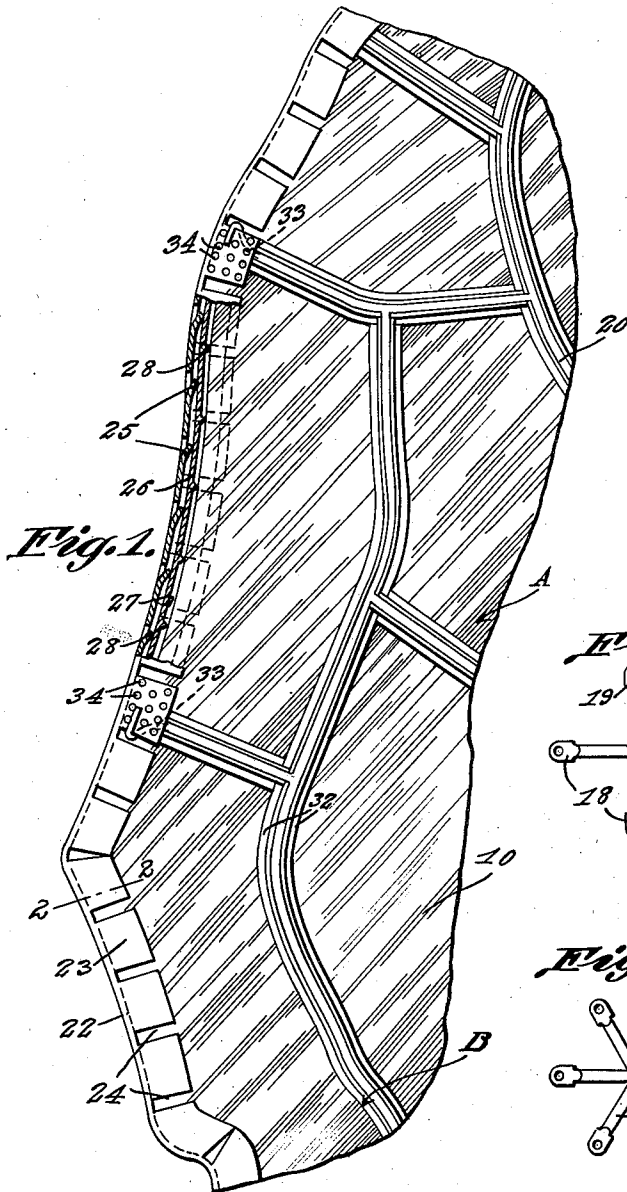
W. H. N. STEVENS

2,083,409

REENFORCED CONSTRUCTION FOR ART GLASS WINDOWS

Filed July 27, 1936

2 Sheets-Sheet 1



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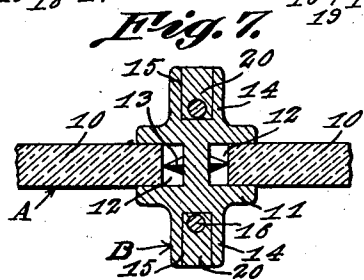
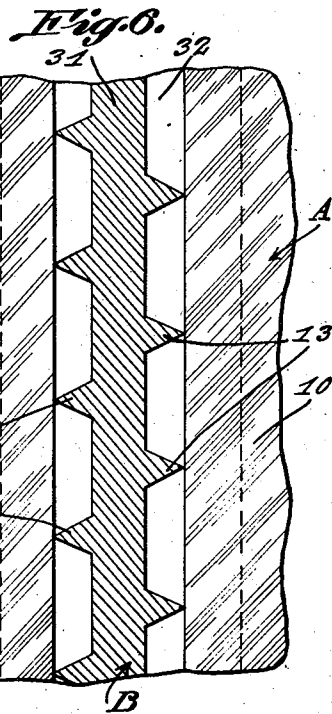
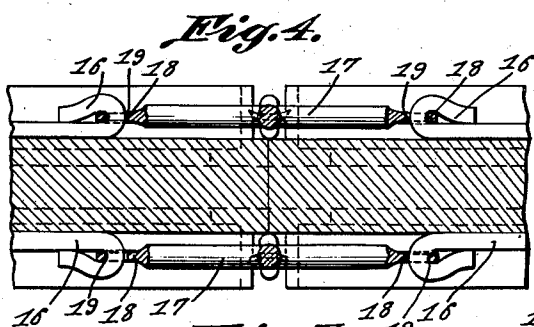
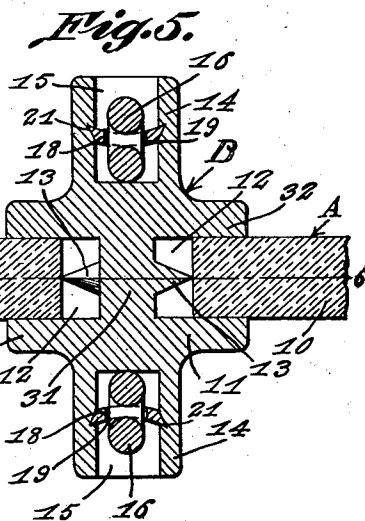
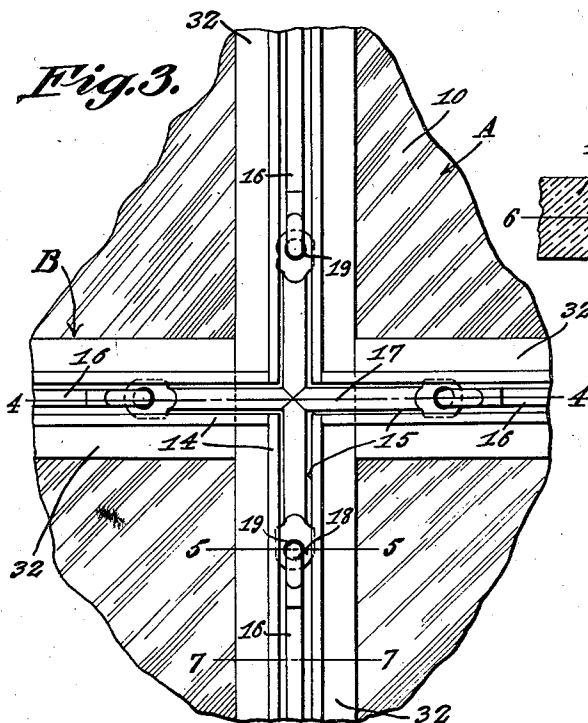
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REINFORCED CONSTRUCTION FOR ART GLASS WINDOWS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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REENFORCED CONSTRUCTION FOR ART
GLASS WINDOWS

William H. N. Stevens, Columbus, Ohio

Application July 27, 1936, Serial No. 92,877

4 Claims. (Cl. 189—77)

The invention relates to latticed or leaded glass and more especially to reinforced construction for art glass windows.

The primary object of the invention is the provision of a construction of this character, wherein a plan of structure and material are provided for reinforced arrangement of stained glass windows, wood mosaic and other designs where the design is either regular or irregular so as to avoid warping, bulging or otherwise impairing the beauty and strength of the design.

Another object of the invention is the provision of a construction of this character, wherein the reinforcement through came lead will be tied or anchored in a manner to allow for expansion and contraction in the completed window.

A further object of the invention is the provision of a construction of this character, wherein the necessity in the use of steel bars across the body of the design is entirely eliminated and at the same time strength and durability to the window will be assured at all times.

A still further object of the invention is the provision of a construction of this character, wherein each piece of came lead is fully reinforced and those pieces of the same contacting with each other are substantially tied or anchored one to the other and the window as an entirety will have the weight thereof equalized in all directions and longevity of the same is assured.

A still further object of the invention is the provision of a construction of this character, which is comparatively simple in its make-up, thoroughly reliable and effective in its operation, strong, and inexpensive to manufacture and install.

With these and other objects in view the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a fragmentary elevation partly in section showing a stained glass window constructed in accordance with the invention.

Figure 2 is a fragmentary sectional view on the line 2—2 of Figure 1.

Figure 3 is a fragmentary elevation showing the came leads in abutment with each other and the reinforcements coupled one with the other.

Figure 4 is a sectional view on the line 4—4 of Figure 3 being on enlarged scale.

Figure 5 is a sectional view on the line 5—5 of Figure 3.

Figure 6 is a sectional view on the line 6—6 of Figure 5.

Figure 7 is a sectional view on the line 7—7 of Figure 3.

Figure 8 is a detail plan view of one of the couplings for the reinforcements.

Figure 9 is a view similar to Figure 8 showing a modification.

Figures 10 and 11 are further modifications over Figures 8 and 9.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the stained glass window A as usual includes a group of colored or non-colored pieces of glass 10, some being regular in contour and others irregular so that when in matched relation will effect a special design. To join these glass pieces 10 there is required the use of came leads B precast and as is customary involves a body 11 of strip form readily applicable or bendable for shaping in accordance with the edging of the pieces of glass 10 to be grouped. The body 11 at opposite longer side edges is channeled or grooved at 12 so that the glass pieces 10 can be seated therein. The base or bottom of each channel or groove 12 has at intervals along the same a series of outwardly tapered pointed spurs or lugs 13, these having contact with the edge of the glasses next thereto and the purpose being to allow for expansion and contraction of the glass pieces 10 when grouped and joined together in such group. It is preferable to have the spurs or lugs 13 in one channel or groove staggered or alternately located to those in the other channel or groove. Built outwardly from opposite front and rear faces of the came leads B are channeled ribs or beads 14, these being co-extensive with the leads B and the channels 15 therein accommodate reinforcing wires or metal strands 16.

Cooperating with these wires or strands 16 when within the channels 15 in the ribs or beads 14 are plural arm tie couplings 17, each of its arms having a flattened end 18 provided with a hole 19 affording an eye terminal to such arm. Threaded through the holes 19 of the eye terminals 18 are the ends of the wires or strands 16 which are turned over on themselves and thus united with the tie couplings. These tie cou-

plings are located at the juncture of the leads B with each other at adjacent pieces of glass 10 and the arms of these couplings 17 lie within the channels 15 in said leads B.

5 Adapted to fill the channels 15 in the leads as created in the ribs or beads 14 is solder 20 which embeds the wires or strands 16 and also the couplings 17 within the leads B.

10 It is preferable to have the terminals 18 slightly 10 ly dished and with reversely beveled edges 21 for biting into the opposite walls of the channels 15 so that these terminals will be latched or locked within the said channels prior to the filling of the channels 15 with the solder 20 and in 15 this fashion holding such couplings in place during the soldering period.

20 About the grouped pieces of glass 10 when joined with each other by the leads B is an outer substantially U-shaped metal strip framing 22, its 20 side flanges 23 being cut into at intervals to form slots 24 opening through the free edge of said side flanges and thus allowing easy bending of the framing in conformity with the border area 25 of the design as created by the glass pieces 10 and in this fashion the framing shaping corresponding thereto. The framing at intervals between the side flanges 23 has cut and struck 25 inwardly therefrom springy tongues 25, these playing against bordering leads 26 which are 30 channeled at 27 and in the base of such channels are the spurs or lugs 28 which play against the edges adjacent thereto of the glass pieces 10 thus absorbing expansion and allowing for contraction of the window. The tongues 25 35 contacting with these leads 26 firmly hold the latticed or leaded glass interfitted with the framing 22.

40 In Figure 9 of the drawings there is shown a slight modification of the coupling which is of the three-arm type, the arms being indicated at 29.

45 In Figures 10 and 11 of the drawings there is shown modifications of the tie coupling, wherein the arms 30 are angularly disposed differently from the angular disposition of the arms of the other described tie couplings accordingly to the lay of the came leads B in association with the grouped glass pieces 10 of the window.

50 Each came lead B in the formation of its body includes an intermediate heart 31 and integral caps 32, these having the ribs or beads 14 built upon the latter while the channels 15 are of a depth and width to permit the convenient laying 55 of the wires or strands 16 therein and the embedding of these in the solder 20 which is poured into such channels and is a final step subsequent to the anchoring or coupling of such wires or strands.

60 The wires or strands 33 in the leads meeting the framing 22 are carried through the slots 24 and hook with the side flanges of said framing. At intervals the side flanges are formed with perforations 34, these confronting the leads next to said flanges 23 and are adapted to accom- 65 modate solder for a unity of the framing with the said leads or the solder 20 present in the channels 15 in said leads B. As shown in Figure 2 of the drawings the came B has its body 11 of

strip form suitably cut away next to the bordering lead 26 at opposite sides of the glass A so that the strip framing 22 will overlap the came and occupy the cut-away portions at 35 through the side flanges 23 of said framing.

What is claimed is:

1. In reenforced construction for art glass windows, came for receiving the glass, caps formed on said came, one of said caps being channeled longitudinally, a reenforcement within said channel, solder filling the said channel and embedding the reenforcement, tie couplings joined with the ends of reenforcements in respective channels within the came and concealed by said solder, and outwardly tapered projections formed 15 at intervals on the came for contact with edges adjacent thereto of the glass.

2. In reenforced construction for art glass windows, came for receiving the glass, caps formed on said came, one of said caps being 20 channeled longitudinally, a reenforcement within said channel, solder filling the said channel and embedding the reenforcement, tie couplings joined with the ends of reenforcements in respective channels within the came and concealed 25 by said solder, outwardly tapered projections formed at intervals on the came for contact with edges adjacent thereto of the glass, and side flanged framing about the glass and having slots in the side flanges for the shaping of the framing 30 with said glass.

3. In reenforced construction for art glass windows, came for receiving the glass, caps formed on said came, one of said caps being 35 channeled longitudinally, a reenforcement within said channel, solder filling the said channel and embedding the reenforcement, tie couplings joined with the ends of reenforcements in respective channels within the came and concealed 40 by said solder, outwardly tapered projections formed at intervals on the came for contact with edges adjacent thereto of the glass, side flanged framing about the glass and having slots in the side flanges for the shaping of the framing with said glass, and springy tongues cut 45 and bent from the framing and coacting with the glass for firm holding of the latter within the framing.

4. In reenforced construction for art glass windows, came for receiving the glass, caps formed on said came, one of said caps being 50 channeled longitudinally, a reenforcement within said channel, solder filling the said channel and embedding the reenforcement, tie couplings joined with the ends of reenforcements in 55 respective channels within the came and concealed by said solder, outwardly tapered projections formed at intervals on the came for contact with edges adjacent thereto of the glass, side flanged framing about the glass and having slots 60 in the side flanges for the shaping of the framing with said glass, springy tongues cut and bent from the framing and coacting with the glass for firm holding of the latter within the framing, and reenforcements coacting with the first- 65 mentioned reenforcements and made fast to the framing.

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