Aug. 26, 1958 O. HAHN 2,848,761

WINDOW FRAME UNIT

Filed Aug. 17, 1953

Fig. 1

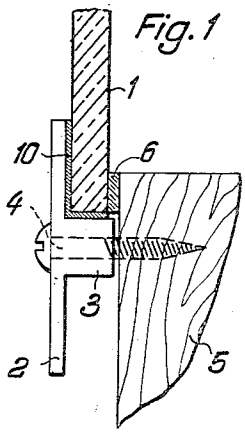


Fig. 2

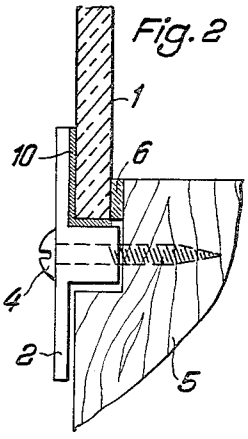


Fig. 3

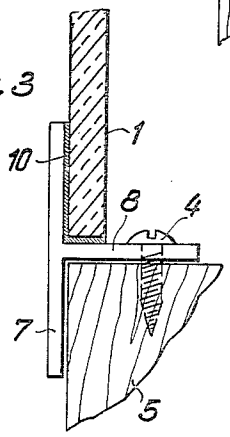


Fig. 4

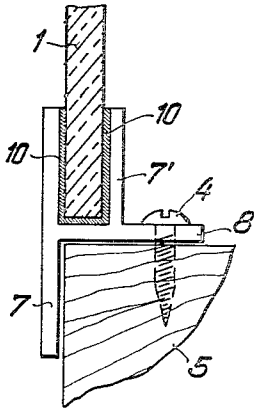
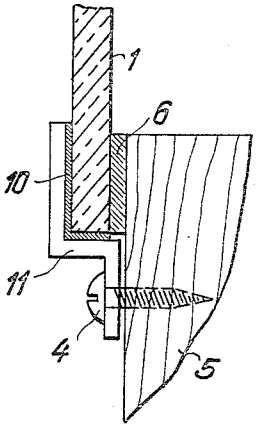


Fig. 5



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WINDOW FRAME UNIT

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1 Claim. (Cl. 20—56.4)

The present invention relates to improvements in windows, and more particularly store windows, and the manner of framing the same.

The customary manner of constructing windows, and especially store windows, consists of first mounting a frame in the particular window opening and then cutting the glass according to the size of the frame, transporting it from the place of manufacture or where it has been cut to the respective building, and there inserting it into the frame and securing it therein.

This customary manner has considerable disadvantages. The frames for medium and large size store windows are generally made of individual metal profiles and are assembled at the very place where they are to be installed. The cost of labor of the mechanics needed for doing this work is very high. Then, the glass intended to fit into the frame is brought from the manufacturer to the place of installation. In transporting it, it may easily break, and the sharp edges and corners thereof are a source of danger to all those handling it. Also, in assembling large size windows at the building where they are to be installed, inaccuracies in measurement can hardly be avoided, and either the glasses or the frames often have to be recut or otherwise adjusted to fit properly together.

It is the primary object of the present invention to overcome the above mentioned disadvantages and to produce an assembly, especially for medium and large size store windows, in which the glass plate is combined with the frame so as to form a single integral unit. Thus, the window is not assembled at the building under construction but it is merely necessary to provide openings of suitable dimensions in its outer walls and to insert the window unit therein. The expensive labor of the mechanics usually required for constructing and assembling the frame at the building under construction, of refitting the frame or recutting the glass so as to obtain a proper fit, and of then and there securing it in the frame is thus avoided. Considerably less and a much cheaper type of labor is required for building the complete units at the place of manufacture, they can be handled, transported to the building under construction, and there installed much more easily and cheaply and at considerably less danger of breakage and without the usual danger involved in handling them.

Further objects, features, and advantages of the present invention will appear from the following description thereof and the accompanying drawings showing various window units in partial cross section, and in which—

Fig. 1 is a partial cross section through a window frame unit according to the invention;

Fig. 2 shows a window unit similar to that shown in Fig. 1, but mounted in a different manner;

Fig. 3 shows another embodiment with a frame of T-iron.

Fig. 4 shows a modification similar to Fig. 3, in which, however, the frame is provided with an additional glass encompassing flange; and

Fig. 5 shows still another modification of the invention.

In Fig. 1, the glass plate 1 is mounted within a frame 2 which preferably consists of iron or other metal, or a plastic material. It completely surrounds the glass plate 1 and is securely sealed or bonded thereto by a layer 10 of adhesive cement, glue, or the like. Various types of adhesives, and especially cements of plastic material, may be used for thus bonding the glass together with the frame. Also, different bonding methods may be used, as long as the primary object is obtained of securing the frame and glass so as to be practically inseparable and to form a single unit.

Thus, the glass plate is supplied to the place of installation with its sharp edges and corners safely covered by the frame 2. As shown in Fig. 1, this frame may be provided with a web 3 with holes therein through which screws 4 may be inserted to mount the frame 2 and glass plate 1 on a simple wooden liner 5 which has been fitted into the window opening. A packing or cushion 6, for example of rubber, sponge rubber, felt, or the like, is preferably inserted between the frame or glass plate and the wooden liner 5.

The embodiment of the invention shown in Fig. 2 is, as far as the novel article of manufacture of a glass and frame unit is concerned, identical with that shown in Fig. 1, the only difference between these two forms being that the wooden liner 5, in which the frame unit is to be mounted, is of somewhat different shape insofar as it is provided with a groove along its inner edge which encompasses the web 3.

The frame 7, shown in Fig. 3, consists of ordinary T-shaped profile iron, the web 8 of which is secured by a screw 4 to the inner wall of the wooden liner 5.

The frame 7 shown in Fig. 4 is substantially similar to that shown in Fig. 3, except that an additional web 7' is provided thereon which extends parallel to the web or cross bar 7 so as to form therewith a U-shaped opening which encloses the glass plate 1 and is bonded thereto by an adhesive 10 on all sides. However, in place of the adhesive or cement, an elastic lining, for example, of rubber, may be inserted between the glass plate and the arms 7 and 7' of the frame.

In the embodiment of the invention shown in Fig. 5, the frame 11 consists of a Z-shaped profile, one arm of which surrounds the outer and lower edges of the glass plate 1 to which it is bonded by an adhesive 10, while the other arm forms a flange along the entire frame which is secured to the wooden liner 5 in the window opening by means of screws 4. A suitable packing or cushion 6 is preferably placed between the glass plate 1 and the wooden liner 5.

While I have above described what I regard to be my most preferred embodiment of the present invention, I do not wish to be limited thereto, except as defined in the appended claims. For example, instead of bonding the glass plate to the frame by some kind of adhesive cement, any other kind of means may be used as long as the frame and glass plate are thereby securely combined so as to form a single unitary article of manufacture. This may be done, for example, by placing two metal ledges on either side of the edge portion of the glass plate and by bolting them together so as to grip the glass firmly between them. Just as in the embodiments previously described, any suitable packing or cushioning materials may be placed between such ledges and the glass, or they may be bonded together by an adhesive cement.

The above description and the drawings indicate that the invention in its broadest scope consists of a com-

bination of a glass window with its frame or frame parts so as to form a single commercial unit. Even though cementing the metallic ledges or profiles to the glass plates has been found to be the most practical manner of securing these parts together, a solid connection may also be formed by other means, for example, by bolts, clamps, or by completely enclosing the plates within a single unitary frame. The frame itself may be decorative and provided with any kind of ornamentation, and it may also consist of wood, plastic, or similar material.

Even though ordinary silicate glass is generally intended to be used, an annealed glass or safely glass, or a sythetic glasslike material or plastic may also be used. Insofar as packing or insulation between the metallic frame and the glass plate may be required, this may consist of putty, rubber, glass cement, or similar material. Irrespective of the type of construction or material selected, the invention consists in solidly enclosing a glass plate within a frame so as to form a single unit which may be bought and sold either in certain standard sizes or custom built at the place of manufacture so as to fit window openings of unusual sizes. This is of particular advantage for the design and construction of show windows. They can be built as well as installed at considerably less expense than the type previously used and at a great saving of labor and material, as well as greatly reduced danger of breakage.

In the construction of the building it is only necessary to provide window openings of a predetermined size, which may or may not be provided with a suitable wooden liner and need not be built with any particular accuracy as long as the window-frame unit may be either fitted therein or secured to the outer surface thereof.

I claim:

As a new article of manufacture, a pre-assembled glass window unit for insertion in an irregular wall opening, consisting of a single glass plate, a T-shaped frame member to which said glass is fixedly bonded, said T-shaped frame member being formed with a head which is generally parallel with the plane of said glass, said head consisting of a pair of legs disposed in the same plane, a first leg extending inwardly of said frame and a second leg extending in an opposite direction to said first leg and outwardly of said frame, a third leg secured centrally and perpendicular to said first and second legs, said glass plate being fixedly bonded by means of a layer of adhesive at its peripheral portion to said inwardly extending first leg and to said third leg, said second leg being of substantial width, for overlapping irregular edges of a wall opening, means for detachably securing the pre-assembled glass window unit in a wall opening, whereby the entire glass window unit may be removed when damaged and replaced by a pre-assembled unit of similar construction.

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