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2,626,434

WINDOW CONSTRUCTION

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Fig. 1

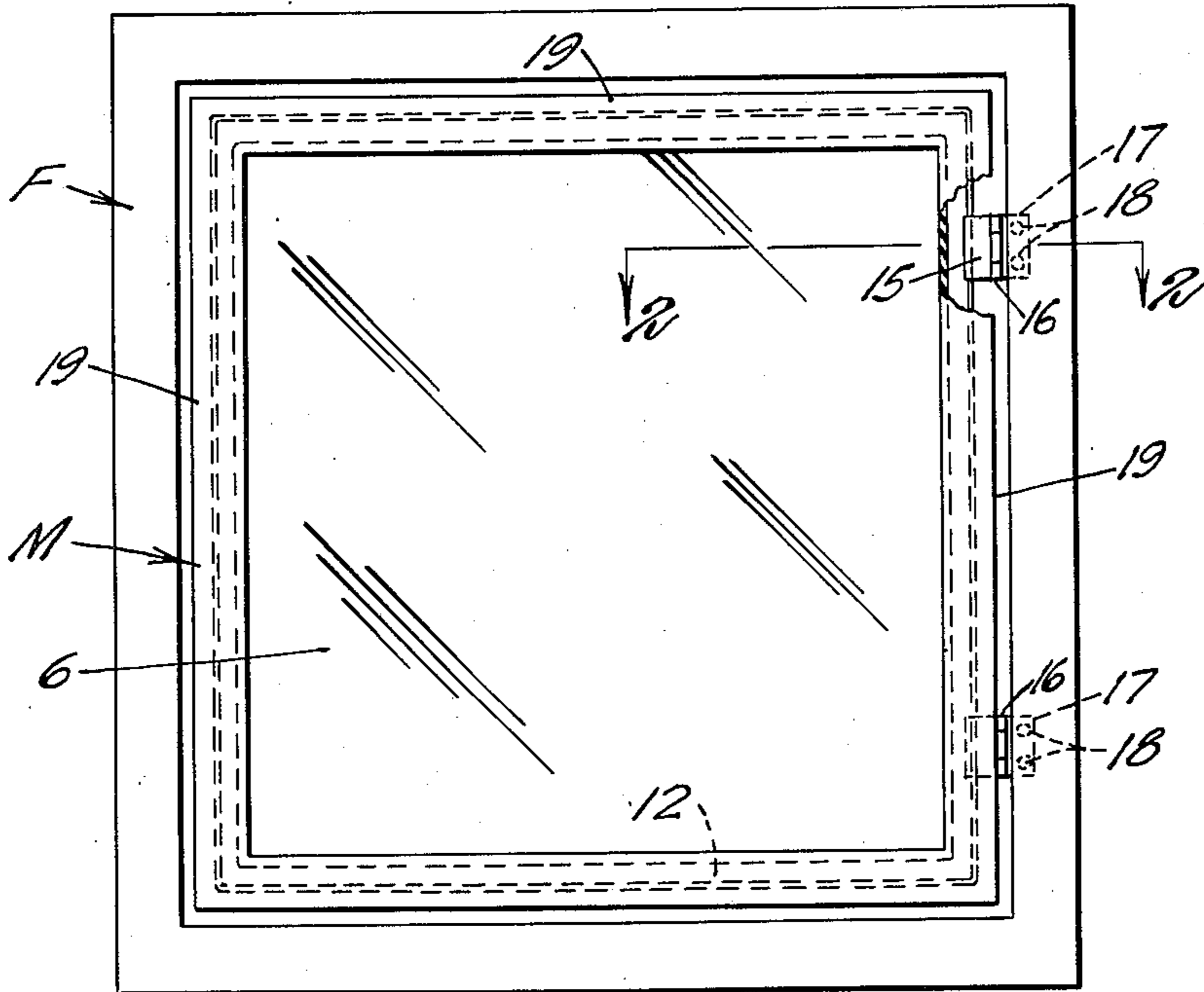


Fig. 2

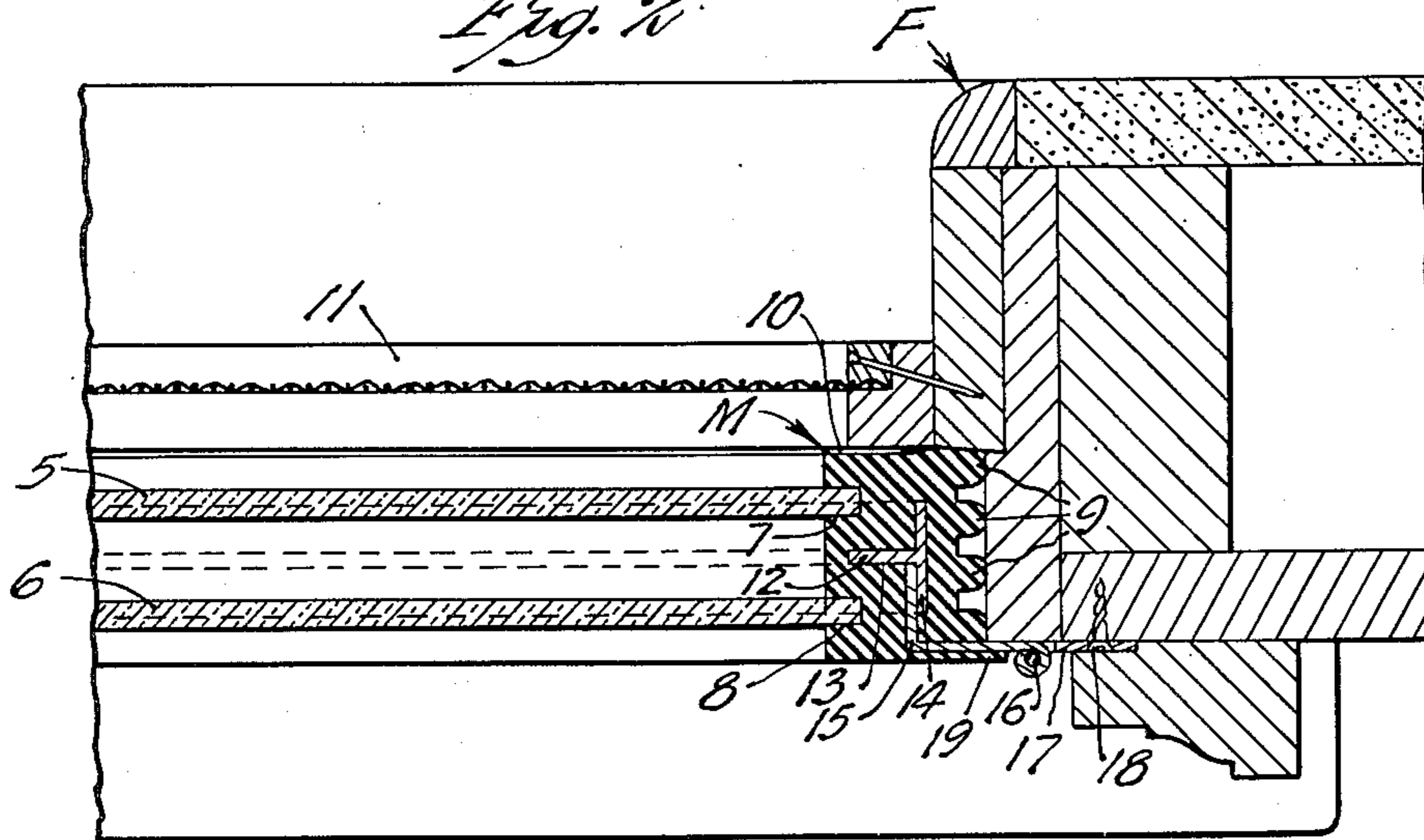
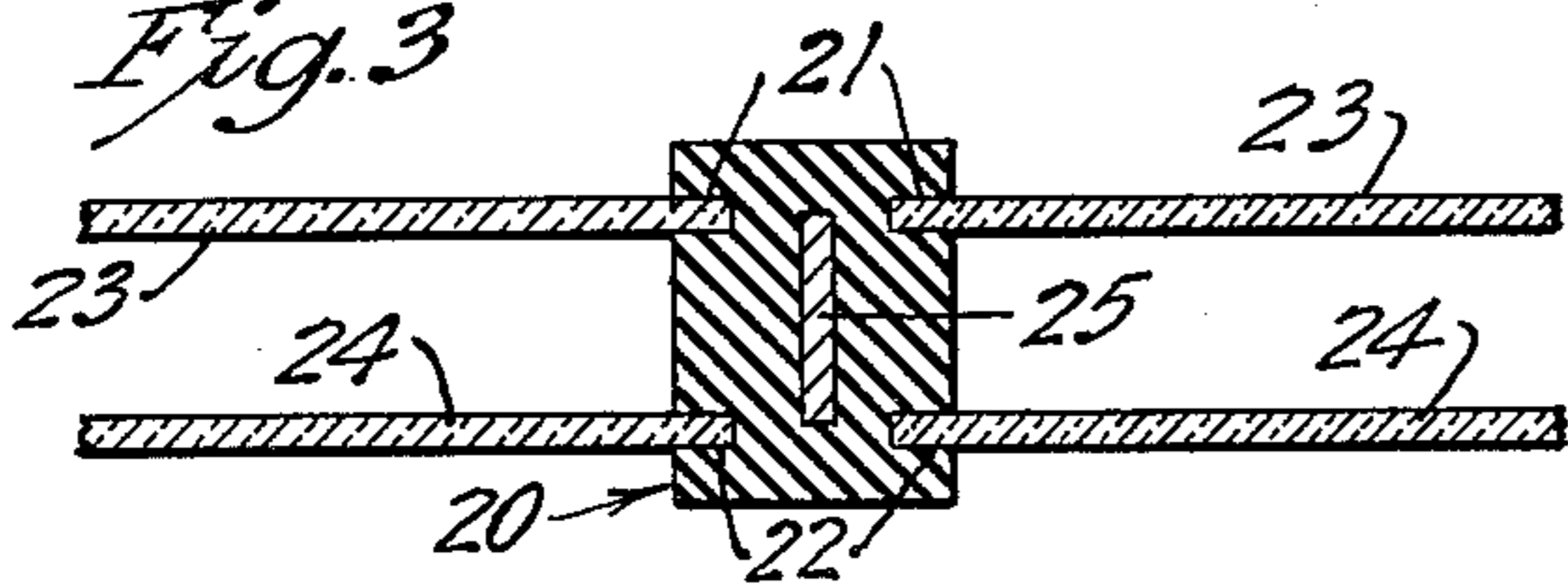


Fig. 3



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WINDOW CONSTRUCTION

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4 Claims. (Cl. 20—53)

1

This invention relates to window construction for buildings and similar structures.

A general object of this invention is to provide a novel and improved window construction which will effectively reduce to a very minimum the amount of cold air which will pass between the window mounting and its frame.

A more specific object is to provide a window construction having positive means both on its outer periphery and also extending laterally and outwardly from its outside surface for positively precluding cold air from passing between the frame and the window mounting.

Another object is to provide a window construction which will permit glass storm panels to be mounted and caused to remain therein throughout the entire year.

Another object is to provide a window construction with a resilient mounting having an interior reinforcing core with means carried thereon for securing the window to a window frame.

A further object is to provide a window construction which will compensate for the minor irregularities of the window frame to which it is secured.

A still further object is to provide a novel and improved window construction which is simple and cheap to manufacture and install.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to similar parts throughout the several views, and, in which:

Fig. 1 is a front elevational view of one embodiment of my invention with a portion of the lip broken away to show the hinge strap;

Fig. 2 is a horizontal sectional view along line 2—2 of Fig. 1;

Fig. 3 is a horizontal sectional view of one of the intermediate mountings utilized in connection with my invention when it is desired to substitute a number of narrower glass panels for a relatively large single panel.

One embodiment of my invention as shown in Figs. 1-3 includes a mounting indicated generally as M which is preferably of a generally rectangular cross-sectional shape as best shown in Fig. 2. This mounting M is made of a resilient and compressible material, preferably of rubber as shown in the drawings. As shown, the mounting M is of a shape and dimensions to circumvent the periphery of a pair of spaced rectangular glass panels 5 and 6 and is provided at one surface

2

with a pair of inwardly facing channels 7 and 8 which are adapted for resiliently, sealingly receiving the edge portions of said glass panels therein. The outer panel 6 serves as what is generally known as a storm window and the inner panel 5 serves as what is generally known as the ordinary window. The panels 5 and 6 are mounted within the channels 7 and 8 respectively as shown in Fig. 2 so that the mounting M extends completely around their periphery. Extending outwardly from the opposing or outer peripheral surface of the mounting M are a plurality of longitudinally extending projecting and compressible ribs 9 which constitute a sealing means. These ribs 9 extend outwardly sufficiently so as to tightly engage or abut against the inner periphery of the window frame F to which the mounting is to be secured and to be compressed thereby when the window is in closed position. The inner side surface of the mounting M indicated as 10 extends inwardly sufficiently so as to abut against the frame F and the window screen 11 when the window is in closed position and to be compressed thereby. As shown, the window screen 11 is mounted on the inner side of the entire mounting M and secured to the window frame F.

Extending longitudinally throughout and completely embedded in the entire mounting M between the opposing surfaces is a T-shaped reinforcing core 12 which made of metal or some similar rigid material. The ordinary vertical or web portion 13 of the T extends inwardly while the ordinary horizontal portion or flange portions 14 of the T extends at right angles to the glass panels with edge portions of the flange portions disposed behind and backing up at least portions of the channels and ribs. Secured to one of the outwardly extending flange portions of the ordinary horizontal portion 14 of the T member 12 is a hinge strap indicated generally as 15 a substantial portion of which is embedded or encased in the mounting. As shown, this hinge strap 15 extends first outwardly and then is bent at substantially right angles to extend laterally beyond the mounting M. The outer end of the hinge strap 15 is reversed upon itself to form an eye 16 which is adapted to co-operate with an anchor plate or hinge 17 so as to hingedly support the mounting. This anchor plate or hinge 17 is secured by a plurality of screws 18 in the conventional manner.

Extending laterally from the outside surface of the mounting M is a flap-like lip member 19 which is adapted to abut against the window frame F

3

around the entire periphery of the mounting M. As shown, this lip also is preferably of an elastic and resilient material.

Fig. 3 shows a horizontal sectional view of a member which is sometimes used in conjunction with my invention. When utilized this member 20 extends vertically between the upper and lower sides of the mounting M. As shown, it is of a generally rectangular cross-sectional shape and has two pairs of diametrically opposed and outwardly facing channels 21 and 22 which are adapted for receiving the ordinary panes 23 and the storm panels 24, respectively. A reinforcing core 25 extends vertically throughout the member 20 and is welded or similarly secured to the ordinary vertical portion 13 of the T.

In operation, the glass panels 5 and 6 are inserted into the channels 7 and 8 in a snug fit and the mounting M is then ready to be secured to the frame F'. This is accomplished in the conventional manner by placing the mounting M into proper position and inserting a pin so as to extend through the eye 16 and the anchor plate 17. Thereafter the window can be opened or closed by a crank (not shown) in the conventional manner. The screen 11 may be removed, of course, during the winter months.

When the entire structure is moved to closed position the inside surface 10 of the mounting M abuts against the frame F' and is compressed thereby. At the same time the outwardly extending ribs 9 also abut against the frame F' and are compressed as shown in Fig. 2. The laterally extending lip 19 abuts against the frame F' around the entire periphery of the mounting M when the window is moved to closed position. It can be readily seen that the inner surface 10 and the ribs 9 will effectively reduce the amount of cold air which is permitted to pass between the mounting M and the window frame F'. This is a serious problem in all window construction, since the sole purpose of storm windows is to provide as efficient heat insulation as possible. Due to the fact that the ribs 9 are compressible they will yield substantially when the window is closed and yet at all times maintain a perfect seal between the mounting M and the window frame F'. These ribs 9 due to their compressible nature also compensate the minor irregularities in the dimensions of the window frame in which and to which the mounting is to be secured. The laterally extending lip 19 is provided to insure an even more perfect seal against the entrance of cold air between the mounting M and the window frame F'. Due to its elastic nature it at all times presses snugly against the edge of the window frame F'. It can be readily seen that if any cold air is to gain entrance into the interior of the building it must follow a very difficult and tortuous route in order to pass the lip 19, the ribs 9 and the compressed inner surface 10 of the mounting M.

The T-shaped member 12 which acts as a core for the mounting M provides the necessary rigidity for the mounting. It is designed to maintain the mounting M at all times in its original and desired shape and at the same time to provide a means for securing the mounting to the window frame F' by acting as an anchor for the hinge strap 15. It should be noted that this reinforcing member 12 is disposed laterally of the glass panels 5 and 6 so as to insure that there will be no interference by the reinforcing member with the installation of the panes 5 and 6. Also, it has

4

been proved that this shape of reinforcing member provides a maximum of rigidity with a minimum of material.

The structure shown in Fig. 3 is adapted for utilization in the installation of windows in large openings. Many people prefer to have a plurality of smaller windows in contrast to one large plate type of window. When it is desired to make such an installation one or more of the members 20 may be installed at the desired points between the opposite sides of the mounting M.

It can be readily seen that through the utilization of a mounting of the type shown in the drawings it will be possible for the owner of the building to permit his storm windows to remain in place throughout the entire year. At the same time he will have the benefit of a mounting which is simple and cheap to manufacture and install. This mounting will effectively reduce to a very minimum the amount of cold air which will be permitted to pass between the window and its frame. Inasmuch as it is adapted to compensate for the minor irregularities of the window frame and to abut against the window frame while under compression and because of its resilient and compressible nature this type of mounting effectively eliminates rattling and the accompanying noise ordinarily found in the conventional type of mounting for the ordinary window pane and the storm panes. The air space between the panes 5 and 6 will provide effective insulation against the transfer of heat therethrough.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What I claim is:

1. A window construction comprising a resilient mounting having one surface thereof provided with first means for resiliently, sealingly holding the edge portion of a glass panel, and an opposing surface provided with second sealing means for tight engagement with the inner periphery of the window frame, a reinforcing core of T-shaped cross-section extending longitudinally of and completely embedded in said mounting between said opposing surfaces and having the flange portion backing-up at least portions of both said first and second means, at least one hinge strap having a substantial portion thereof embedded in said mounting and secured to one of the flanges of said core, with the outer free end portion of the hinge strap having means for hingedly supporting the mounting on the window frame.

2. A window construction comprising a resilient mounting having one surface thereof provided with at least one channel for snugly receiving the edge portion of a glass panel, and an opposing surface provided with at least one outwardly projecting compressible rib extending longitudinally of the mounting for sealing engagement with the inner periphery of a window frame, a reinforcing core of T-shaped cross-section extending longitudinally of and embedded in said mounting between the channeled and ribbed surfaces with at least an edge portion of the flanges disposed behind each channel, a hinge strap with a substantial portion thereof encased in said mounting and with the encased end thereof attached to one of the flanges of said core, and the opposing end portion of said hinge strap having means for hingedly supporting the mounting on the window frame.

3. A window construction comprising a resili-

5

ent mounting of substantially rectangular cross-section having one surface thereof provided with a pair of channels for snugly receiving a pair of glass panels, and having an opposing surface provided with a plurality of outwardly projecting compressible ribs extending longitudinally of the mounting for sealing engagement with the inner periphery of a window frame, the inside surface of the mounting having a portion thereof adjacent one of said ribs adapted to sealingly engage a cooperating portion of the frame when the mounting is in place, a T-shaped reinforcing core extending longitudinally of and embedded in said mounting between the channeled and ribbed surfaces with the flange portions of said core substantially parallel to the channeled and ribbed surfaces with edge portions of the flanges disposed behind at least portions of the channels, and the web portion of the core extending inwardly substantially midway between the channels, a hinge strap with a substantial portion thereof encased in said mounting and with the encased end thereof attached to one of the flanges of said core, an opposing end portion of said hinge strap having an eye formed therein adapted to receive a pin for hinged support on an anchor plate secured to the frame.

4. A window construction comprising a resilient mounting having one surface thereof provided with first means for resiliently, sealingly

6

holding the edge portion of a glass panel, and an opposing surface provided with second sealing means for tight engagement with the inner periphery of the window frame, a reinforcing core of T-shaped cross-section extending longitudinally of and completely embedded in said mounting between said opposing surfaces and having the flange portion backing-up at least portions of both said first and second means, at least one hinge strap having a substantial portion thereof embedded in said mounting and secured to the flange of said core, with the outer free end portion of the hinge strap having means for hinged support on the window frame, and said mounting having a longitudinally extending flap-like lip member adapted to sealingly overlie the hinge plate and window frame.

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