

March 6, 1951

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2,544,512

WINDOW SCREEN FRAME

Filed Aug. 23, 1946

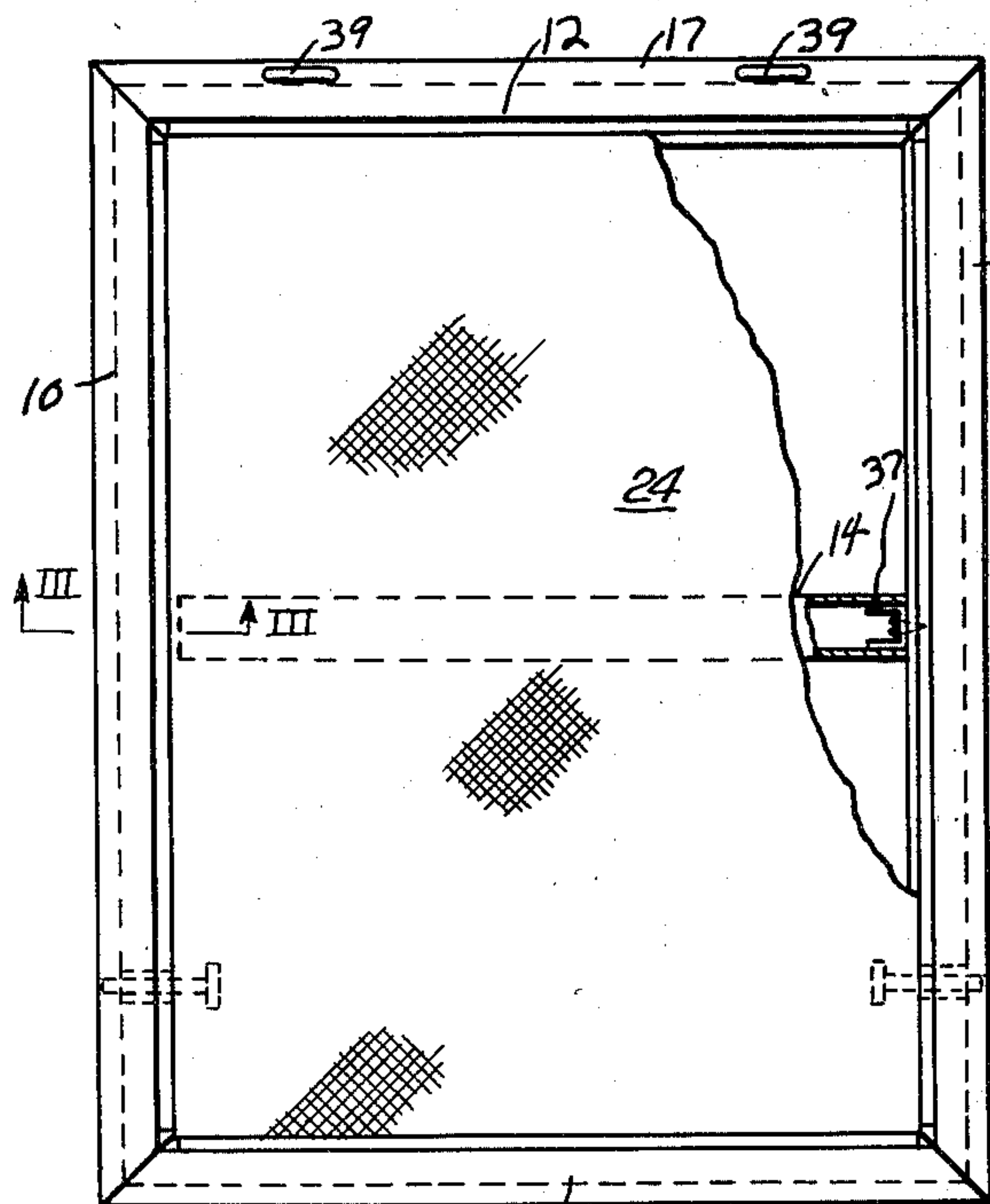


Fig 1

Fig 2

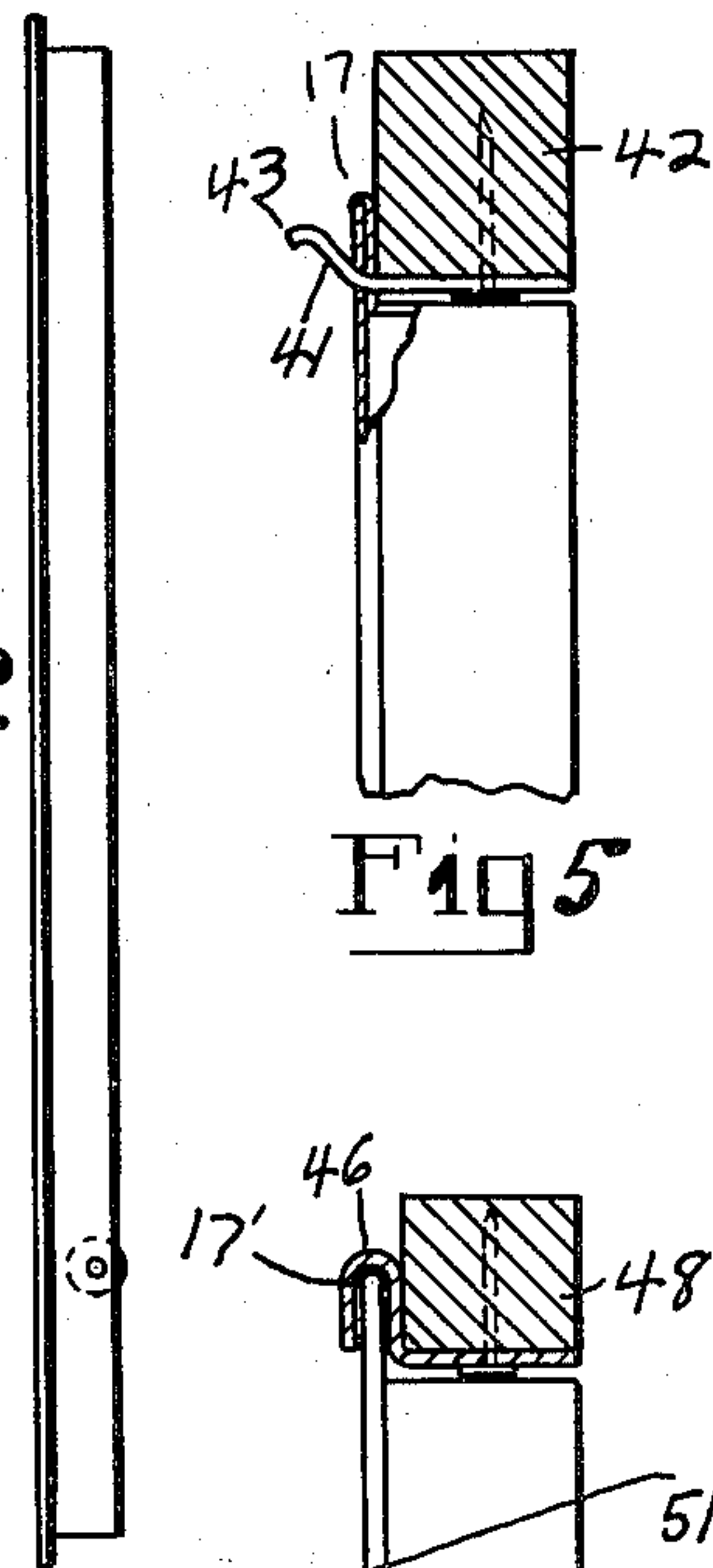


Fig 5

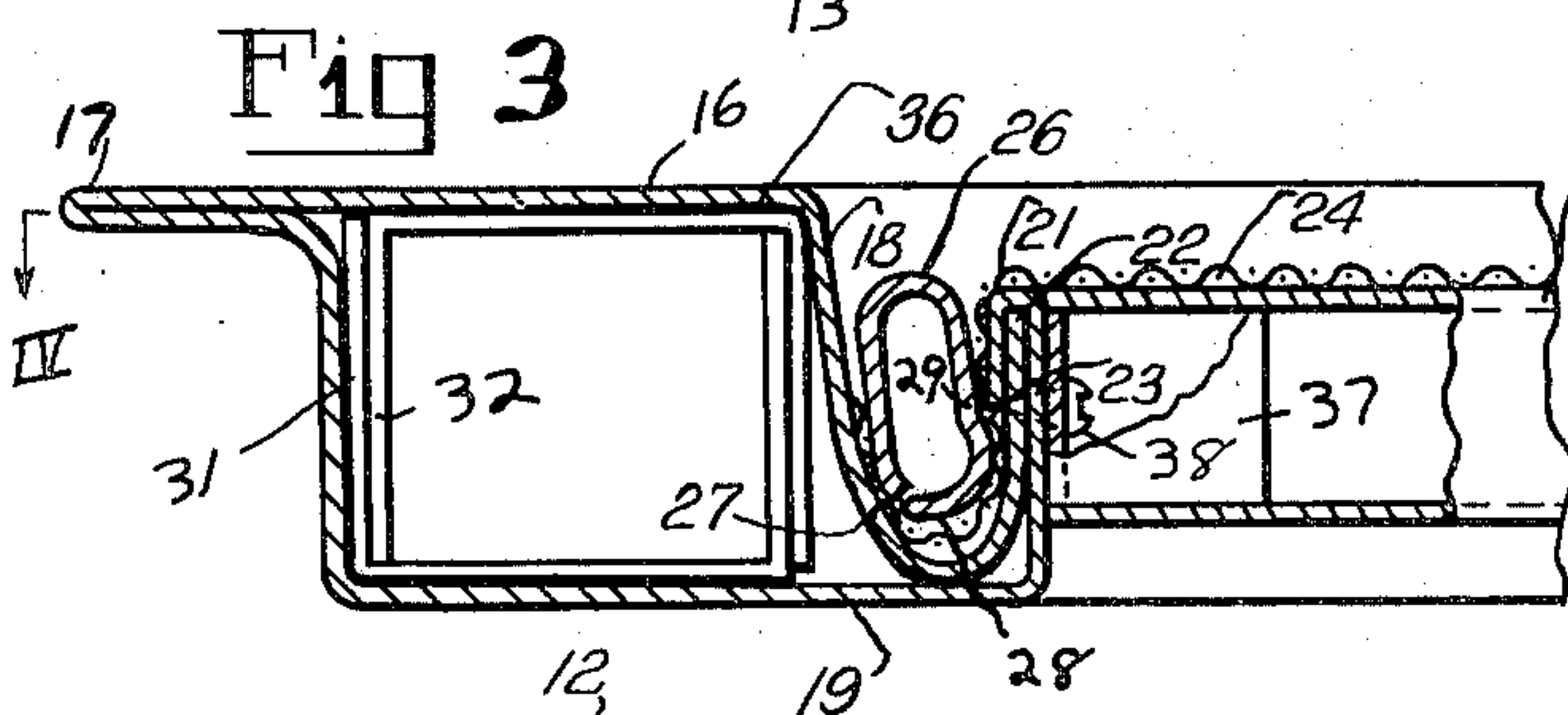


Fig 3

Fig 6

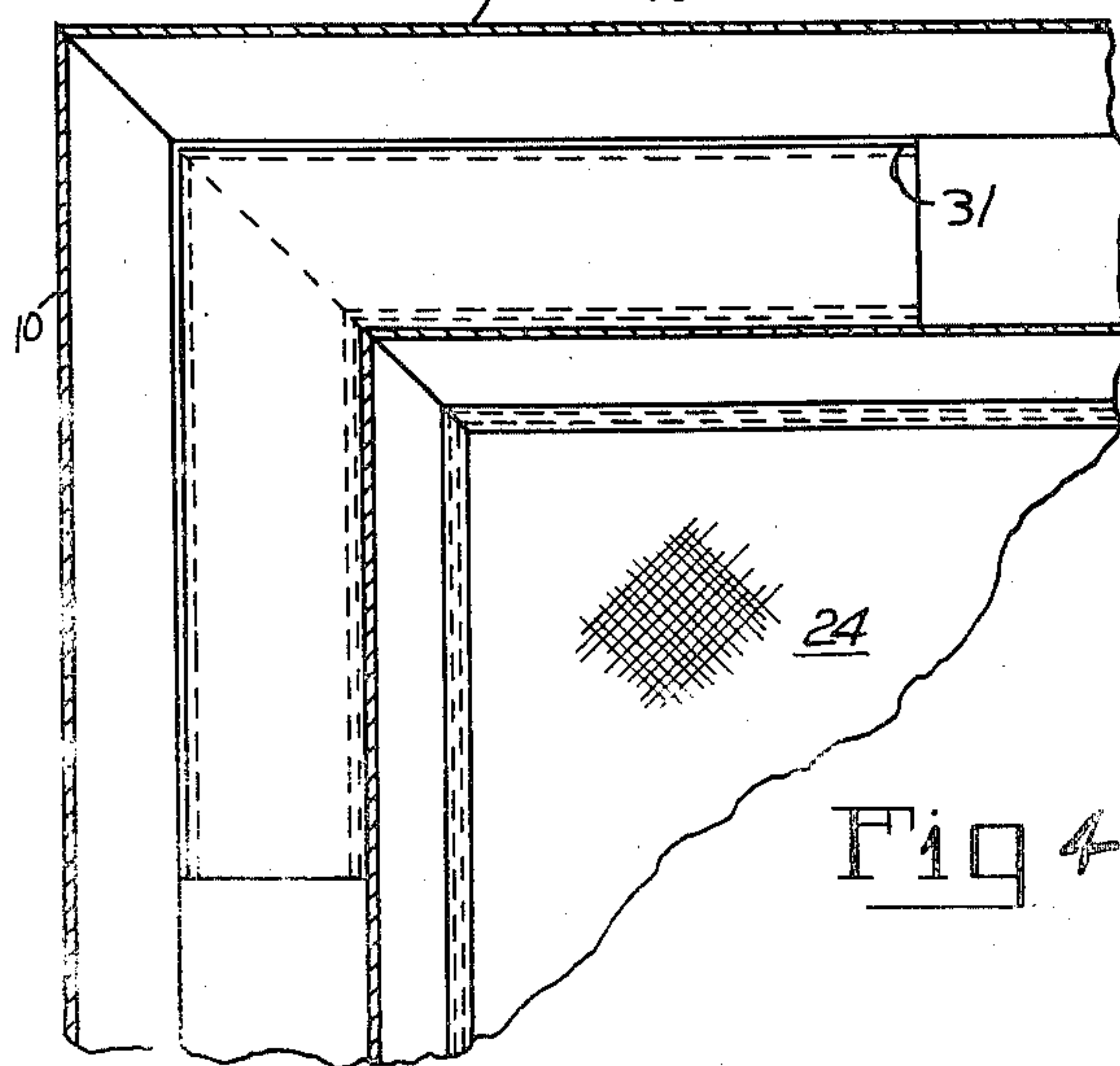
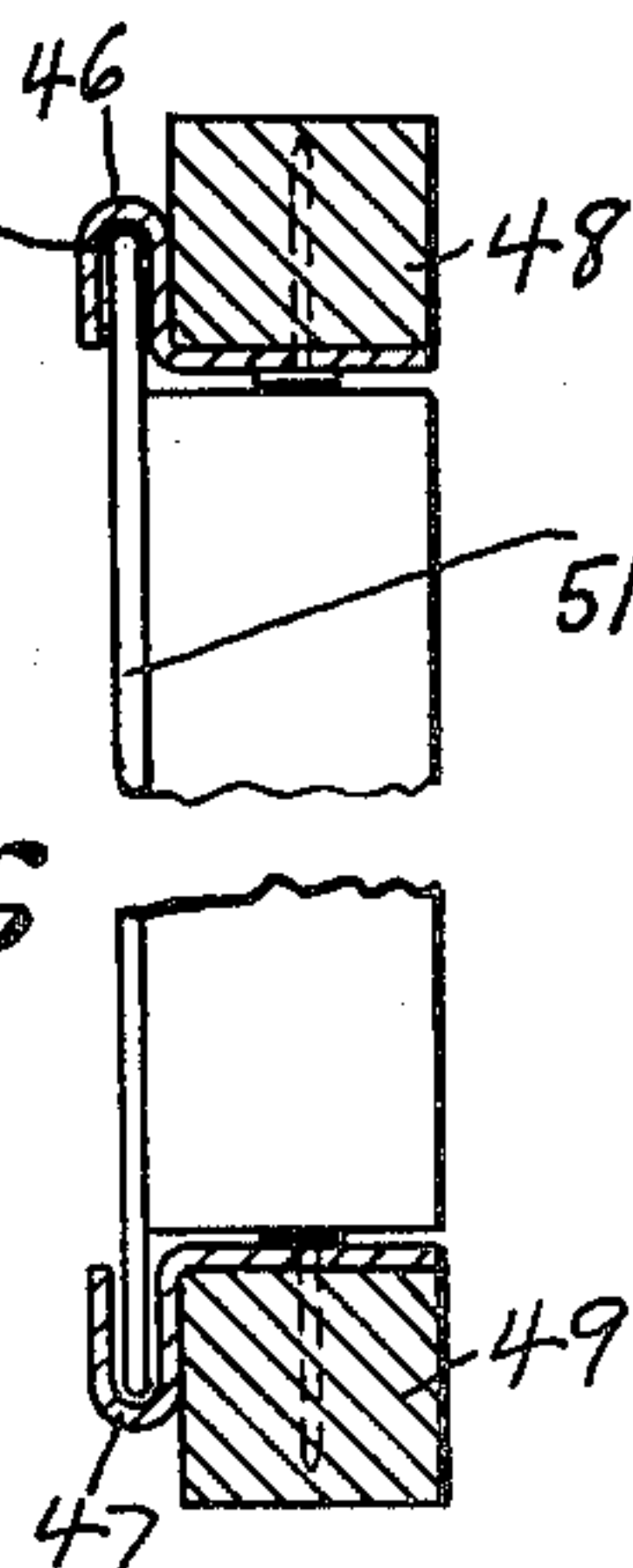


Fig 4

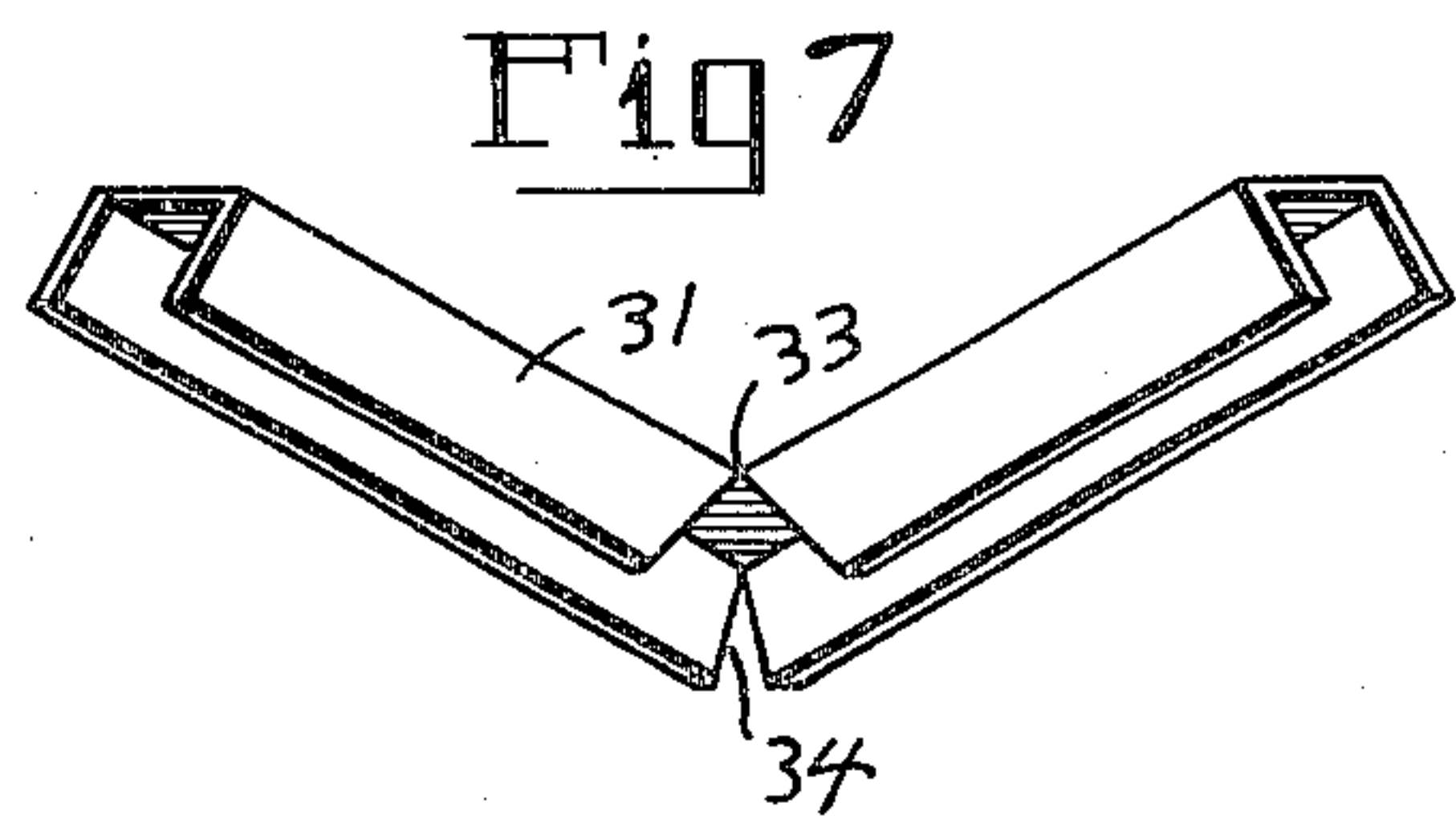


Fig 7

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2,544,512

WINDOW SCREEN FRAME

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Application August 23, 1946, Serial No. 692,408

1 Claim. (Cl. 160—381)

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This invention relates to metal window screen frames and has for its object the provision of an article of the character designated which shall be truly rectangular in shape, extremely sturdy of construction, and which shall be simple and easy of manufacture.

A further object of my invention is to provide a metal window screen frame which shall include readily applied means for securely locking the screen wire in place.

A more specific object of my invention is to provide a metal window screen frame in which the corners are held together by means of splines which are rectangular in cross section and which fit into hollow rectangular frame pieces and which hold the corners firmly and accurately,

Briefly, my invention comprises a metal window screen frame comprising side and end members, each of which is made from a single piece of metal, preferably, cold rolled aluminum or an alloy thereof, the frame members being rolled with a rectangular section, with a flange extending outwardly to provide a seal for the frame against a screen stop and with a locking groove extending along the inward side of the frame, the groove having a double reinforced metal wall with a shoulder along one side. A resilient spline is driven downwardly into the groove with the screen wire and thus stretches it and holds it firmly in place.

These and other features of my invention are illustrated in the accompanying drawing, forming a part of this application, in which

Fig. 1 is an elevational view with parts broken away and parts in section;

Fig. 2 is an edge view thereof;

Fig. 3 is a detail sectional view taken along the line III—III of Fig. 1 and drawn to a larger scale;

Fig. 4 is a detail sectional plan view taken along the line IV—IV of Fig. 3;

Fig. 5 is a detail sectional view showing one method of hanging the screen;

Fig. 6 is a detail sectional view showing another method of hanging the screen; and

Fig. 7 is a detail perspective view of one of the corner connecting splines.

Referring now to the drawings for a better understanding of my invention, my improved window screen frame comprises side members 10 and 11 and end members 12 and 13. There may also be a middle brace 14 extending across the frame between the ends thereof, as shown in Fig. 1.

The side and end members are shown in detail in Figs. 3 and 4. Each is formed by roll-

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ing from a single sheet of metal, preferably aluminum or an alloy thereof. As shown particularly in Fig. 3, the metal is rolled to provide a generally rectangular body portion 16 with the strip doubled against itself to provide an outer overhanging flange 17. Along the inward side, the metal is turned downwardly, as viewed in Fig. 3, to provide a U shaped locking groove 18. The lower side of the strip, as viewed in Fig. 3, extends outwardly at 19 and thence upwardly to be bent back at 21 upon the upper edge 22 of the other side of the strip, thereby providing a double reinforced inner wall for the locking groove 18 with a locking shoulder 23 therein.

The screen wire is shown at 24 and is locked in place by a resilient tubular spline 26, also rolled from a single strip, with the edge 27 thereof underlying the edge 28 as shown in Fig. 3. The spline is also rolled to provide a groove 29 along one side thereof which engages the shoulder 23 in the groove 18 to hold the screen wire in place as shown in Fig. 3. In mounting the screen wire in the frame, it is laid over the frame and the spline 26 pressed downwardly into the groove 18. The spline, constructed as already explained, has considerable resiliency so that it springs past the shoulder 23 for the groove 29 to engage therewith. The wire is thus held tightly stretched and firmly in place.

The ends of my improved frame members, as shown particularly in Fig. 4 of the drawing, are mitered so that the end and side pieces fit snugly against each other to provide square corners. A pair of connecting splines 31 and 32 are employed to join the end and side members together. Each of the splines is formed from a pair of channels, as shown in Fig. 7, each of which is notched at 33 and 34 and the ends turned at a right angle to each other. The two channels are nested together, as shown in Fig. 3, and fit snugly into the rectangular body portions 16 of the end and side members. A coating of aluminum cement, indicated generally by the numeral 36, is placed over the outsides of the spline members and serves to hold the parts rigidly together when assembled.

The middle brace 14 is a seamless tubular section, generally rectangular in shape and is held in place by means of channel shaped lugs 37 which fit snugly into the ends of the brace 14 and are held in place by means of screws 38 which pass through the base webs of the lugs and into the reinforced sides of the U shaped grooves 18.

My improved window screen frame may be

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mounted in a window in various ways. For example, in Fig. 1 I show elongated slots 39 in the upper flange 17 which, as shown in Fig. 5, are adapted to engage hooks 41 which may be secured to a screen stop 42. Preferably, the hooks 41 are provided with a reverse bend 43 at the outer end thereof, whereby the slots 39 may be engaged with the hooks 41 readily by a person on the inside of the room in which the screen is being installed. With such an arrangement, the lower end of the screen may be held in place by a spring pressed plunger 44 mounted in the spring and entering a suitable hole formed in the window frame, not shown.

In Fig. 6 I show another method of mounting my improved window screen frame in place which consists of metal guides 46 and 47 mounted on the side screen frame stops 48 and 49. The screen frame 51 may be mounted with its side flanges 17' fitting in the guides.

With either of the arrangements shown, it will be seen that the flange 17 of my improved screen provides an effective seal against insects passing around the screen. It will further be seen that the mitered corners and the rectangular splines insure accurately square corners and a sturdy frame construction. Furthermore, the manner of mounting the screen wire on the frame is such as to draw the screen wire tight and also draw the side and end members toward each other.

When assembling the frame, the frame members are disposed in their separate positions relative to each other and are then pressed toward each other with the splines 31 and 32 engaging in the ends of the frame members so that all parts are brought together simultaneously. The screen wire is then laid in place on the frame and the splines 26 pressed inwardly to stretch and lock the screen wire in place. It may thus be accurately and quickly assembled.

From the foregoing, it will be apparent that I have devised an improved window screen frame which is simple of design and construction, easy of manufacture, easily assembled and one which provides an extremely sturdy construction.

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While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claim.

What I claim is:

10 A window screen frame including side and end members, each comprising a body portion of sheet metal generally rectangular in cross section, with a flange along its outward edge, the edge portions of the sheet being doubled and bent over to form a locking groove having a shoulder along one side, said locking groove extending along the inward side wall of each of the frame members, mitered ends on each of the frame members for joining adjacent frame members, 15 connectors for the frame members comprising pressed metal channel members nested with the legs of each channel abutting the web of the other to form rectangular splines, each of said splines comprising arms at right angles to each other and fitting snugly within the rectangular body portion of the side and end members, a tubular resilient spline member fitting within the groove for holding screen wire in place in the frame, said tubular spline having a shoulder 20 along one side thereof coacting with the shoulder in the groove.

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