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(71)(72) Applicant and Inventor: PICK, William, E. [CA/CA]; R.R. #2, Carp, Ontario K0A 1L0 (CA).

(74) Agent: SCOTT & AYLEN; Suite 1000, 60 Queen Street, Ottawa, Ontario K1P 5Y7 (CA).

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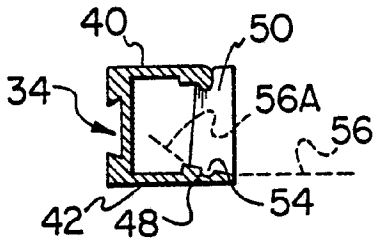


(57) Abstract

A construction for supporting a flexible sheet (56) is disclosed, which construction includes a U-shaped channel (34) having opposed flanges (40, 42) that are adapted to receive a complementary spline member (50) for frictionally engaging a flexible sheet (56), such as window screen, between a surface of the spline member (50) and an adjacent inner surface of one flange of the U-shaped channel (34). The structure has several practical applications including the assembly of window screen frames, electrostatic air filters of the charged media type, frames for storm windows of plastic film, and the like. An improved construction for an electrostatic air filter of the charged media type, which air filter is assembled using the construction for supporting a flexible sheet (56), is also disclosed.

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# A CONSTRUCTION FOR SUPPORTING A FLEXIBLE SHEET

## Technical Field

The present invention relates to a construction for supporting a flexible sheet or screen such as window screen, or the like, and its application to the assembly of an electrostatic air filter of the charged media type.

## Background Art

Flexible sheets or screens such as a window screen, plastic films and the like used for various applications including the closing and covering of window openings are well known in the art. Flexible sheets or screens are usually mounted in a frame which is attached to the structure of a window opening. A common material for assembling such frames is an aluminum roll-formed section, which is generally an elongated box shaped structure provided with a U-shaped spline groove adjacent an edge of one surface. Four lengths of a roll-formed section are commonly assembled into a frame using corner brackets or other fasteners known in the art. A flexible sheet such as window screening is attached to the frame by cutting the sheet to the approximate size of the frame, laying the sheet over that side of the frame which is provided with the spline groove and forcing the sheet into the spline groove with a flexible spline member sized to frictionally engage the sheet with the walls of the spline groove. This is a difficult task which requires a certain amount of skill and experience to install the sheet with even tension and without wrinkling the sheet or warping the frames. In addition, after attaching a flexible sheet to a frame with a conventional spline member, the selvage edges of the sheet must be trimmed to provide a neat appearance and prevent the accidental removal of the sheet from the spline groove by catching the exposed loose edges of the sheet. Trimming the exposed loose edges of the sheet is a tedious and labour intensive task which contributes significantly to the cost of attaching a flexible sheet to a frame.

An alternate method of attaching a flexible sheet to a frame is disclosed in Canadian Patent 1,108,476, which issued on September 8, 1981. This patent describes a fastener for attaching a specially constructed flexible sheet to a frame. The specially constructed

flexible sheet is provided along its opposed edges with a permanently attached metallic or plastic extrusion that is gripped by a D-shaped metal fastener. The disadvantage of this method is that the flexible sheet must be precisely dimensioned to the size of the frame opening to achieve an acceptable fit, and attaching the required clips is a lengthy and relatively delicate process which is, in itself, time consuming.

It is an object of the present invention to overcome the disadvantages of the prior art described above.

It is a further object of the invention to provide constructions for attaching a flexible sheet to a frame which are simpler, faster and easier to use than known prior art methods.

It is yet a further object of the invention to provide an improved electrostatic air filter assembly of the charged media type which includes a flexible sheet supported by the construction in accordance with the invention.

## Disclosure of Invention

Accordingly, there has been invented a construction for supporting a flexible sheet which construction includes a U-shaped channel and a spline member cooperative with the free edges of the flanges of the channel. Preferably, one flange of the U-shaped channel is slightly shorter than the other. The shorter flange is further preferably provided with a rounded nose along the inner edge of its free end. The longer flange is preferably provided with a wedge-shaped region on the inner surface of its free end, which region includes a longitudinal groove that is parallel with the free end of the flange. The spline member is preferably shaped to pivot on the rounded nose of the shorter flange and further preferably includes a ridge cooperative with the groove in the longer flange for frictionally engaging a sheet between the spline member and the inclined wedge of the longer flange. This construction has many advantages over traditional methods of supporting a flexible sheet. Since the channel conceals the free edges of the sheet, no trimming of the sheet is required after installation. The structure of the spline permits it to be quickly snapped into place without danger of tearing, creasing or deforming the sheet being installed. This eliminates the tedious process of installing a prior art spline in a groove.

Finally, as a result of the cooperation of the mating surfaces between the longer flange and the spline member, the sheet is tensioned evenly on installation, eliminating wrinkles, waves and sag in the installed sheet.

Besides being well adapted to the construction of window screens and the like, the construction in accordance with the invention is also adapted to be used for the assembly of a novel electrostatic air filter of the charged media type. The construction eliminates many of the traditional problems and time consuming aspects of an electrostatic air filter assembly. For use in the assembly of an electrostatic air filter, the channel members are preferably modified by the inclusion of a dove-tailed groove on the back surface of each channel. The dove-tailed groove permits the installation of various plastic clips, hinges and connectors so that an electrostatic air filter of the charged media type may be clipped together in a fraction of the time required for assembling the same style of filter using traditional assembly techniques.

In general terms there is provided a construction for supporting a flexible sheet, comprising:

a construction for supporting a flexible sheet, which construction may be formed into a frame for supporting the flexible sheet characterized in that the construction comprises:

a channel of generally U-shaped cross-section, which channel includes a web and first and second parallel spaced-apart flanges, each flange having a longitudinal free edge which is remote from the web of the channel;

the first flange being shorter than the second flange, the free edge of the second flange extending beyond the free edge of the first flange;

the first flange including a protruding nose region extending longitudinally from the inner free edge thereof;

the second flange including an inclined ramp region which extends longitudinally from the inner face of the free edge, the ramp region being upwardly tapered from the free edge of the second flange;

a spline member adapted for removable engagement between the free edge regions of the first and second flanges to frictionally engage an edge region of the flexible sheet between the ramp region of

the second flange and a complementary inclined surface of the spline member; and

means for securing the spline member within the channel when the spline member is engaged between the free edge regions of the first and second flanges of the channel.

Brief Description of Drawings

The present invention will now be explained by way of example only and with reference to the following drawings wherein:

FIG. 1 is a cross-sectional view of a prior art roll-formed section used in the assembly of frames for supporting flexible sheets such as window screening;

FIG. 2A is a perspective view of a spline and channel construction for supporting a flexible sheet in accordance with the invention;

FIG. 2B is a cross-sectional view of the spline and channel construction of FIG. 2A showing the construction in an open condition;

FIG. 2C is a cross-sectional view of the spline and channel construction of FIG 2A showing the construction in a closed condition;

FIG. 3A is a perspective view of a recommended corner assembly for use with the spline and channel construction in accordance with the invention;

FIG. 3B is a perspective view of the assembled corner shown in FIG. 3A;

FIG. 3C is a cross-sectional view of a channel construction shown in FIG. 3A;

FIG. 4A is a cross-sectional view of the structural components of an electrostatic air filter of the charged media type assembled using the construction in accordance with the invention, the air filter being in a closed condition;

FIG. 4B is a cross-section view of the air filter shown in FIG. 4A, the air filter being in an open condition;

FIG. 5 is a detailed view of the hinge construction shown in cross-section in FIGS 4A and 4B;

FIG. 6 is a detailed view of a clasp closure suitable for use with the electrostatic air filter construction shown in FIGS. 4A and 4B;

FIG. 7 is a detailed perspective view of a channel for housing the high voltage power supply of the electrostatic air filter shown in FIGS. 4A and 4B;

FIG. 8 is a cross-sectional view of a completely assembled electrostatic air filter of the charged media type as shown in FIGS. 4A and 4B;

FIG. 9A is an illustration of the assembly of two or more of the filters shown in FIG. 8 in an end to end relationship;

FIG. 9B is a detailed cross-sectional view of the connectors used for linking the filters shown in FIG. 9A;

FIG. 10A is a perspective view of two filters interconnected in an opposed parallel relationship;

FIG. 10B is a detailed cross-sectional view of the connection of two or more filters in the relationship illustrated in FIG. 10A.

Best Mode of Carrying Out The Invention

As shown in FIG. 1, prior art frames for supporting flexible sheets such as insect screening for windows or doors frequently comprise a roll-formed section 20 provided with a spline groove 22 which is continuous along an edge of the roll-formed section. A flexible sheet 24, such as insect screening, is affixed to the roll-formed section 20 with a flexible spline 26. Flexible sheet 24 is attached to the roll-formed section 20 by placing a precut sheet over the frame and forcing the flexible spline 26 and the flexible sheet 24 simultaneously into the spline groove 22, thereby frictionally engaging the flexible sheet 24 in the spline groove between the spline 26 and the walls of the groove 22. A selvage edge must be allowed along the outer edges of sheet 24 for a successful installation and that selvage edge must be trimmed off after the spline 26 is installed in order to provide a neat appearance. The installation of spline member 26 and the required trimming of the selvage edge is, of course, a labour intensive and time consuming process which has apparently never been successfully automated.

FIG. 2A illustrates a novel construction in accordance with the invention for supporting a flexible sheet. The construction includes a channel which is preferably extruded and is generally indicated by reference 34. The channel 34 includes a web 36, a back 38 and a pair of flanges 40 and 42. Flange 40 is preferably shorter than flange 42

and preferably includes a rounded nose 44 which extends along the entire length of its inner free edge. The lower flange 42 is preferably longer than flange 40 and includes a wedge shaped region 46 which is upwardly inclined from the outer edge of channel 42. Wedge-shaped region 46 further includes a longitudinal groove 48 which is parallel with the edge of flange 42 and is preferably centered in wedge-shaped region 46. The channel 34 may be extruded from any extrudable material having suitable structural properties, however, aluminum is preferred.

The second component of the construction is an elongated spline 50 which is preferably extruded in long sections and subsequently cut to the lengths required. Spline 50 includes a rounded groove 52 on its upper inside corner and a longitudinal ridge 54 which extends along the center of its angled bottom face. The spline 50 may be extruded from any extrudable material, however, dense plastics such as polyvinylchloride are preferred.

As seen in FIG. 2B, the rounded groove 52 in spline 50 cooperates with rounded nose 44 on flange 40 to provide a pivot surface for the spline 50. As is apparent in FIG. 2B, the lower edge of the spline 50 is angled upwardly from its outer corner. This permits spline 50 to be pivoted inwardly from the position illustrated in FIG. 2B without the inner corner striking the outer edge of flange 42 and interfering with the swivel motion. As is apparent from FIG. 2C, when spline 50 is swivelled inwardly, the longitudinal ridge 54 cooperates with longitudinal groove 48 to lock flexible sheet 56, window screen, for example, or any other flexible sheet, between the spline 50 and flange 42. As is apparent, any selvage edge 56A of flexible sheet 56 is concealed within channel 34 and does not require trimming or other treatment. In addition, the rotation of spline 50 across the wedge-shaped region 46 of flange 42 evenly tensions flexible sheet 56. This tends to eliminate any ripples or sags in the flexible sheet 56 and provides a neat installation. Thus a frequently encountered problem of properly and evenly tensioning a flexible sheet when attaching it to a prior art roll-formed section is obviated.

FIG. 3A illustrates a preferred corner connector for the construction shown in FIGS. 2A-2C. The corner connector includes an extruded corner 58, preferably nylon or polyvinylchloride, though many

other materials including aluminum are equally suitable. The corner connector is preferably extruded in long sections which are subsequently cut into lengths appropriate for fitting snugly into a square socket 60 formed by the web 36, the inner surfaces of flanges 40 and 42 and opposed square steps 59 (see FIG. 3C) in the inner surfaces of the flanges 40 and 42. The mating ends of each channel 34 are preferably mitered at 45° to produce a smooth finished corner as illustrated in FIG. 3B. Each channel 34 may, for example, be punched at points 62 to deform the channel against the extruded corner 58 to thereby inhibit separation of the finished corner. Glue or other bonds between the corner connector and the channels may also be used.

FIGS. 4A and 4B illustrate a novel electrostatic air filter construction, the supporting framework of which air filter is assembled using the construction in accordance with the invention. Channels 34 are modified to include a dove-tailed groove 64 on their backs when used in the assembly of the electrostatic air filter schematically illustrated in cross-section in FIGS. 4A and 4B. As is apparent, two rectangular frames constructed in accordance with the invention are hinged together along their one edges by a plastic hinge 66 and latched together along their opposed edges by a channel extrusion 68. Channel extrusion 68 is preferably a plastic extrusion having some flexibility. One side of the bottom surface of channel 68 is provided with a longitudinal dove-tailed protrusion 70 which locks the channel extrusion 68 to a dove-tailed groove 64 in one channel 34. On the opposite side of the bottom surface of channel extrusion 68 is provided a wedge-shaped latch 72 which serves to lock the opposed frames together. As may be seen in FIG. 4B, the electrostatic air filter frame may be opened and closed using the wedge-shaped latch 72 provided on the channel extrusion 68.

FIG. 5 illustrates in detail the plastic hinge shown in cross-section in FIGS. 4A and 4B. The hinge is preferably extruded in long sections and subsequently cut into lengths suitable for use as hinges. The hinges may be extruded from any thermoplastic having good resistance to flex fatigue, polythylene, for example.

FIG. 6 illustrates an extruded latch 74 for channels 34. Extruded latch 74 is preferably extruded in long sections similar to extruded hinge 66, and subsequently cut into suitable lengths. The latch 72 on the bottom surface of extruded channel 68 (see FIG. 3A)

may be eliminated, and the frames may be locked together on one or both ends using the extruded latch as illustrated in FIG. 6. This permits the channel 68 to be extruded from rigid materials such as aluminum.

FIG. 7 is a perspective view of extruded channel 68 and an extruded electronics housing 76. The electronics housing 76 is designed to support the high voltage power supply (not illustrated) which is used to power the electrostatic air filter. The electronics housing 76 snaps into channel 68 as will be explained in more detail hereinafter. The electronics housing 76 is likewise preferably extruded in long sections and cut into appropriate lengths after extrusion. It may be formed from any extrudable material, but is preferably extruded from a thermoplastic.

FIG. 8 shows a cross-sectional view of a fully assembled electrostatic air filter in accordance with one aspect of the invention. As is apparent, channels 34 are assembled to form a pair of identical opposed rectangular frames which are hinged together by flexible plastic hinges 66. A charging medium 82 is attached to the outer side of each frame using splines 50 as explained above. Charging medium 82 is preferably an electrically conductive woven wire screen or an electrically conductive expanded metallic mesh. Sandwiched between the opposed charging media 82 are a pair of dielectric fibrous filter pads 78 and a third electrically conductive charging medium 80. Charging medium 80 is in turn connected to the positive pole of the high voltage power supply, generally indicated by reference 84, by an insulated high voltage electrode 86. Charging medium 80 may be any conductive material, including a carbon-filled odour absorbing open celled plastic foam.

An electrostatic air filter of the charged media type as illustrated in FIG. 8 is assembled in the following manner. First, the opposed frames of the air filter are assembled with channels 34 using extruded corners 58 (see FIG. 3A). Charging media 82 are then connected to the frames by snapping in spline members 50 to tension the charging media and retain them firmly within the frames. Hinge members 66 are slid into place in the dove-tail grooves on the bottom side of the filter and the extruded channel 68 is attached to the top of one frame member. A hole is subsequently drilled through the channel 68 and the top of channel 34 for the passage of high voltage

electrode 86. A high voltage power supply 84 (schematically illustrated) is clipped into electronics housing 76 and the housing issnapped into extruded channel 68 while guiding the high voltage electrode 86 through the hole provided. A ground connection (not illustrated) must be supplied for electrically interconnecting one of frame members 34 with the ground pole of the high voltage power supply(84). It should be noted that the dielectric filter pads 78 and the center charging media 80 may be cut in unison. Prior art filter constructions of the charged media type required that the center charging medium be cut separately from the filter pads as it had to be smaller in length and width than the filter pads so that it did not contact the outer sides of the air filter frame and thereby cause electrical arching and loss of charge. With this instant air filter construction, the center charging element contacts only the dielectric plastic splines 50, eliminating any danger of electrical arching between the highly charged center charging medium 80 and the grounded frame members of the air filter. This filter construction also eliminates any need for trimming the selvage edges 82a of outside charging media 82. It is therefore apparent that an electrostatic air filter of the charged media type may be thus assembled in a fraction of the time required for the assembly of prior art air filters of the same style.

FIG. 9A shows how two or more of the air filters illustrated in FIG. 8 may be connected in an end to end relationship to form a gang of filters to provide increased air filter area in an air handling system. As seen in FIG. 9B, the filters are interconnected in an end to end relationship with dove-tail shaped connectors 88, preferably plastic extrusions.

FIG. 10A illustrates an alternate connection of filters into a bank of parallel filters to enhance the removal of filtrates from filtered air. In this case, the filters are interconnected using either plastic hinges 66 or, preferably, extruded latches 74. Any number of filters may be connected side to side in this manner, however, resistance to airflow through the filters increases with each filter added.

Industrial Applicability

The construction for supporting a flexible sheet in accordance with the invention may be used for the assembly of frames for screendoors, window screens, storm windows of the type made with plastic sheet, and the like. The invention has many other application, including the assembly of electrostatic air filters of the charged media type as explained above.

In use, the electrostatic air filter in accordance with one aspect of the invention is assembled as shown in FIG. 8 and installed in an air handling system. When power is connected to the high voltage power supply 84, the center screen 80 is charged with high voltage on the order of 4 to 10 kilovolts. Thus an electrostatic field is created between charging media 80 and 82 to polarize the fibers in the dielectric filter pads 78. Particle contaminants in the air forced through the filter are attracted to the polarized fibers in the dielectric filter pad 78 and thereby removed from the filtered air. Electrostatic air filters of this type are known to greatly increase the efficiency of the filter media in removing particulates from filtered air.

Changes and modifications in the specifically described embodiments can be carried out without departing from the scope of the invention which is intended to be limited only by the scope of the appended claims.

I CLAIM:

1. A construction for supporting a flexible sheet, which construction may be formed into a frame for supporting the flexible sheet characterized in that the construction comprises:

a channel(34) of generally U-shaped cross-section, which channel(34) includes a web(36) and first and second parallel spaced-apart flanges(40,42) each flange having a longitudinal free edge which is remote from the web(36) of the channel(34);

the first flange(40) being shorter than the second flange(42), the free edge of the second flange(42) extending beyond the free edge of the first flange(40);

the first flange(40) including a protruding nose region(44) extending longitudinally from the inner free edge thereof;

the second flange(42) including an inclined ramp region(46) which extends longitudinally from the inner face of the free edge, the ramp region(46) being upwardly tapered from the free edge of the second flange(42);

a spline member(50) adapted for removable engagement between the free edge regions of the first and second flanges(42) to frictionally engage an edge region of the flexible sheet(56) between the ramp region(46) of the second flange(42) and a complementary inclined surface of the spline member(50); and

means for securing the spline member(50) within the channel(34) when the spline member(50) is engaged between the free edge regions of the first and second flanges(40,42) of the channel(34).

2. A construction for supporting a flexible sheet as recited in claim 1 wherein the spline member comprises:

an elongated member of generally rectangular cross-section, having a top edge, a bottom edge and front and rear faces;

the top edge including a longitudinally extending groove(52) adjacent the rear face for pivotal cooperation with the protruding nose region(44) of the free edge of the first flange(40);

the bottom edge having a substantially planar surface which angles upwardly from the front face so that said bottom edge

contacts the ramp region(46) on the free edge of the second flange(42) to frictionally engage the flexible sheet(56) therebetween; and means for inhibiting the movement of the spline member(50) relative to the channel(34) when the spline member(50) is engaged between the first and second flanges(42) of the channel(34).

3. A construction for supporting a flexible sheet as recited in claim 2, wherein the means for inhibiting the movement of the spline member relative to the channel when the spline member is engaged between the free edge regions of the first and second flanges of the channel, comprises:

a longitudinal groove(48) in the inclined ramp region(46) along the inner side of the free edge of the second flange(42); and

a longitudinal ridge(54), complementary with said longitudinal groove(48), located on the bottom edge of the spline member(50), so that the ridge(54) engages the groove(48) to inhibit the movement of the spline member(50) relative to the channel(34) when the spline member(50) is pivoted into engagement between the free edge regions of the first and second flanges(40,42) of the channel(34).

4. A construction for supporting a flexible sheet, as recited in claim 1, wherein a square step(59) in an inner surface of each flange adjacent the web(36) for the channel(34), in combination with the web(36) of the channel(34), susbstantially defines a rectangular chamber(60) of receiving one complementary end of a two-ended corner connector(58) for interconnecting two discrete lengths of the channel(34) at a predetermined angle, whereby at least four discrete lengths of the channel(34) may be interconnected with the corner connectors(58) to construct a frame for supporting a flexible sheet(56).

5. A construction for supporting a flexible sheet as recited in claims 1, 2 or 4, characterized in that:

the spline member(50) is an elongated member of substantially rectangular cross-section having a top edge, a bottom edge and opposed front and rear faces, the top edge including a longitudinal groove(52) adjacent the rear face for cooperation with

the protruding nose region(44) along the inner side of the free edge of the first flange(40), and the bottom edge including a substantially planar surface which angles upwardly from the front face of the spline member(50) so that it is complementary with the ramp region(46) of the free edge of the second flange(42) and further includes a longitudinal rounded ridge(54) complementary with the rounded groove(48) in the ramp region(46) of the second flange(42) for engaging the groove(48) and inhibiting the relative movement of the spline member(50) with respect to the flange.

6. A construction for an electrostatic air filter of the charged media type wherein dielectric fibrous filter pad is sandwiched between two opposed parallel spaced-apart flexible sheets of electrically conductive charging media which are electrically energized with high voltage electrical current to create an electrostatic field for polarizing the fibers of the filter pad to enhance removal of particulate matter suspended in air passed therethrough, the improvement comprising:

first and second opposed rectangular frames respectively assembled from channels(34) of generally U-shaped cross-section which include a web(36), a back(38) and first and second parallel spaced-apart flanges(40,42), each said flange having a longitudinal free edge remote from the web(36) of the channel(34), the first flange(40) being shorter than the second flange(42) and the channel(34) being constructed so that the free edge of the second flange(42) extends beyond the free edge of the first flange(40); and the channel(34) is adapted to receive a spline member(50) between the free edges of the first and second flanges(42) thereof, the spline member(50) being adapted for cooperation with the free edges of the first and second flanges(40,42) to affix an electrically conductive flexible charging medium(82) to one side of each said frame by frictional engagement of the charging medium(82) between the spline member(50) and an inclined ramp region(46) on an inner surface of the free edge of the second flange(42), the spline member(50) and the second flange(42) further including means for inhibiting the movement of the spline member(50) with respect to the channel(34) when the spline member(50) is engaged between the free edges of the first and

second flanges(40,42);

hinge members(66) for interconnecting said frames to provide a hollow box structure;

a pair of fibrous filter pads(78) disposed within said hollow box structure in opposed, parallel, adjacent relationship;

an inner charging medium(80) disposed between said fibrous filter pads(78); and

a high voltage power supply(84) having its negative pole in electrical connection with said outer charging media(82) frame and its positive pole in electrical connection with said inner charging medium(80).

7. A construction for an electrostatic air filter of the charged media type as recited in claim 6 wherein the first flange(40) includes a rounded nose region(44) which extends longitudinally along the inner surface of the fee edge thereof.

8. A construction for an electrostatic air filter of the charged media type, as recited in claim 7, wherein the spline member(50) is an elongated substantially rectangular member with a top edge, a bottom edge and opposed front and rear faces, the top edge including a longitudinal groove(52) adjacent the rear face for cooperation with the rounded nose region(44) of the first flange(40).

9. A construction for an electrostatic air filter of the charged media type as in claim 6, wherein the means for inhibiting the movement of the spline member(50) with respect to the channel(34) includes a longitudinal groove(48) in the inclined ramp region(46) of the inner surface of the free edge of the second flange(42) and a complementary longitudinal ridge(54) on a bottom edge of the spline member(50), whereby the ridge(54) on the spline member(50) engages the groove in the ramp region(46) of the second flange(42) when the spline member(50) is engaged between the free edges of the first and second flanges(40,42) of said channels(34).

10. A construction for an electrostatic air filter of the charged media type, as recited in claim 6, wherein each channel(34) includes a dovetail groove(64) which extends longitudinally the length

of the backs(38) of said channels(34).

11. A construction for an electrostatic air filter of the charged media type as recited in claim 10, wherein the hinge members(66) each comprise a plastic extrusion having dovetail-shaped connectors on each side of a flexible hinge region, the dovetail-shaped connectors being adapted to engage the dovetail grooves(64) in the backs(38) of the channels(34) of the first and second frames.

12. A construction for an electrostatic air filter of the charged media type as in claim 10 wherein the opposed rectangular frames are releasably clipped together by clasps(74) which each comprise a plastic extrusion having a dovetail-shaped connector on one side of a flexible hinge region and a hook-shaped connector on the opposite side of the flexible hinge region, the dovetail-shaped connector being adapted to engage the dovetail groove(64)in the back(38) of a channel(34) in the first frame and the hook-shaped connector being adapted to releasably engage the dovetail groove(64)in the back(38) of an opposite channel(34) of the second frame.

13. A construction for an electrostatic air filter of the charged media type as recited in claim 10 wherein the high voltage power supply(84) is housed in an extruded channel(68) having a back, a web and first and second opposed parallel flanges connected to the web, said extruded channel(68) further including a dovetail-shaped connector(70) on a side of the back thereof for engaging the dovetail groove(64)in the back(38) of a channel(34) of one of the first and second frames of the air filter.

14. A construction for an electrostatic air filter of the charged media type as recited in claim 13 wherein the extruded channel(68) which houses the power supply is extruded from a flexible material such as plastic.

15. A construction for an electrostatic air filter of the charged media type as recited in claim 14 wherein the back of the extruded channel(68) further includes a clip(72) opposite the

dovetail-shaped connector (70) for releasably engaging the dovetail groove(64) in an opposite channel(34) of the other of the first and second frames of the air filter.

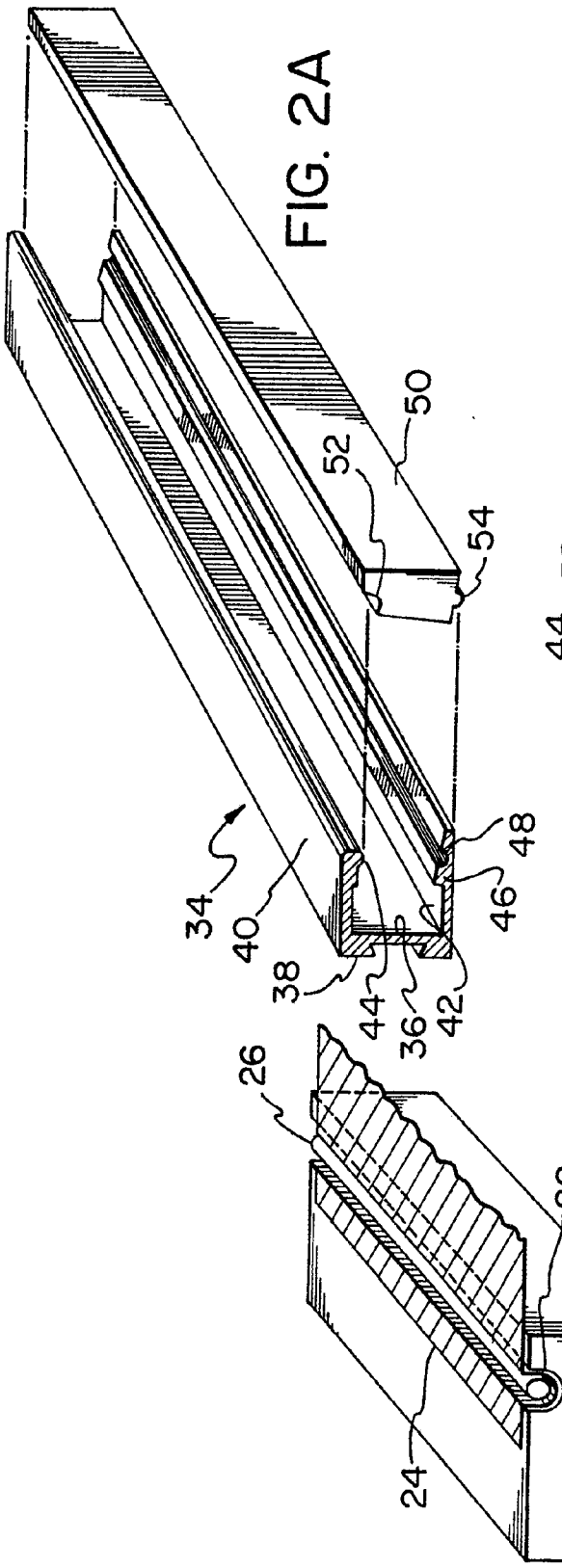



FIG. 1
PRIOR ART




FIG. 2A

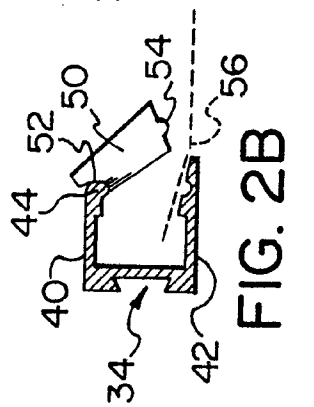



FIG. 2B

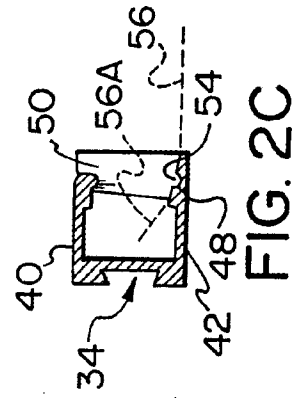



FIG. 2C

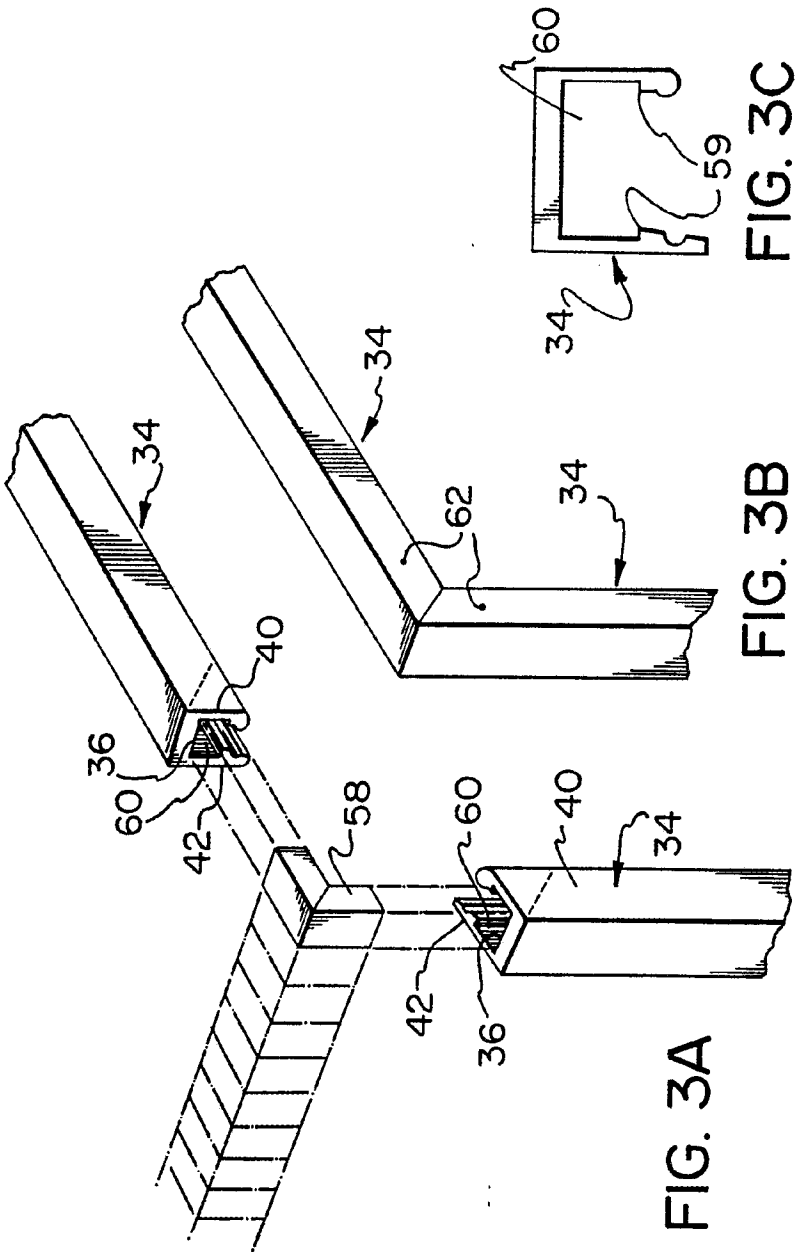



FIG. 3C

FIG. 3B

FIG. 3A

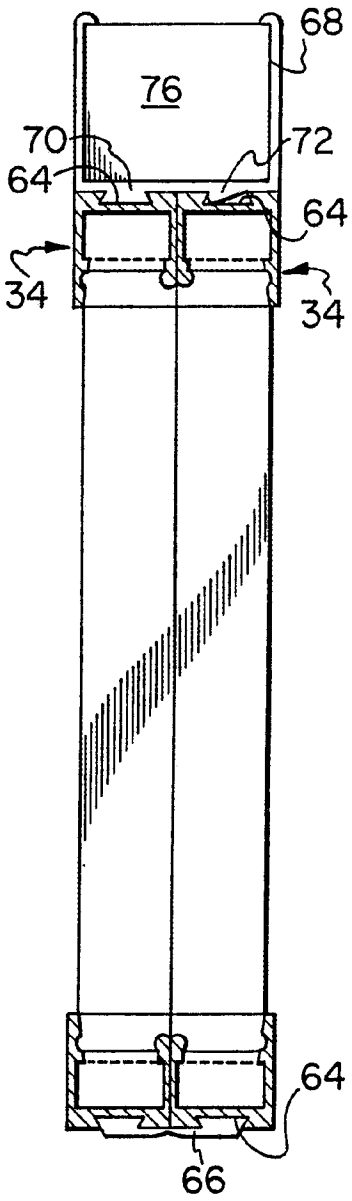



FIG. 4A

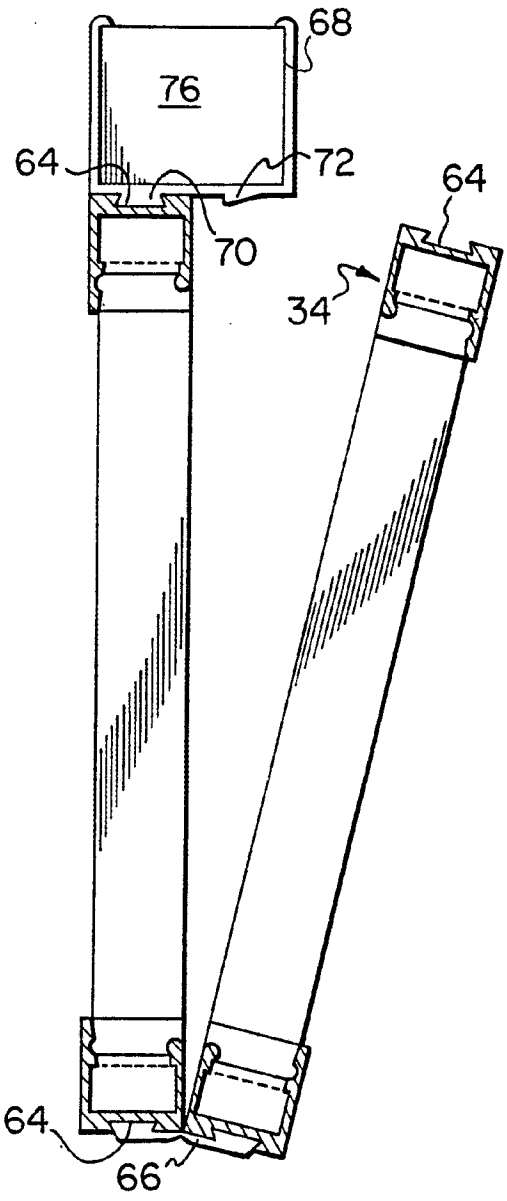



FIG. 4B

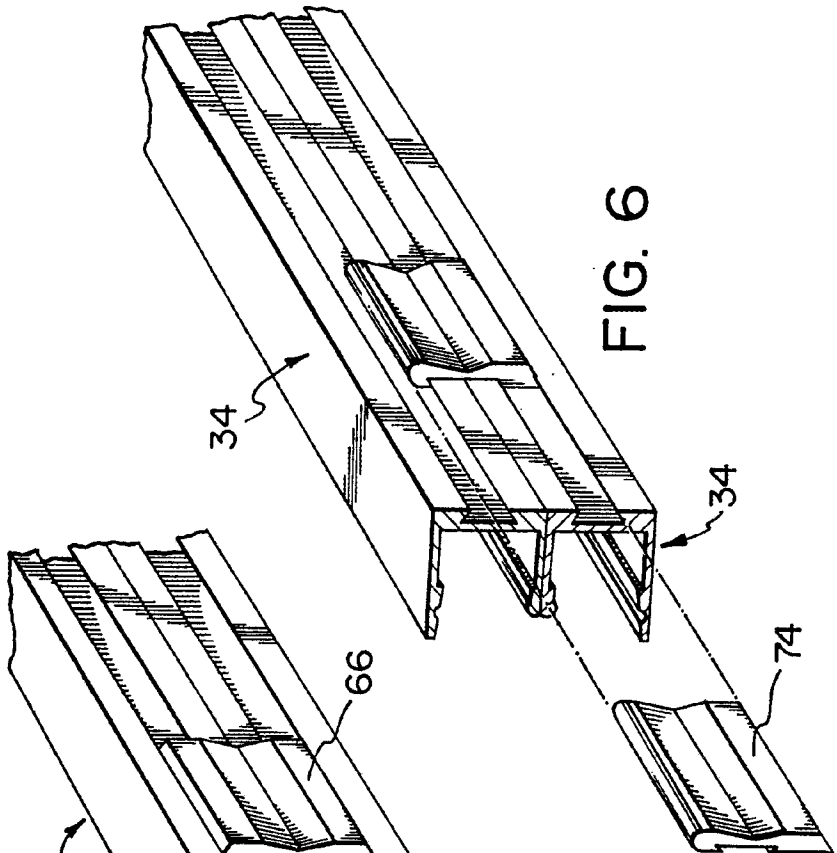



FIG. 6

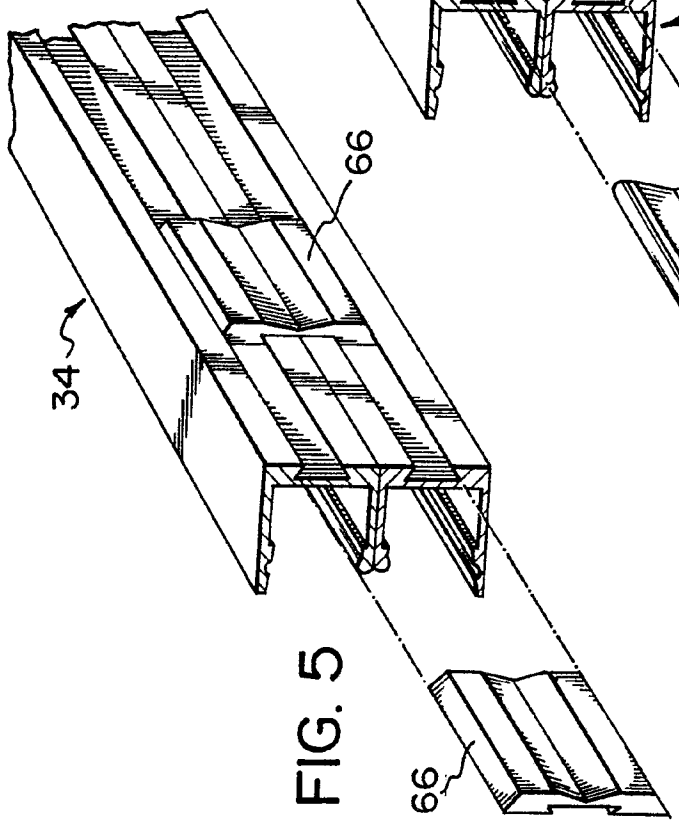



FIG. 5

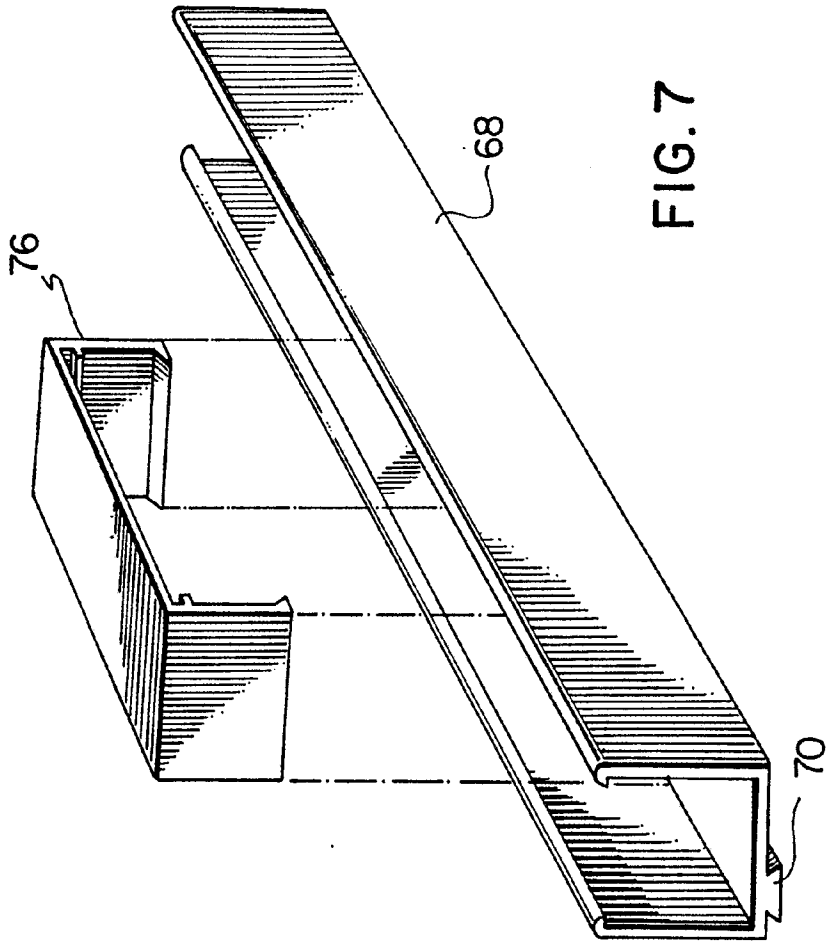
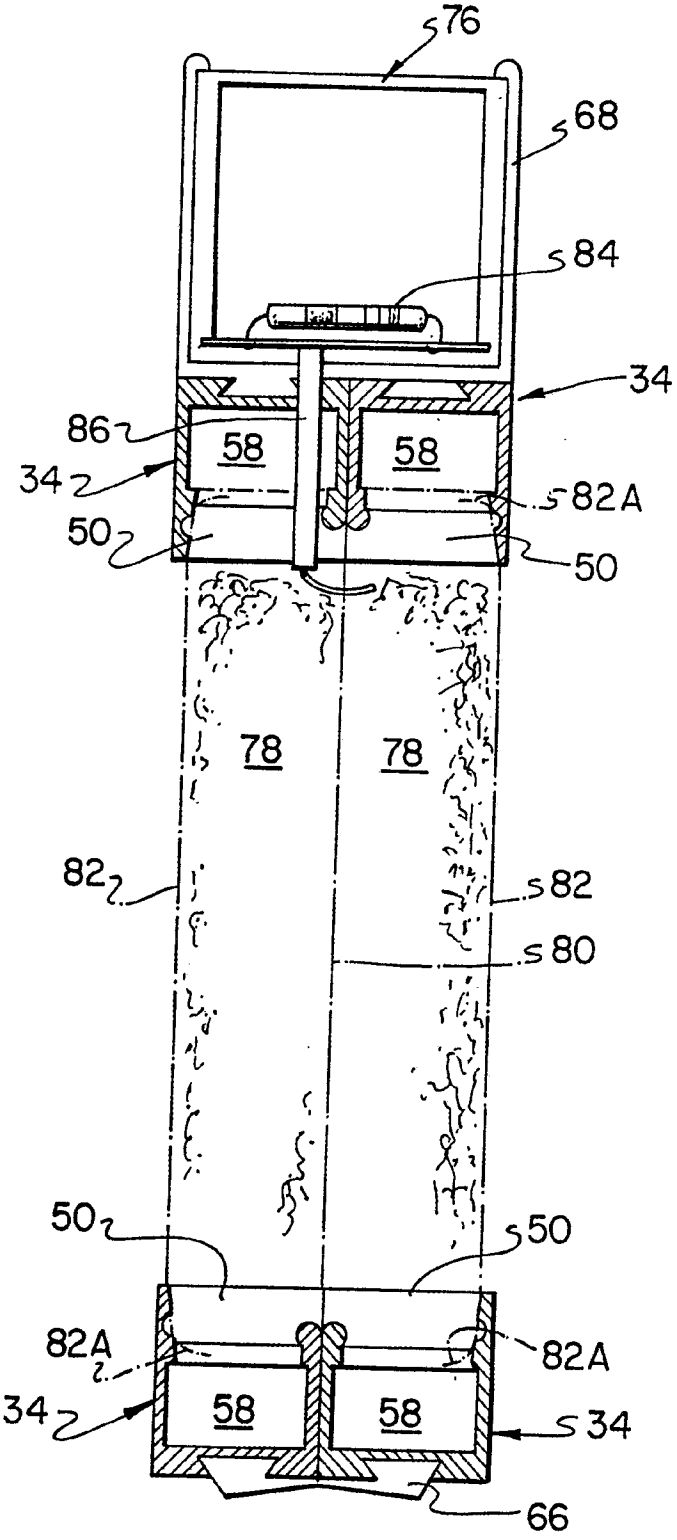



FIG. 7


76
68
84
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86
58
58
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82A
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78
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82
80
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50
82A
82A
58
58
34
66

FIG. 8

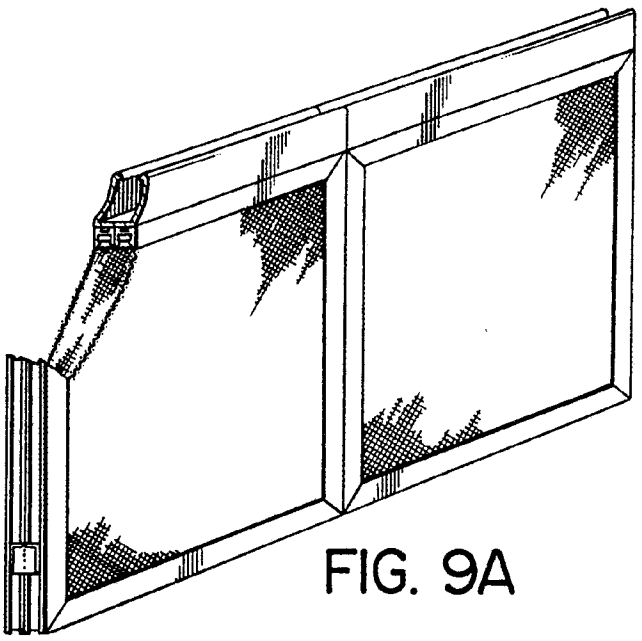

FIG. 9A

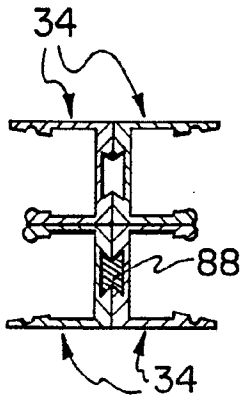


FIG. 9B

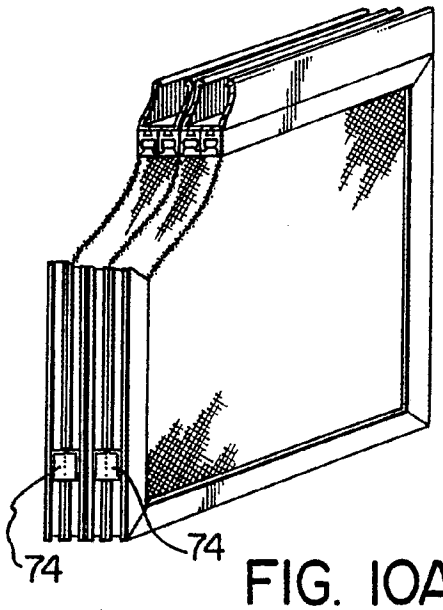


FIG. 10A

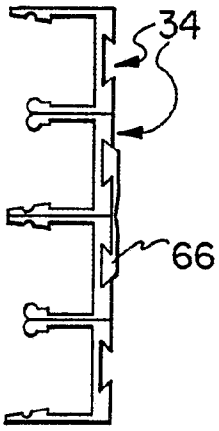


FIG. 10B