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CA 2350094 A1 2002/12/12

(21) 2 350 094

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(22) Date de dépôt/Filing Date: 2001/06/12

(41) Mise à la disp. pub./Open to Public Insp.: 2002/12/12

(51) Cl.Int.^{7}/Int.Cl.^{7} G09F 13/00, G09F 13/04

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(54) Titre : SIGN-EZZY
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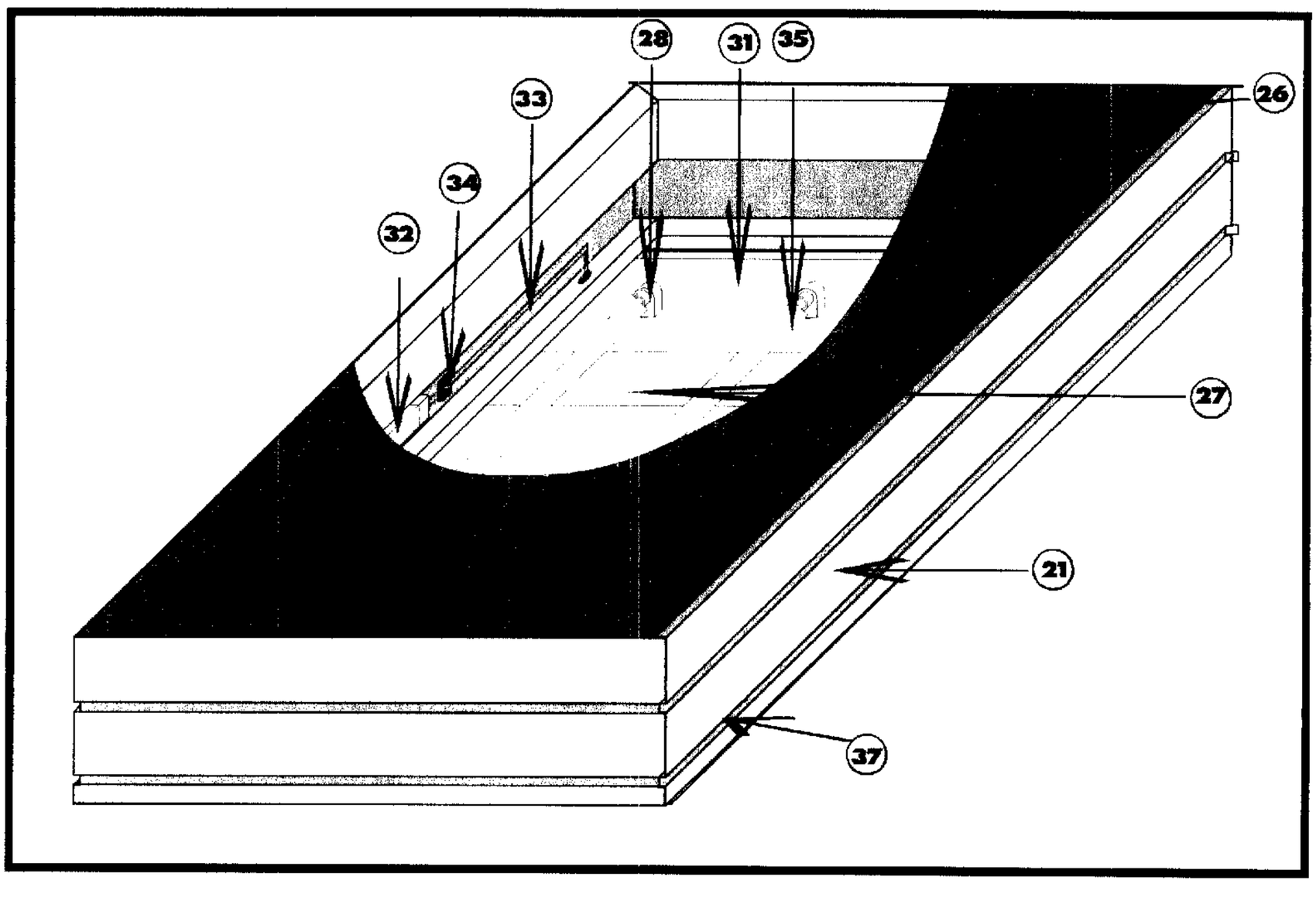
ASSEMBLED VIEW SINGLE SIDED



(57) Abrégé/Abstract:
A frameless flexible sign face extrusion system used for double-sided & single-sided illuminated sign boxes unlike conventional frameless sign systems, which really have a hidden frame to support a translucent vinyl fascia. This system attaches the vinyl directly to the extrusion that forms the sidewalk of the sign box by means of spring hooks attached to grommets around the edge of the vinyl fascia. A removable cover plate is then added all around the parameter of the box making it completely water proof & clean looking. This system can will be pre hydro approved when sold as a kit because the unique shape of the extrusion & the formed troughs in the back panel which allows for pre wiring with plug in connections.

Frame less illuminated sign system

Abstract

A frameless flexible sign face extrusion system used for double-sided & single-sided illuminated sign boxes unlike conventional frameless sign systems, which really have a hidden frame to support a translucent vinyl fascia. This system attaches the vinyl directly to the extrusion that forms the sidewalls of the sign box by means of spring hooks attached to grommets around the edge of the vinyl fascia. A removable cover plate is then added all around the parameter of the box making it completely water proof & clean looking. This system can will be pre hydro approved when sold as a kit because the unique shape of the extrusion & the formed troughs in the back panel which allows for pre wiring with plug in connections.

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Description

Background of the invention

The present invention relates to frameless illuminated sign systems, & more particularly to illuminated systems, which utilize a flexible, stretchable vinyl fabric as a display face. What is really unique about this system is it is truly frameless meaning there is no hidden frame as in other typical frameless systems. Also the wiring & ballast is contained in a shaped trough that runs through the middle of the channel walls. In the single sided box the back panel also has troughs built in to it, which connect, with the troughs in the sidewalls. Not only does this create a totally waterproof box when assembled but the troughs in the channel walls & back panel create enough rigidity to eliminate the need for any extra strengthening gussets or retainer bars to keep the box from collapsing when the face material is tensioned in place. Another advantage of this system is that if it needs to be opened it is a simple mater of removing the cover plate unhooking the material in the area where needed this can be done with one person on a large sign where as in the traditional hinged framed systems it usually requires two men.

Some examples of traditional systems are: U.S. Pat No 4,265,039 issued May 5, 1981 to ABC Extrusion Co., U.S. Pat. No. 4,542,605 issued Sept. 24, U.S. Pat. No. 4,452,000 issued June 5th.1984 & U.S. Pat. No. 5,020,254. All of these hinged systems require many extra parts for strengthening their frames so that the flexible material will not collapse them. Their assembled box systems also require added raceways for wiring & ballast installation; In addition the single sided versions also need added gussets to strengthen their filler channel against the pack panel.
There is therefore a need for a simpler more cost effective illuminated flexible sign face system.

Summary of the invention

The present invention provides a cost effective illuminated sign system, which uses a flexible face material that is easily & quickly installed with simple springs that hook on to a lip on the outer side of the extruded body channel. This channel is then covered with an easily removed cover plate, which seals out any water. In addition when sold as a pre assembled kit it will be hydro certified.

Brief descriptions of the drawings

Fig. 1 illustrates an assembled view of a single sided frameless illuminated sign kit of the present invention with a section of the flexible face cut away.

Fig. 2 illustrates an assembled view of a double-sided frameless illuminated sign kit of the present invention with a section of the flexible face cut away.

Fig. 3 illustrates a blown apart view of single sided frameless illuminated sign kit of the present invention.

Fig 4 illustrates a blown apart view of a double-sided frameless illuminated sign kit of the present invention.

Fig. 5 is an assembled view of the single sided frameless illuminated sign kit with the outside cover plates off showing the flexible face attached to the sides of the box using grommets on the edges of the fabric with springs attached & hooked on to a rail all around the outside parameter of the box.

Fig. 6 is an assembled view of the double sided frameless illuminated sign kit with the outside cover plates off showing the flexible faces attached to the sides of the box using grommets on the edges of the fabric with springs attached to & hooked to rails all around the parameter of both sides of the box.

Fig. 7 is a cross section of the extrusion used a single sided frameless illuminated sign kit system. This cross section also shows the fabric attached using springs & grommets.

Fig. 8 is a cross section of the extrusion used for a double-sided frameless illuminated sign kit system. This cross section also shows the fabric attached using springs & grommets

Detailed Description Of The Preferred Embodiment

Referring to Fig 1 an assembled view of a single sided frameless sign. Cover plate 21 is attached to inner sign box wall 22 with self tapping sheet metal screws 37 at various distances on two horizontal revels on cover plate 21. Flexible face 26 is cut away to show inner box extrusion 22 metal back 27, metal wiring cover plates 31, sockets 28, fluorescent tubes 35, ballast 32, 110 switch box 34 & wiring 33. Fig 2 refers to an assembled view of a double-sided frameless sign. Cover plate 23 is attached to inner box wall 24 with self tapping sheet metal screws 37 at various distances on two horizontal revels on cover plate 23. Flexible face 26 is cut away to show opposite flexible face 26, inner box extrusion 24, typical wiring, lamps sockets, ballast, 110-switch box & metal wiring cover plates 31.

Referring to Fig 3 an exploded view of a single sided frameless sign. Inner extrusion box walls 22 are joined at the four corners with angle brackets 36. Pre wired metal back plate 27 fits into shaped bottom of inside sidewalls 22. Plug connections 38 are joined to wiring 33 inside of metal back plate 27 & box wall extrusion channel 22. Cover plates 21 are screwed to inner box extrusion walls 22. Referring to Fig. 4 an exploded view of a double-sided frameless sign. Inner extrusion box walls 24 are joined at all four corners with angle brackets 36. Plug connections 38 are joined to wiring 33. Cover plates 23 are screwed to inner box extrusion walls 24.

Referring to Fig 5 Single sided illuminated box with flexible vinyl face attached & side cover panels off. Flexible face 26 with grommets 29 all around sides of face, one end springs 25 attached to grommets 29, other end of springs 25 attached to receiving rail 40 all around top outside edge of box.

Referring to Fig. 6 Double sided illuminated box with flexible vinyl face attached to both outside edges of box. Flexible face 26 with grommets 29 all around both faces, one end of springs 25 attached to grommets 29, other end of spring 25 attached to receiving rails 40 all around top & bottom of box.

Referring to Fig. 7 a cross section of single sided extrusion system forming walls of box. Flexible face 26 & grommet 29 wrapped around outer front edge of extrusion 22, one end of spring 25 attached to grommet 29 other end of spring 25 attached to horizontal rail 40, formed back panel 27 fitted inside horizontal channel 42, screws 37 attaching back panel 27 to channel 42, cover plate 21 with two horizontal shaped channels 39 directly above extrusion 22. When cover plate 21 drops down in place, horizontal channels 39 & flanges 41 meet, they are then held in place with screws 37 as needed.

Referring to Fig. 8 a cross section of double-sided extrusion system forming walls of box. Flexible faces 26 & grommets 29 wrapped around outer edges of extrusion 24, one end of spring 25 attaches to grommets 29 other end of spring 25 attaches to horizontal rails 40, cover plate 23 with two horizontal shaped channels 39. When cover plate 23 drops down in place horizontal channels 39 & flanges 41 meet, they are held in place by screws 37.

While the above description provides a full and complete disclosure of the preferred embodiment of this invention, various modifications, alternate constructions and equivalent may be employed without departing from the true spirit and scope of the invention. Such changes might involve alternate components, structural arrangements, operable features or the like. Therefore, the invention, which is defined by the appended claims.

Claims

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

1. A double-sided & single-sided illuminated sign box system comprising of ridged extruded aluminum channel walls defining planar openings, pre formed troughs in said channels for containing wiring & ballast, cover plates for said troughs, sheets of flexible sign face material across said openings, spring hook means of tensioning said sign face material to said channel walls, formed metal back panels for said single-sided sign box & outer cover plates for said sign box channels.

2. The sign of claim 1 wherein both outer edges of said channel are angled up to allow illumination to very edge of the openings creating an illuminated truly frameless sign box.

3. The of claim 1 wherein the said flexible sign face material is pre grommeted & said spring hooks are attached to grommets.

4. The of claim 1 wherein said channel has a lip in from both outer edges to allow for said spring hooks to be attached when said flexible sign face material is wrapped around edges.

5. The sign of claim 1 wherein said channel has said formed trough extending longitudinally the length of the channel.

6. The sign of claim 1 wherein said trough has an inner cover plate containing said wiring.

7. The sign of claim 6 wherein said inner cover plate have pre fitted sockets for fluorescent lamps.

8. The sign of claim 1 wherein said trough has flange on both vertical sides.

9. The sign of claim 1 wherein said channel has said removable outer cover plate with two spaced indentations.

10. The sign of claim 8 wherein said flanges are directly under said indentations of cover plate when it is in place.

11. The sign of claim 10 wherein said indentations & flanges are screwed together.

12. The sign of claim 1 wherein said outer cover plate has a 90% bend on both longitudinal outer sides so that when screwed in place said sign box is water proof

13. The sign of claim 1 wherein said channel has three right angles bends on one side.

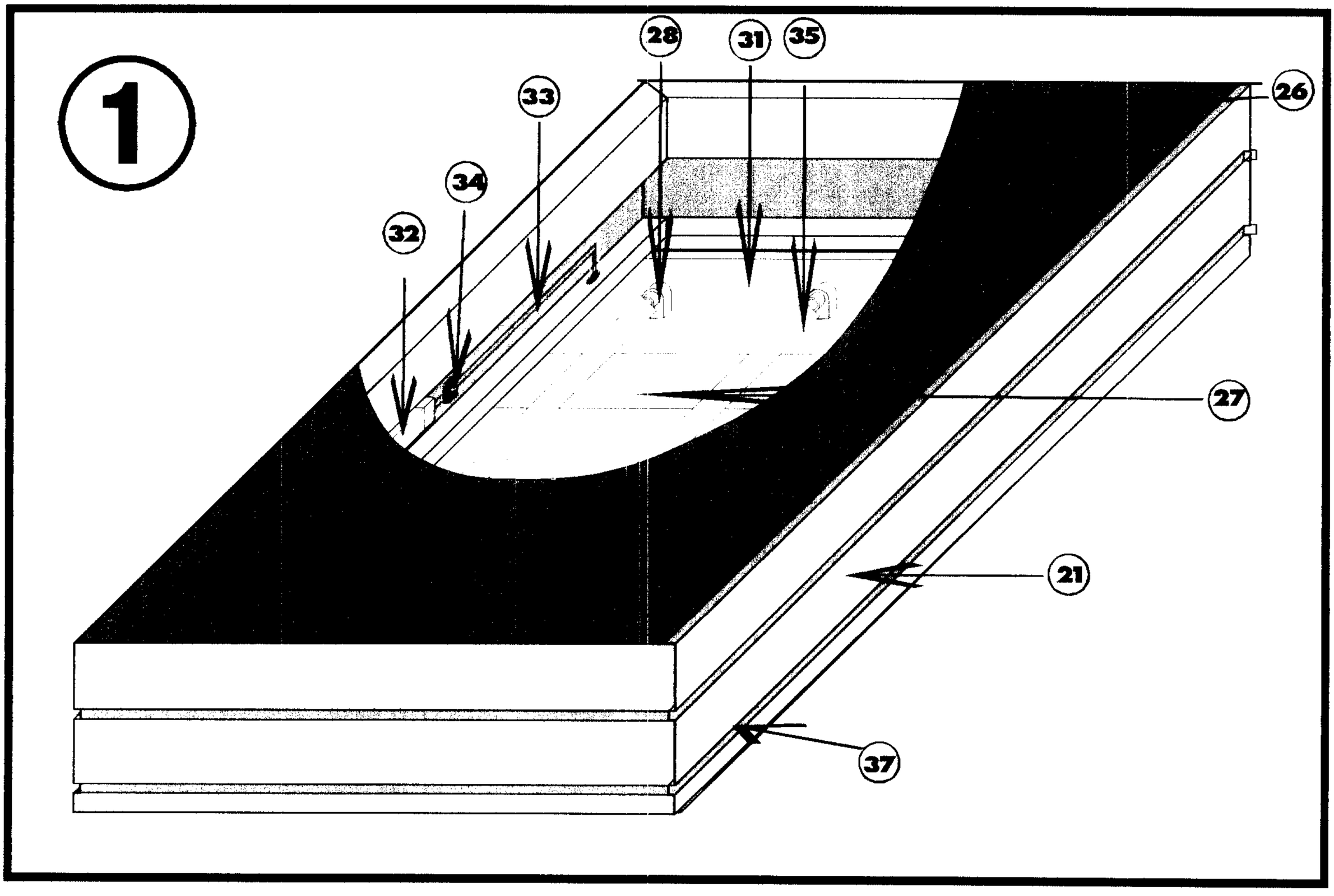
14. The sign of claim 13 wherein said right angle bends are shaped to receive said formed back panel.

15. The sign of claim 14 wherein said back panel has cover plates for each formed trough.

16. The sign of claim 15 wherein said cover plates have pre fitted fluorescent lamp sockets.

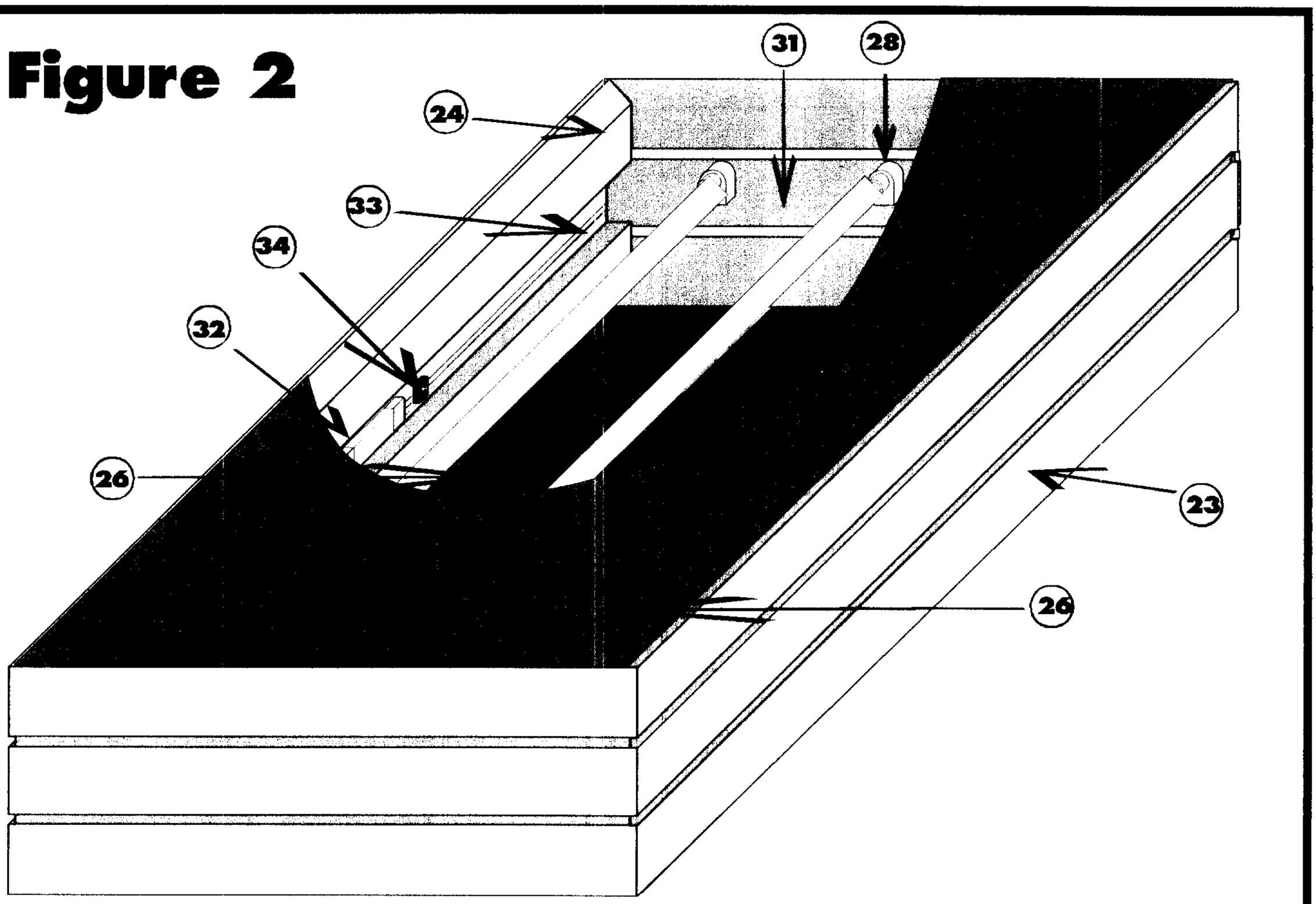
17. The sign of claim 13 wherein said cover plate has a 90% bend on front side which forms a waterproof cover when sign is assembled.

ASSEMBLED VIEW SINGLE SIDED



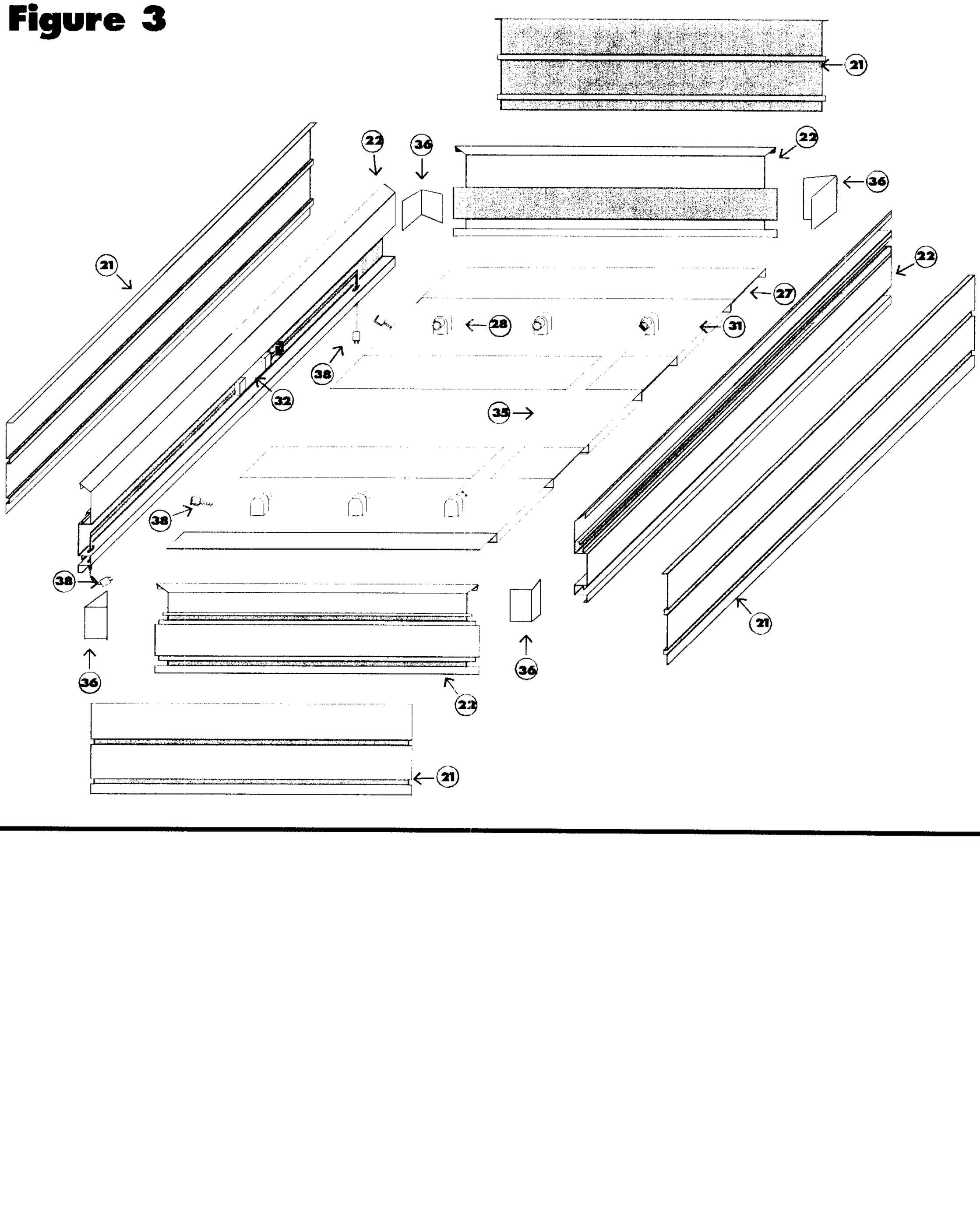
ASSEMBLED VIEW DOUBLE SIDED

Figure 2

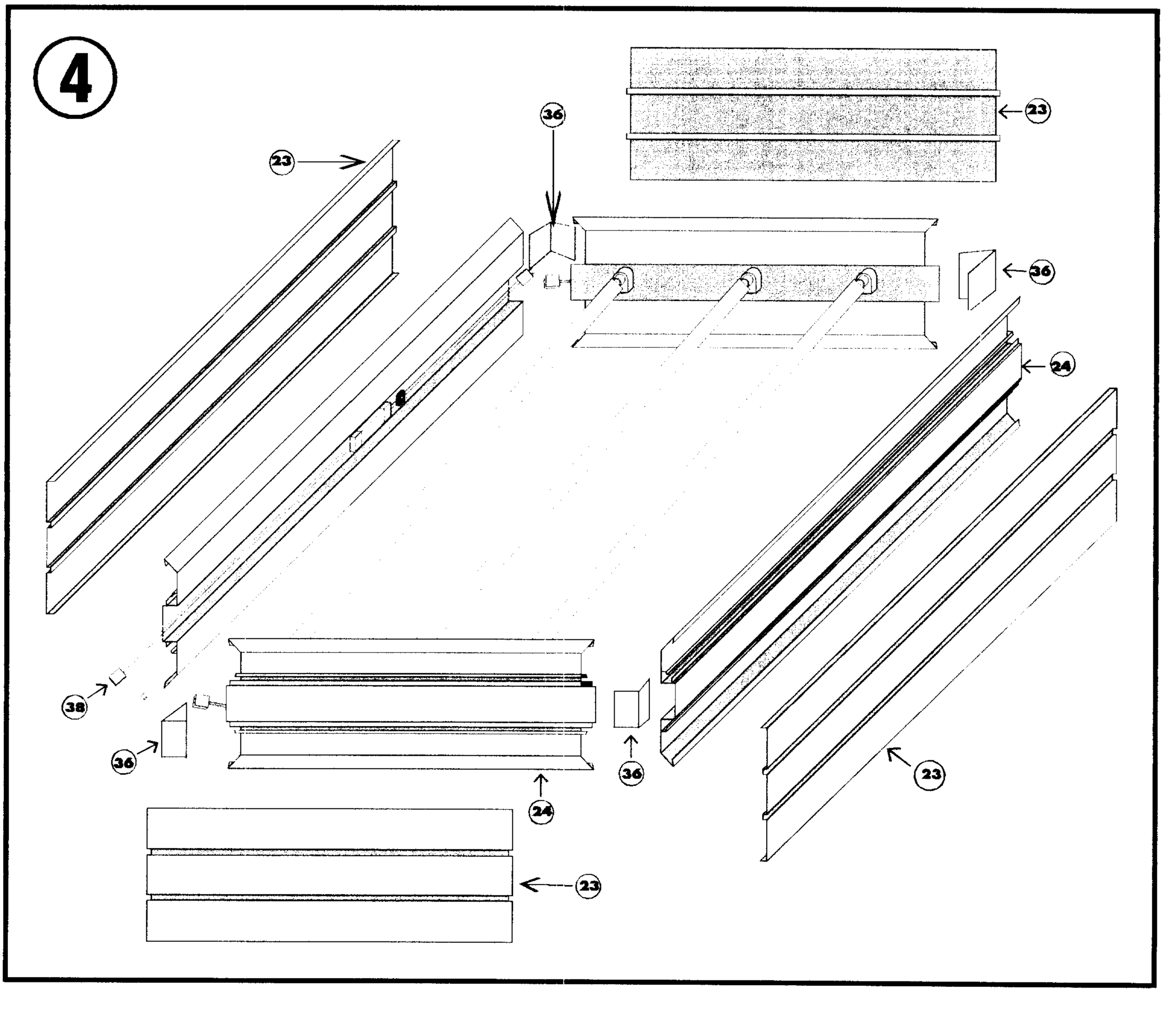


BLOW APART SINGLE SIDED

Figure 3



BLOW APART DOUBLE SIDED



SKIN ON SHOWING SPRINGS SINGLE SIDED

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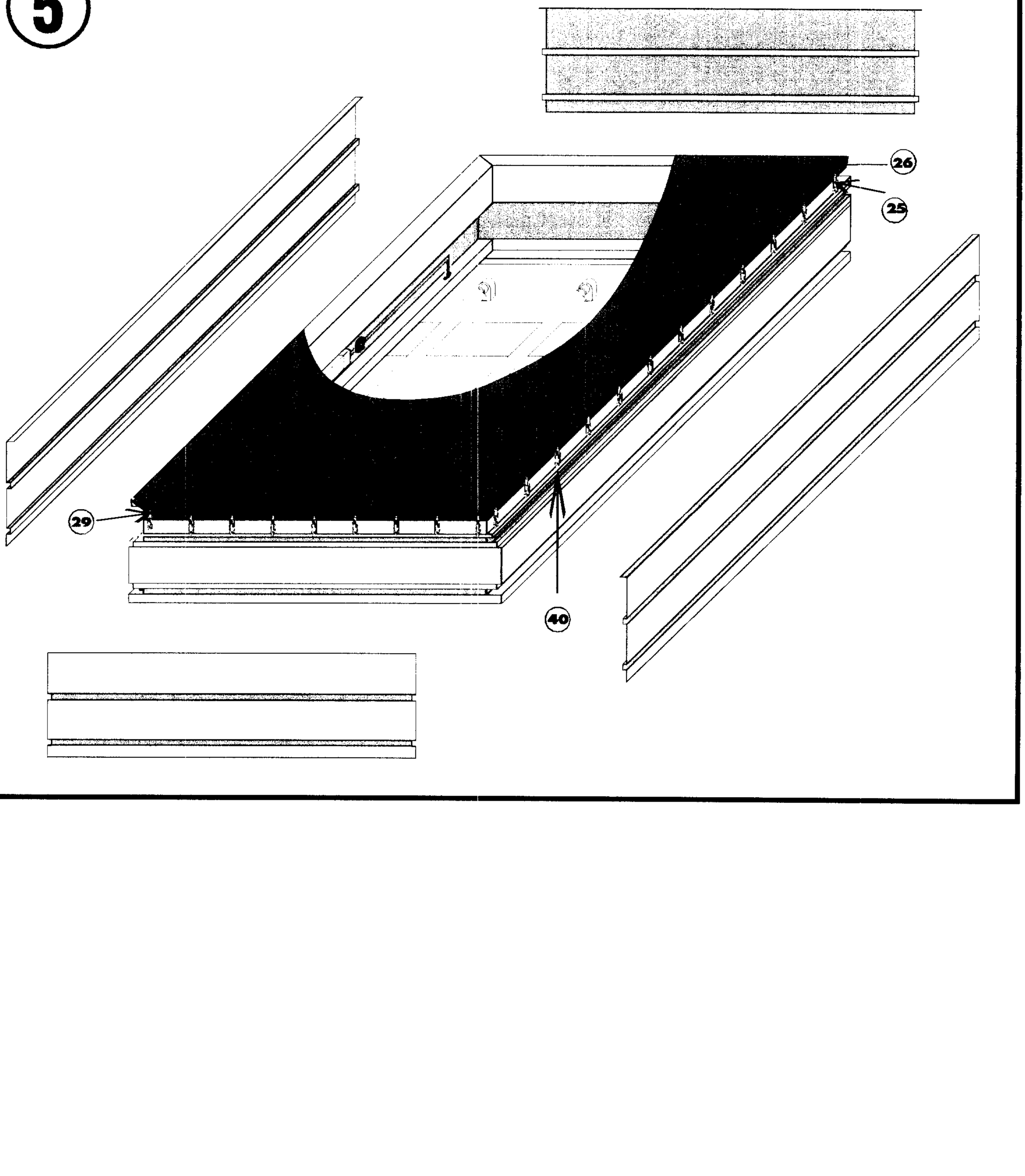


SKIN ON SHOWING SPRINGS DOUBLE SIDED

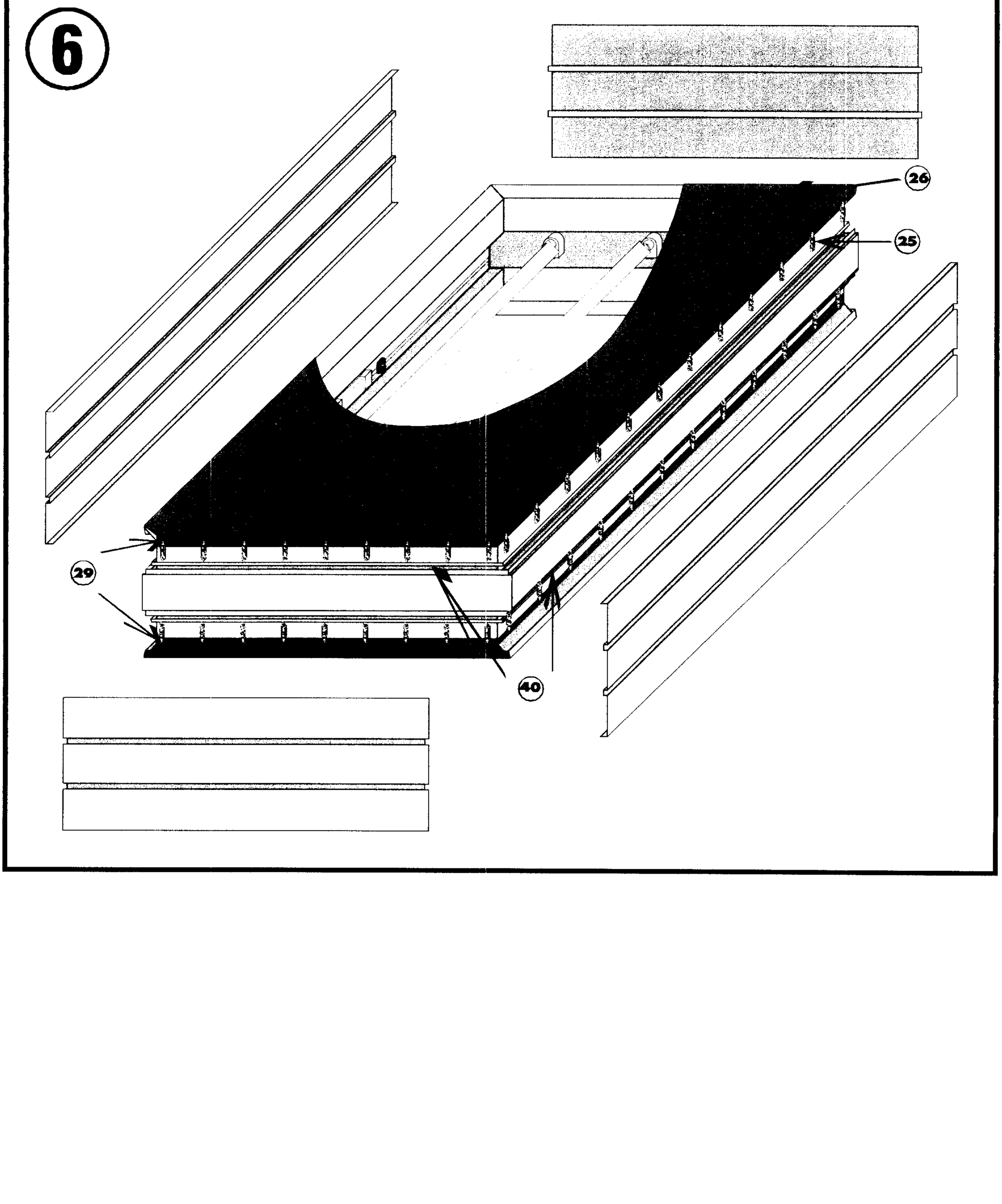


Figure 7 single sided cross section

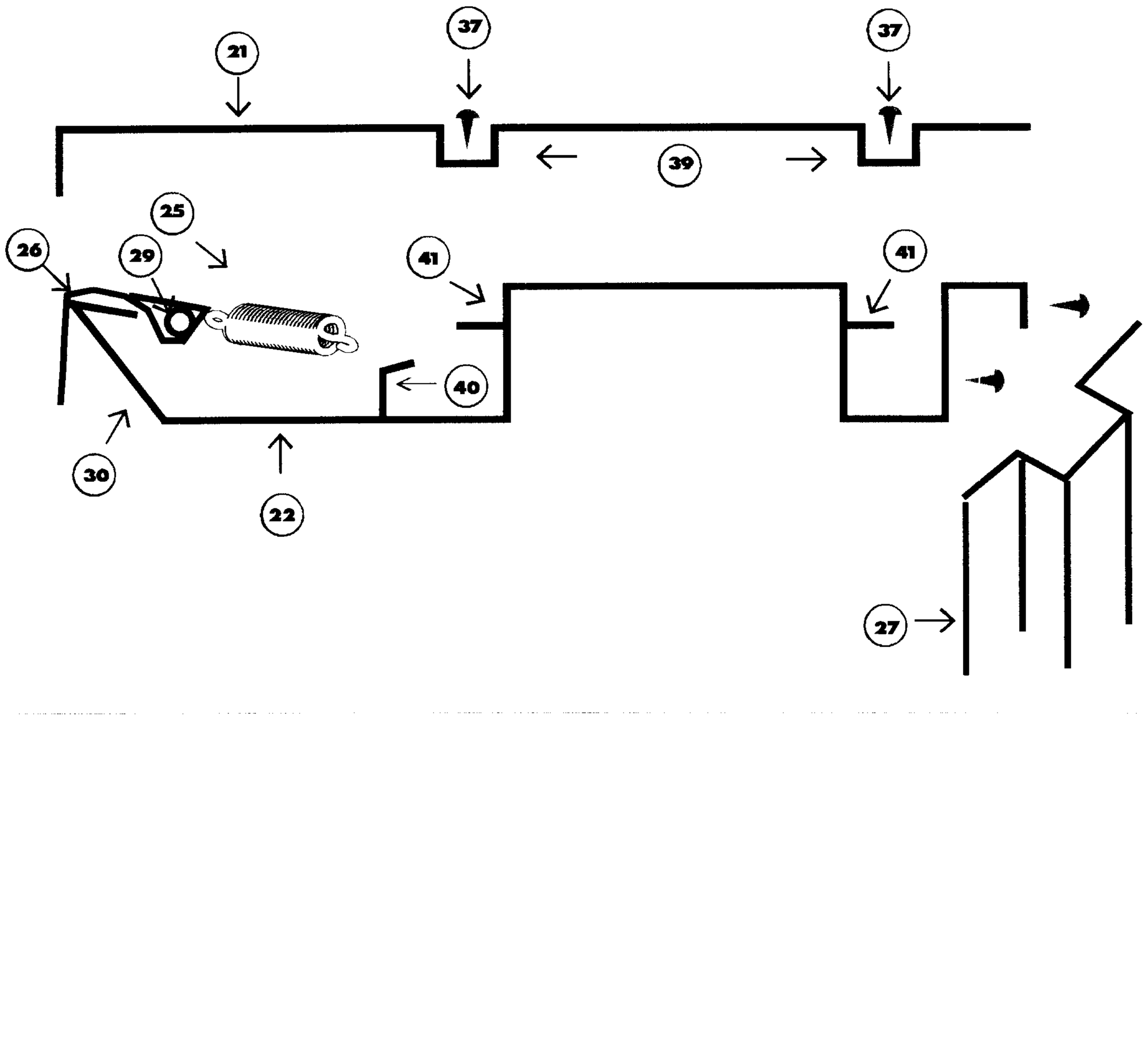
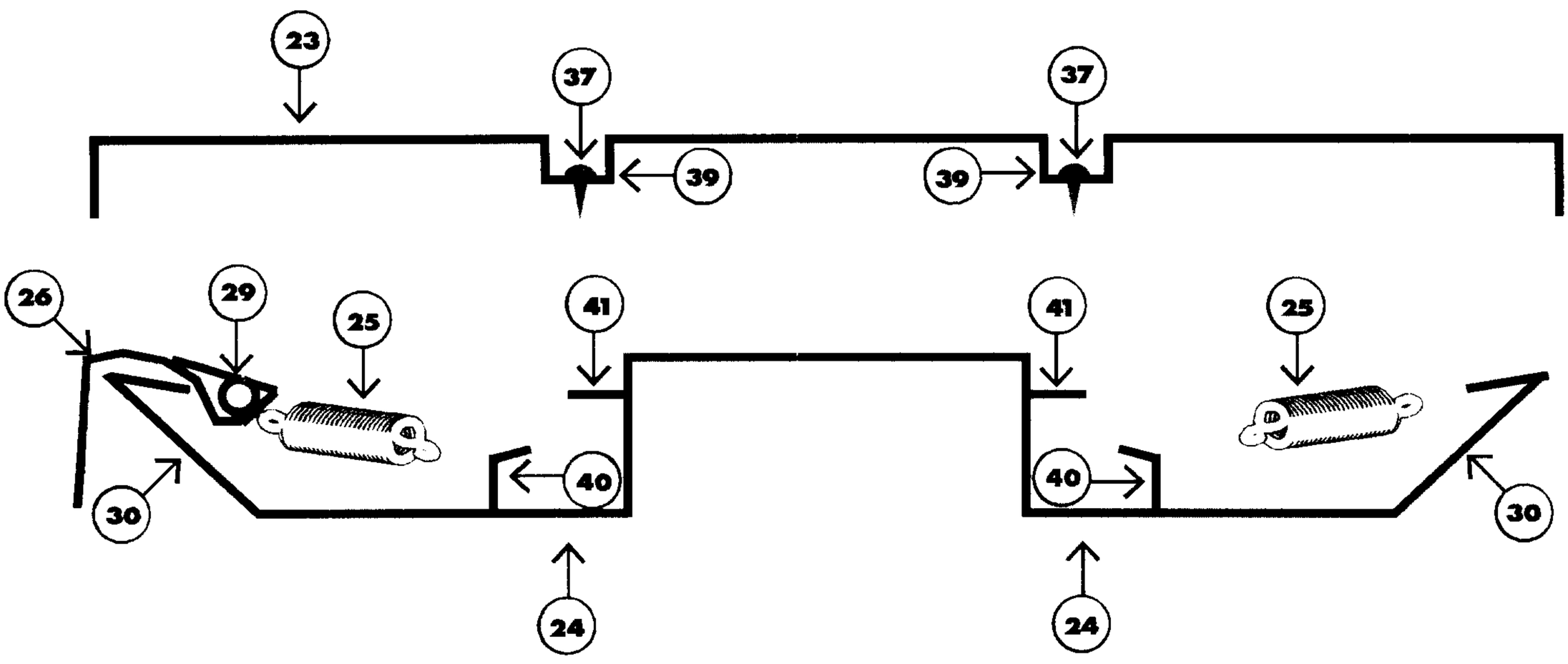


Figure 8 double sided cross section



ASSEMBLED VIEW SINGLE SIDED