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CA 2654307 C 2013/12/24

(11)(21) 2 654 307

(12) BREVET CANADIEN
CANADIAN PATENT

(13) C

(86) Date de dépôt PCT/PCT Filing Date: 2006/05/04
(87) Date publication PCT/PCT Publication Date: 2007/11/08
(45) Date de délivrance/Issue Date: 2013/12/24
(85) Entrée phase nationale/National Entry: 2008/12/02
(86) N° demande PCT/PCT Application No.: TR 2006/000018
(87) N° publication PCT/PCT Publication No.: 2007/126397

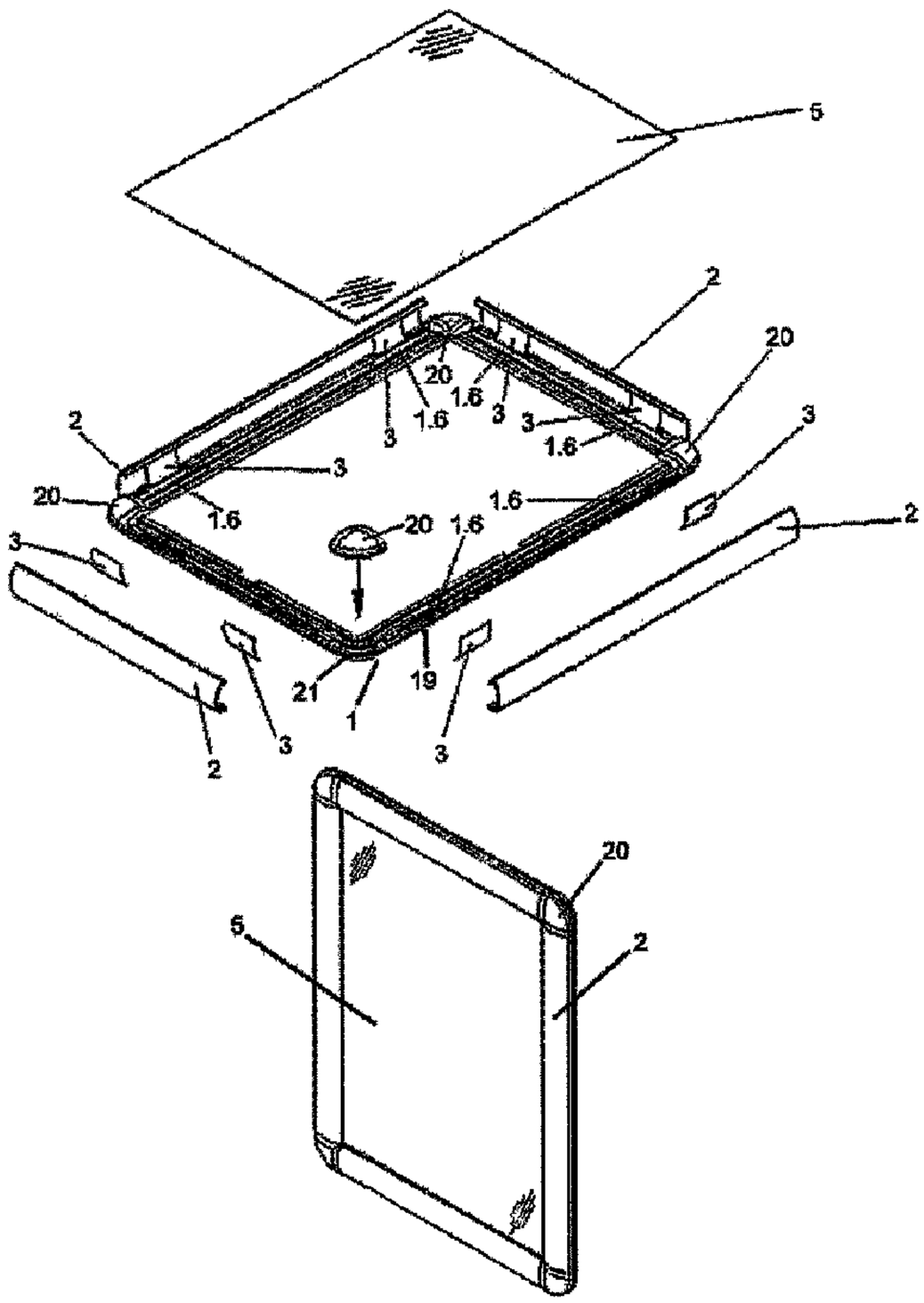
(51) Cl.Int./Int.Cl. *G09F 15/00* (2006.01)

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(54) Titre : CADRE PRODUIT SOUS FORME DE CORPS EN UNE SEULE PIECE
(54) Title: FRAME PRODUCED AS ONE-PIECE BODY



(57) Abrégé/Abstract:
A frame for displaying an advertisement poster. The frame may include an injection-molded single-piece plastic body, an upper aluminum profile, and a spring connected to the upper aluminum profile and mounted to the body. A method for manufacturing a

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(57) Abrégé(suite)/Abstract(continued):
frame for displaying an advertisement poster where the frame includes a body formed as a single- piece, at least one upper aluminum profile; and at least one spring, wherein the body is a single-piece body, the spring is connected to the upper aluminum profile, and the spring is mounted to the body. The method may include manufacturing at least one upper aluminum profile by aluminum extrusion, manufacturing an injection-molded single-pieced plastic body, and mounting at least the upper aluminum profile and at least one of the spring to the body.

ABSTRACT

A frame for displaying an advertisement poster. The frame may include an injection-molded single-piece plastic body, an upper aluminum profile, and a spring connected to the upper aluminum profile and mounted to the body. A method for manufacturing a frame for displaying an advertisement poster where the frame includes a body formed as a single- piece, at least one upper aluminum profile; and at least one spring, wherein the body is a single-piece body, the spring is connected to the upper aluminum profile, and the spring is mounted to the body. The method may include manufacturing at least one upper aluminum profile by aluminum extrusion, manufacturing an injection-molded single-pieced plastic body, and mounting at least the upper aluminum profile and at least one of the spring to the body.

FRAME PRODUCED AS ONE-PIECE BODY

FIELD OF THE INVENTION

The present invention relates to a frame for displaying an advertisement poster. The invention relates particularly to a new frame that provides savings in manufacturing and labor given that it is manufactured as a single plastic-injected body as opposed to a body comprising many cooperating parts and to the production method for the same.

BACKGROUND OF THE INVENTION

Conventional aluminum frames are usually used for the exhibition of the advertisement posters in the interior spaces. Aluminum frames generally comprise lower aluminum profiles, upper aluminum profiles, background (polystyrene), springs, corner connection elements and PVC protection.

Traditional aluminum frames are manufactured in 5 preparatory stages and 5 assembly stages.

Preparatory stages include the following:

- cutting the springs in the form of strips with special machines in sizes suitable for the frame,
- after lower and upper aluminum profiles have been obtained, they are cut to the necessary sizes, and the lower and upper profiles are joined by springs at an angle of 45
- providing the background (polystyrene) and cutting the same into necessary sizes,
- performing the cutting and boring procedures for the metal pieces provided with suitable hardness for the corner connections in press and molding machines, practicing the threading operations for the holes and

coating the same, and screwing once the corner connections have been made, and

— after the PVC protection has been obtained, cutting the same in the required dimensions, opening a canal on one side of PVC to facilitate the opening of the frame from the interior.

Assembly stages comprise the following:

— after the lower and upper aluminum profiles have been processed at the boring tool, the previously prepared corner connection elements are attached to two reciprocal edges and the screws and screw blank spaces are removed.

— one of the edges, to which the corner connection elements have been attached, is joined to the other two edges by means of the corner connection elements (edges take the shape of a U).

— the previously prepared background (polystyrene) is applied through the canals located on the lower profile on the edges that have taken the shape of a U.

— once the background (polystyrene) has been fixed, it is mounted on the other U shaped edges by means of the corner connection elements.

— PVC protection is located at the position delimited by the lower profile and the frame is made ready for the end user.

Because the number of parts of a traditional frame body are many, for instance: lower aluminum profiles, corner connection elements enabling the assembly of the edges, a background and a polystyrene layer forming the background, the assembly, manufacturing and labor time for traditional frames is extensive. Traditional aluminum profiles are produced using an extrusion method which is difficult to execute and requires extra processing afterwards. This excess processing increases the manufacturing and labor costs and time.

In addition, various hanger apparatus are attached on the background, in order to enable the frames to be suspended from a location. This leads to extra costs and

makes the production stages even more difficult. Additionally, due to the attachment of the hanger apparatus on the frame, the frame is alienated from the point of suspension by a distance equivalent to the thickness of the apparatus, which also constitutes a problem.

Thus, there is the need for a new single-pieced frame, which provides savings in the manufacturing costs and time.

SUMMARY OF THE INVENTION

Based on the known state of the art, it is an object of the invention to provide a new one-piece frame, which is manufactured in a shorter time and at a lower cost, and the production method for the same.

It is another object of the invention to provide savings in the operating costs by forming a new frame comprising a body made by the plastic injection method and the springs connected to aluminum profiles placed on the body, without using the lower aluminum profiles, corner connection elements and the background.

It is another object of the invention to provide savings in the manufacturing and labor costs by providing a body formed at a single stage without using the lower aluminum profiles, corner connection elements and the background.

It is yet another object of the invention to provide the ease of use by means of a portable thrust unit formed on the back of the frame.

It is still another object of the invention to provide a shorter manufacturing time for the plastic-based body produced at single stage by injection method, and the frames formed by placing the spring, aluminum profile and a PVC protection on the body.

It is still another object of the invention to shorten the duration of the preparatory and assembly stages for the frames.

In order to attain the aforesaid objects, a new frame has been developed, which consists of a body formed by the plastic injection method, and the springs in connection with aluminum profiles located on the body. The body produced at a single stage is used, without the need to use the lower aluminum profiles, corner connection elements and the background. This provides shortened manufacturing stages and enables a new frame to be produced in a shorter time with lower manufacturing costs.

According to an embodiment of the invention, the method comprises the steps of providing the springs in the form of strips and cutting the same in suitable sizes, cutting the upper aluminum profiles at certain sizes in an angled manner and subjecting the same to the boring process, forming the body by means of the plastic injection method, once the upper aluminum profiles have been subjected to boring process, mounting the same onto the body along with the springs and locating the PVC protection on the body.

According to an embodiment of the invention, canals are formed on one side of the PVC protection and the upper aluminum profiles are cut at angles of 45°.

According to an embodiment of the invention, at least one portable thrust unit is formed, to be mounted on the body when necessary.

According to an embodiment of the invention, at least one thrust unit assembly site is formed on the body, in order to enable the thrust unit to be mounted on the body.

According to an embodiment of the invention, a body prepared in a single part, at least one upper aluminum profile located at the body and at least one spring have been formed.

According to an embodiment of the invention, the body is obtained by means of the plastic injection method.

According to an embodiment of the invention, there is provided at least one upper aluminum profile housing formed on the body, at least one spring housing, at least one upper profile stopper and at least one hanger canal.

According to an embodiment of the invention, there is provided at least one corner connection support located on the corner connection support housings formed at the corners of the body.

According to an embodiment of the invention, there is provided at least one thrust unit formed to be mounted onto the body.

According to an embodiment of the invention, there is provided at least one thrust unit assembly site and at least one thrust unit bearing, in order to enable the thrust unit to be mounted on the body when desired.

According to an embodiment of the invention, there is provided at least one thrust fixer and thrust leg located on the thrust body comprising the thrust unit.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure-1 is a perspective view showing the attachment of the corner connection elements according to the prior art.

Figure-1a is a perspective view showing the attachment of the shorter edge formed by the upper and lower aluminum profiles to the other edges according to the prior art.

Figure-1 b is a perspective view showing the attachment of the background (polystyrene) to the frame according to the prior art.

Figure-1c is a perspective view showing the attachment of the other edge according to the prior art.

Figure-1d is a perspective view showing the assembly of the PVC protection according to the prior art.

Figure-1e is a perspective view showing the frame used according to the prior art.

Figure-2 is the front and cross-sectional views of the body according to a

representative application of the invention.

Figure-3 is disassembled view of the frame with a complete body according to a representative application of the invention.

Figure-3a shows the disassembled and assembled perspective views of the frame with a complete body including the corner connection support according to an alternative representative application of the invention.

Figure-4 shows the front view and a detailed perspective view of the body according to a representative application of the invention.

Figure-5 shows the rear view and a detailed view of the body according to a representative application of the invention.

Figure-6 shows the views of the thrust unit in open and closed states, according to a representative application of the invention.

Figure-7 is a view showing the assembly of the upper aluminum profiles and the springs on the body, according to a representative application of the invention.

Figure-8 includes the view showing the assembly of the PVC protection and the perspective view of the frame that is ready for use, according to a representative application of the invention.

Figure-9 is a perspective view showing the assembly of the thrust unit on the body in a horizontal and vertical alignment, according to a representative application of the invention.

Figure-10 is a perspective view showing the assembly of the frame onto the wall, according to a representative application of the invention.

Figure-11 is a perspective view showing the hanging of the frame by means of the connection with the hanger canals, according to a representative application of the invention.

Figure-12 is a perspective view showing the use of the frame with the thrust unit according to a representative application of the invention.

Figure-13 is a representative view of the production by means of the injection method according to a representative application of the invention.

Figure-14 is a representative view of the production of the aluminum profiles by means of the extrusion method according to the prior art.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to aluminum frames for displaying advertisement posters in various places which are produced in shorter times and at lower costs. The body (1) formed by the plastic injection method, the upper aluminum profiles (2) and the springs (3) to be mounted on the body (1), are provided. After the upper aluminum profiles (2) and the springs (3) are connected to the same and mounted on the body (1), the PVC protection (5) is mounted within the limits forming the frame. With the new frame formed in this way, the operating costs are reduced.

Figure-1 provides a perspective view showing the attachment of the corner connection elements (8) according to the prior art. In the existing frames, the corner connection elements (8) are mounted on the upper and lower aluminum profiles (2, 6) and are connected to the springs (3), forming the shorter edges. Figure-1a provides a perspective view showing the attachment of the shorter edge formed by the upper and lower aluminum profiles (2, 6) to the other edges according to the prior art. One of the shorter edges is mounted to the upper and lower aluminum profiles (2, 6) connected to the springs (3), forming the longer edge. Figure-1b provides a perspective view showing the attachment of the background (polystyrene) (7) to the frame according to the prior art. The background (7) is mounted from the open end of the frame, which is formed in a way to have one end open. Figure-1c provides a perspective view showing the attachment of the other edge according to the prior art. After the background (7) has been attached, the other shorter edge is mounted.

Figure-1d provides a perspective view showing the assembly of the PVC protection (5) according to the prior art. PVC protection (5) is mounted within the limits of the formed frame. Figure-1e provides the perspective view of the frame used according to the prior art. The upper aluminum profiles (2) are tightly closed over the PVC protection (5) by means of the springs (3). In this manner, the formed frame becomes ready for use. Here the number of parts comprising the frame is excessive and the aluminum profiles (2, 6) are produced by means of an extrusion method, hence the manufacturing costs and times are increased.

In Figure-2, the front and cross-sectional views of the body (1) are shown according to a representative application of the invention. As provided in the A-A cross-section and the detail Z, the springs (3) are connected to the upper aluminum profiles (2) and are mounted on the body (1). Figure-3 provides the disassembled view of the frame (1) with the complete body according to a representative application of the invention. The upper aluminum profiles (2) and the springs (3) are mounted to the spring housing (1.6) and the upper aluminum profile housing (19), respectively, formed on the body (1). The PVC protection (5) is mounted within the limits formed on the body (1). Figure-3a shows the disassembled and assembled perspective views of the frame with a complete body (1) including the corner connection supports (20) according to an alternative representative application of the invention. The corner connection supports (20) are mounted in the corner connection support housings (21) formed at the corners of the body (1) along with the upper aluminum profiles (2) located on the body (1). In this way, it is made possible to obtain a frame with the corner connection supports (20). Figure-4 shows the front view and a detailed perspective view of the body (1) according to a representative application of the invention. Spring housings (1.6) are formed on the body (1). Springs (3) are preferably strip-type springs made of steel.

Figure-5 shows the rear view and a detailed view of the body (1) according to a representative application of the invention. Upper aluminum profile housing (19), upper aluminum profile stopper (1.5), assembly housing (1.2), hanger canal (1.1), thrust unit bearing (1.3) and thrust unit assembly site (1.4) have been formed on the body (1). Thrust unit bearing (1.3) is located on the short and long edges on the body (1). Thrust unit assembly sites (1.4) are formed to enable the thrust unit (4) to be mounted on the body (1). In Detail-Y, the detail of the upper profile stopper (1.5), is provided. Detail-Z provides the detail of the hanger canal (1.1). Figure-6 shows the views of the thrust unit in open and closed states, according to a representative application of the invention. Thrust fixer (4.2) connected with the thrust leg (4.1) operates on the thrust body (4.3). In this way, the use of the thrust unit (4) is made possible in open and closed states and the desired adjustment is possible.

Figure-7 is a view showing the assembly of the upper aluminum profiles (2) and the springs (3) on the body (1), according to a representative application of the invention. As shown in Section A-A, the upper aluminum profiles (2) are connected to the springs (3) and are mounted inside the housings (1.6, 19) formed on the body (1) produced as a single piece. Figure-8 includes the view showing the assembly of the PVC protection (5) and the perspective view of the frame that is ready for use, according to a representative application of the invention. PVC protection (5) is mounted within the limits formed on the body (1). After the PVC protection (5) has been mounted, the upper aluminum profiles (2) are closed over the PVC protection (5) by means of the springs (3). The frame formed in this way becomes ready for use.

Figure-9 is a perspective view showing the assembly of the thrust unit (4) on the body (1) in a horizontal and vertical alignment, according to a representative application of the invention. The thrust unit (4) is mounted both in vertical and horizontal alignment by means of the thrust unit assembly sites (1.4) through the thrust unit bearings (1.3) formed on the back side of the body (1). The ease of use is provided with the portable thrust unit (4) mounted in the thrust unit assembly sites (1.4). Figure-10 is a perspective view showing the assembly of the frame onto the wall, according to a representative application of the invention. The frame is mounted by means of the connection means (9) through the assembly sites (1.2) formed on the body (1). Figure-11 is a perspective view showing the hanging of the frame by means of the connection with the hanger canals (1.1), according to a representative to application of the invention. As show in Detail-B, the frame is mounted by means of the connection means (9) through the hanger canal (1.1) formed on the body (1).

Figure-12 is a perspective view showing the use of the frame with the thrust unit (4) according to a representative application of the invention. The use of the frame is realized upon the assembly of the thrust unit (4). The position of the thrust unit (4) may be adjusted. Figure-13 is a representative view of the production by means of the injection method according to a representative application of the invention. The raw material is supplied through the raw material inlet (12) to the mould (10), by means of the drive element (11), and during the transfer of the raw material to the mould (10);

heat transfer (13) is performed. In this way, the production stages are shortened and savings are provided in the operating costs.

The product (18) is obtained in the shape of the mould (10) in the injection machine. The production is completed at a single stage, without the need for any extra processing. Figure-14 is a representative view of the production of the aluminum profiles (2, 6) by means of the extrusion method according to the prior art. The mould (10) connected with the case (16) is located. Aluminum rod (14) and the punch (15) are formed inside the case (16). By the pushing force of the punch (15), the aluminum rod (14) in molten form passes through the mould (10) and forms the profile (17).

After the profile (17) has been formed, it needs to be subjected to numerous process steps. This means a costly and time consuming production.

CLAIMS

1. A method of producing an aluminum frame for display of advertisement posters, comprising the steps of:

- cutting springs as strips;
- extruding and cutting upper aluminum profiles;
- mounting aluminum profiles by means of the springs;
- cutting a PVC protection;
- positioning the PVC protection;
- subjecting the aluminum profiles to a boring process;
- forming a frame body as one piece body by means of plastic injection method;
- mounting the upper aluminum profiles on said one piece body along with the springs; and
- locating the PVC protection on said one piece body.

2. The method of claim 1 further comprising:

- forming canals on one side of the PVC protection; and
- cutting the upper aluminum profiles at 45° angles.

3. The method of claims 1 or 2 further comprising forming at least one portable thrust unit, said thrust unit to be mounted on the body when necessary.

4. The method of claim 3 further comprising forming at least one thrust unit assembly site on the body in order to enable the thrust unit to be mounted on the body.

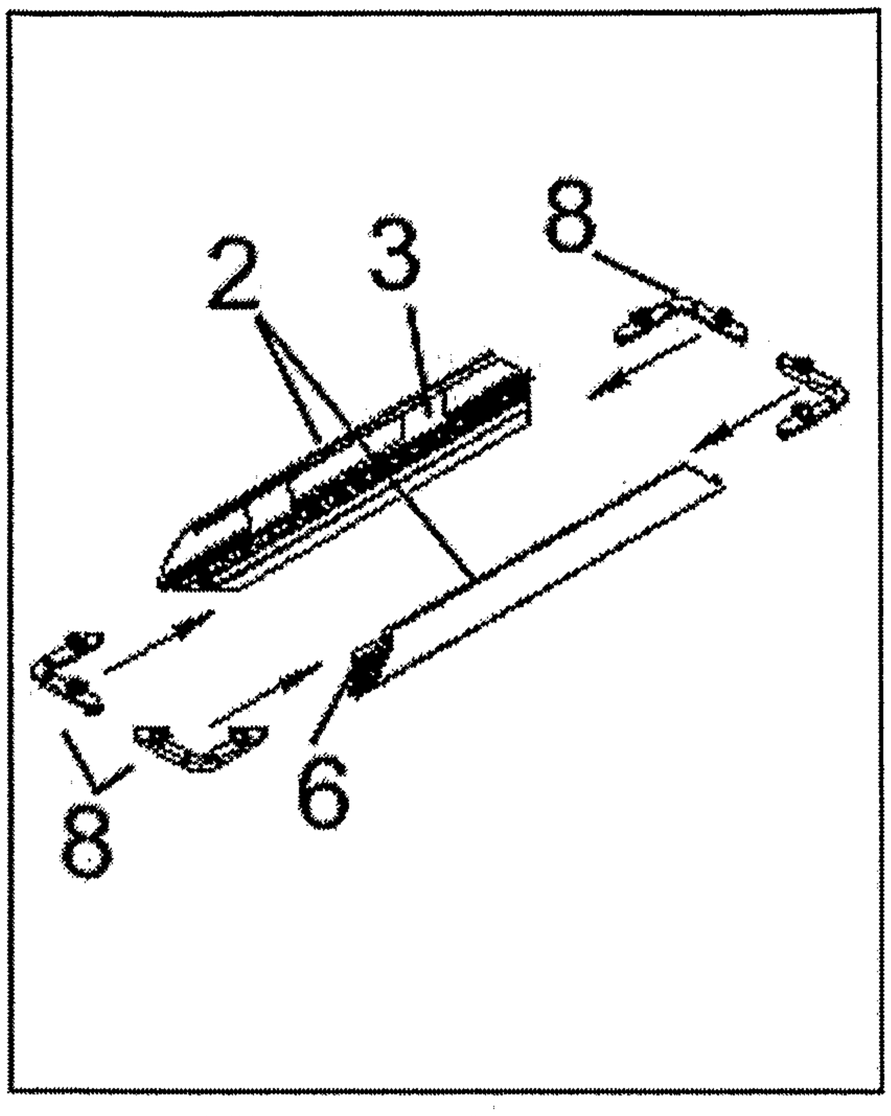


Figure 1

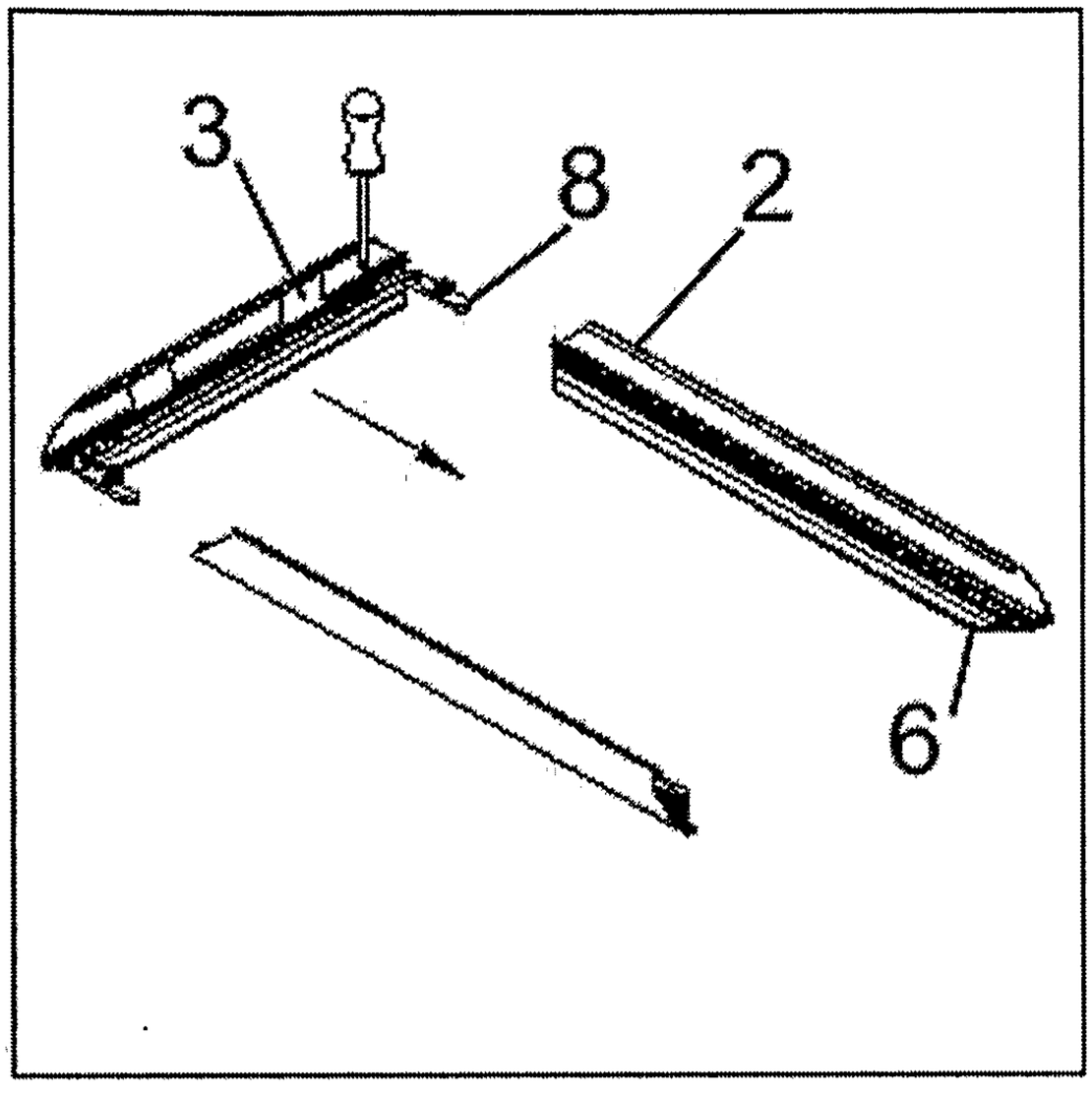


Figure 1a

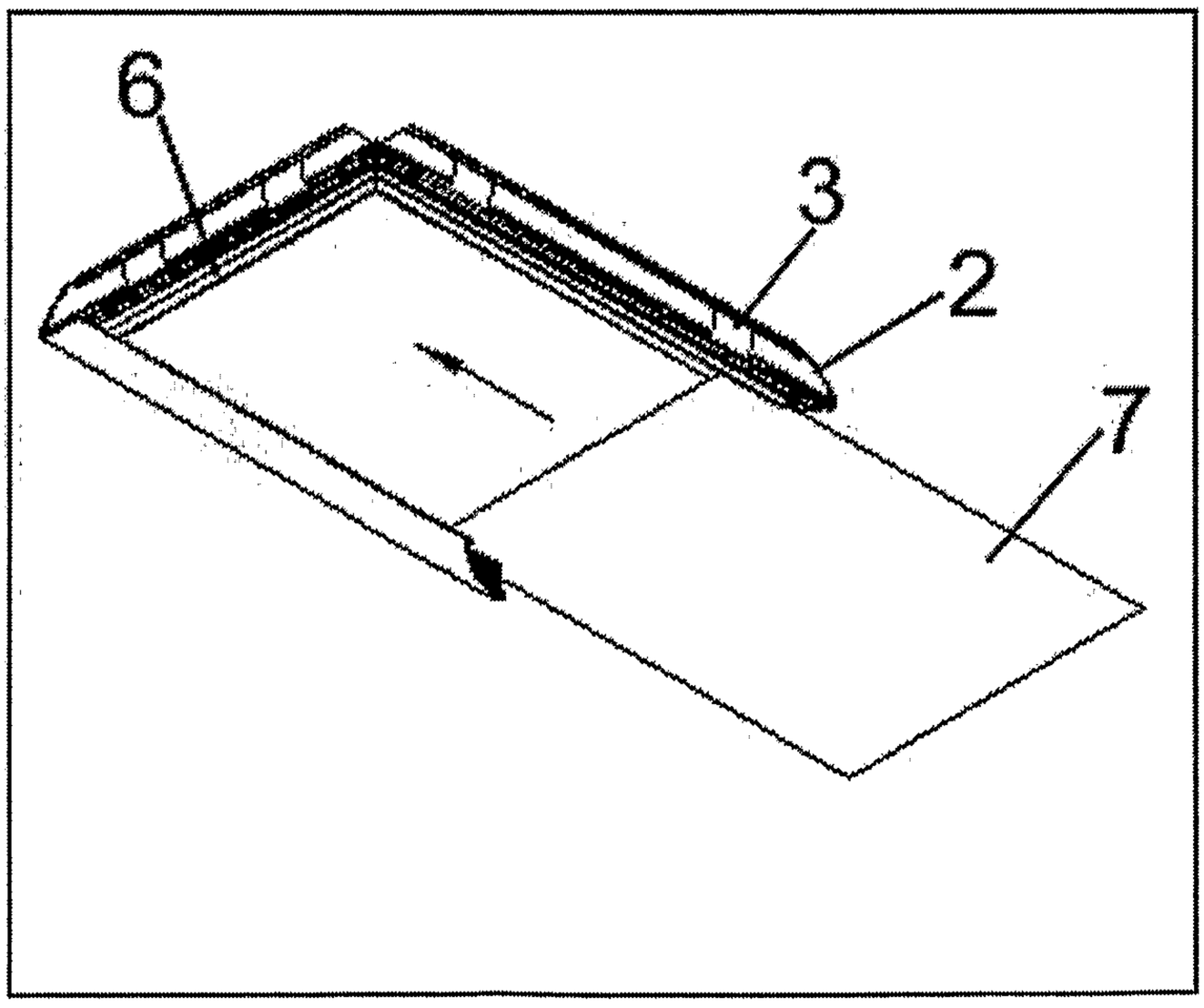


Figure 1b

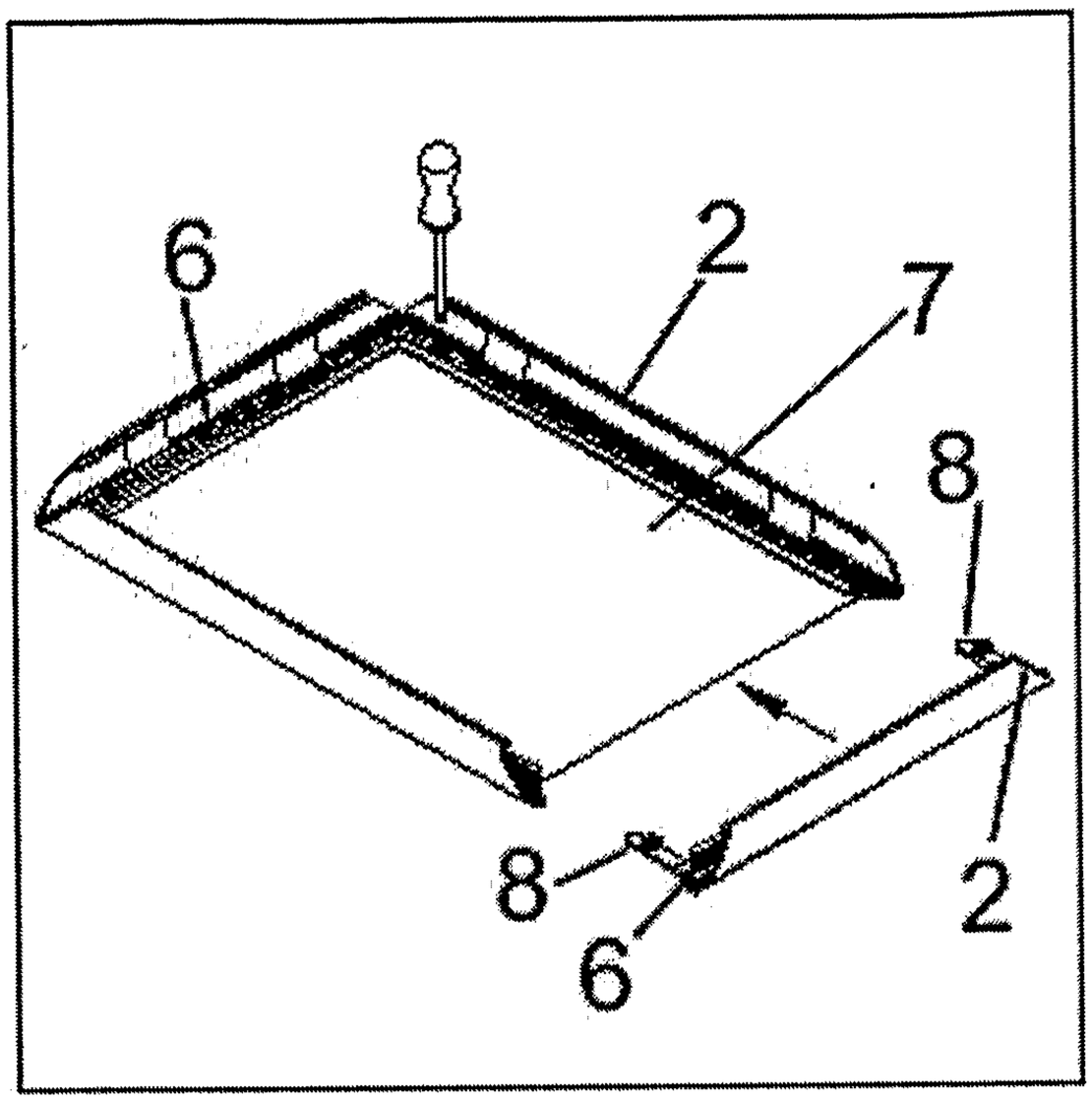


Figure 1c

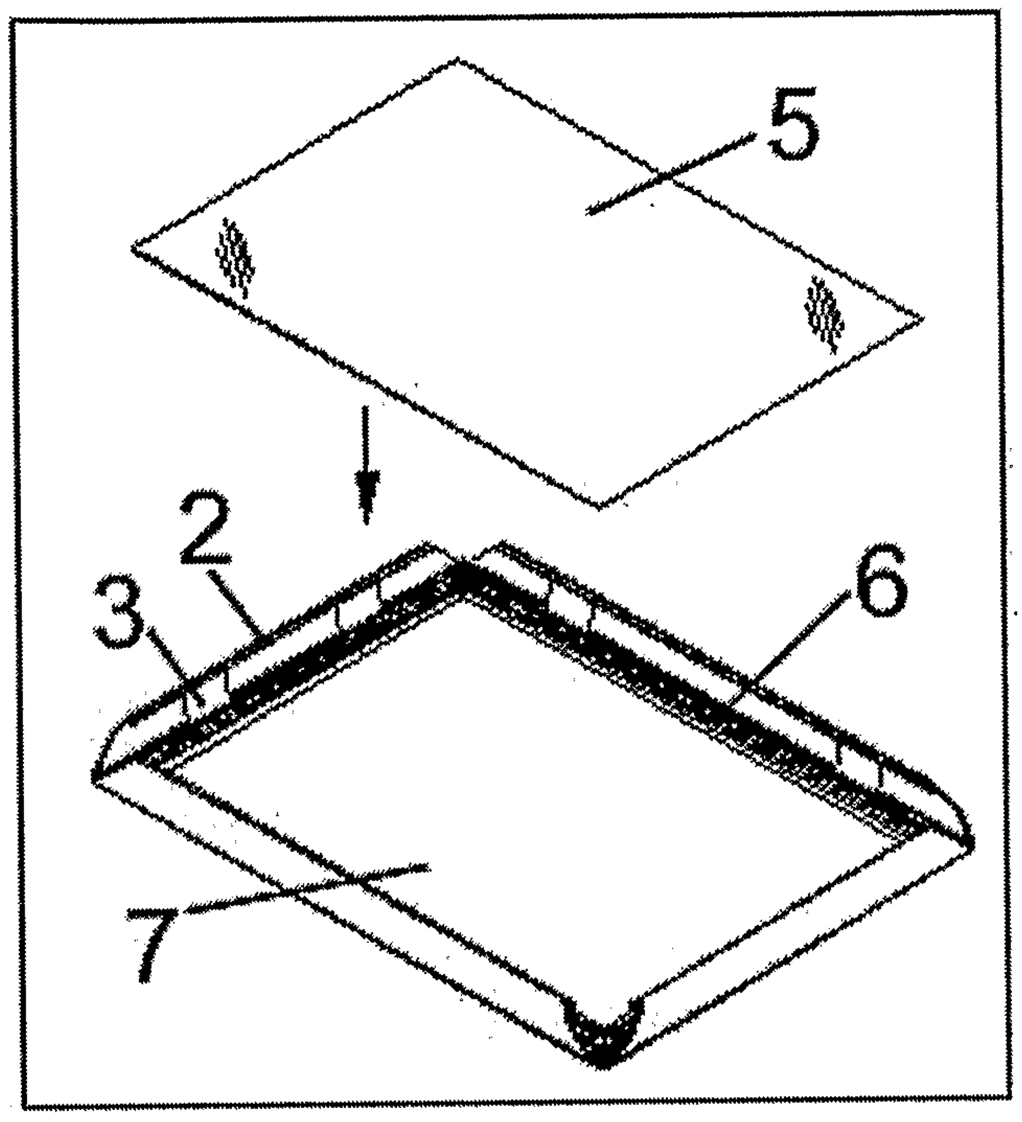


Figure 1d

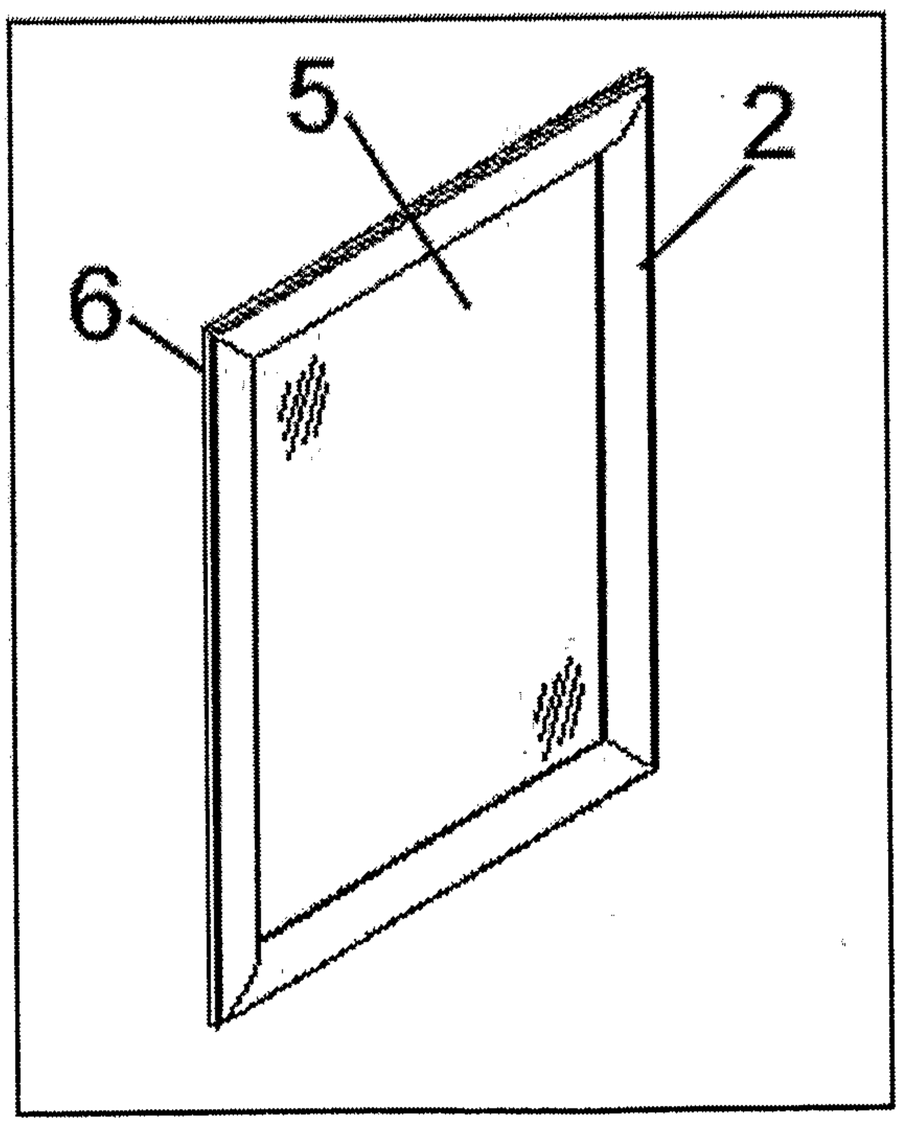


Figure 1e

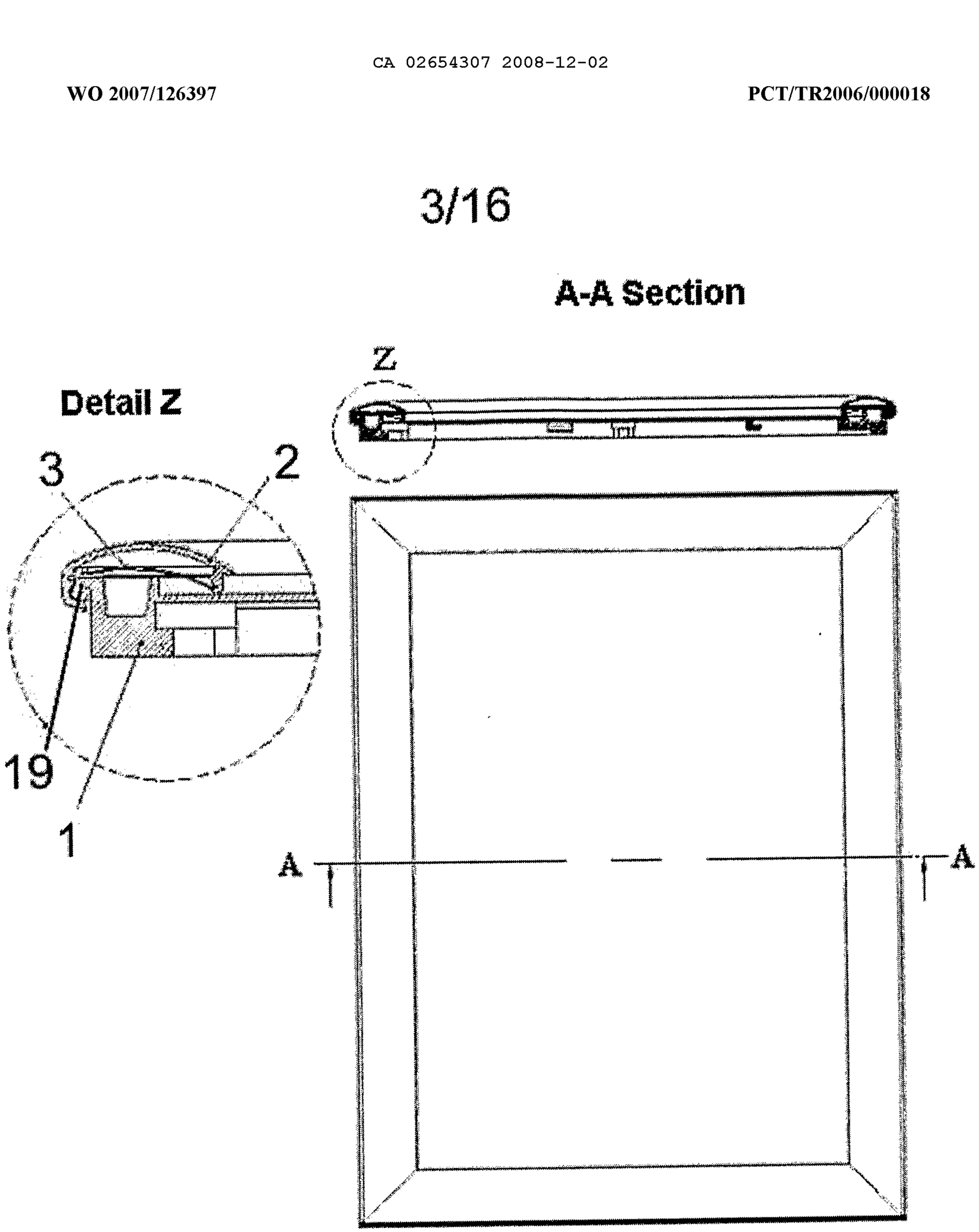


Figure 2

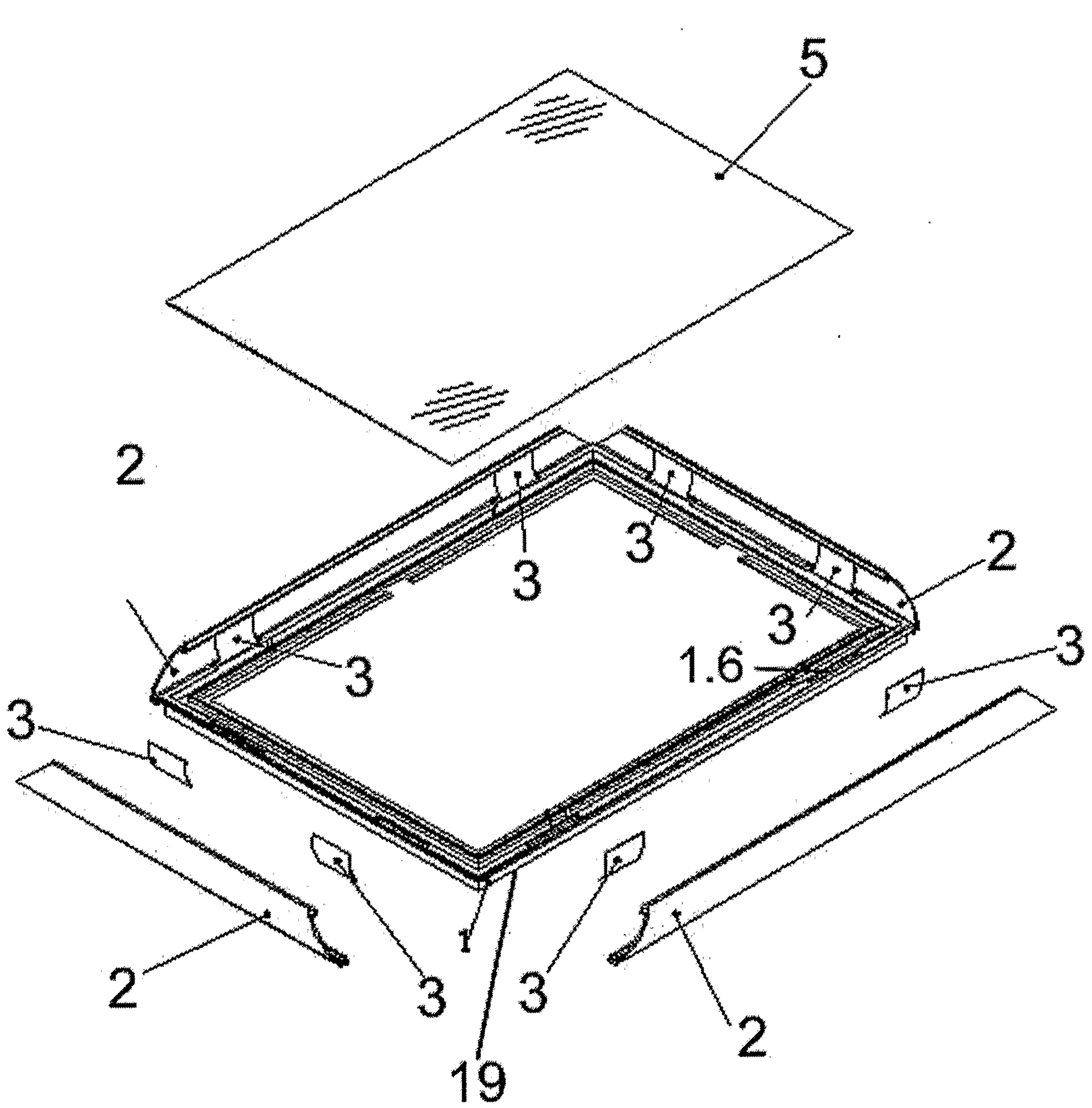


Figure 3

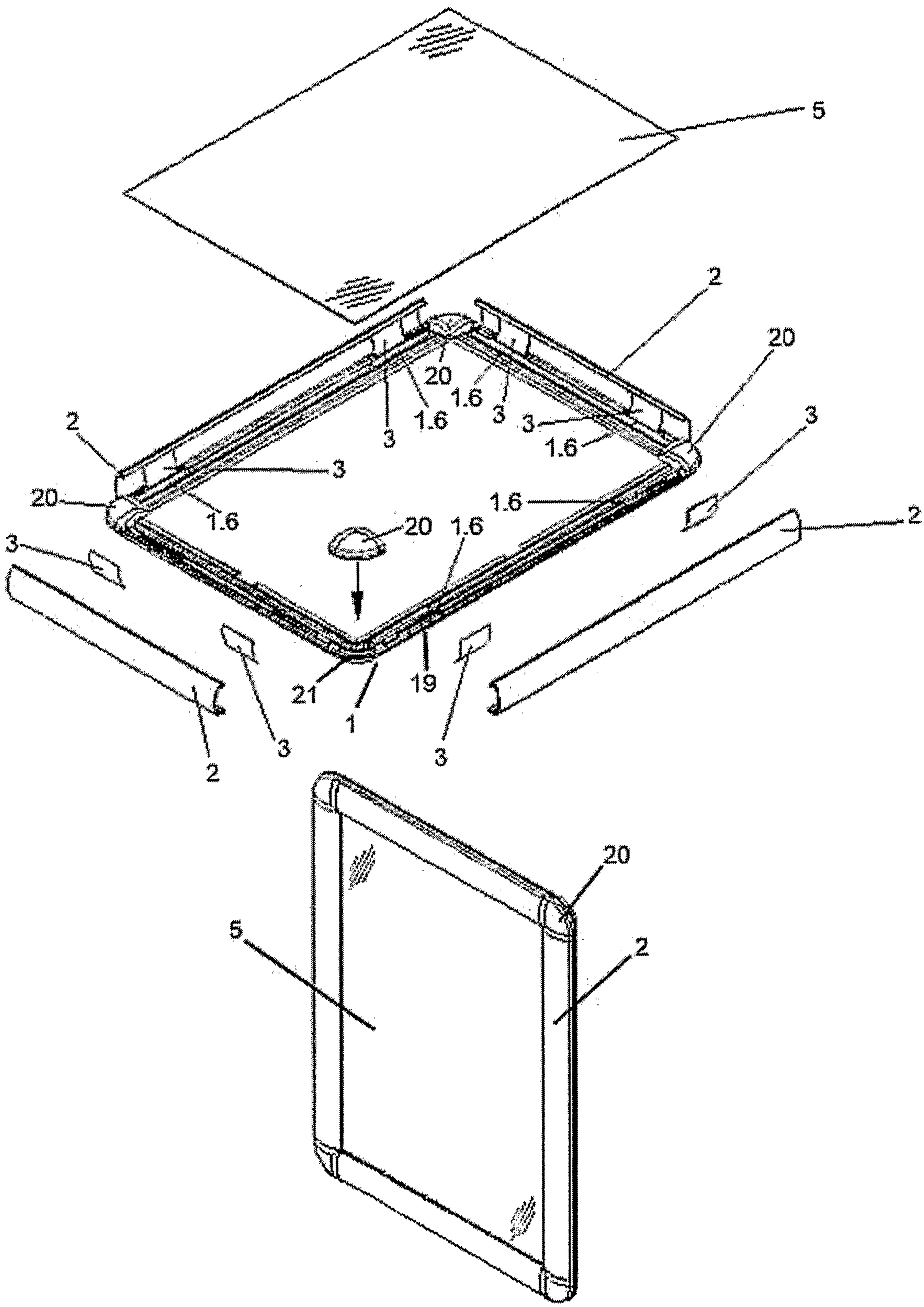


Figure 3a

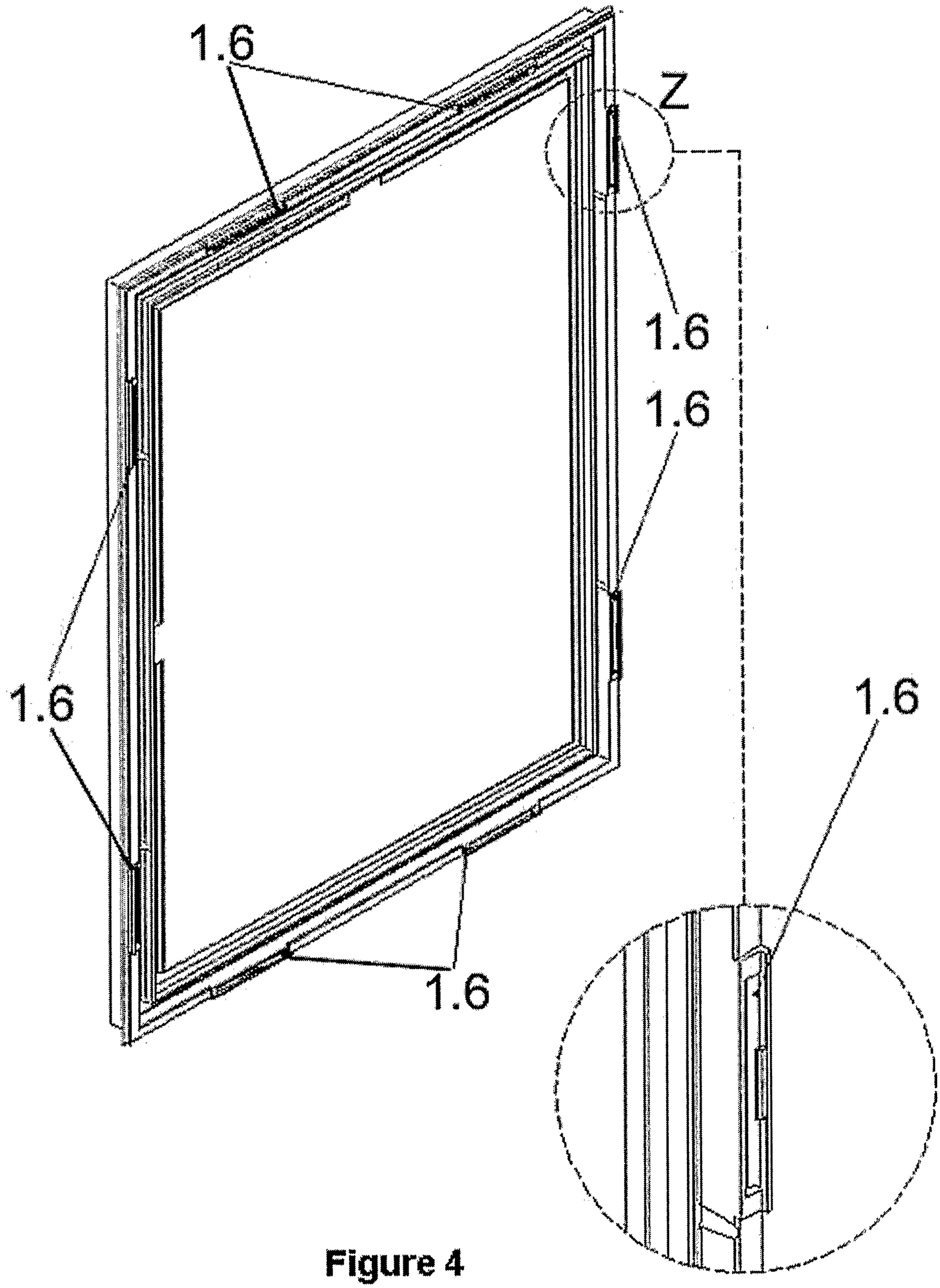
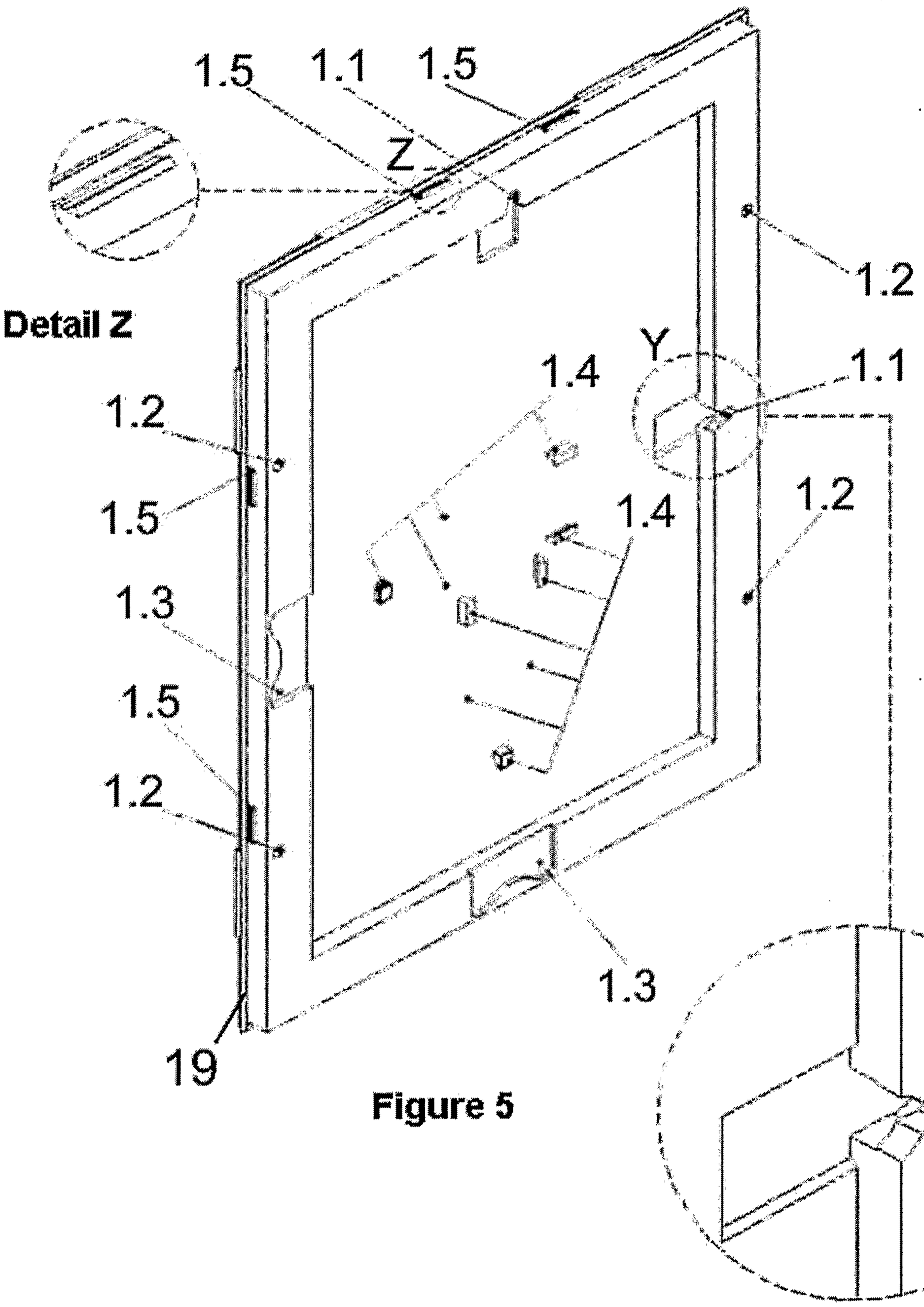


Figure 4

Detail Z



Detail Z

Figure 5

Detail Y

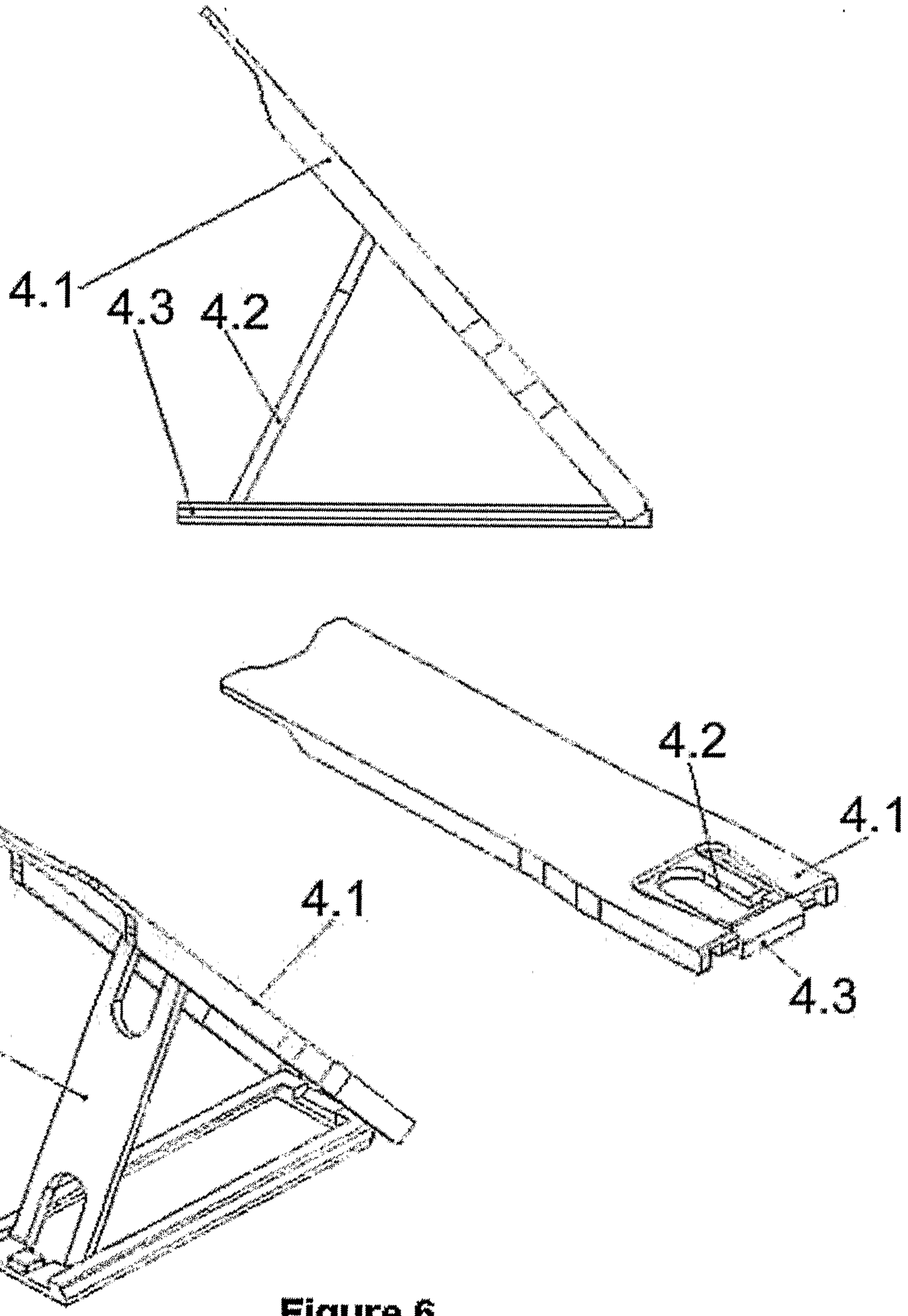
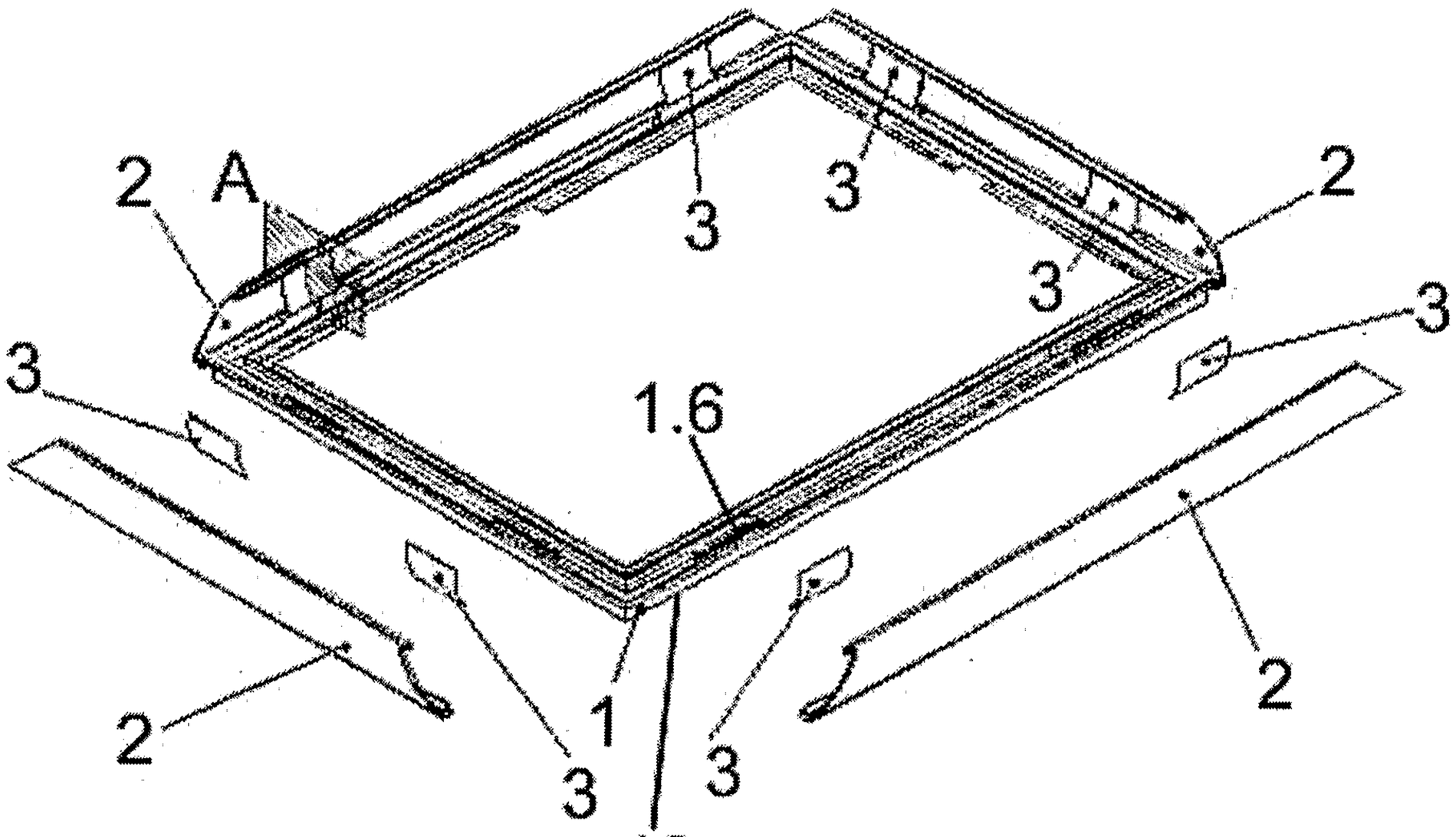
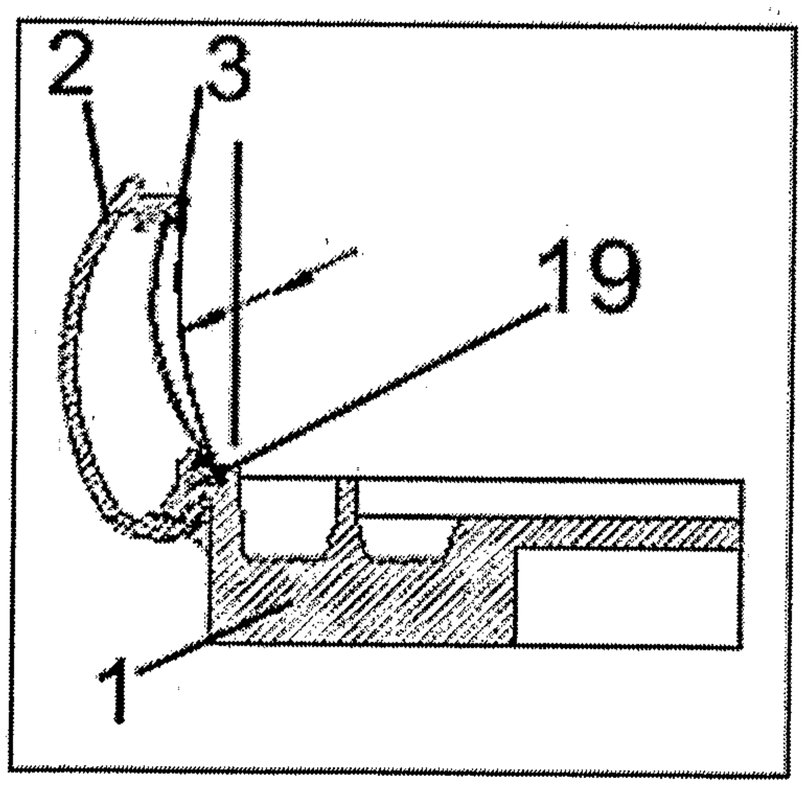


Figure 6



19



Section A

Figure 7

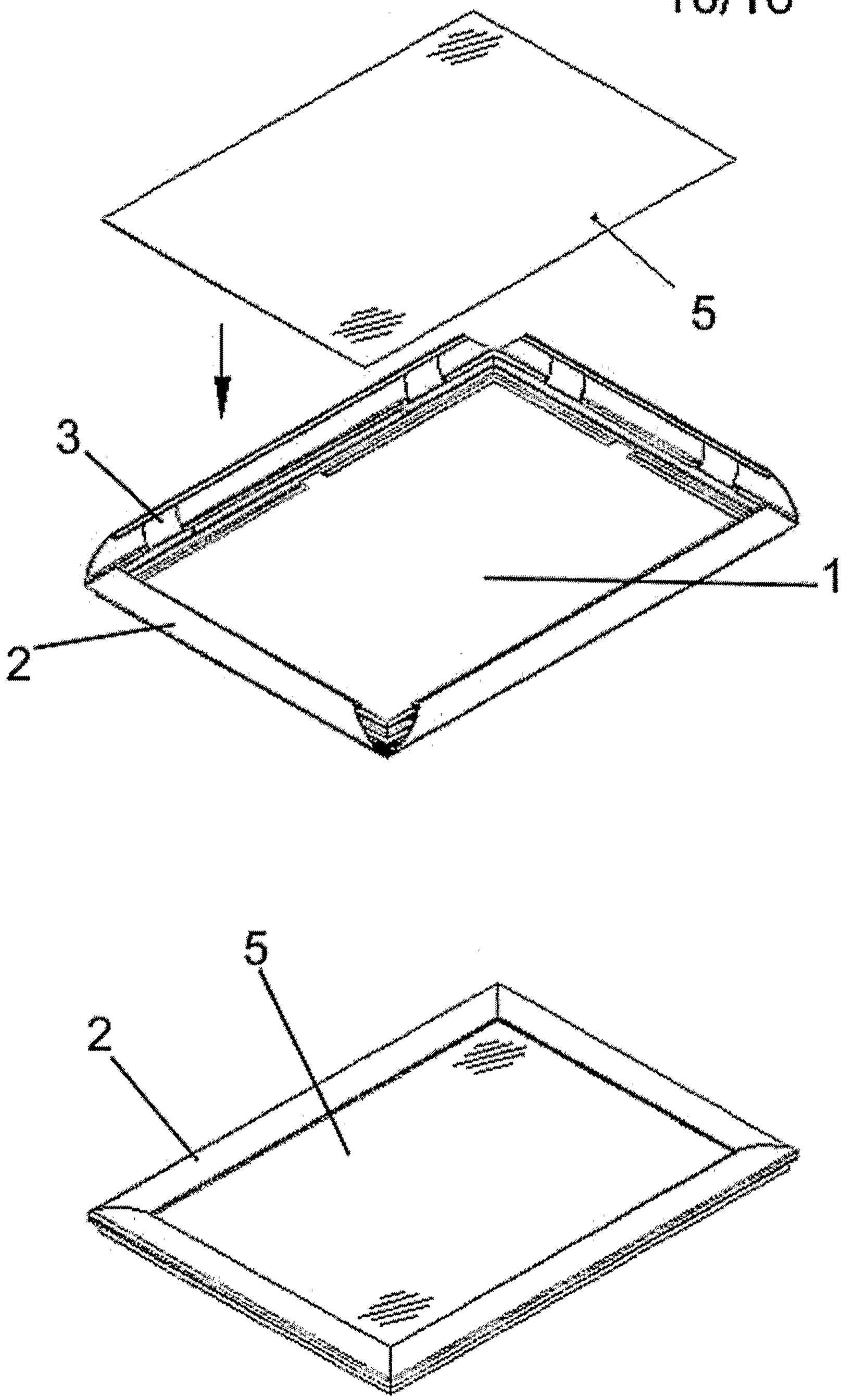


Figure 8

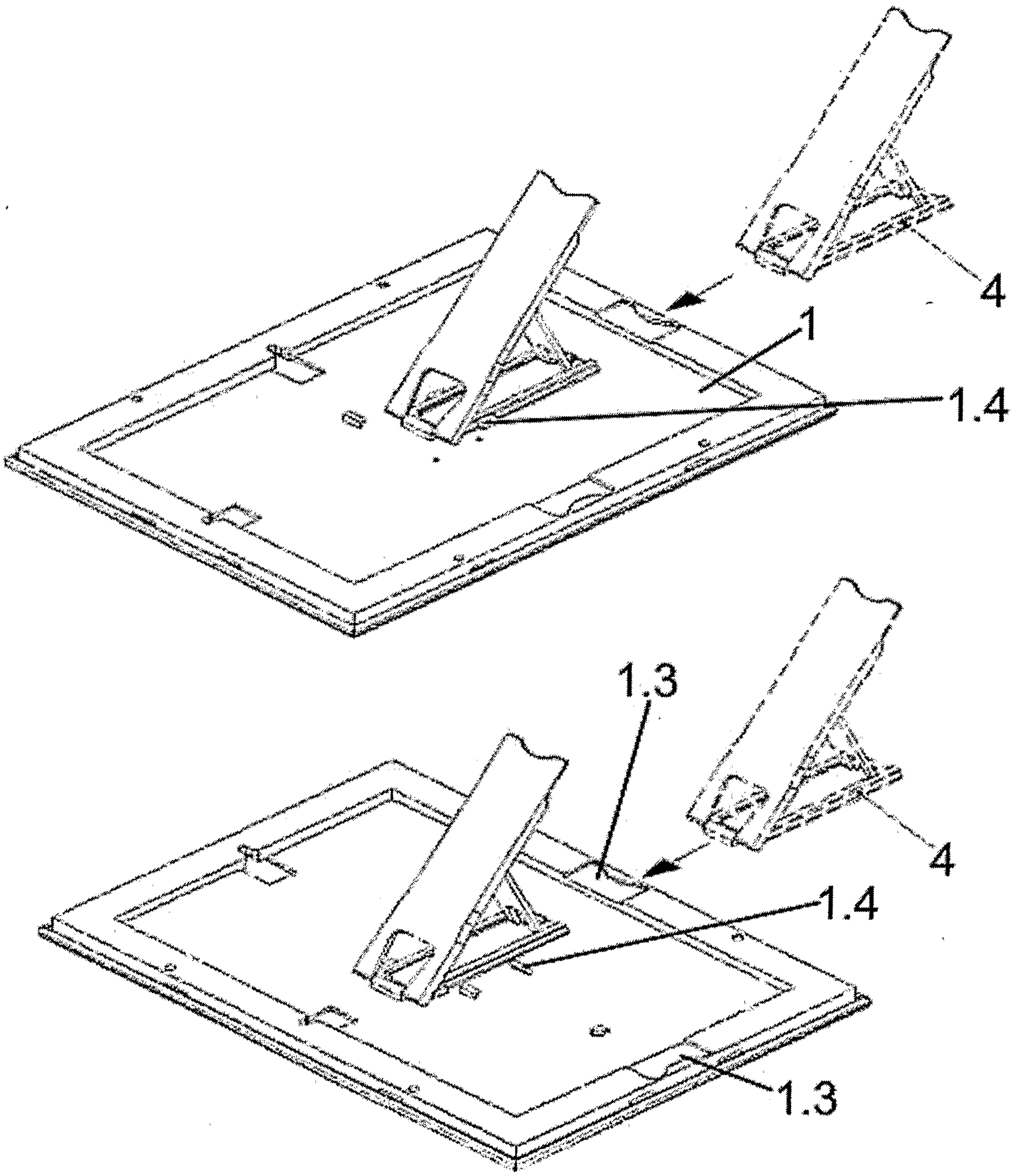


Figure 9

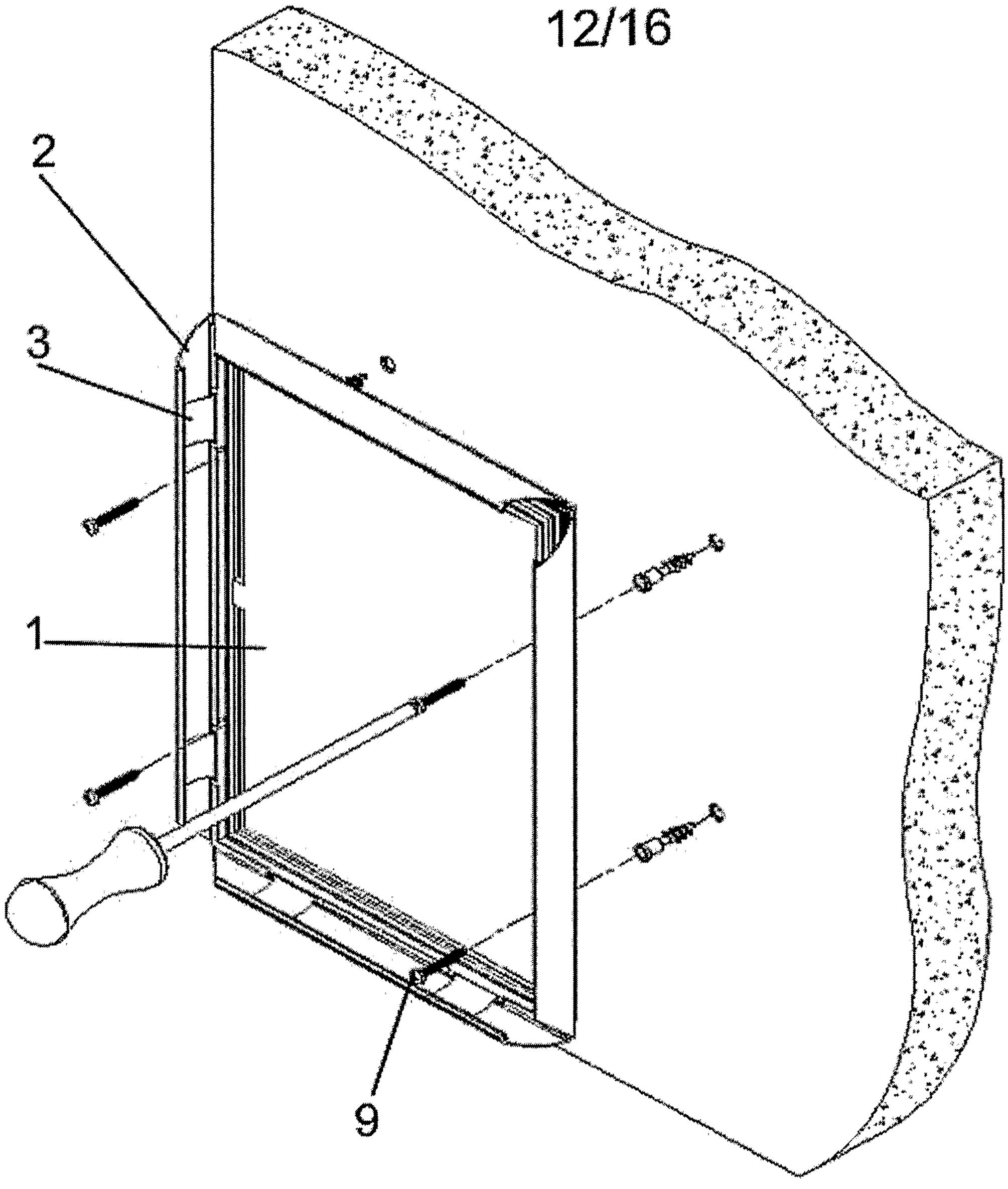


Figure 10

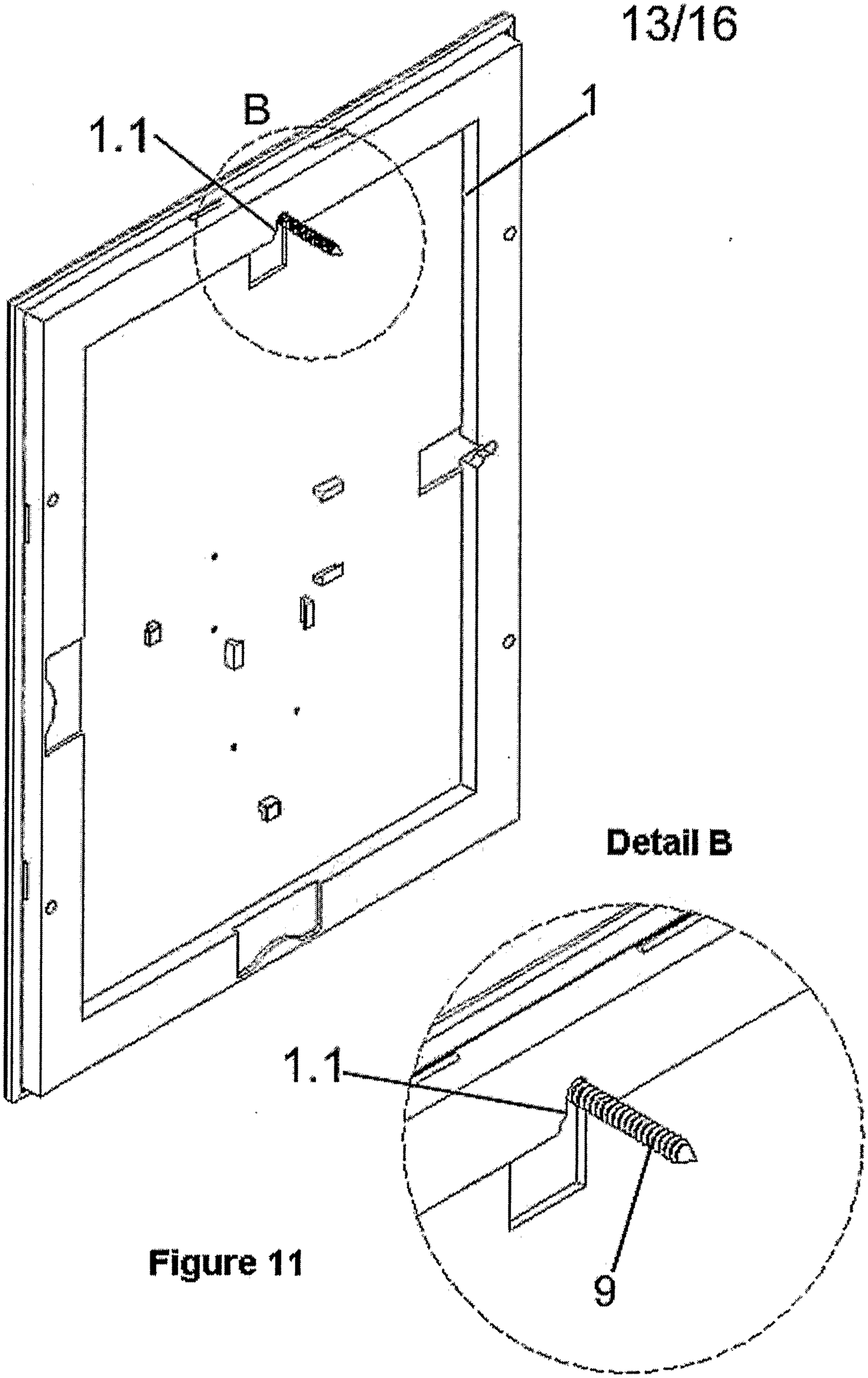


Figure 11

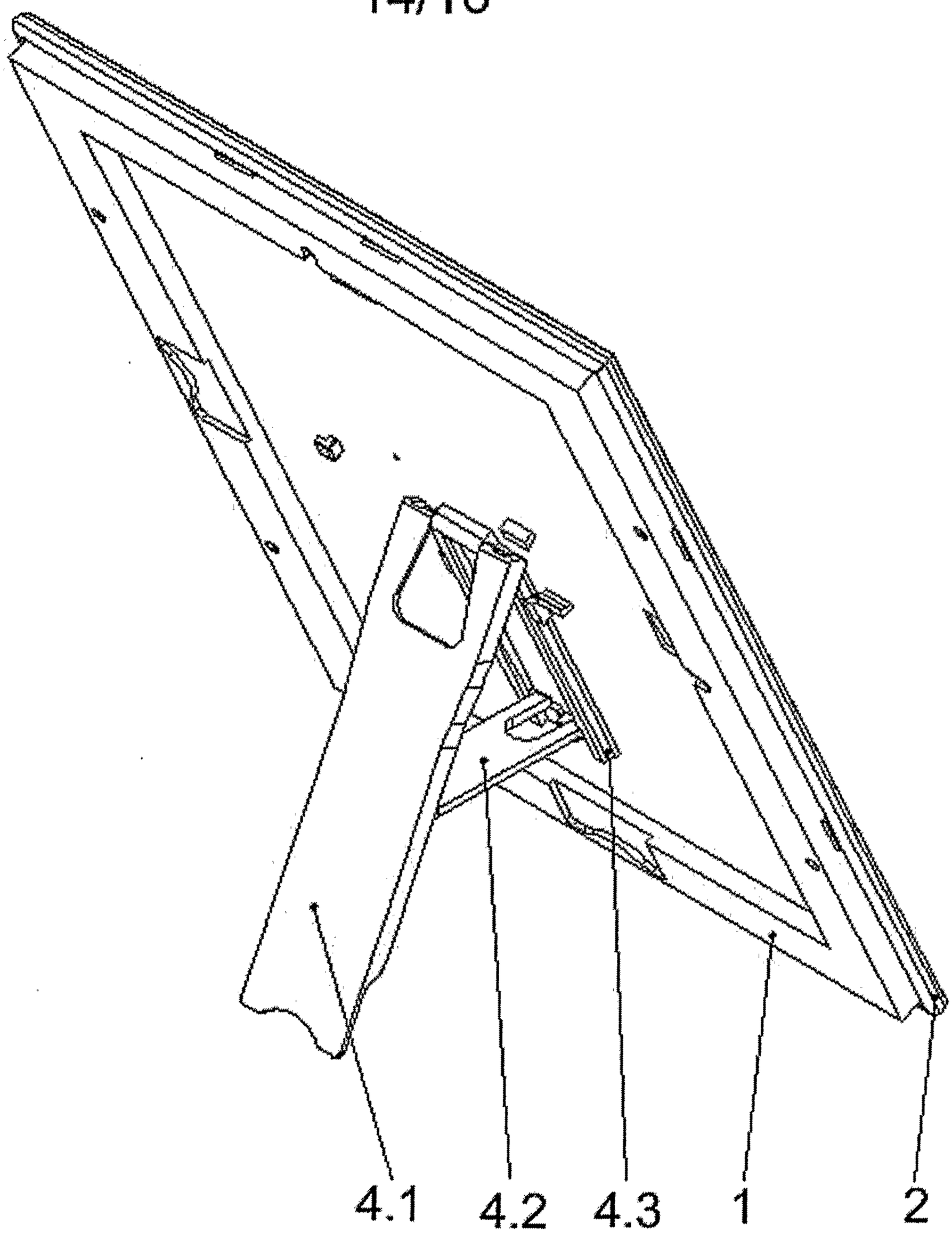


Figure 12

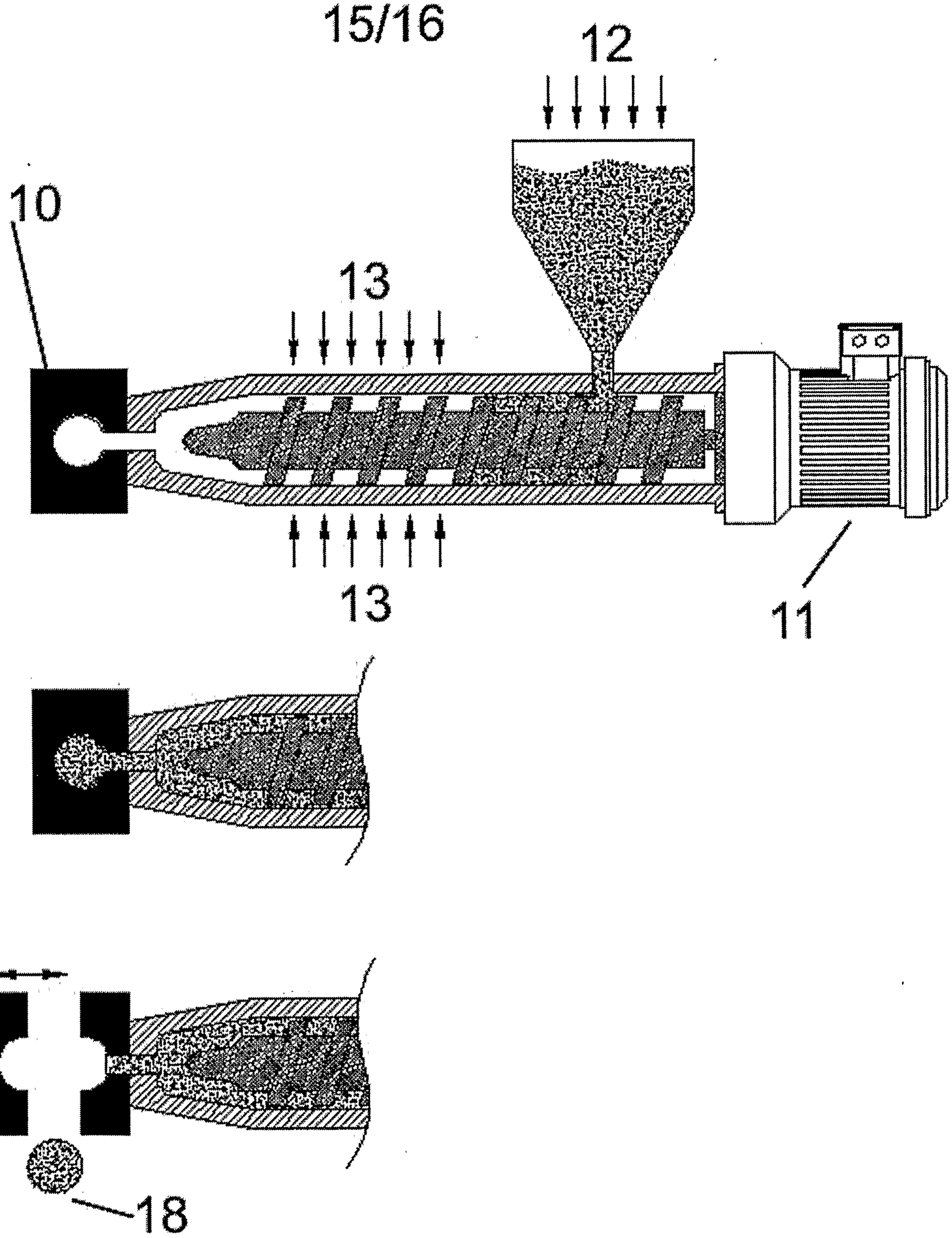


Figure 13

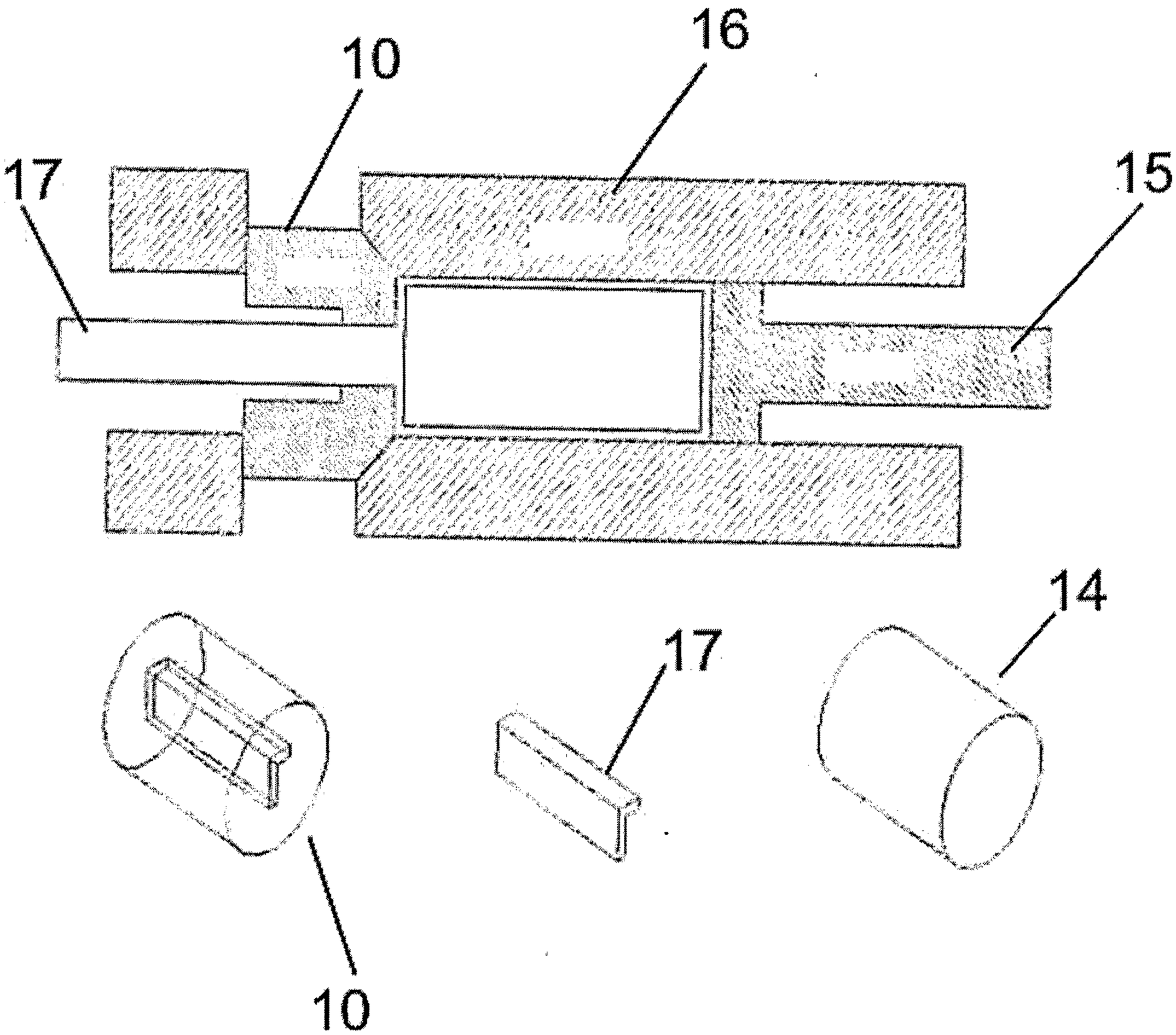
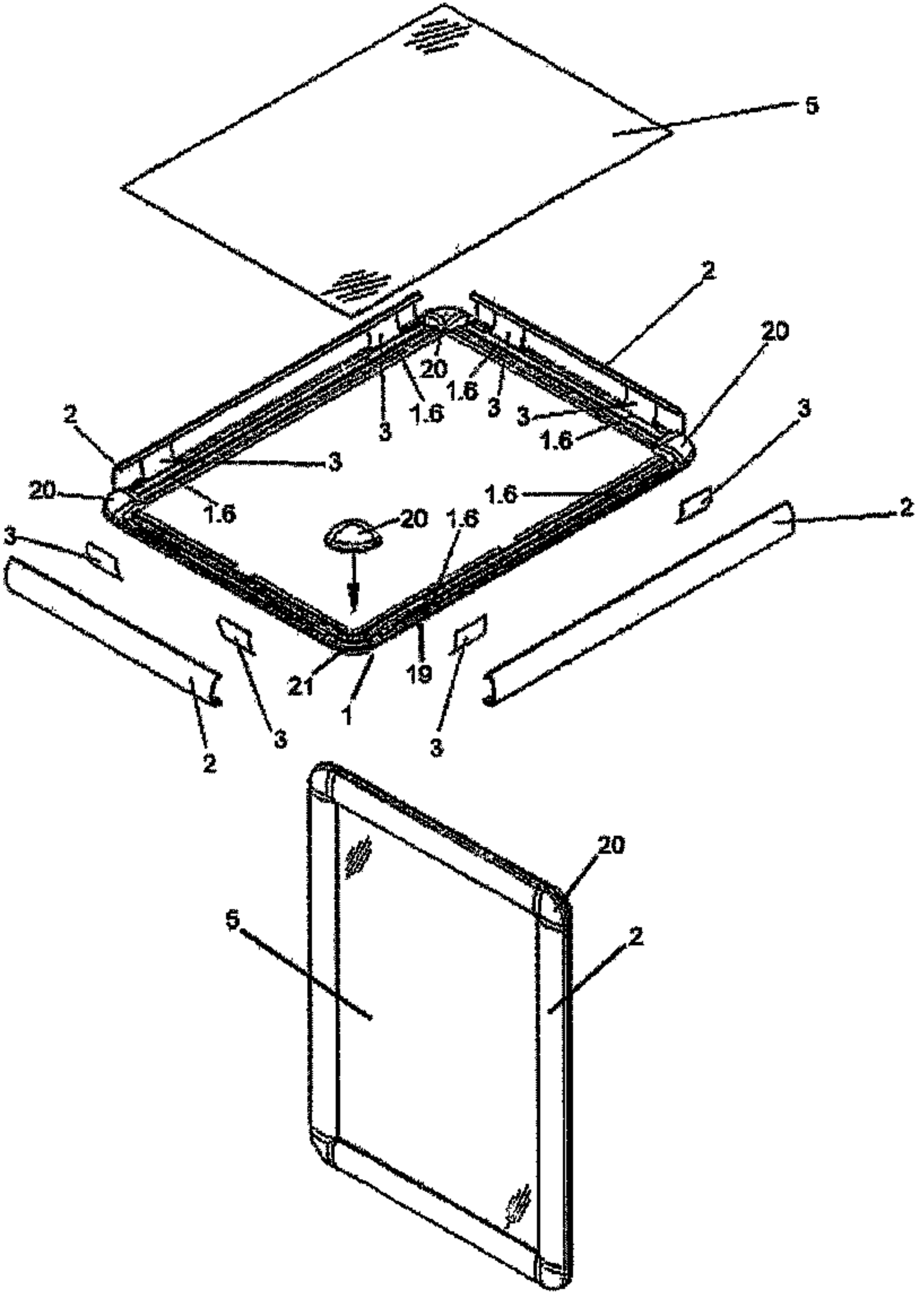


Figure 14


5
2
20
1.6
3
2
20
1.6
3
3
1.6
2
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1.6
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3
20
1.6
2
3
21
19
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3
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