

POM PT ONE STEP WITH A CROSS DIRECTIONAL RIPPING-STRIP

FIELD OF THE INVENTION

The present invention relates generally to the field of the multi-wall paper bag industry and more particularly to the production of a Paste Open Mouth style bag with a Pinched Top, embracing an inserted liner.

BACKGROUND

10 In the multi-wall paper bag industry, so far, nobody was able to provide an easy and secure opening feature in a POM style bag with a pinched top (PT) in a 2 or 3 paper ply bag with a poly inserted liner.

On the known version of POM PT style bags, the bottom is covered with a patch. Customers require a special sealer which cuts the liner just above the seal to prevent the liner from being caught in the flap at the top closure. The access to the liner is thus difficult. Even when an easy opening feature is implemented, the end user usually uses a knife to open the bag, resulting in potential damage to the bag and
20 risk of injury.

The SOM liner, the most traditional bag, offers easy access to the liner. During manufacturing, the liner is manually inserted and sealed. The bag is closed with the help of a sewing thread. The manufacturing process is labour intensive, has a high lead time and creates risk of injury during the manual insertion. The final product has a poor standing-ability, exhibits a high risk of contamination during the filling process and is not compatible with the PT closing equipment.

30 The SOS liner is very similar to the SOM liner. However, it stands better on a flat surface. It still exhibits similar limitations of the SOM liner.

The SOS PT bag (or commercially known as a "WEBB bag") is a very expensive bag and is only offered by a limited amount of suppliers. It has a square bottom and is compatible with the pinch closure equipment on the top. The bag provides a good

pallet display, but still has limitations. The inner liner cannot be separated from the paper bag and hence both cannot be recycled. It is also not possible to seal the liner fully hermetically.

A very popular version in industry is the PBOM bag. Its top closure is pinch type and is therefor adapted to the same closing equipment. Again the liner cannot be separated and it has a poor standing-ability.

SUMMARY OF THE INVENTION

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An object of the invention is to provide a POM PT bag that overcomes the above mentioned drawbacks.

Another object of the invention is to provide such a POM PT bag having an inserted liner.

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Another object of the invention is to provide such a POM PT bag having a top closure that can be folded above a customer seal in order for an inner liner to be fully independent from the bag after the bag is opened with the help of a ripping-strip (easy opening feature).

Another object of the invention is to provide such a POM PT bag wherein the liner is not trapped in an upper flap of the bag in order for the bag to be fully recyclable.

Another object of the invention is to provide such a POM PT bag in which a liner can be removed from the bag for hygienic reasons (as for the food and pharmaceutical industries).

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According to the present invention there is provided a POM PT bag comprising adhesive material applied on a ply step of the bag, a ripping-strip and a non adhesive coated area embedding the ripping-strip. The bottom of the bag comprises a folded flat bottom. The bag holds an inserted liner.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and advantages of the invention will become apparent upon reading the detailed description and upon referring to the drawings in which:

Figure 1 is a schematic perspective top view of a POM PT bag according to the present invention.

Figure 2 is a schematic partial perspective top view of a POM PT bag prior to the filling according to the present invention.

Figure 3 is a schematic partial perspective top view of a closed POM PT bag according to the present invention.

Figure 4 is a schematic perspective front view of a POM PT bag showing the top and the bottom closures according to the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

Referring to figures 1 to 4, there is shown a POM PT style multi-wall paper bag having an outer ply 1. The number of plies can varies through the field of application and the bag is preferably made of paper. The bag comprises a pasted open mouth and has a pinched top closure. The bag has a flat bottom closure 2 in order for the bag to stand in an upright position on a flat surface such as a conveyor. The filled bag preferably has a triangular profile converging from the bottom closure 2 to a top closure 12 of the bag when in standing position.

The top closure 12 of the bag has an upper flap 10 that can be folded, along a guideline axis 5, on the outer ply 1 for closing the open mouth. A coated adhesive 6 is located on the upper flap 10. Preferably, the coated adhesive 6 applied on the upper flap 10 is a strip of hot melt glue. The hot melt glue has to be reactivated before closure of the bag to ensure a tight seal. Other adhesive coating material, or tape, can also be used for the same purpose. For example, a two-faces adhesive tape can be applied on the upper flap 10. An advantage of the adhesive tape over

the hot melted glue is that it does not require from a user to have a special closing equipment to close the bag. A soluble glue can also be used to facilitate recycling of the paper bag.

A ripping-strip 8 is located within an area 7. The area 7 is located between the adhesive coating material 6 on the upper flap 10 and the open mouth of the bag. This area 7 is kept free of adhesive material and hence forms the non coated area 7. The ripping-strip 8 can be made of any synthetic material. For easy gripping by a user, the ripping-strip 8 has a portion 11 exceeding an edge of the bag. This portion 11 of
10 the ripping-strip 8 provides adequate length for the customer to get hold of it. The bag preferably has perforations 9 on both sides along the ripping-strip 8 to ease the opening process.

An inner liner 3 is inserted within the bag. The liner 3 is preferably made of polyethylene. The open mouth of the liner 3 is preferably located near the open mouth of the bag.

During the manufacturing process of the bag, the liner 3 is mechanically inserted into the bag in form of a continuous poly tubing. The bottom of this poly tubing is heat
20 sealed during the manufacturing process, forming a liner. Glue points between the bag and the liner 3 secured the bottom of the liner 3 to the interior bottom of the bag. The liner 3 can be completely removed from the bag after the pinched top closure is ripped open by the ripping-strip 8.

At a user's filling facility, for example, a product is filled in the liner 3. Then, using a conventional sealer, the inner liner 3 is sealed through the paper bag to form the customer seal 4. The adhesive coating material 6 is heated and the upper flap 10 is folded just above the customer seal 4 of the liner. The sealing of the open mouth of the liner 3 is preferably done by heating elements heating the liner 3 through the
30 paper bag. The heat is transferred to the liner 3 which seals itself. It is important to note that during the sealing process, the liner 3 does not react with the paper bag and does not adhere to it. To remove the inner liner 3 once the upper flap 10 is folded and sealed on the outer ply 1, the user has to grab the ripping-strip 8 by the

exceeding portion 11 and tear it off. Then, the user can remove the liner 3 from the bag or leave it there. This is a bag in a bag concept.

It is recommended to use high performance paper in order to provide a strong flap at the closure. It is also possible to position a mid-step with the mid ply in a 3 paper ply bag design. The mid step is designed in such a way that the liner would still be positioned above the folding line 5. This mid step can stiffen and reinforce the flap 10.

- 10 The bag is also compatible with a sealing head where the liner is trimmed just above the seal. The stepping pattern could be traditional or the one step as described in this patent.

In the case of a 3 paper ply bag, the mid ply could be stepped at mid position of the outer ply step. In this case it could be possible to add two slits at the start to help the opening.

The POM PT style bag of the present invention has the following advantages:

- Easy access to the inner liner 3 (poly tubing), easy, secure and fast opening;
- 20 - The paper bag and the poly bag are recyclable;
- Compatible with a conventional sealer where the liner is heat sealed through the paper bag at the top. The conventional sealer cannot cut the liner above the seal;
- This bag style offers a good pallet display;
- Stands very well on conveyors or on the floor;
- Minimum labour required for the filling process;
- Very hygienic bag as there is a minimal handling. The bag and the process were designed in order to minimize the potential product contamination. This bag is compatible with the actual requirements of the food industry; and
- The closing is strong and secure from a food safety perspective.

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The POM PT bag can be made of the following materials:

- Inner liner 3: Poly tubing (should be strong enough to carry the material by itself);
- Inner ply of the paper bag: Multi-wall kraft paper (high performance paper is recommended);

- Mid ply of the paper bag (optional): Multi-wall kraft paper (high performance paper is recommended);
- Outer ply of the paper bag: Multi-wall kraft paper (printed or plain; high performance paper is recommended); and
- Closure components: Hot melt glue (regular or soluble) or two sided auto-adhesive tape, ripping-strip made of synthetic material.

10 While embodiments of this invention have been illustrated in the accompanying drawings and described above, it will be evident to those skilled in the art that changes and modifications may be made therein without departing from the essence of this invention.

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Figures: 2,3,

Pages: _____

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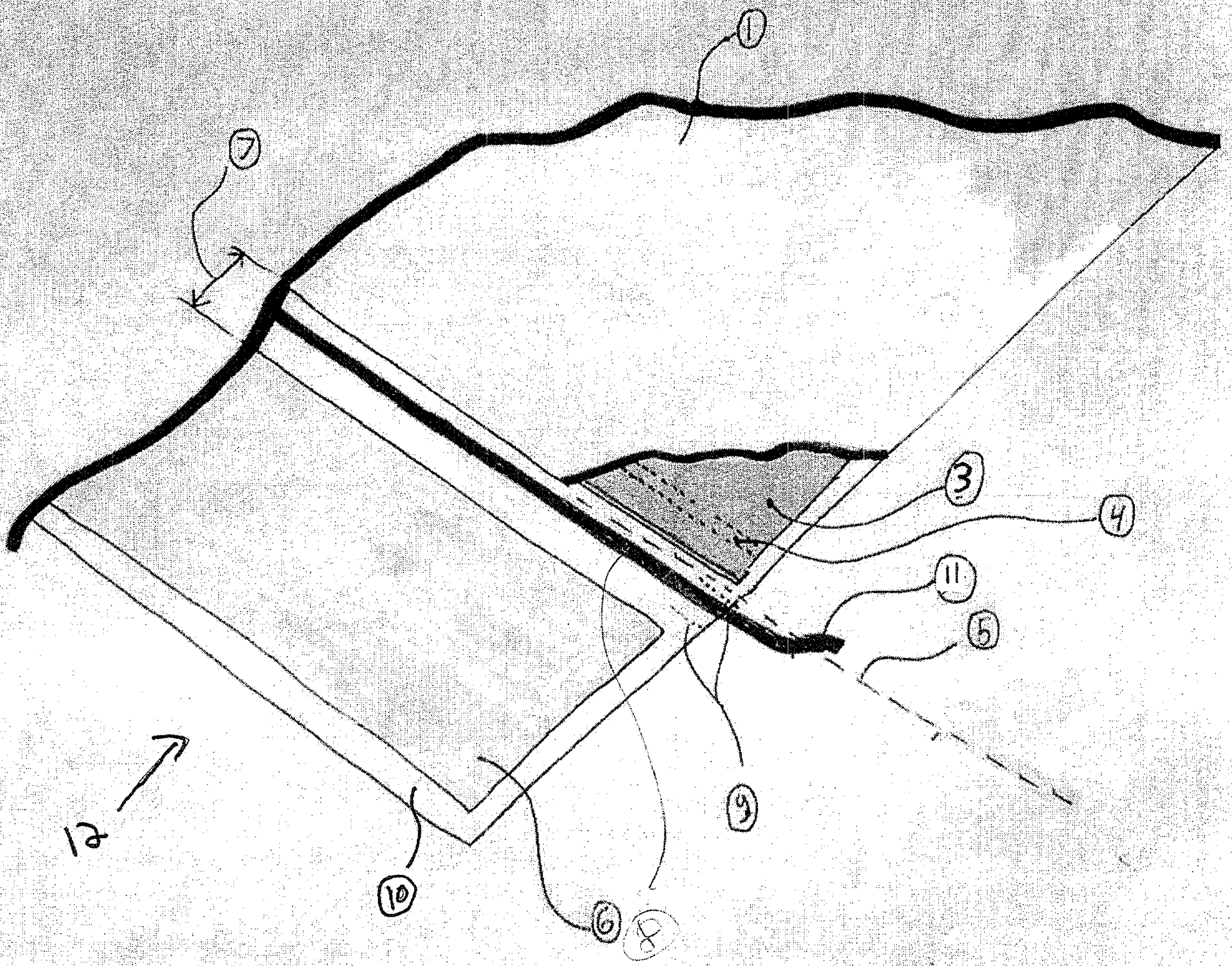


Fig. 1

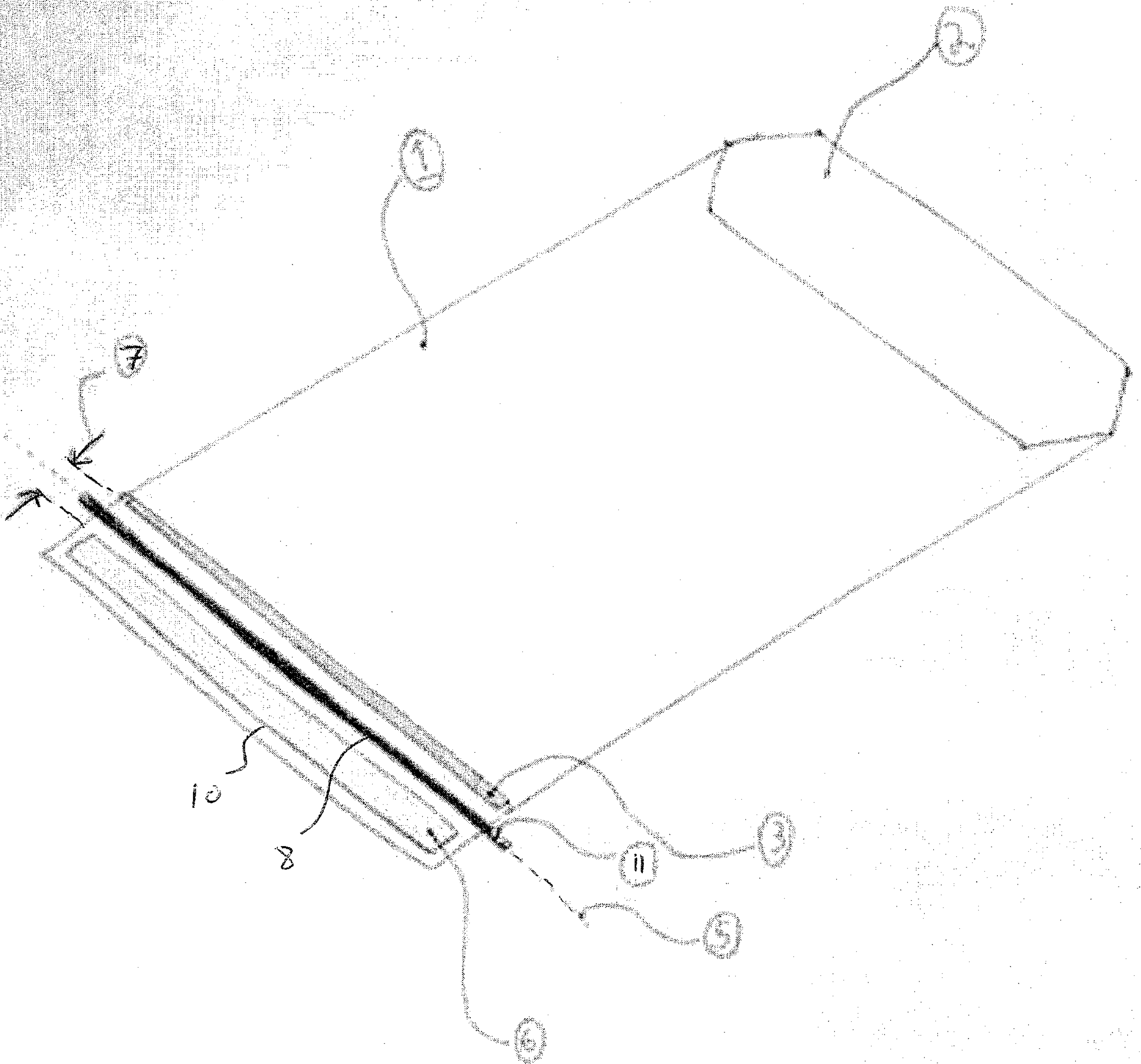


Fig. 4

