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(54) Folded cardbord element as a shelf, support or the like in a display stand or the like

(57) The invention relates to a folded cardboard element constituting a shelf, a load-bearing support or the like in a display stand or the like. The element (5, 10) is folded around two parallel folding lines (7) which at the ends (8) converge towards each other.

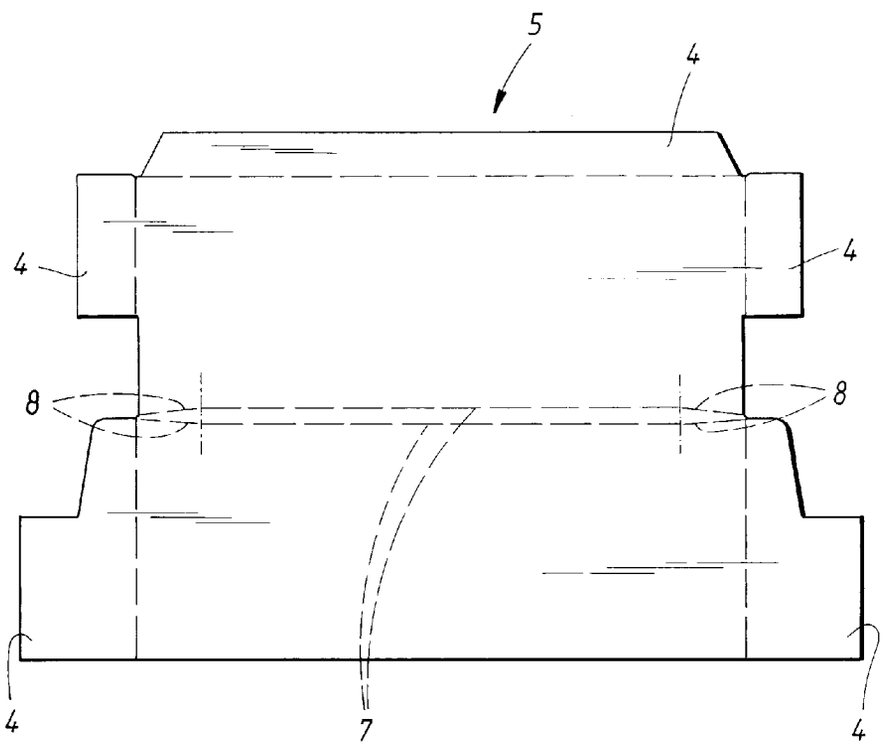

FIG.2

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Description

TECHNICAL FIELD:

The present invention relates to a folded cardboard element which is intended to be a shelf, a load-bearing support or the like in a display stand or the like which shall display different objects or special-line articles for the public.

PRIOR ART:

Display stands are well-known constructions. They can be produced from different materials, such as wood, plastics and even concrete, but preferably and during recent decades from cardboard or corrugated cardboard. An advantage with this material is that it is lightweight and it can be transported in a folded state and easily be unfolded to the position which the display stand shall have. Besides these advantages, cardboard has been commonly used also due to the fact that it can be provided with text and also decorated in a desired way by the application of printing ink. A great number of constructions of such display stands made from cardboard is known. They also vary much in size, from small display stands to those which have a height of in the order of 2 metres.

TECHNICAL PROBLEM:

Display stands usually comprise a number of shelves or shelf-like protrusions made from cardboard or they may even have vertical supporting parts made from the same material. A problem with such shelves and the supporting parts is that the inherent strength of the material with regard to bending is not great. Shelves made of this material will therefore have a strong tendency to bend downwardly at the middle parts of the shelf and a load-bearing vertical part may bend outwardly or inwardly. To remedy this, shelves have, for example, been made of stronger material than in the other parts of the construction or the material has been folded so that the shelf, for example, will consist of three layers of material. This means of course a great material consumption. To reinforce the shelf, it has sometimes been folded up at the front side in the form of a border or edging, but this will hide the articles which are to be displayed, which of course is a bad solution. The shelf may also be reinforced by giving it a shorter depth but this will result in a smaller displaying surface.

Therefore, during a very long number of years it has been a problem to be able reinforce the shelf element or corresponding constructions in a simpler and more reliable way which does not incur extra costs.

THE SOLUTION:

According to the present invention the above problem has been solved and a folded cardboard element constituting a shelf, load-bearing support, or the like in a display stand or the like has been brought about, which cardboard element is characterized in that it has been folded around two parallel folding lines which at the ends converge towards each other.

According to the invention, the folding lines at the end should have an angle of 4-20° in relation to each other.

According to the invention, the converging ends of the folding lines can be directed in the same direction in relation to the parallel parts.

According to the invention, one of the folding lines may be straight all the way out to the ends whereas the second folding line converges toward the completely straight folding line at its ends.

According to the invention, it is suitable that the converging part of the folding lines has a length of 2-10 cm, preferably 5 cm, and that the distance between the parallel folding lines is 1-5 cm.

DESCRIPTION OF THE FIGURES:

The invention will now be described more in detail with reference to the accompanying drawings, where

Fig. 1 shows in perspective an exploded view of a display stand of known kind on which the present invention is applicable, where

Fig. 2 shows an unfolded sheet having folding lines according to present invention, which sheet is intended to constitute a shelf in the display stand according to Fig. 1, where

Fig. 3 shows in perspective another embodiment of a display stand on which the present invention has been applied, and where

Fig. 4 shows an unfolded sheet having folding lines according to the present invention, which sheet is intended to be one of the load-bearing walls in the display stand according to Fig. 3.

PREFERRED EMBODIMENTS:

Fig. 1 shows a display stand of known kind made of corrugated cardboard and before mounting. It consists of a lower part 1, an upper shelf part 2 intended to be mounted on the lower supporting part 1 and an uppermost part 3 which is intended to be mounted on the shelf part 2. To reinforce the parts and mount them to each other, tabs 4 are arranged at suitable positions. These tabs 4 shall partly be folded into the sections and partly be inserted into suitable recesses for connecting the parts to each other. These stands are known and are therefore not described more closely here. To the right in Fig. 1 a shelf is shown separated before mount-

ing but in a folded state. This shelf 5 has been folded once and it will consequently have the double thickness of corrugated cardboard which suitably is 3-5 mm. The problem with these shelves 5 is, as stated above, that with a moderate load they have a tendency to bend downwardly in time. These display stands are usually used during a period of a week to a month and it is therefore important that the load does not force the shelf down during this time. The present invention relates to the folded edge 6 on the shelf 5.

Fig. 2 shows in detail a punched corrugated cardboard sheet which shall constitute the shelf 5. This sheet is punched and provided with tabs 4 of known kind. However, the folding edge 6 has been drastically changed. It consists now of two parallel folding lines 7 at a certain distance from each other, which parallel lines 7 at their ends 8 converge towards each other and meet approximately in the punched side edge. When the sheet is folded around these lines 7, which suitably have a distance of 1-5 cm from each other, the folded shelf parts lying on each other will be at a certain distance from each other at the edge 6. This edge 6 will therefore be very strong with regard to bending stresses and will have a strength 5-6 times greater than when only one folding line is made, such as is the case with earlier known constructions. In this way a front edge of the shelf 5 is obtained which is sufficiently strong without any tendency to bending downward and without the use of any concealing border or the like.

The distance between parallel folding lines 7 depends on the length of the shelf. The longer the shelf the longer the distance between the folding lines 7 must be.

Neither is it necessary that the ends 8 of the folding lines converge in the way shown in the figure. They may be directed in the same direction or one of the folding lines 7 may be completely straight all the way and only one of these lines may have end parts 8 converging towards the straight line. Neither is it necessary in all circumstances that the converging end parts 8 are on both sides of the lines.

The front edge 6 of the shelf, which now may have a width of 1-5 cm, is also suitable for printing or gluing on of a decoration or information.

The angle between the converging end parts may be in the range of 4-20° and the length of these end parts may be in the range of 5 cm.

Fig. 3 shows a display stand 9 of corrugated cardboard having vertical load-bearing walls 10. These walls have been provided at their upper edge with tabs 4 for insertion into holes on shelves 11. The actual construction of this display stand is previously known but it has been changed radically at its front edges 12 where the present invention has been applied. It can be seen from the figure that the side edges 10 have been folded at the front edge 12 with the intention that the walls 10 made from corrugated cardboard shall obtain the proper rigidity so that the shelves 11 which are put on them can be loaded.

Fig. 4 shows in detail how one of the walls 10 has been punched out and the figure accordingly shows a wall in a non-mounted stage. Two parallel folding lines 7 have been made on the sheet which lines according to the invention have end parts converging towards each other. After folding and mounting of the sheet making the side wall 10 and the front wall, a wide front edge 12 (Fig. 3) is therefore obtained, which with regard to strength substantially exceeds an edge which has been folded around one single straight folding line. The strength in this length loading is about 5-6 times greater than that of the conventional edge. With a certain load it took 20 minutes before the conventional edge started bending outwardly whereas the edge 12 according to the present invention did not show any sign of bending out after two weeks with the same load.

By means of the present invention, one has accordingly with very simple means brought about a substantial improvement in the strength of such constructions as, for example, display stands. These improvements have not resulted in higher production costs but costs will be the same as those for the production of the conventional constructions. Besides solving the old problem of achieving this greater strength, a further decoration surface has also been obtained.

The invention is not limited to the embodiments above but it can be varied in different ways within the scope of the claims and accordingly also include other constructions and display stands.

Claims

1. Folded cardboard element constituting a shelf, load-bearing support or the like in a display stand or the like,
characterized in that the element (5, 10) is folded around two parallel folding lines (7) which at their ends (8) converge towards each other.

2. Folded cardboard element according to claim 1, **characterized in** that the folding lines (7) at the ends (8) have an angle of 4-20° in relation to each other.

3. Folded cardboard element according to any of claims 1 or 2, **characterized in** that the converging ends (8) of the folding lines are directed in the same direction in relation to the parallel parts (7).

4. Folded cardboard element according to any of claims 1-3, **characterized in** that one of the folding lines (7) is straight all the way to the ends whereas the other folding line (7) converges towards the completely straight folding line (7) at its ends (8).

5. Folded cardboard element according to any of

claims 1-4, **characterized in** that the converging part (8) of the folding lines (7) has a length of 2-10 cm, preferably 5 cm.

6. Folded cardboard element according to any of claims 1-5, **characterized in** that the distance between the parallel folding lines (7) is 1-5 cm.

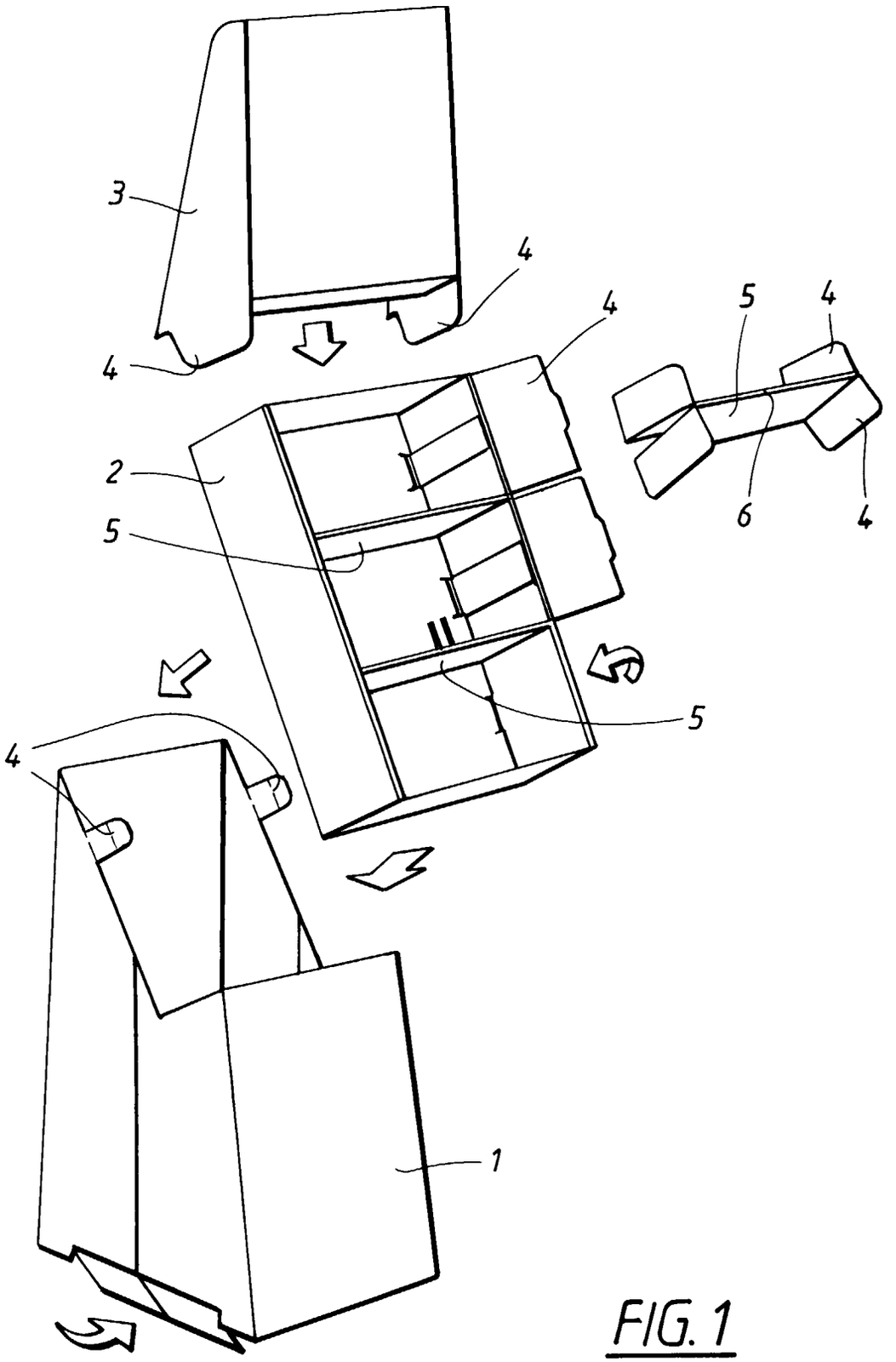

FIG. 1

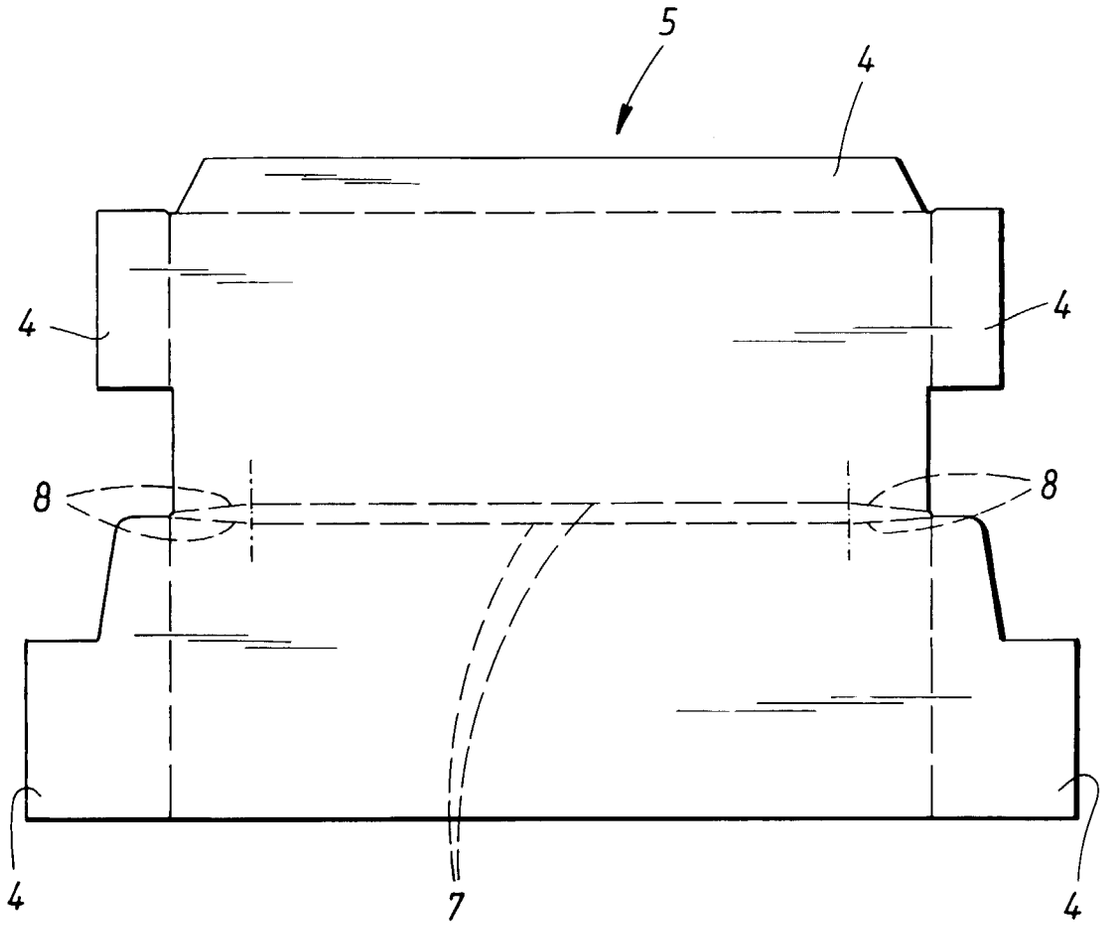

FIG.2

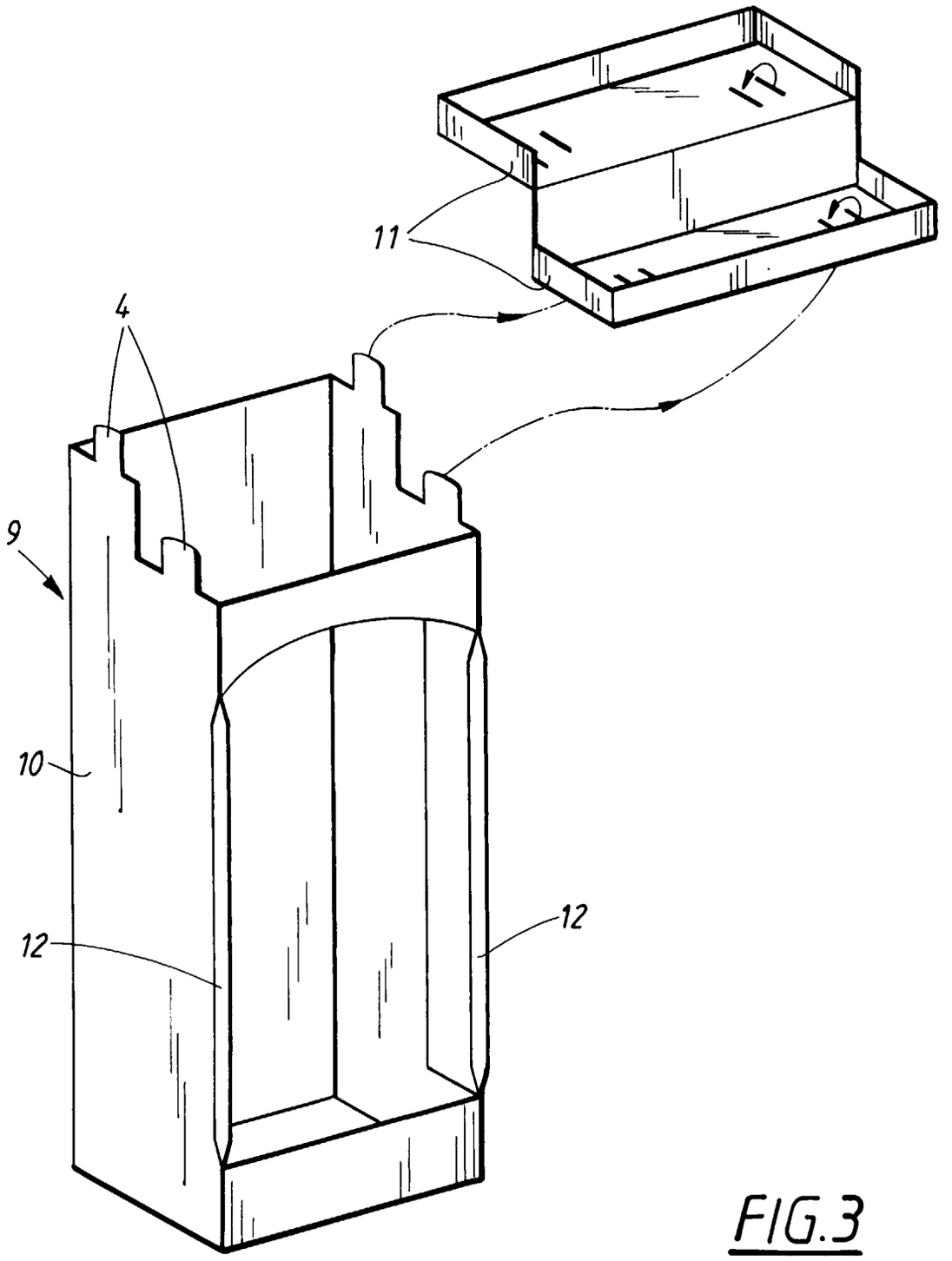

FIG.3

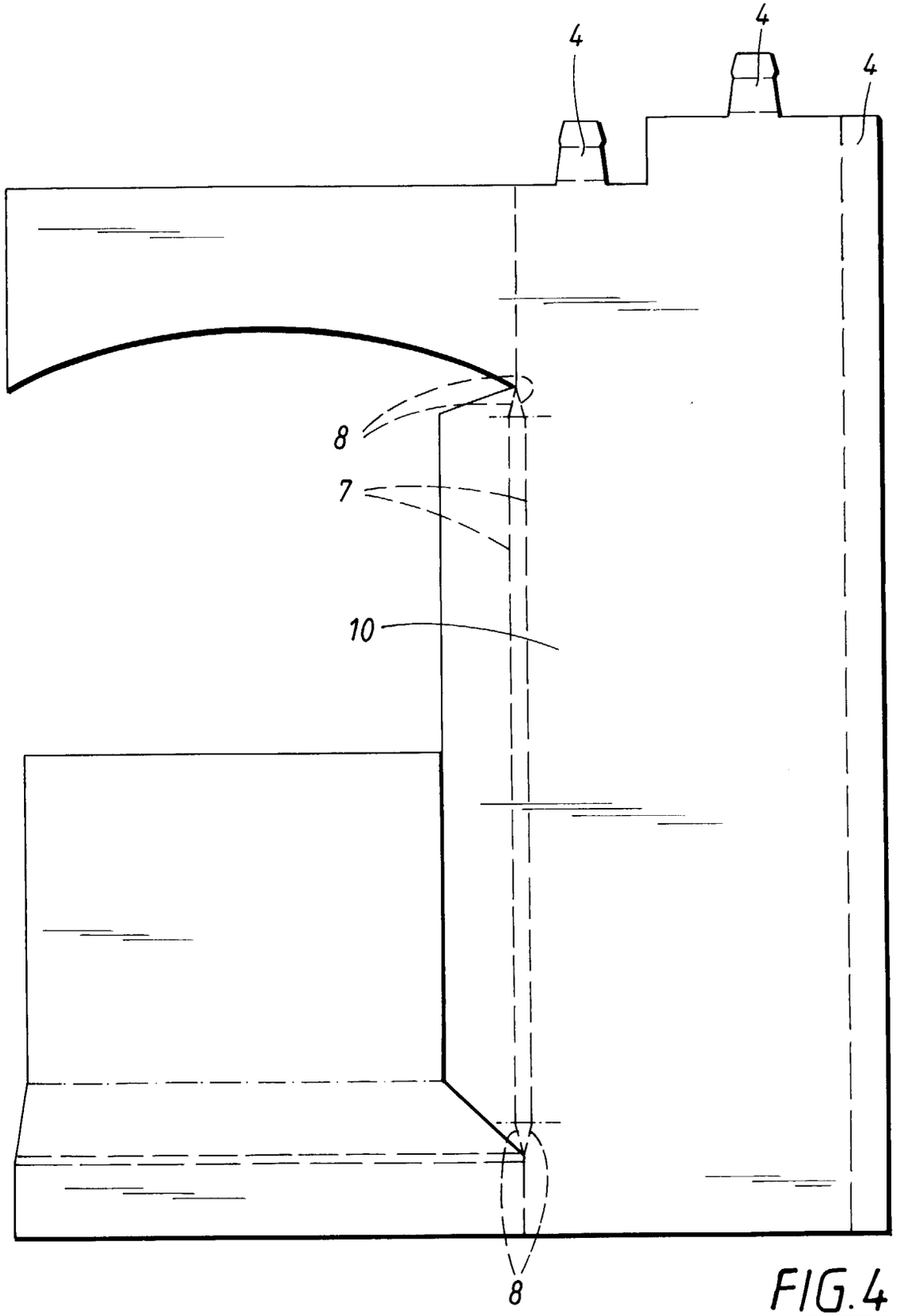

FIG.4