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(54) **Lamella cutter**

(57) Lamella cutter, comprising a lower part (1) which bears a lower blade (8) and an upper part (2) which bears an upper blade (18) and is hingeable with respect to the lower part (1) about a fixed hinge pin (3), while a spring (9) is present which is active in the sense of opening the two parts of the cutter. The blades (8,18) are positioned parallel to the hinge pin (3) of the two parts and guide elements (13,13') are arranged such that they receive the lamella between them with its longitudinal direction perpendicular to the direction of the

hinge pin (3).

Preferably, the upper part (2) is provided with a feed-through opening for the lamella, near the hinge pin (3). The lower part (1) bears a slide guide (4) for a ruler (6). Preferably, an extension section (5) is displaceable in the slide guide (4), in which section the ruler (6) is in turn displaceable.

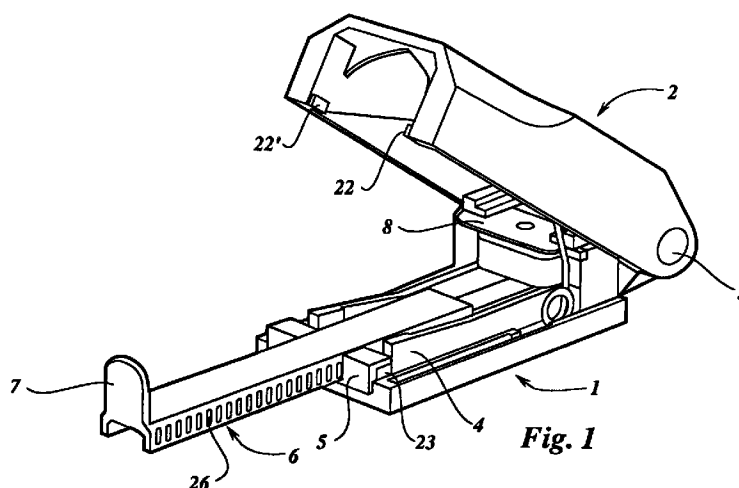


Fig. 1

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Description

The invention relates to a lamella cutter, comprising a lower part which bears a lower blade and an upper part which bears an upper blade and is hingeable with respect to the lower part about a fixed hinge pin, the active portion of one of the blades having a shape which corresponds to the intended shape of the end edge of the lamella which is to be cut off and the other blade has a recess which is complementary thereto, while a spring is present which is active in the sense of opening the two parts of the cutter, and one of the parts being provided with guide elements for the lamella, at a spacing which corresponds to the width of the lamellae for which the cutter is intended, while finally an adjustable ruler provided with a raised end face is present as an aid for fixing the length of the piece which is to be cut off the lamella.

A lamella cutter of this kind for horizontal venetian blinds is commercially available in large numbers. It is disclosed in the following publications:

1. International Design DM/002258 of 21 February 1983;
2. Taiwan Utility Model Application No. 7228969, filed on 30 December 1983, granted on 16 June 1984;
3. Taiwan Utility Model Application No. 78208328, filed on 29 August 1989, granted on 11 January 1991 under No. 60312;
4. German Utility Model No. 91 07 778,8, filed on 24 June 1991.

It appears from these publications that the cutter originally had no means whatsoever for fixing the length of the piece which has to be cut off from the lamella. It will be clear that it is important for all the lamellae to retain the same length after cutting. The solution which was subsequently conceived in the form of a ruler with an endpiece was based on the tenet that the cutter, essentially having the form which was originally known, was able to be rotated, and subsequently resiliently moved and snapped in, with respect to the ruler. The size of the unit snapped in, with respect to the ruler. The size of the unit was several times that of the cutter on its own. To the knowledge of the applicant, this embodiment has never been used on a large scale.

The object of the present invention is to provide a lamella cutter such that it contains a stop element or spacer which does not significantly increase the size of the cutter, while on the other hand the cost can be kept low, because the intention, after all, is for these cutters to be supplied for one-off use with each venetian blind sold.

The basic principle permits a simple solution if the cutter has the characteristic that the blades are positioned parallel to the hinge pin of the two parts and the guide elements are arranged such that they receive the

lamella between them with its longitudinal direction perpendicular to the direction of the hinge pin.

As a result, the length of the piece which is to be cut off now corresponds to the longitudinal direction of the cutter. In this case, a ruler also extends in this direction.

A number of variants remain possible within this basic principle. For example, it is conceivable to make a ruler which can be slid out on the hinge side in the longitudinal direction of the cutter. Preferably, however, the cutter is designed according to the invention such that the upper part is provided with a feed-through opening for the lamella, near the hinge pin.

This feed-through opening can be formed by a U-shaped section of the upper part, the legs of this U-shape being situated on either side of an elevated section of the lower part in which the hinge pin is situated, and the guide elements for the lamella being arranged on said elevated section.

An extremely simple solution is obtained if the lower part bears a slide guide for the ruler, with the direction of sliding perpendicular to the direction of the hinge pin. A greater longitudinal range for the section which is to be cut off is obtained, in what is an extremely simple manner, if the ruler can be slid completely out of the slide guide and, as a result, can be used in two positions to extend the range of the length which is to be cut off.

The range can be increased yet further if an extension section is displaceable in the slide guide, in which section the ruler is in turn displaceable.

The invention will be explained below with reference to the attached drawing of an exemplary embodiment, in which:

Fig. 1 shows the lamella cutter in the open position, ready for use.

Figs. 2 to 6 show the cutter in the closed position, specifically

Fig. 2 as a side view, seen from the other side from Fig. 1,

Fig. 3 as a top view,

Fig. 4 as a bottom view,

Fig. 5 as an end view from behind, and

Fig. 6 as an end view from the front.

Fig. 7 is a view from the rear, as in Fig. 5, but in the open position as in Fig. 1.

Fig. 8 is a longitudinal section along the arrows VIII-VIII in Fig. 3;

Fig. 9 is a cross-section along the arrows IX-IX in Fig. 8, and

Fig. 10 is a cross-section along the arrows X-X in Fig. 8.

The cutter comprises a lower part 1, an upper part 2 which is hinged with respect to the lower part by means of hinge pin 3.

The lower part 1 is provided with a slide guide 4, in

which an extension section 5 is displaceable in the longitudinal direction of the lower part 1, i.e. at right angles to the direction of the hinge pin 3. The extension section 5 itself also forms a slide guide, in the same direction, for a ruler 6, which is provided with a raised end face 7, designed to have the end of the lamella which is to be cut off stopped against it when ruler 6, and possibly extension section 5, have been adjusted to the desired spacing, as will be explained further.

The lower part 1 has fastened to it the lower blade 8, supported in a manner which will be described in more detail below. An upper blade, interacting with the lower blade, is active on the upper part 2, although this is not yet visible in Fig. 1. The complementary profiles of these blades may be as in the known blades.

A wire spring 9, which holds the cutter in the open position of Fig. 1 as long as the upper part 2 is not manually pressed downwards or a locking mechanism for the closed position is not activated, is positioned in a base outside the slide guide 4.

The rear of the upper part 2 is U-shaped, owing to the presence of an opening 10 through which, in the top view of Fig. 3, the lower blade 8 can be seen. The legs 11, 11' of the U-shape engage on either side around an elevated section 12 of the lower part, within which the hinge pin is situated. Fig. 3 also shows the two guide elements 13 and 13', which have a mutual spacing corresponding to the width of the lamella for which the cutter is intended, so that the lamella can be introduced in the direction of the arrow P, fed through opening 10, above the lower blade 8 until it is stopped against the raised end face 7 of ruler 6, shown in Fig. 1.

The bottom view of Fig. 4 shows that the underside of the lower part 1 is provided with a rectangular recess 14 which runs from the rear edge to approximately half-way along the length. An integrally-formed piece 15 of the extension section 5 can be displaced backwards and forwards in the longitudinal direction in this recess 14. The two positions of said extension section are determined, on the one hand, by a snap-in connection which will be described below, as a result of which it lies level with the rear edge 16 of the lower part, and, on the other hand, by resting against the other end of the recess 15. 17 and 17' show details of the hinge structures, by means of which the parts 1 and 2 of the cutter are hingeable with respect to one another.

The rear view of Fig. 5 shows a rear view of the extension section 5, and the way in which ruler 6 lies therein.

At the front (Fig. 6), the extension section 5 is widened to in front of the slide guides 4 (see also Fig. 1). The section of the ruler 6 can also be seen, with the raised end face 7.

In the open position of the cutter in Fig. 7, a lamella can be inserted through the opening 10 from the rear which is then automatically fed over the lower blade 8 which is visible in Fig. 7 and under the upper blade 18 which is visible in this figure. It can already be seen from

Fig. 7 that the upper blade 18 is not arranged horizontally, but at an angle, so that a cutting action takes place when the upper part is pressed onto the lower part.

Fig 8, which depicts a central longitudinal section in the closed position, shows more details of the mutual interaction of the blades.

The lower part 2 is provided with a table-shaped support 19 for the lower blade 8. The cross-sectional shape of this support 19 can be seen from the cross-section of Fig. 9. The lower blade 8 lies horizontally, viewed in the longitudinal direction of the cutter. Viewed from the side, i.e. along the longitudinal section of Fig. 8, the table is of a slightly inclined design, so that the lower blade 8 also rests in an inclined manner, with the cutting edge 8' uppermost, as a result of which a better cutting action is obtained.

Fig. 8 also shows that the upper part 1 of the cutter is provided with a blade support 20 which has the form of a lowered section, which is also visible from the outside (Fig. 3). Viewed from the side, i.e. in the longitudinal section of Fig. 8, the upper blade lies horizontally but viewed in the longitudinal direction, along the cross-section of Fig. 10, the inclined position which was also visible in Fig. 7 can be seen again. During cutting, blade 18 presses against the support 20 and, moreover, is held clamped in place by two projections, such as 21, formed integrally on the side walls. Because of this sloping position of the upper blade 18, a cutting action will start on the right-hand side, as seen in Fig. 10, and as the upper part 1 of the cutter is pressed further downwards will proceed to the left until the entire width of the lamella situated between the blades has been cut through.

Returning to Fig. 1, it will be seen that the upper part 2, near the front end, is provided on the inside with two studs 22, 22', and that cavities, such as 23, which are open to the rear are present in the side face of the extension section. If the extension section 5 is pulled slightly forwards during closure of the cutter, the upper part 2 can be moved fully into the closed position on the lower part 1. If section 5 is then pressed backwards again, cavities 23 will slide over studs 22, 22' and the cutter is locked in the closed position. Unlocking can be carried out by displacing section 5 again slightly, for example by acting on integrally-formed lowered section 15.

Figs. 8 to 10 offer the possibility of giving further illustration of some details. Fig. 8 shows the central longitudinal section of the extension section 5 with the abovementioned, block-shaped lowered section 15, which is integrally formed thereon, was already shown in a bottom view in Fig. 4, and which can slide in the recess 14 which is also visible in Fig. 10. Furthermore, extension section 5 is provided with a snap-in opening 24, in which a snap-in hook 25 can engage, which forms part of the lower part 2 of the cutter and which is also visible in Fig. 4.

Fig. 9 again shows the cross-sections of the extension section 5 and the ruler 6 lying therein. Fig. 10

shows details of how the extension section 5 is enclosed between the guide elements 4, 4' which are integrally formed on the lower part 1.

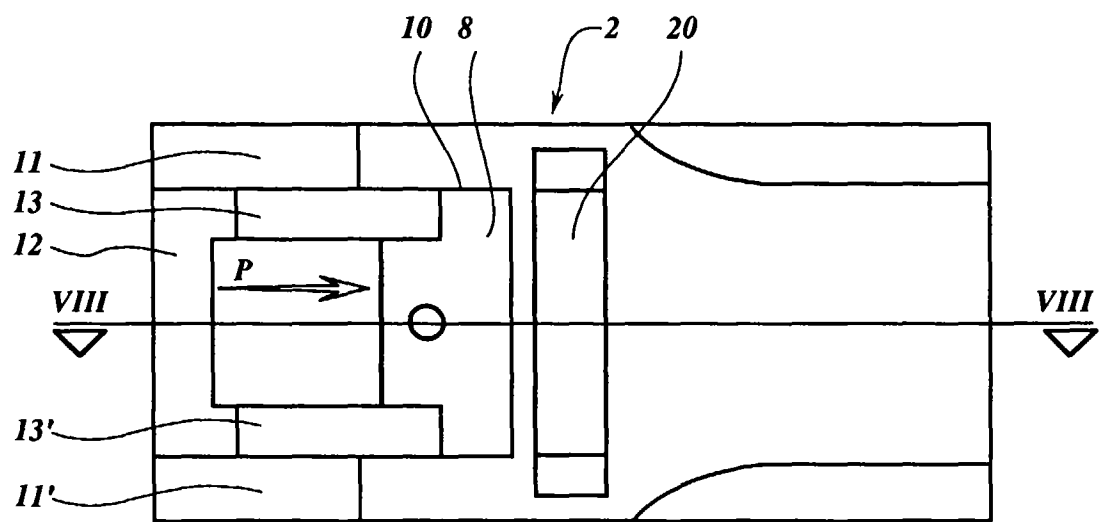
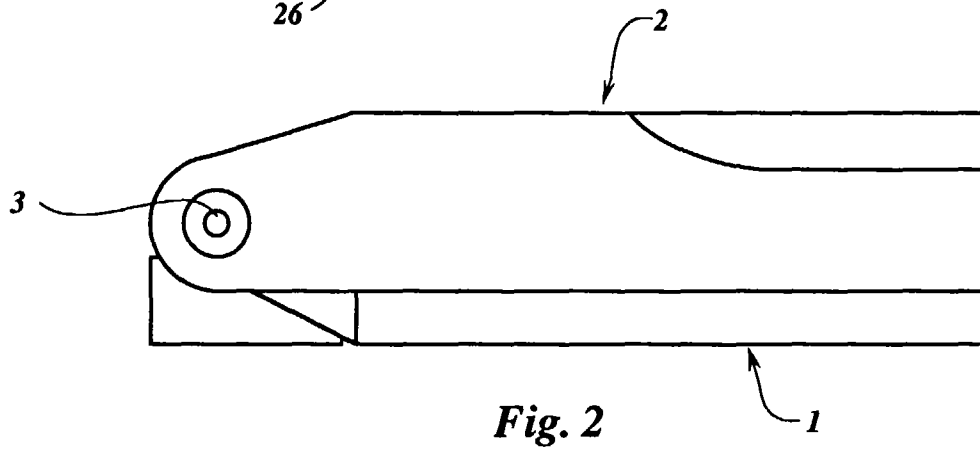
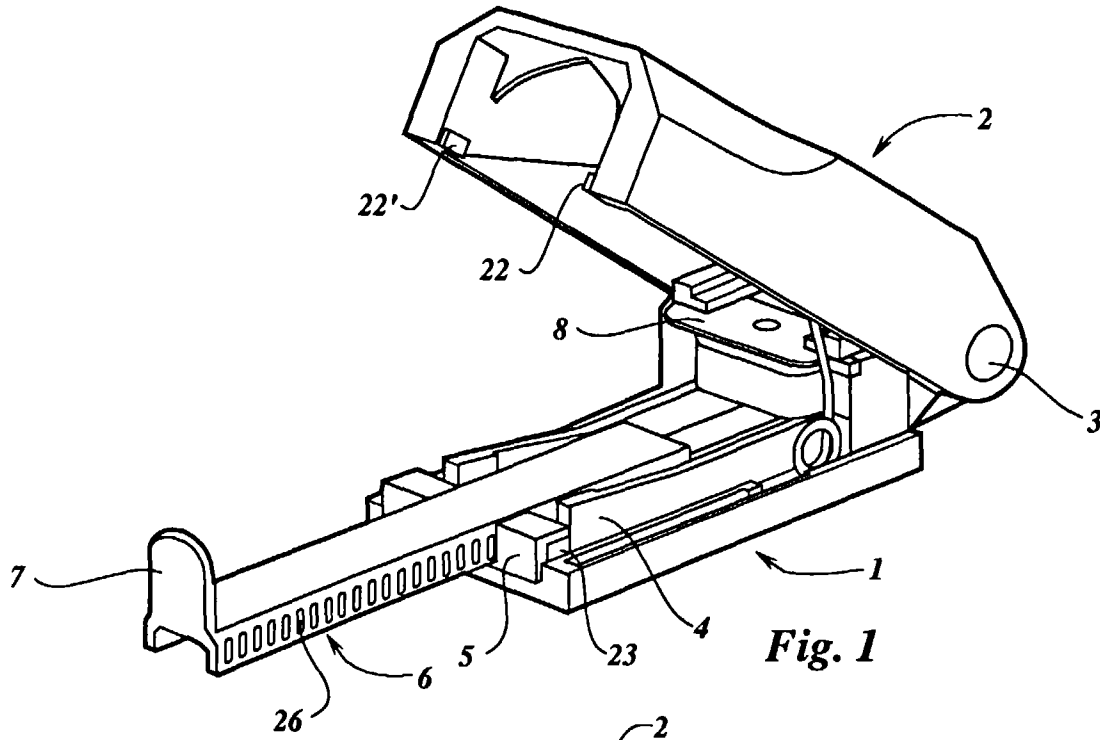
It can be seen in Fig. 1, although not in Fig. 10, that the ruler 6 is provided on the side faces with snap-in cavities 26, into which snap-in projections on the inside of the upright edges of the extension section 5 can snap, thus forming a number of fixed longitudinal measurements for the position of ruler 6 with end piece 7 in order to determine the length of the lamella which is to be cut off. The position of the snap-in projections and cavities can, of course, be swapped over. It should also be noted that the ruler can be slid completely out of the slide guide and can therefore be used in two positions to extend the range of the length which is to be cut off.

Claims

1. Lamella cutter, comprising a lower part (1) which bears a lower blade (8) and an upper part (2) which bears an upper blade (18) and is hingeable with respect to the lower part (1) about a fixed hinge pin (3), the active portion of one (8) of the blades having a shape which corresponds to the intended shape of the end edge of the lamella which is to be cut off and the other blade (18) has a recess which is complementary thereto, while a spring (9) is present which is active in the sense of opening the two parts (1, 2) of the cutter, and one of the parts being provided with guide elements (11, 11') for the lamella, at a spacing which corresponds to the width of the lamellae for which the cutter is intended, while finally an adjustable ruler (6) provided with a raised end face (7) is present as an aid for fixing the length of the piece which is to be cut off the lamella, characterized in that the blades (8, 18) are positioned parallel to the hinge pin (3) of the two parts (1, 2) and the guide elements (13, 13') are arranged such that they receive the lamella between them with its longitudinal direction perpendicular to the direction of the hinge pin (3).
2. Lamella cutter according to claim 1, characterized in that the upper part (2) is provided with a feed-through opening (10) for the lamella, near the hinge pin (3).
3. Lamella cutter according to claim 2, characterized in that the feed-through opening (10) is formed by a U-shaped section of the upper part (2), the legs of this U-shape being situated on either side of an elevated section of the lower part (1) in which the hinge pin is situated, and the guide elements (13, 13') for the lamella being arranged on said elevated section.
4. Lamella cutter according to claim 2 or 3, characterized in that the lower part (1) bears a slide guide (4)

for the ruler (6), with the direction of sliding perpendicular to the direction of the hinge pin (3).

5. Lamella cutter according to claim 4, characterized in that the ruler (6) can be slid completely out of the slide guide and, as a result, can be used in two positions to extend the range of the length which is to be cut off.
6. Lamella cutter according to claim 4 or 5, characterized in that an extension section (5) is displaceable in the slide guide (4), in which section the ruler (6) is in turn displaceable.
7. Lamella cutter according to one of claims 3-6, characterized in that the ruler (6) and the guide faces in which it is displaceable are provided with snap-in elements (22) for rest positions at regular intervals.



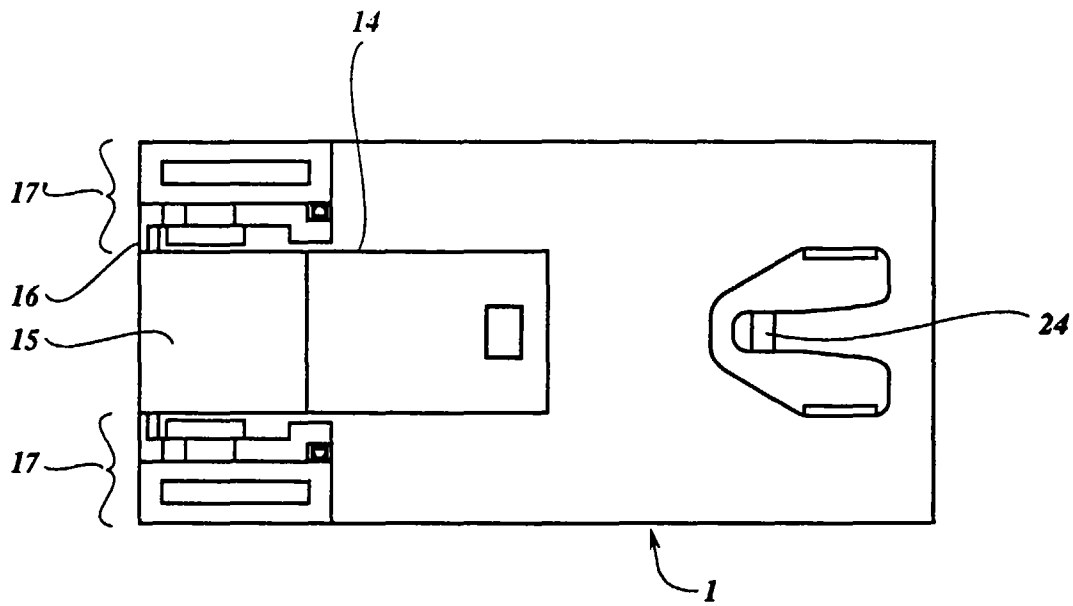


Fig.4

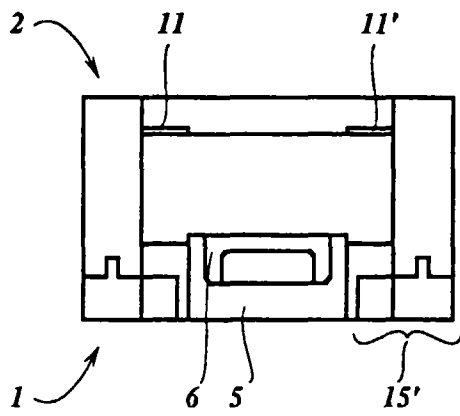


Fig.5

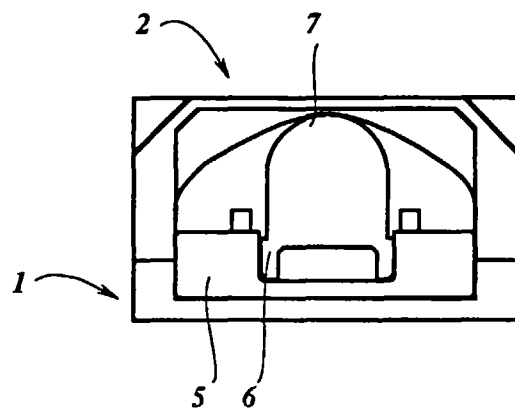


Fig.6

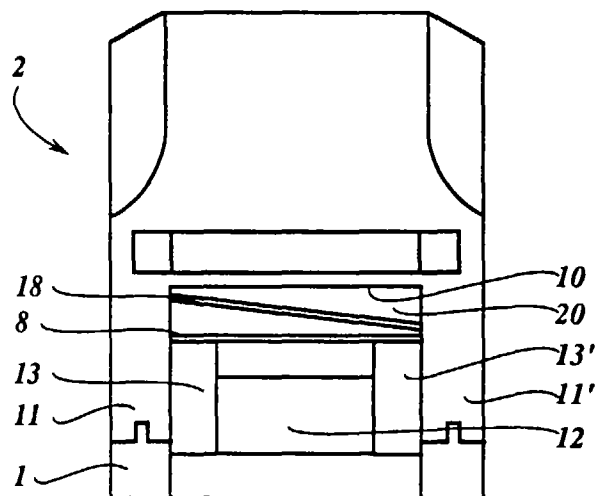


Fig.7

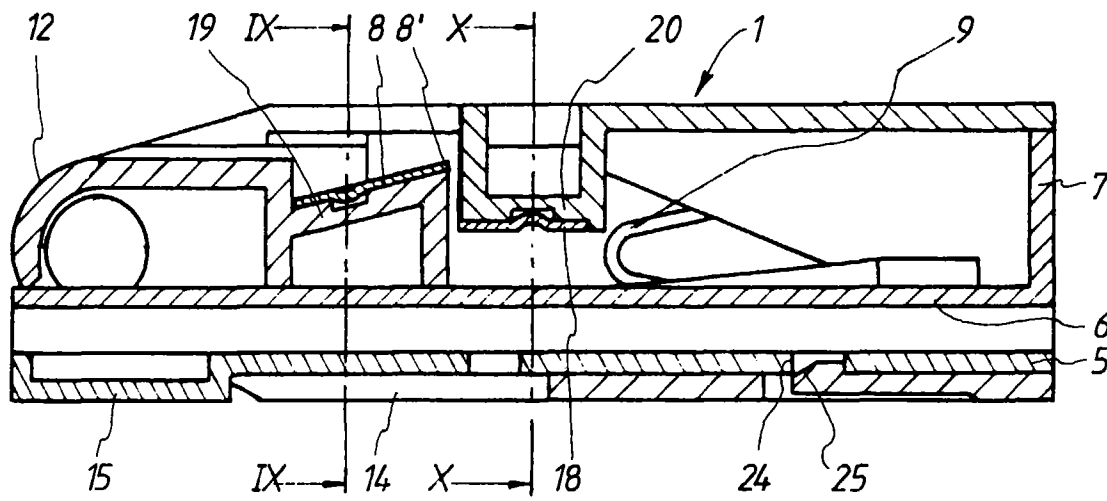


Fig. 8

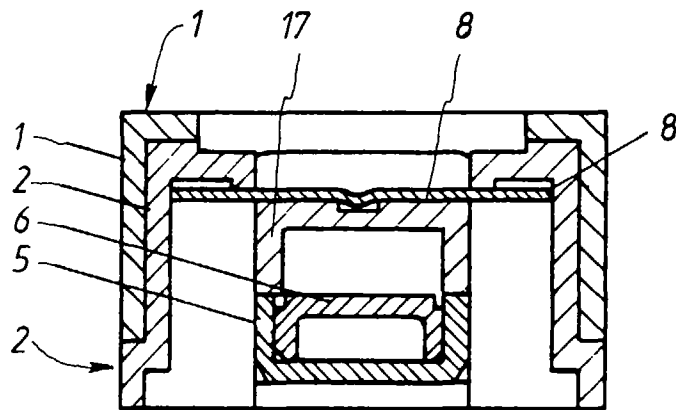


Fig. 9

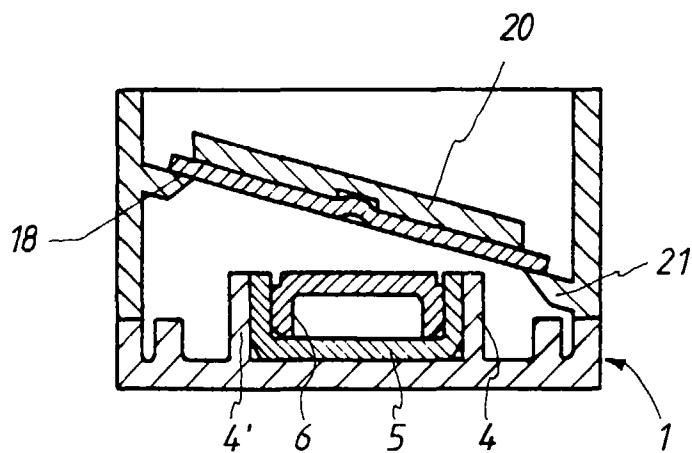


Fig. 10



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EUROPEAN SEARCH REPORT

Application Number
EP 96 20 2498

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 636 562 A (BROTHER IND LTD) 1 February 1995 * column 4, line 50 - column 5, line 7 * * column 6, line 31 - line 52 * * column 7, line 2 - line 55 * * column 13, line 34 - line 48; figures 1-4,7-9,14,15 *	1-4,7	E06B9/266 B26D3/10
A	US 4 807 363 A (CLIFTON JR THOMAS S) 28 February 1989 * the whole document *	1-4	
A	US 4 227 305 A (NEWMAN JERRY C) 14 October 1980		
A	DE 88 10 061 U (TEH YOR INDUSTRIAL CO.) 22 September 1988		
A	DE 93 12 910 U (TEH YOR IND CO LTD) 28 October 1993		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B B26D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24 February 1997	Examiner Huggins, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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