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(71) Applicant: **KAI R&D CENTER CO., LTD.**
1110, Oyana
Seki-shi Gifu-ken(JP)

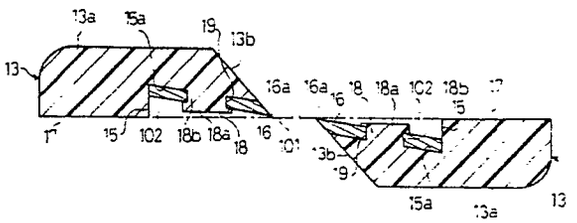
(72) Inventor: **Sugiyama, Makoto**
3, Kyo-machi 1-chome
Gifu-shi Gifu-ken(JP)

(74) Representative: **Leyh, Hans, Dr.-Ing. et al**
Patentanwälte Berendt, Leyh & Hering Innere Wiener Strasse 20
D-8000 München 80(DE)

(54) Structure for mounting blades in scissors.

(57) A structure for mounting blades (16) into notches (15) provided on the insides of the opposite inner surfaces (17) of blade portions (13) of a pair of openable scissor segments. The notch portions (15) have inner bottom surfaces (15a), onto which blades (16) are set, and which are inclined toward sliding surfaces (17). Blade edges (16a) of the blades (16) are on a plane (101) including the sliding surfaces (17) so that spaces (102) are formed between the plane (101) and blades (16). In the notches (15), a plurality of supporting projections (18) are integrally formed on the blade portions (13) to project from inner bottom surfaces (15a). The supporting projections (18) include stem portions (18b) of smaller diameter inserted into holes (19) of the blades (16), and head portions of larger diameter (18a) provided on the tips of the stem portions (18b) and engaging circumference of the holes (19) on surfaces of the blades (16) away from supporting surfaces (15a). The head portions (18a) of the supporting projections (18) are situated in the space (102) and do not project from the plane (101) including the sliding surfaces (17).

FIG. 3



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Structure for Mounting Blades in Scissors

FIELD OF THE INVENTION

The present invention relates to a structure for mounting blades in scissors or shears which have a pair of scissor or shear segments supported by a pivot in the form of X, or bow scissors which have a pair of scissor segments supported by a pivot at its base end portion in the form of V.

DESCRIPTION OF THE RELATED ART

Fig. 4 shows one of examples of structures for mounting blades in scissors. In the scissors, notches 5 are formed on the insides of the opposite inner surfaces of a pair of blade portions 3. Blades 6 are fitted in the notches 5 and fixed by screws 10. Sliding surfaces 7 are formed adjacent to the notches 5 on the outsides of the opposite inner surfaces of the blade portions 3. The inner surfaces of the blades 6 and the sliding surfaces 7 are level to each other.

However, in the above described structure for mounting, the blades 6 are attached to the notches 5 by the screws 10, so that it is difficult in view of strength to form blade mounting portions 3a of the blade portions 3 out of synthetic resin. Furthermore, the scissors can not be opened and closed without trouble if heads of the screws 10 are projected from the blades 6 which also form parts of sliding surfaces. Therefore, the screws 10 need to be buried in the blades 6. However, it is troublesome to form concave portions accurately in the blades 6 for burying the heads of the screws 10. Furthermore, in view of forming the concave portions, the thickness of the blades 6 can not be too thin.

SUMMARY OF THE INVENTION

It is a general object of the present invention to provide a structure for mounting blades wherein the blades can surely and smoothly slide on each other without trouble during the open/close operation of scissor segments.

It is another object of the present invention to provide a structure for mounting blades using no screws whereby blade mounting portions of blade portions can be formed out of synthetic resin.

To achieve the foregoing objects, the present invention provides a structure for mounting a blade with a blade edge to a first side of a blade mounting portion having a sliding surface on a second side, said first side being continuous with said second side, comprising a notch formed in said second side of said blade mounting portion, and having a surface inclined toward said sliding surface, said blade being set on said inclined surface, said blade edge being on a plane including said sliding surface, said plane and said blade defining a space therebetween; and supporting means for supporting said blade, provided on said inclined surface and situated within said space.

Other and further objects of this invention will become obvious upon an understanding of the illustrative embodiments about to be described or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a plan view showing scissors in an open state according to an embodiment of the present invention,

Fig. 2 is a plan view showing the same scissors in a closed state,

Fig 3 is a section view taken along the III-III line in Fig. I,

Fig. 4 is a sectional view showing a structure for mounting blades in the related art.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

An embodiment of the present invention will now be described with reference to Figs. 1 through 3.

A pair of scissor segments 11 respectively comprises a handle 12 and a blade portion 13, and is supported by a pivot 14 in the form of X. Notches 15 are formed on the insides of the opposite inner surfaces of blade mounting portions 13a of both the blade portions 13. Blades 16 are mounted on the notches 15. Hereinafter, a structure for mounting the blades 16 will be described in detail.

As shown in Fig. 3, a sliding surface 17 is formed, adjacent to the notch 15, on the outside of the opposite inner surface of the blade mounting portion 13a of each blade portion 13. An inner bottom surface 15a of each notch 15 forms a supporting surface for the blade 16, and is inclined toward a plane 101 including the sliding surface 17. A plurality of supporting projections 18, three in this embodiment, are formed on the inner bottom

surface 15a of the notch 15 as means for supporting the blade 16. Each supporting projection 18 includes a stem portion of smaller diameter inserted into a support hole 19 of the blade 16, and a head portion 18a of larger diameter mounted on the tip of the stem portion 18b and engaging the circumference of the support hole 19 on the surface of the blade 16 away from the inner bottom surface 15a.

The blade 16 is fitted into the notch 15 so as to be put on the inner bottom surface 15a. Then each supporting projection 18 is inserted into each of the support holes 19 formed in the blade 16, and the head portion 18a is engaged with the blade 16 so that the blade 16 is supported in the notch 15. The support projections 18 are integrally formed on the blade mounting portions 13a in the present embodiment. However, so long as the strength of the blade mounting portion 13a is assured, the supporting projections 18 may be formed separately and attached to the inner bottom surface 15a of the notch 16. Moreover, though the blade mounting portions 13a and supporting projections 18 are formed out of synthetic resin in this embodiment, they can be also formed out of other kinds of materials.

A blade edge 16a of he blade 16 is on a plane including an inner edge 13b of the blade mounting portion 13a, and at the same time, on the plane 101 including the sliding surfaces 17. In other words, each of the blade edges 16a of the blades 16 is on the intersection line of the plane including the inner edge 13b of the blade mounting portion 13a and the plane 101 including the sliding surfaces 17. A space 102 is formed between the plane 101, which connects the sliding surfaces 17 with the blade edges 16a of the blades 16, and the blades 16. In the space 102, the head portions 18a of the support projections 18 are engaged with the blades 16.

When both the scissor segments 11 described above are opened or closed, as the sliding surfaces 17 of both the blade portions 13 are being slided on each other, an object is cut by the blade edges 16a of both the blades 16. During the cutting operation, since the space 102 is formed between the blades 16 and the plane 101 including the sliding surfaces 17, and since the head portions 18a of the supporting projections 18 supporting the blades 16 are within the same space 102, the head portions 18a of the supporting projections 18 of one scissor segment 11 do not hit and interfere with the sliding surface 17 of the other scissor segment 11. As a result, the open/close movement of both the scissor segments 11 is not interfered.

Furthermore, the blades 6 are attached to the notches 15 using no screws but the supporting projections 18. Namely, concave portions reducing the strength of the blade mounting portions 13a are omitted from the same blade mounting portions 13a. Therefore, there arises no problem in strength if the blade mounting portions 13a of the blades 13 are formed out of synthetic resin, and the forming of the blade mounting portions 13a out of synthetic resin is realized.

In order to make the space 102, it is proposed that the blades 16 themselves are processed, such that the opposite inner surfaces of the blades 16 are inclined toward the plane 101 including the sliding surfaces 17. However, in the present embodiment, the inner bottom surfaces 15a of the notches 15 are inclined toward the plane 101 including the sliding surfaces 17 and the blades 16 are set on the same inner bottom surfaces 15a so that the blades 16 are automatically inclined toward the plane 101 and the space l02 is made. Therefore, there is no necessity of special processing of the blades 16 for making the space 102.

Furthermore, the structure for mounting the blades 16 according to the present embodiment can naturally be applied to shears or bow scissors.

As many apparently widely different embodiments of this invention may be made without departing from the spirit and scope thereof, it is to be understood that he invention is not limited to the specific embodiments thereof except as defined in the appended claims.

Claims

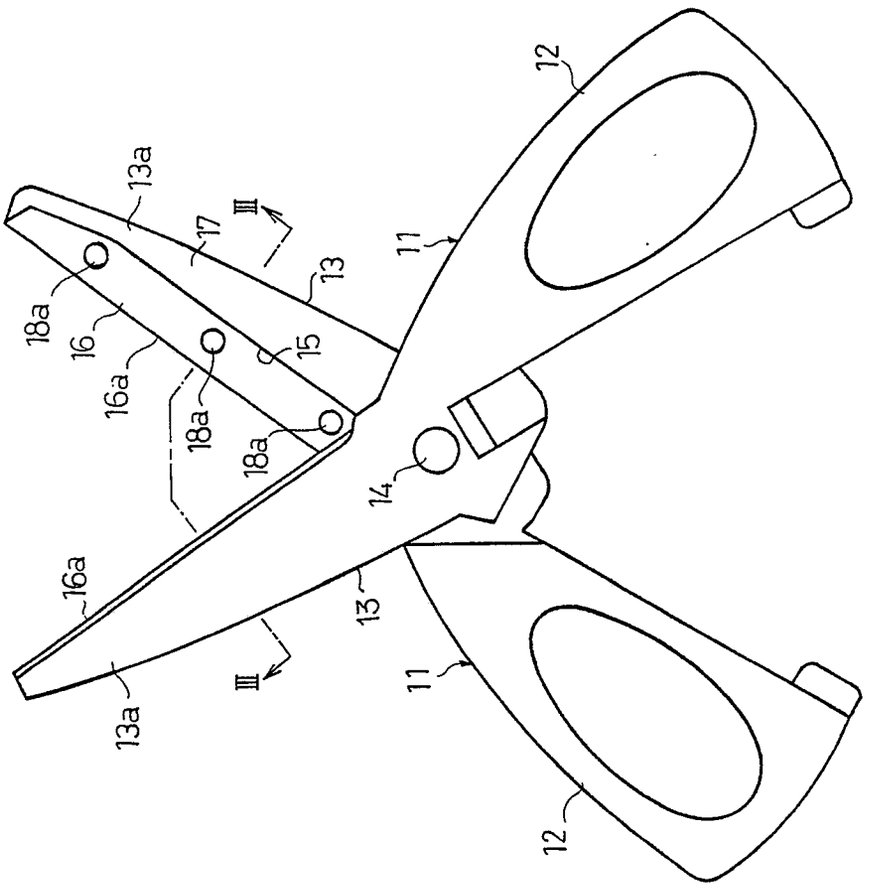
1. A structure for mounting a blade (16) with a blade edge (16a) to a first side of a blade mounting portion (13a) having a sliding surface (17) on a second side, said first side being continuous with said second side,
characterized by;
a notch (15) formed in said second side of said blade mounting portion (13a), and having a surface (15a) inclined toward said sliding surface (l7), said blade (16) being set on said inclined surface (15a), said blade edge (16a) being on a plane (101) including said sliding surface (17), said plane (101) and said blade (16) defining a space (102) therebetween; and
supporting means (18) for supporting said blade (16), provided on said inclined surface (17) and situated within said space (102).

2. A structure for mounting a blade according to claim 1, wherein said supporting means comprises a projection (18) integrally formed on said blade mounting portion (13a), so as to project from said inclined surface (15a) in said notch (15) and having a portion (18a) engaging said blade (16).

3. A structure for mounting a blade according to claim 2, wherein said blade mounting portion (13a) and said projection (18) are formed of synthetic resin.

4. A structure for mounting a blade (16) with a blade edge (16a) and a hole (19) to a first side of a blade mounting portion (13a) having a sliding surface (17) on a second side, said first side being continuous with said second side,
characterized by;
a notch (15) formed in said second side of said blade mounting portion (13a) and having a having supporting surface (15a) inclined toward said sliding surface (17), said blade (16) being set on said supporting surface (15a), said blade edges (16a) being on a plane (101) including said sliding surface (17), said plane (101) and said blade (16) defining a space (102) therebetween; and
a plurality of supporting projections (18) integrally formed on said blade mounting portion (13a) so as to project from said supporting surface (15a) in said notch (15), each supporting projection (18) including a stem portion (18b) of smaller diameter inserted into said hole (19) of said blade (16) and a head portion (18a) of larger diameter provided on a tip of said stem portion (18b), said head portion (18a) engaging a circumference of said hole (19) on a surface of said blade (16) away from said supporting surface (15a), said supporting projection (18) and said blade mounting portion (13a) being formed of synthetic resin, said head portion (18a) of said supporting projection (18) being situated within said space (102).

FIG. 1


12
13a
17
III
13
11
18a
16
15
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18a
14
16a
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III
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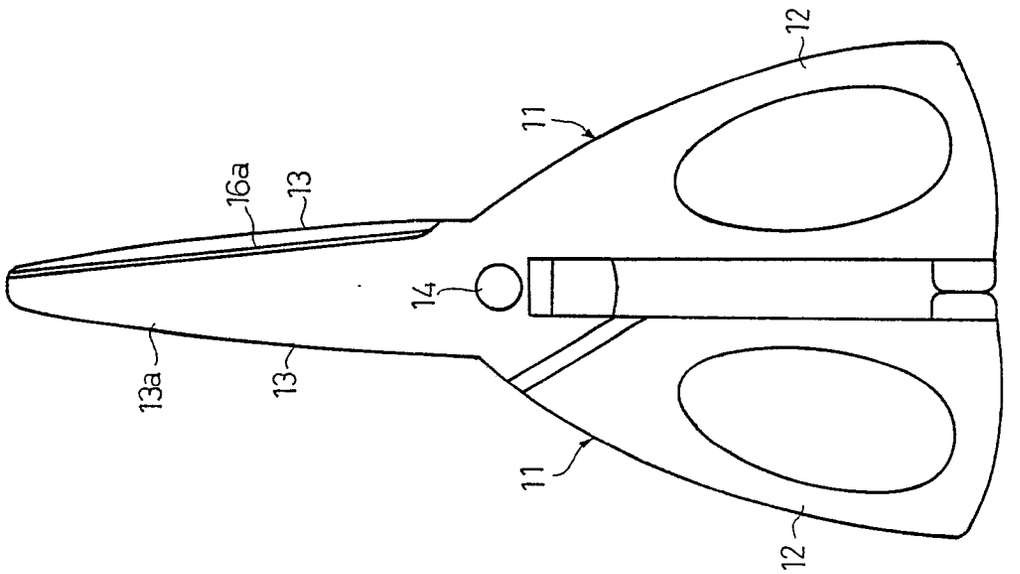
12

FIG. 2


12
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16a
13
14
13a
13
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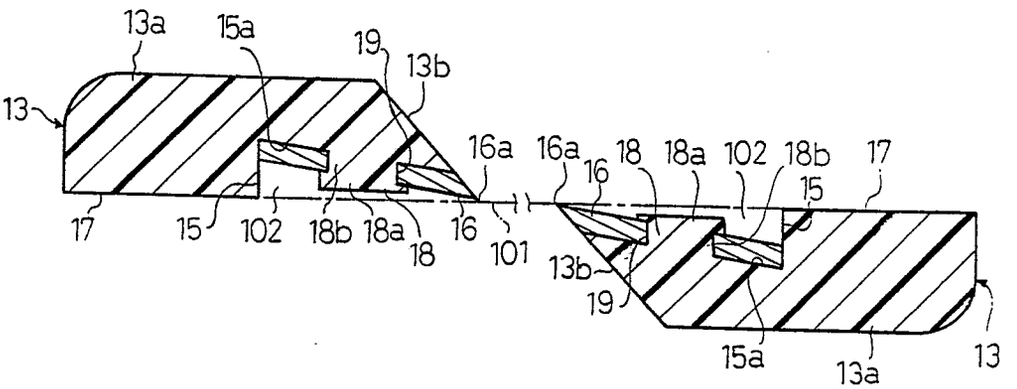
FIG. 3


13a
15a
19
13b
13
16a
16a
16
18
18a
102
18b
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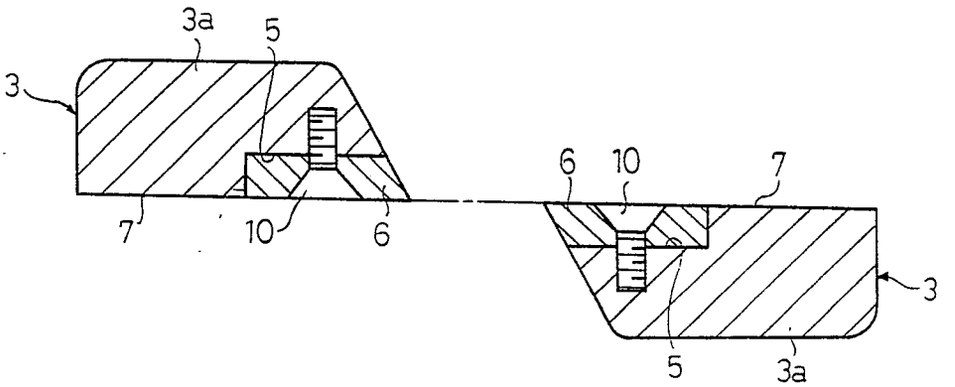
18b
18a
18
16
101
13b
19
15a
13a
13

FIG. 4


3a
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3a

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 10 0163

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.4)
X	GB-A- 999 624 (G. THOMPSON) * Page 3, lines 83-94; figure 9 *	1,2,3	B 26 B 13/02
Y		4	
Y	GB-A-1 597 745 (S. MARIN) * Page 2; figures 1-3 *	4	
A	GB-A- 627 080 (P. RICHARTZ) * Page 3, lines 10-85; figure 3 *	1,2,3,4	
A	US-A-1 956 588 (M. PARKER et al.)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

B 26 B
A 61 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	03-04-1989	WOHLRAPP R.G.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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