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(54) **A method and device for tensioning and fixing covering material on an object, particularly a seat.**

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Description

The invention relates to a method for fixing and tensioning upholstery material to an object, a recess being provided in the object, whereby a strip of more rigid material is attached to the free edge of the upholstery material which is cut off to measure, and that thereupon the strip with a portion projecting therefrom is fixed into the recess while exerting tensioning forces on the upholstery material.

A similar method for fixing and tensioning upholstery material to an object is known from CH—A—526,289. With this known method the free edge of the upholstery material is provided with a strengthening strip of material that is more rigid than the upholstery material. The thus thickened edge of the upholstery material is pushed into a longitudinal groove of a profiled bar, the profile angle of which is less than 90°. The longitudinal groove in the profiled bar is, however, adapted for only one combined thickness of upholstery material and strengthening strip, so that with a different thickness of upholstery material also a different groove width will be necessary, which means a new strengthening strip and a new profiled bar. Because of the fact that the strengthening strip lies in a plane parallel to the free edge of the upholstery material, it is difficult to insert the strip and the free edge together into the longitudinal groove and to maintain at the same time an even tensioning in the upholstery material.

The invention aims at removing the above described disadvantages of the known method.

This object is reached in that according to the invention a profile with a T- or L-shaped section is applied as the strip of more rigid material, the body of which is pressed into the recess under exertion of frictional forces and that the free edge of the upholstery material is stitched to the flag of the profile.

By application of the method according to the invention the profile is adapted for all thicknesses of upholstery material to be used, whereas the profile with the aid of the flag, which is generally perpendicular to the body, may be easily inserted by hand into the longitudinal recess in the object, during which insertion the even tensioning of the upholstery material may be properly maintained.

The present invention also relates to a device for fixing and tensioning upholstery material to an object, which device is provided with a tensioning element and with which a recess for fixing and tensioning of the upholstery material is applied, whereby the tensioning element is attached over the entire length of the free edge of the upholstery material to be fixed.

A similar device is known from CH—A—526,289. The tensioning element of this device is a profiled bar, the profile angle of which is smaller than 90°. The profiled bar is provided with an insertion portion or body, which is a simple plain lip with a rectangular section. With such a tensioning element it is necessary that the

body includes a sharp angle with the direction in which the upholstery material extends from the tensioning element, so that the tension in the material tends to push the body into the recess.

The device according to the invention is characterized in that the tensioning element is provided with a portion projecting at an angle therefrom, which is resiliently deformably clamped in the recess which is made directly into the object.

With the device according to the invention the body of the tensioning element is held firmly in the recess by means of resilient deformation, without any special shape of the tensioning element itself.

With a preferred embodiment of the device according to the invention the tensioning element comprises a T-section of flexible synthetic material, the flag of which is stitched to the free edge of the upholstery material and the body of which, which can be clamped in the recess, is provided on at least one side with at least one barb-shaped member extending in longitudinal direction, which is inclined in opposition direction with respect to the inserting direction and the greatest thickness of the body being greater than the width of the groove-shaped recess.

This embodiment of the tensioning element entails an easy and quick fixing and tensioning of the upholstery material, which can easily be carried out by laymen, so that a thorough washing of the upholstery between times and replacement by new upholstery could be done by laymen without any difficulty.

According to the invention the free edge of the upholstery material is stitched to the flag on that side of the body of the T-section, which is turned away from the direction in which the upholstery material extends from the T-section.

By application of this feature the section is covered by the upholstery material and by this method of fixing of the upholstery material it is also reached, that the tensioning force of the upholstery material on the stitching seam on the T-section is at least partly taken up by the flag of the T-section.

The invention finally also relates to a pre-fabricated upholstery cover for objects, especially chairs and the like.

The pre-fabricated upholstery cover according to the invention is characterized in that over the entire length of the free edge of the upholstery cover to be fixed, a tensioning element is attached, a portion of which projects at an angle from the portion attached to the upholstery cover.

According to the invention the tensioning element of the upholstery cover is a T-section, the flag of which on one side is attached to the free edge of the upholstery material and the body of which is provided on at least one side with at least one longitudinally extending barb-shaped member, which is inclined in opposite direction away from the free edge of the body.

The method and device according to the invention as well as the pre-fabricated upholstery cover can especially be applied to seat furniture, pro-

vided with a trunk or frame, preferably made of wood, as into this material a groove-shaped recess can be easily milled, but the trunk may also be made of synthetic material or metal or another natural or synthetic material, into which the groove is milled then, molded in the injection mold or achieved in another way.

The method and device according to the invention as well as the pre-fabricated upholstery cover can, of course, also be applied to other objects, e.g. tables, car- and airplane chairs and benches, which must be provided with an upholstery.

Although the frame or the trunk of seat furniture or other objects, provided with an upholstery cover, is usually provided with foam-rubber sheets or sheets made of synthetic foam material and stuffing pieces, over which the upholstery is tensioned, this is not absolutely necessary; if a relatively thick upholstery material is used, this could be sufficient in some cases.

The invention will be further elucidated with reference to the drawings with an embodiment.

Figure 1 is a schematic section of a bench or arm-chair to which the invention is applied and

Figure 2 shows a detail II of figure 1 on a larger scale.

The bench or arm-chair 1, drawn in figure 1 is provided with a frame or trunk 2, comprising two side panels 3 which are tightly connected to each other by longitudinal or cross beams 4, 5 and 6, such that a non-deformable frame is obtained. Between the side panels 3 obviously extra stiffening and/or support beams or support sheets (not drawn) could still be applied for instance to support the foam-rubber or synthetic foam rubber back and seat cushions 7 and 8, which are supported by webs (not shown), tensioned in transverse and longitudinal direction between the side panels 3 and between the stiffening and support beams. To the back side of the piece of furniture a foam rubber or synthetic foam rubber sheet 9 can still be applied to cover the frame on that side too, while also the beams 6 and the side panels 3 on the outer side can be provided with such a sheet 10.

About the seat an upholstery cover 11 is positioned, which is tensioned and fixed in the following way, vide figure 2.

The upholstery cover 11 could comprise one piece of leather, synthetic material, textile or other material, cut off on moulds to the right measure and stitched at the necessary places to bring the cover into the right shape. Before the cover 11 is placed on the furniture 1, a T-section 13, made of synthetic material, is stitched over the entire length of the peripheral hem or free edge 12. The T-section 13 is provided with a flag 14 and a body 15. The peripheral hem or free edge 12 of the upholstery cover 11 is stitched to the flag 14 of the T-section along a seam 16 on that side of the body 15 which is turned away from the direction in which the upholstery material 11 extends from the T-section 13, as appears from figure 2. The advantage thereof is, that on one side the T-section 13 is covered by the material 11, and on

the other side, which is still more important, that at least a part of the tensioning force of the upholstery cover 11 is absorbed by the flag 14 itself and therefore this tensioning force never has to be absorbed entirely by the stitching seam 16.

The body 15 of the T-section 13 has a firtree-shaped cross-section, barb-shaped members or ribs 17 being formed, the operation and function of which will be further elucidated in the following.

The T-section 13 is applied along the entire periphery of the free edge hem 12 of the cover 11, thus along the lower side of the frame beams 4 and 6 as well as along the lower side of both side panels 3 and moreover along the lower side of the frame beam 5, in order to be able to tension the front back flap 7' and the seat flap 8' and to fix them. Therefore, the front back flap 7' and the seat flap 8' of the cover 11 are stitched on their free edges to a tensioning strip 11', the free edge of which in its turn is provided with a T-section 13 of synthetic material in the above described way, which can be pressed with its body 15 into a recess in the lower face of the frame beam 5 in the way as described in the following.

The tensioning and fixing of the cover 11 on the lower face of the frame beam will be described now with the aid of figure 2, but this description of course also applies to the fastening of the cover to the side panels 3 and to the longitudinal beams 5 and 6.

In order to fix the upholstery cover 11 a groove 18 is milled into the lower face of the frame beam 4 over the entire length, the width of which is smaller than the greatest thickness of the body 15 of the T-section 13, including the barb shaped hooks 17, at least one of which is applied to one side of the body 15.

The cover 11 is tensioned by smoothing it by hand downwards over the rear back panel, the V-shaped free edge of the body 13 being positioned in front of the entrance of the groove 18. If the upholstery cover is sufficiently tensioned, the T-section is manually pressed with the body 15 into the groove against the frictional force. The body of the T-section 13 is sufficiently tightly fixed in the groove 18 in this way, because if for instance someone pulls at the upholstery material in the direction of the arrow 19 in figure 2, no or at the most only relatively small force is exerted in outward direction on the body 15 of the T-section 13. The barbed hook-shaped ribs 17 bite as it were into the wood of the groove walls.

The invention is not restricted to the above described application of the T-section 13. Instead of that, also an L-shaped section in the shape of angle steel could be applied.

Furthermore the "body" of the T- or L-section can be smooth and can be fixed in the groove 18 with or without the aid of a non-setting adhesive. If a slightly resilient and/or flexible synthetic material is used for the fixing section, the thickness of the "body" of the section, which must be positioned into the groove 18, can in this case

also be equal to or somewhat greater than the width of that groove 18.

Also, it is not necessary for the "body" of the T- or an L-section to be perpendicular to the "flag", but it can also enclose a sharp or even an obtuse angle therewith.

The free edge or hem 12 of the upholstery cover 11 can also be stitched to the flag on the other side of the body of the T-section or another section or for instance be attached with an adhesive if this is preferred for some reason or another or if one is obliged to do so under certain circumstances.

Claims

1. Method for fixing and tensioning upholstery material to an object, a recess being made in the object, whereby a strip of more rigid material is attached to the free edge of the upholstery material which is cut off to measure, and that thereupon the strip with a portion projecting therefrom is fixed into the recess while exerting tensioning forces on the upholstery material, characterized in that a profile with a T- or L-shaped section is applied as the strip of more rigid material, the body of which is pressed into the recess under exertion of frictional forces and that the free edge of the upholstery material is stitched to the flag of the profile.

2. Device for fixing and tensioning upholstery material (11) to an object (1), which device is provided with a tensioning element (13) and with which a recess (18) for fixing and tensioning of the upholstery material (11) is applied, whereby the tensioning element (13) is attached over the entire length of the free edge (12) of the upholstery material to be fixed, characterized in that the tensioning element (13) is provided with a portion (15) projecting at an angle therefrom, which is resiliently deformably clamped in the recess (18) which is made directly into the object (1).

3. Device according to claim 2, characterized in that the tensioning element comprises a T-section (13) of flexible synthetic material, the flag (14) of which is stitched to the free edge (12) of the upholstery material (11) and the body (15) of which, which can be clamped into the recess (18), is provided on at least one side with at least one longitudinally extending barb-shaped member (17), which is inclined in opposite direction with respect to the inserting direction and the greatest thickness of the body being greater than the width of the groove-shaped recess.

4. Device according to claim 3, characterized in that the free edge (12) of the upholstery material (11) is stitched to the flag (14) on that side of the body (15) of the T-section (13), which is turned away from the direction in which the upholstery material extends from the T-section.

5. Pre-fabricated upholstery cover for objects, especially seat furniture and the like objects, characterized in that over the entire length of the free edge (12) of the upholstery cover (11) to be fixed a tensioning element is attached; a portion

(15) of which projects at an angle from the portion, attached to the upholstery cover (11).

6. Upholstery cover according to claim 5, characterized in that the tensioning element is a T-section (13), the flag of which on one side is attached to the free edge (12) of the upholstery material and the body (15) of which is provided on at least one side with at least one longitudinally extending barb-shaped member (17), which is inclined in opposite direction away from the free edge of the body (15).

Patentansprüche

1. Verfahren zum Spannen und Befestigen eines Überzugsmaterialies an einem Gegenstand, in den eine Ausnehmung gemacht wird, ein Streifen aus steiferem Material am freien Rand des auf Maß geschnittenen Überzugsmaterialies angebracht wird, wonach der Streifen mit einem von diesem vorspringenden Abschnitt in der Ausnehmung befestigt wird, während auf das Überzugsmaterial Zugkräfte ausgeübt werden, dadurch gekennzeichnet, daß als Streifen aus steiferem Material ein Profil mit T- oder L-förmigem Querschnitt verwendet wird, daß der Hauptteil des Profiles reibungsschlüssig in die Ausnehmung eingepreßt wird und daß der freie Rand des Überzugsmaterialies am Steg des Profiles angeheftet wird.

2. Vorrichtung zum Spannen und Befestigen eines Überzugsmaterialies (11) an einem Gegenstand (1), bei der ein Spannelement (13) und eine Ausnehmung (18) zum Befestigen und Spannen des Überzugsmaterialies (11) vorgesehen sind, wobei das Spannelement (13) über die gesamte Länge am freien Rand (12) des zu befestigenden Überzugsmaterialies angebracht ist, dadurch gekennzeichnet, daß das Spannelement (13) mit einem unter einem Winkel vorspringenden Abschnitt (15) versehen ist, der unter elastischer Verformung in der Ausnehmung (18) eingeklemmt ist, die unmittelbar im Gegenstand (1) ausgebildet ist.

3. Vorrichtung nach Anspruch 2, dadurch gekennzeichnet, daß das Spannelement aus einem T-Profil (13) aus flexiblem Kunststoff besteht, dessen Steg (14) am freien Rand (12) des Überzugsmaterialies (11) angeheftet und dessen in der Ausnehmung (18) einklemmbare Hauptteil (15) an wenigstens einer Seite mit mindestens einem längsverlaufenden widerhakenförmigen Element (17) versehen ist, das in Gegenrichtung zur Richtung des Einsetzens geneigt ist, und daß die größte Dicke des Hauptteiles (15) größer als die Breite der nutenförmigen Ausnehmung (18) ist.

4. Vorrichtung nach Anspruch 3, dadurch gekennzeichnet, daß der freie Rand (12) des Überzugsmaterialies (11) am Steg (14) an derjenigen Seite des Hauptteiles (15) des T-Profiles (13) angeheftet ist, die von der Richtung, in der sich das Überzugsmaterial (11) vom T-Profil (13); weggestreckt, abgewendet ist.

5. Vorgefertigter Überzug für Gegenstände, insbesondere Stühle od.dgl., dadurch gekennzeichnet,

net, daß über die gesamte Länge des freien Randes (12) des zu befestigenden Überzuges (11) ein Spannelement angebracht wird, von dem ein Teil (15) unter einem Winkel von demjenigen Teil vorspringt, der am Überzug (11) angebracht ist.

6. Überzug nach Anspruch 5, dadurch gekennzeichnet, daß das Spannelement ein T-Profil (13) ist, dessen Steg an einer Seite am freien Rand (12) des Überzugsmaterialies (11) angebracht ist und dessen Hauptteil (15) an wenigstens einer Seite mit mindestens einem längsverlaufenden widerhakenförmigen Element (17) versehen ist, das vom freien Rand des Hauptteiles (15) in Gegenrichtung geneigt ist.

Revendications

1. Méthode pour fixer et tendre une garniture sur un objet, un logement étant fait dans l'objet, méthode dans laquelle on attache au bord libre de la garniture, coupée à longueur, une bande d'un matériau plus rigide, et dans laquelle ensuite on fixe la bande, par une portion de cette bande en saillie, dans le logement, tout en exerçant des forces de tension sur la garniture, caractérisée en ce que, comme bande de matériau plus rigide, on utilise un profilé en T ou L dont on enfonce l'âme dans le logement, ce qui met en oeuvre des forces de frottement; et en ce que le bord libre de la garniture est piqué sur la base du profilé.

2. Dispositif pour fixer et tendre une garniture (11) sur un objet (1), dispositif qui comporte un élément de tension (13) et dans lequel on utilise un logement (18) pour fixer et tendre la garniture (11), étant précisé que l'élément de tension (13) est attaché sur toute la longueur du bord libre (12) de la garniture à fixer, caractérisé en ce que

l'élément de tension (13) comporte une portion (15) qui fait saillie sous un certain angle et que l'on bride, en le déformant élastiquement, dans le logement (8) directement prévu dans l'objet (1).

3. Dispositif selon la revendication 2, caractérisé en ce que l'élément de tension comporte un profilé T (13) de matériau synthétique souple, dont la base (14) est piquée sur le bord libre (12) de la garniture (11) et dont l'âme (15), que l'on peut brider dans le logement (18), présente, sur au moins une face, au moins un élément (17) en forme de picot s'étendant longitudinalement et incliné dans le sens opposé au sens d'insertion, la plus grande épaisseur de l'âme étant supérieure à la largeur du logement en forme de rainure.

4. Dispositif selon la revendication 3, caractérisé en ce que le bord libre (12) de la garniture (11) est piqué sur la base (14), du côté de l'âme (15) du profilé T (13) dirigé dans le sens opposé au sens dans lequel la garniture s'étend depuis le profilé T.

5. Garniture de revêtement préfabriquée pour objets, en particulier pour sièges et objets semblables, caractérisée en ce que sur toute la longueur du bord libre (12) de la garniture de revêtement (11) à fixer, est attaché un élément de tension dont une portion (15) fait saillie, sous un certain angle, depuis la portion attachée à la garniture de revêtement (11).

6. Garniture de revêtement selon la revendication 5, caractérisée en ce que l'élément de tension est un profilé T (13), dont la base est attachée d'un côté au bord libre (12) de la garniture et dont l'âme (15) présente, sur au moins une face, au moins un élément en forme de picot, s'étendant longitudinalement et incliné dans le sens opposé, en s'éloignant du bord libre de l'âme (15).

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