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Description

The present invention relates to metal drawer guides and a manufacturing method therefor (of the kind already known from IT-U-203 626).

In a conventional construction the drawer consists of side, front and rear boards all made of wood of varying thickness and rigidly assembled with glue. The drawer thus made is then equipped on the sides with metallic guides, generally in the form of the letter Z, with the upper arm of the Z bent outward and shaped to constitute a sliding track for wheels pivoted on a complementary guide mounted laterally in the opening receiving the drawer in the furniture item. The lower end of the Z constitutes a support for the lower edge of the drawer shoulder.

For reasons of cost and processing practicality, drawer guides of this type are usually made in pairs by cutting and shaping from a strip of a width proportionate to the length of the guides to be made a pair united along the lower end of the Z. Once all the necessary operations have been performed such as drilling, bending, drawing, etc., the guide pairs are sent to a final cutting station which separates the two guides of the pair so as to obtain the finished product.

In craft production the two guide pairs are fixed to the furniture item and to the drawer by screws, generally three for each guide, arranged on the lower end of the Z.

For industrial production of large quantities a similar system calling for at least 12 screws per drawer involves however cost and processing times which are often unacceptable.

While fixing of the complementary guides on the furniture item can be readily automated by using nogs inserted under pressure, fixing of the guides on the drawer presents greater difficulties. Indeed, the flanks of the drawers are usually thin, e.g. less than 13mm, which does not allow the use of expanding nogs.

It has therefore been proposed to make the guides with the lower end of the Z extending beyond the thickness of the drawer shoulder so that in the extension there can be made tabs bending back upward to secure the guide thereto. Such a system, while ensuring rapid assembly, has a serious shortcoming. Indeed, to ensure good holding, it is necessary that the tabs to be bent be as long as possible.

This involves a considerable increase in the material necessary for production of the guides with a consequent cost increase. The piece of sheet metal from which the guide is made has indeed a substantially rectangular development and thus any projection implies a proportionate increase in said development.

To provide tabs of suitable length without increasing excessively the extension, the tabs are usually notched parallel to the extension of the shoulder and are then bent upward so as to rest one edge on the shoulder. Said tabs, in addition to requiring specific bending tools, provide however poor resistance against sliding out of the guides from the edge of the shoulder, especially in the direction of the guide extension. To obviate this there are necessary additional operations on the guide to provide gripping teeth along it which bite into the wood of the shoulder with considerable cost increases.

Another disadvantage of the known art is the necessity of producing a new production line with resulting new costs and space occupied since the change in dimensions of the guide pair imposed by the extension of the lower end does not permit even for a first part of the operations the use of the initial cutting, bending, etc., line used for production of the screw assembly guides, still required by the market.

The general object of the present invention is to obviate the above shortcomings by providing guides with rivet fastening and a method for production thereof involving the use of a quantity of material not greater than that necessary for the guides with screw fastening, provide very firm fixing and, in addition, produced on the same production line as the screw fixed guides.

In view of said object it has been sought to provide in accordance with the present invention a method for production of a pair of guides to be fixed laterally near the lower edges of the two shoulders of a drawer for its sliding on corresponding sliding elements fixed in a furniture item and comprising the phases of:

- pressing from a strip of sheet metal an element shaped generally like the letter U with the upper ends of the U bent outward to provide support and guide tracks for said sliding elements, and
- cutting the U in the centre to separate two specular elements forming the guide pair, said method being characterized in that the separating cutting of the guides of the pair is done along a path traversing at several points the line of symmetry of the U to form on each guide a plurality of tabs by cutting from the other guide of the pair and bendable upward substantially along said symmetry line to provide clipping of the guide to the lower edge of the shoulder by clamping it between the tabs and the corresponding vertical arm of the U.

In addition it is sought to provide a pair of drawer guides each comprising a sliding rail against the side wall and extending in a portion

designed to be bend in the form of the letter C to embrace the lower edge of a shoulder of the drawer and characterized in that the inner end of the C is in the form of spaced tabs, each guide having a flat development in the form of a substantially rectangular figure from which project said tabs made by cutting along a fret line from a single piece of material inscribing the developments of the two guides of the guide pair.

To further clarify the explanation of the innovative principles of the present invention and its advantages as compared with the known art there are described below with the aid of the annexed drawings possible embodiments as nonlimiting examples applying said principles. In the drawings:

FIG. 1 shows shows an end view of a specular pair of drawer guides united along a median line,

FIG. 2 shows a schematic plan view of a strip of sheet metal for forming of the pair of FIG. 1,

FIG. 3 shows a plan view of the pair of FIG. 1 after an innovative cutting operation into two separate guides, and

FIG. 4 shows a schematic partial end view of a guide of FIG. 3 applied to a shoulder of a generic drawer.

With reference to the figures, as may be seen in FIG. 1, a guide pair, indicated generally by reference number 10, is formed of right and left guides for the two sides of a drawer. Said guides are substantially specular along a median line 16, formed substantially like the letter Z and united at the lower end of the Z. In particular, the upper part 12, inclined edge 11, side part (13) and lower part (14) will appear.

Said pair is made by cutting a strip of sheet metal 17 symmetrical along the median line 16 so as to produce the flat part of the paired guides, performing optional operations of drawing and drilling of holes 15 for reception, for example, of stops, wheels, etc., which are known and readily imagined by those skilled in the art, and finally bending the strip along longitudinal lines (shown in broken lines in FIG. 2).

The part 14 has a width substantially equal to the thickness of the drawer shoulders to which the guides are fixed.

At this point there have been obtained paired guides which, if drilled at the lower end 14 and then separated by cutting along the median line 16 are substantially the same as normal guides for screw fixing.

As an alternative, in accordance with the innovative principles claimed here, the paired guides are separated by cutting as shown in FIG. 3 along a line with lengths 18 coinciding with the median line 16 and lengths forming a plurality of tabs 19 in one guide with corresponding recesses 20 in the

other.

The length of the tabs 19 and hence of the corresponding recessed 20 is slightly less than the width of the lower part 14 so that they are completely contained in the latter.

In this manner, with no need to alter the preceding operations of forming of the guide pair, there are obtained guides which can be fixed to a shoulder of a drawer by clipping. Indeed, as shown schematically in FIG. 4 the tabs 19 can be bent upward so as to clip the guide to the lower edge of a shoulder 22 of a drawer immediately beneath the bottom 23 of said drawer, the lower ends of the guides being formed to be bent substantially in the shape of the letter C with the inner side of the C formed by the bent tabs. In said figure 4 there is seen schematically that, in accordance with the known art, the upper part of the guide provides a sliding track for wheels 25 supported by guides fixed to the furniture item 26.

Advantageously, as shown in FIG. 3, to facilitate bending of the tabs 19 there can be coined to the base of the tabs incisions 21, e.g. with a V section. In this case it may be advantageous, before the cutting operation, to separate the coined parts by holes 24 at the ends of the incisions 21.

At this point it is clear that the objects of the present invention are achieved. Thanks to the innovative principles described, the initial cutting and bending machines can be used both to produce screw-mounted guides and rivetted guides with no modification. The only different operations are the final ones of cutting to separate the two guides of a pair and optionally coining and drilling.

There can thus be produced only guide pairs as in FIG. 1 with considerable economies, subsequently sending them depending on requirements either to the final operations to make screwed guides or the final operations to make rivetted guides. In addition, the rivetted guides are made with much less material than the rivetted guides of the known art, which allows considerable saving.

As will be clear to those skilled in the art, bending of the tabs is possible with a bending tool laid along the guide with no need of knowing the number and exact position of the tabs, differently from the known art where the tabs, due to their peculiar form, were bendable only with a tool specifically designed for the position and number of tabs and hence, in short, for the length of the guide. It is thus possible to make a single application machine for guides of different lengths.

The type of fastening with the tabs 19 permits easy and rapid positioning of the guides and permits acceptance of a tolerance on the thickness of the drawer flank, ensuring in all cases optional fixing with no need to provide gripping teeth or the like on the side wall of the guide which, once

mounted, would be visible.

Naturally the above description of an embodiment applying the innovative principles of the present invention is given merely by way of example and therefore is not to be taken as a limitation of the patent right claimed here.

For example, the length of the guide, the number and exact position of the tabs 19 are variable depending on the particular practical requirements, as is clear to those skilled in the art. In addition, the end corners of the tabs can be partially bent toward the shoulder to bite into the wood upon clipping so as to provide additional holding characteristics.

Claims

1. Method for the manufacture of a pair of guides to be fixed laterally near the lower edges of the two shoulders of a drawer for its sliding on corresponding sliding elements fixed in a furniture item and comprising the phases of:

- pressing from a strip of sheet metal an element shaped generally like the letter U with the upper ends of the U bent outward to provide support and guide tracks for said sliding elements, and
- cutting the U in the centre to separate two specular elements forming the guide pair, said method being characterized in that the separating cutting of the guides of the pair is done along a path traversing at several points the line of symmetry of the U to form on each guide a plurality of tabs by cutting from the other guide of the pair and bendable upward substantially along said symmetry line to provide clipping of the guide to the lower edge of the shoulder by clamping it between the tabs and the corresponding vertical arm of the U.

2. Method in accordance with claim 1 characterized in that it comprises the additional operation of coining grooves along bending lines of the tabs.

3. Method in accordance with claim 2 characterized in that it comprises the additional phase of producing holes at the ends of the grooves coined on the tabs.

4. Pair of drawer guides each guide comprising a rail for sliding against the side wall and extending in a portion designed to be bent in the shape of the letter C to embrace the lower edge of a shoulder of the drawer and char-

acterized in that the inner end of the C is in the form of spaced tabs and each guide having a flat development in the form of a substantially rectangular figure from which project said tabs made by cutting along a fret line from a single piece of material inscribing the development of the two guides of the guide pair.

5. Pair of guides in accordance with claim 4 characterized in that the cutting line separating the development of the two guides comprises a straight centre-line portion with alternating fret portions forming trapezoidal projections from opposite sides and identifying said tabs.

6. Pair of guides in accordance with claim 4 characterized in that the tabs are bent along lines formed with grooves facilitating bending.

7. Pair of guides in accordance with claim 6 characterized in that at the end of the grooves facilitating bending there are terminal holes for them.

8. Pair of guides in accordance with claim 4 characterized in that the end corners of the tabs are at least partially bent toward the shoulder to bite into the wood upon clipping so as to provide an additional holding characteristic.

Patentansprüche

1. Verfahren zur Herstellung eines Führungspaares, das zwecks Gleiten auf entsprechenden Gleitelementen, die an einem Möbelstück befestigt sind, seitlich in der Nähe der unteren Kanten der zwei Schultern einer Schublade angebracht wird, umfassend die Stufen:

- des Drückens eines im wesentlichen U-förmigen Elementes, dessen obere Enden nach außen gebogen sind, aus einem Blechstreifen, um Stütz- und Führungsschienen für die Gleitelemente bereitzustellen, und
- des Zerschneidens des U in der Mitte, um es in zwei spiegelbildliche Elemente zu zerteilen, die das Führungspaar bilden, wobei das verfahren dadurch gekennzeichnet ist, daß das Zerteilen der Führungsschienen des Paares entlang einer Bahn durchgeführt wird, die an mehreren Punkten die Symmetrielinie des U kreuzt, um auf jeder Führungsschiene eine Vielzahl von übergreifenden Lappen zu bilden, indem diese von der anderen Führung des Paares herausgetrennt werden, und daß die Lappen im wesentli-

- chen entlang der Symmetrielinie nach oben biegsam sind, um ein Befestigen der Führung an der unteren Kante der Schulter zu ermöglichen, indem diese zwischen die übergreifenden Lappen und den entsprechenden senkrechten Arm des U geklammert wird.
2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß es zusätzlich den Arbeitsgang des Prägens von Nuten entlang der Biegelinien der übergreifenden Lappen umfaßt.
3. Verfahren nach Anspruch 2, dadurch gekennzeichnet, daß es zusätzlich den Arbeitsschritt der Herstellung von Löchern an den Enden der auf die übergreifenden Lappen geprägten Nuten umfaßt.
4. Führungspaar für Schubladen, bei dem jede Führung eine Schiene für das Gleiten an der Seitenwand umfaßt und sich als ein Stück ausdehnt, das derartig entworfen wurde, daß es in die Form des Buchstaben C gebogen werden kann, um die untere Kante einer Schulter der Schublade zu umklammern, dadurch gekennzeichnet, daß das innere Ende des C die Form von mit Zwischenräumen angeordneten, übergreifenden Lappen besitzt, wobei jede Führung eine flache Erweiterung in Form einer im wesentlichen rechteckigen Kontur besitzt, aus der die übergreifenden Lappen herausragen, die durch das Ausschneiden eines einzelnen Stückes an Material entlang einer gestrichelten Linie hergestellt wurden, wobei die Erweiterungen der zwei Führungen des Führungspaares ineinander geschrieben sind.
5. Führungspaar nach Anspruch 4, dadurch gekennzeichnet, daß die Schnittlinie, die die flache Erweiterung der zwei Führungen trennt, einen geraden Mittellinienbereich mit wechselnden ausgeschnittenen Bereichen umfaßt, die trapezförmige Vorsprünge von gegenüberliegenden Seiten bilden und die die Lappen charakterisieren.
6. Führungspaar nach Anspruch 4, dadurch gekennzeichnet, daß die Lappen entlang Linien gebogen wurden, die aus Rillen bestehen, um das Biegen zu erleichtern.
7. Führungspaar nach Anspruch 6, dadurch gekennzeichnet, daß sich am Ende der Rillen, durch die das Biegen erleichtert wird, Begrenzungslöcher für sie befinden.
8. Führungspaar nach Anspruch 4, dadurch gekennzeichnet, daß die Enden der Ecken der übergreifenden Lappen zumindest teilweise in Richtung der Schulter gebogen sind, um in das Holz einzudringen, wenn sie geklammert werden, und so zusätzlichen Halt zu bieten.

Revendications

1. Procédé de fabrication d'une paire de glissières destinées à être fixées latéralement à proximité des bords inférieurs des deux épaulements d'un tiroir pour son coulisement sur des éléments de coulisement correspondants fixés sur un article formant meuble et comportant les phases consistant à:
- réaliser à la presse, à partir d'une bande de feuillard métallique, un élément mis en forme de manière générale analogue à la lettre U, les extrémités supérieures du U étant pliées vers l'extérieur pour obtenir des rails de support et de guidage pour ces éléments de coulisement, et
 - découper le U dans son milieu pour séparer deux éléments symétriques formant la paire de glissières,
- ce procédé étant caractérisé en ce que la découpe de séparation des glissières de la paire est réalisée le long d'un trajet traversant au niveau de plusieurs points la ligne de symétrie du U pour former sur chaque glissière plusieurs pattes par découpe à partir de l'autre glissière de la paire et pouvant être pliées vers le haut pratiquement le long de cette ligne de symétrie pour permettre l'agrafage de la glissière sur le bord inférieur de l'épaulement par serrage de celui-ci entre les pattes et le bras vertical correspondant du U.
2. Procédé selon la revendication 1 caractérisé en ce que qu'il comporte l'opération supplémentaire consistant à frapper des gorges le long des lignes de pliage des pattes.
3. Procédé selon la revendication 2 caractérisé en ce que qu'il comporte la phase supplémentaire consistant à réaliser des trous au niveau des extrémités des gorges frappées sur les pattes.
4. Paire de glissières pour tiroir, chaque glissière comportant un rail destiné à coulisser contre la paroi latérale et s'étendant dans une partie conçue pour être pliée sous la forme de la lettre C pour entourer le bord inférieur d'un

épaulement du tiroir et caractérisée en ce que l'extrémité intérieure du C est sous la forme de pattes espacées et chaque glissière ayant un développement à plat de forme pratiquement rectangulaire à partir de laquelle font saillie ces pattes réalisées par découpe le long d'une ligne à méandres à partir d'un seul morceau de matériau inscrivant le développement des deux glissières de la paire de glissières.

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5. Paire de glissières selon la revendication 4 caractérisée en ce que la ligne de découpe séparant le développement des deux glissières comporte une partie formant ligne médiane rectiligne ayant des parties en méandre alternées formant des saillies trapézoïdales à partir des côtés opposés et constituant ces pattes.

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6. Paire de glissières selon la revendication 4 caractérisée en ce que les pattes sont pliées le long de lignes munies de gorges facilitant le pliage.

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7. Paire de glissières selon la revendication 6 caractérisée en ce qu'au niveau de l'extrémité des gorges facilitant le pliage existent des trous formant extrémités de celles-ci.

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8. Paire de glissières selon la revendication 4 caractérisée en ce que les coins d'extrémités des pattes sont au moins partiellement pliés vers l'épaulement pour pouvoir pénétrer à l'intérieur du bois lors de l'agrafage de manière à fournir une caractéristique de maintien supplémentaire.

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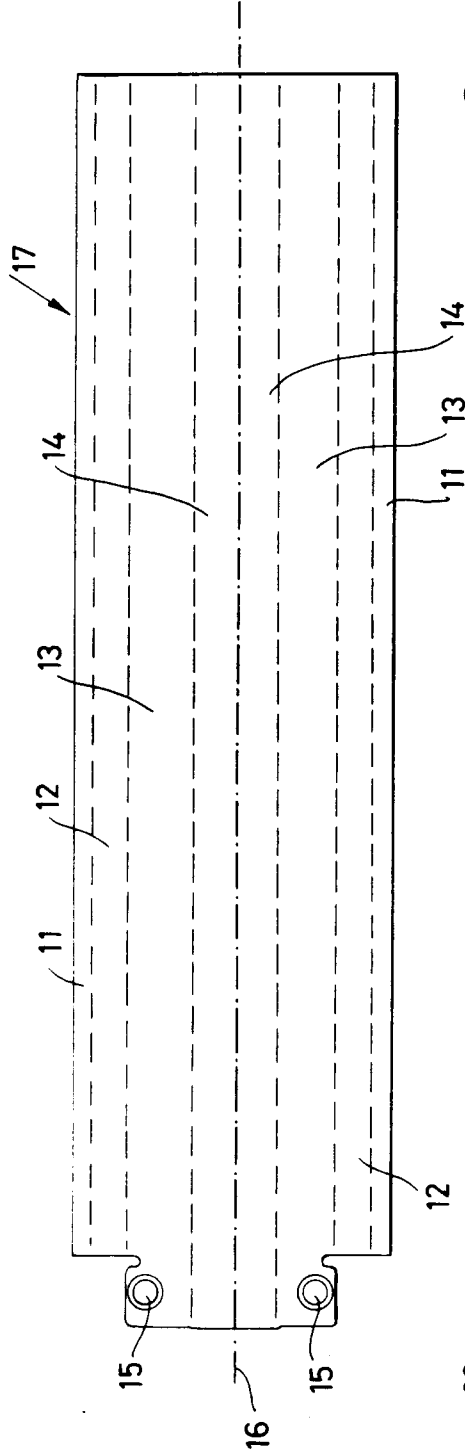


Fig. 2

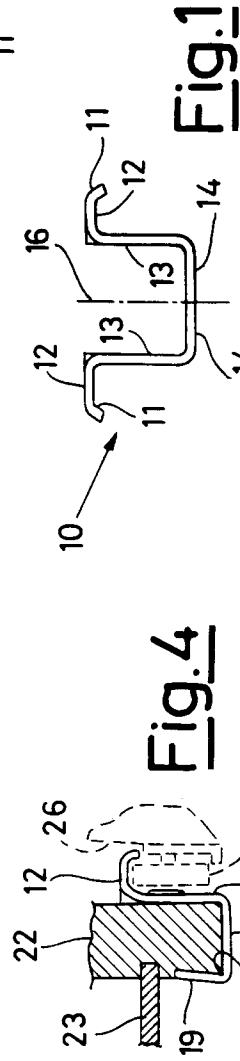


Fig. 1

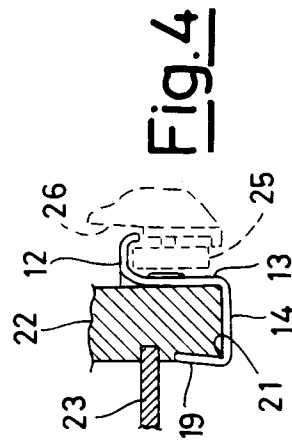


Fig. 4

Fig. 3

