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Description

The invention concerns catches, particularly but not exclusively safety catches for preventing extended relative movement of two parts of a piece of furniture moveable relative to one another.

Such catches are known to prevent drawer, doors and the like of articles of furniture being readily opened to an extent enabling access to be made, by infants, to potentially hazardous articles and materials stored in the piece of furniture. The known catches generally provide that the drawer or door may be partially opened and the, following further manipulation by a user, the drawer or door may be fully opened. The purpose of such a catch is to prevent access to potentially dangerous articles and/or materials being made by infants who, it is assumed, have neither the mental ability nor physical dexterity to both manipulate the catch into a releasing position and open the drawer or door of the piece of furniture on which the catch is operably mounted.

There have been many suggestions for catches of this type a number of which include a flexible element mountable on one of the parts of the piece of furniture and engageable, as the two parts of the piece of furniture are moved relative to one another, with a stop element carried on the other part of the piece of furniture.

Once the flexible element has engaged with the stop element further, extended, relative movement of the two parts of the piece of furniture is prevented until the flexible element is pushed by a user out of alignment with the stop element enabling the two parts of the piece of furniture to again move relative one to the other.

German Offenlegungsschrift Nr. 29 32 123 for example provides an arrangement typifying the known forms of catch. In the disclosure of this document the elongate flexible element is referred to as a finger catch and is provided on one side thereof with two hooks facing in opposite directions (i.e. one hook faces away from, and the other toward, the mounting end of the elongate flexible element). The arrangement described in this document provides that one element is mountable on the back of a drawer front to engage a stop mounted in the carcass of the piece of furniture to permit a drawer to be opened only by a small amount and that a second, substantially identical, element is mounted on the rear wall of the drawer (facing towards the front wall of the drawer) which second element is in turn engaged by the stop once the first element has been pushed out of engagement with the stop and the opening of the drawer is continued. With this particular arrangement a single flexible element (finger-catch) is useable both to provide that the drawer cannot initially be opened by an amount enabling access to be made to the content thereof by an infant, and to prevent the drawer being withdrawn fully from the carcass in which it is housed.

A major difficulty found with this type of releaseable catch, which is not overcome by the arrangement described in the noted German Offenlegungsschrift, arises when a drawer fitted with such a catch is located closely adjacent another drawer, door or other item of furniture. The partial opening of the drawer fitted with a catch may often be insufficient to enable access, of an adult's fingers for example, into the drawer to a position enabling manipulation of the flexible element into a drawer releasing position.

Clearly one solution to the problem would be to ensure that the elongate flexible element is longer but such a solution has the disadvantage that when the catch is fitted to a drawer not closely adjacent to another article of furniture the drawer may be sufficiently openable by an infant to enable that infant to insert his arm into the drawer and gain access to whatever is in there.

Alternative proposals could be to provide a plurality of catches each having a flexible element of a different length, or to provide that the elongate flexible element is of a single length but mountable on a drawer or door with one or more spacer elements in selected circumstances. These proposals, however, add both to the cost and complexity of the catch and, importantly, to the difficulty encountered in fitting the catch on a piece of furniture.

An object of this invention is to provide a catch meeting or substantially alleviating the above noted problems of the known catches and proposals for catches.

Accordingly, the present invention provides catch means comprising a hooked element which is mountable on a part of a piece of furniture moveable relative to another part of the piece of furniture and which is when so mounted engageable with a stop body on the other part to prevent extended relative movement of the two parts, the hooked element comprising an elongate flexible member one end of which is adapted for mounting on a part of a piece of furniture and which has a first hook portion formed thereon, the invention providing that the elongate flexible member has at least one further hook portion formed thereon spaced along the length thereof from said first hook portion and that the first hook portion and each of said further hook portions extend in radially different directions from the axis of the elongate member, whereby upon relative movement of the two parts of the piece of furniture one of the first and at least one further hook portions engages with said stop body to prevent relative movement of said two parts by more than an amount determined by a selected mounting orientation of the hooked element.

The hooked element and stop body preferably are made of a moulded plastics material, for example nylon.

One embodiment of the invention provides that the hooked element is formed with two hook portions on an extended elongate flexible part thereof, the hooked portions facing in mutually opposite directions.

Embodiments of the invention will now be

described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of two elements of the catch embodying the invention,

Figure 2 is a partially exposed side view of an article of furniture in which catches described with reference to Figure 1 are fitted, and

Figure 3 is a perspective view of another form of catch embodying the invention.

The catch shown in Figure 1 comprises a body 10 formed with apertures 12 through which screws (not shown in Figure 1) may pass to fix the body to a piece of furniture. Body 10 includes a triangular tongue portion 13 having a stop face 14. Surface 15 of body 10 and the stop surface 14 may each be roughened, for example by the formation thereon of a series of ridges or serrations 16 whilst the body is being formed.

Figure 1 also shows a hooked element 20 comprising a base 21 slotted at 22 to enable the passage of screws (not shown in Figure 1) therethrough to fix the element onto a piece of furniture on which the catch is to be mounted. Element 20 including a flexible elongate member 23 carried on base 21 and formed at the end thereof spaced from base 21 with the first hook 24 having a face 25 which can cooperate with stop face 14 of element 10. Part-way along the length of member 23 element 20 is formed with a second hook 26 having a face 27 is also, in certain circumstances engage the face 14 of element 10.

With advantage the faces 25 and 27 are provided with ridges or serrations 28 for cooperating with the ridges 16 on stop face 14.

The elements 10 and 20 are preferably formed by moulding from a flexible plastics material (for example nylon) which enables the elongate portion 23 of element 20 to be readily pushed away from the position which it normally adopts in use by the application pressure thereto by, for example an adult's finger.

Figure 2 shows a three-drawer cabinet 30 having drawers 31, 32 and 33. A stop element 10 such as shown in Figure 1 is fixed to the undersurface 34 of the top element 35 of the furniture unit 30 by screws 36. A hooked element 20 is mounted on the rear surface 37 of the front of drawer 31 by screws 38. The elements 10 and 20 associated with the drawer 31 unit are so mounted that the hook 26 is uppermost and the elements 10 and 20 are aligned such that the face 27 engages with the face 14 of member 10 when the drawer 31 is partially opened. The catch provides that the drawer 31 is openable to the extent shown but cannot be opened further unless the drawer is closed slightly (that is to say pushed slightly in the direction of the arrow C) and the flexible element 23 depressed such that the face 27 is moved below — out of alignment with — the face 14 of element 10. Whilst holding the flexible element 23 in the depressed position the drawer 31 may be fully opened.

Drawers 32 and 33 have elements 20 mounted thereon as shown, that is to say with the element 20 rotated through a 180° with respect to the position adopted by the element 20 attached to the drawer 31. It will be appreciated that if the elements 20 were positioned with the same orientation as that attached to the drawer 31 the space between the fronts of drawers 31 and 32 (or 32 and 33) when lower most drawer is opened as far as is enabled by the catch would be significantly less than that provided when the front of drawer 31 is partially opened between the drawer front 31 and the element 35.

The elements 20 are therefore mounted on the backs of the fronts of drawers 32 and 33 with their hooks 24 uppermost such the surfaces 25 are engageable with the faces 14 of the elements 10 attached as shown to structural members 39 within the drawer unit 30. The elements 10 are attached to the structural members 39 by screws 40.

With the arrangement described the gap between the drawers 31 and 32 (or 32 and 33) when a drawer 32 or 33 is opened, is considerably extended by an amount which is substantially equal to that shown existing between the drawer front 31 and element 35 in Figure 2.

To fully open a drawer 32 or 33 the drawer (for example drawer 33) must be slightly closed — that is to say pushed in the direction of the arrow C and the flexible element depressed to move face 25 out of alignment with face 14. The drawer 33 may then be opened whilst the element 26 is held in depressed by a person opening the drawer.

As noted above the elements 10 and 20 are preferably moulded from a plastics material such as nylon.

As described the element 20 is provided with two hooks 24 and 26 enabling the efficient use of the catch in two orientations namely with the drawer to which it is being fixed uppermost (the arrangement of drawer 31) or with a drawer to which it is being fixed below one or more similar drawers (the arrangement of drawers 32 and 33) in Figure 2. The spacing between the hooks 24 and 26 along the elongate element 23 is such as to take account of the average thickness of drawer fronts in use in furniture units produced today — say 20 mm.

An advantage the first portion 23' of member 20 running from the base 21 to the hook 26 diverges from the normal to the base 21 through a small angle (approximately 1 degree) to increase the height of the hook 26 to the base 21. The further extension 23'' of the member 20 from the hook 26 to the hook 24 preferably runs at an angle of 16° to the axis of the portion 23'. This means that the hook 24, when the member 20 is attached as shown to the drawer fronts 32 and 33 of Figure 2 lies slightly above the normal to the base 21 of the member 20. Within the scope of the invention it is possible that further hook members may be provided on the flexible element at varying distances from the base 16 at mutually different orientations to provide that the hook member 20 is applicable for use in a variety of different situations.

A modified form of hook member usable in such an arrangement is as shown in Figure 3. In the arrangement of Figure 3 both parts of the hook member corresponding to the hook member shown in Figures 1 and 2 are given the same reference numerals. With the arrangement of Figure 3 the hook member 20 is provided at four locations at predetermined spacings along the length of the flexible member 23 for hook members 50. Each hook member 50 having a face 51 for cooperating with the stop face 14 of the element 10. With the arrangement of Figure 3 the hook member 20 may be positioned in any one of four different orientations to enable a drawer to which it is attached to be opened partially by any one of four different mounts enabling the insertion of a users finger through the gap so proposed to push down the elongate member 23 and enable the further opening of the drawer.

Although a specific description of this invention has been made with reference to drawers it will be appreciated that the elements 10 and 20 may be located on other parts of a piece of furniture which are movable relative to one another and which it is wished to secure, for example the units may be fitted with sliding and/or hinged doors, windows and the like.

Claims

1. Catch means comprising a hooked element (20) which is mountable on a part of a piece of furniture moveable relative to another part of the piece of furniture and which is when so mounted engageable with a stop body (10) on the other part to prevent extended relative movement of the two parts, the hooked element (20) comprising an elongate flexible member (23) one end (21) of which is adapted for mounting on a part of a piece of furniture and which has a first hook portion (24 Fig 1, 50 Fig 3) formed thereon, characterised in that the elongate flexible member (23) has at least one further hook portion (26, 50) formed thereon spaced along the length thereof from said first hook portion (24, 50) and in that said first hook portion (24) and the or each of said at least one further hook portions (26, 50) extend in radially different directions from the axis of the elongate member (23), whereby upon relative movement of said two parts one of said first and at least one further hook portions engages with said stop body (10) to prevent relative movement of the two parts of the piece of furniture by more than an amount determined by a selected mounting orientation of the hooked element (20).

2. Catch means according to Claim 1, wherein the hooked element (20) has two hook portions (24, 26).

3. Catch means according to Claim 2, wherein said two hook portions (24, 26) are spaced on opposite sides of the elongate flexible member (23).

4. Catch means according to any one of Claims 1, 2 and 3, wherein said elongate flexible member (23) normally extends from said end (21) thereof adapted for mounting on a part of a piece of furniture at an angle diverging from the normal to the piece of furniture when it is mounted.

5. Catch means according to Claim 4, wherein said elongate flexible member (23) extends away from said end (21) thereof at an angle diverging from the normal to the piece of furniture when the member is mounted thereon by one degree until it meets a hooked portion (26) formed thereon, and wherein said elongate flexible member (23) thereafter extends at an angle diverging from the axis of said first portion thereof.

6. Catch means according to Claim 1, wherein said hooked element (20) comprises an elongate flexible member (23) having four hook portions (50) formed thereon, said four hook portions being located equi-spaced along the length of, and around, the elongate flexible member (23).

7. Catch means according to any one of the preceding Claims, wherein the surface (14) of the stop body (10) and the surfaces (25, 27, 51) of the hook portions (24, 26, 50) with which they operatively engage in use are roughened.

8. Catch means according to Claim 7, wherein said roughened surfaces (14, 25, 27, 50) are serrated.

9. Catch means in accordance with any one of the preceding Claims, wherein said stop body (10) and hooked element (20) are formed by moulding a plastics material.

10. Catch means according to Claim 8, wherein said stop body (10) and hooked member (20) are of nylon.

Patentansprüche

1. Arretiervorrichtung, die ein mit Haken versehenes Bauteil oder Element (20) umfaßt, das an einem Teil eines Möbelstückes, das relativ zu einem anderen Teil des Möbelstückes bewegbar ist, befestigbar ist und nach seiner derartigen Anbringung mit einem Anschlagkörper (10) an dem anderen Teil zum Eingriff kommen kann, um eine weitergehende relative Bewegung der zwei Teile zu verhindern, wobei das mit Haken versehene Bauteil oder Element (20) ein biegsames längliches Glied (23) umfaßt, dessen eines Ende (21) für die Befestigung an einem Teil eines Möbelstückes ausgelegt ist und an dem ein erster Hakenabschnitt (24 Fig. 1, 50 Fig. 3) angeformt ist, dadurch gekennzeichnet, daß das biegsame längliche Glied (23) wenigstens einen weiteren Hakenabschnitt (26,50) aufweist, der an ihm mit Abstand entlang der Längsrichtung des Gliedes (23) von dem ersten Hakenabschnitt (24,50) angeformt ist, und daß sich der erste Hakenabschnitt (24) und der weitere Hakenabschnitt oder jeder der weiteren Hakenabschnitte (26, 50) in verschiedenen radialen Richtungen von der Achse des länglichen Gliedes (23) erstrecken, wodurch bei relativer Bewegung der zwei Teile gegeneinander ein Hakenabschnitt von diesem ersten und dem wenigstens einem weiteren oder den weiteren Hakenabschnitten mit dem Anschlagkörper (10)

zum Eingriff kommt, um relative Bewegung der zwei Teile des Möbelstückes um mehr als einen Betrag, der durch eine ausgewählte Befestigungsorientierung des mit Haken versehenen Bauteils oder Elementes (20) bestimmt wird, zu verhindern.

2. Arretiervorrichtung nach Anspruch 1, bei der das mit Haken versehene Bauteil oder Element (20) zwei Hakenabschnitte (24,26) besitzt.

3. Arretiervorrichtung nach Anspruch 2, bei der die zwei Hakenabschnitte (24,26) mit Abstand voneinander auf gegenüberliegenden Seiten des biegsamen länglichen Gliedes (23) vorgesehen sind.

4. Arretiervorrichtung nach einem der Ansprüche 1, 2 und 3, bei der sich das biegsame längliche Glied (23) rechtwinklig von seinem Ende (21) aus erstreckt, das für die Befestigung an einem Teil eines Möbelstückes in einem Winkel, der von der Normalen zu dem Möbelstück abweicht, ausgelegt ist, wenn es befestigt ist.

5. Arretiervorrichtung nach Anspruch 4, bei der sich das biegsame längliche Glied (23) von seinem Ende (21) in einem Winkel, der um 1° von der Normalen zu dem Möbelstück abweicht, wenn das Glied daran befestigt ist, bis zu der Stelle wegerstreckt, an der ein hakenförmiger Abschnitt (26) an ihm ausgebildet ist, und bei der sich das biegsame längliche Glied (23) dahinter in einem Winkel erstreckt, der von der Achse seines ersten Abschnittes abweicht.

6. Arretiervorrichtung nach Anspruch 1, bei der das mit Haken versehene Bauteil oder Element (20) ein biegsames längliches Glied (23) mit vier an ihm angeformten Hakenabschnitten (50) umfaßt, wobei diese vier Hakenabschnitte in gleichen Abständen entlang der Länge und um das biegsame längliche Glied (23) herum angeordnet sind.

7. Arretiervorrichtung nach einem der vorhergehenden Ansprüche, bei der die Oberfläche (14) des Anschlagkörpers (10) und die Oberflächen (25, 27, 51) der Hakenabschnitte (24, 26, 50), die beim Gebrauch wirksam im Eingriff stehen, aufgerauht sind.

8. Arretiervorrichtung nach Anspruch 7, bei der die aufgerauhten Oberflächen (14, 25, 27, 50) mit Rippen oder Zacken versehen sind.

9. Arretiervorrichtung nach einem der vorhergehenden Ansprüche, bei der der Anschlagkörper (10) und das mit Haken versehene Bauteil oder Element (20) durch Gießen oder Pressen eines Kunststoffmaterials ausgeformt sind.

10. Arretiervorrichtung nach Anspruch 8, bei der der Anschlagkörper (10) und das mit Haken versehene Bauteil oder Element (20) aus Nylon bestehen.

Revendications

1. Dispositif d'arrêt comprenant un élément en forme de crochet (20) qui peut être monté sur une partie d'un meuble déplaçable par rapport à une autre partie du meuble et qui, lorsqu'il est ainsi monté, peut entrer en prise avec un corps d'arrêt (10) sur l'autre partie pour empêcher un mouvement relatif étendu des deux parties, l'élément en forme de crochet (20) comprenant un organe flexible allongé (23) dont une extrémité (21) est adaptée pour être montée sur une partie d'un meuble et qui présente une première partie de crochet (24 de la figure 1, 50 de la figure 3) façonnée sur lui, caractérisé en ce que l'organe flexible allongé (23) présente au moins une partie de crochet supplémentaire (26,50) façonnée sur lui et espacée sur sa longueur de la première partie de crochet (24, 50) et en ce que la première partie de crochet (24) et la ou chacune des parties de crochet supplémentaires (26, 50) font saillie dans des sens radialement différents à partir de l'axe de l'organe allongé (23), une partie de crochet parmi ladite première partie de crochet et la ou lesdites parties de crochet supplémentaires entrant, après un mouvement relatif des deux parties en prise avec le corps d'arrêt (10) pour empêcher un mouvement relatif des deux parties du meuble de plus d'une valeur déterminée par une orientation de montage choisie de l'élément de crochet (20).

2. Dispositif d'arrêt suivant la revendication 1, caractérisé en ce que l'élément de crochet (20) présente deux parties de crochet (24, 26).

3. Dispositif d'arrêt suivant la revendication 2, caractérisé en ce que les deux parties de crochet (24,26) sont espacées sur des côtés opposés de l'organe flexible allongé (23).

4. Dispositif d'arrêt suivant l'une quelconque des revendications 1, 2 et 3, caractérisé en ce que l'organe flexible allongé (23) fait normalement saillie par rapport à son extrémité (21) adaptée pour être montée sur une partie d'un meuble, suivant un angle qui diverge par rapport à la normale au meuble, lorsqu'il est monté.

5. Dispositif d'arrêt suivant la revendication 4, caractérisé en ce que l'organe flexible allongé (23) fait saillie par rapport à son extrémité (21) suivant un angle qui diverge d'un degré par rapport à la normale au meuble, lorsque l'organe est monté dessus, jusqu'à ce qu'il rencontre une partie de crochet (26) façonnée dessus et en ce que l'organe flexible allongé (23) s'étend ensuite sous un angle divergent par rapport à l'axe de sa première partie.

6. Dispositif d'arrêt suivant la revendication 1, caractérisé en ce que l'élément en forme de crochet (20) comprend un organe flexible allongé (23) présentant quatre parties de crochet (50) façonnées dessus, ces quatre parties de crochet étant situées à équidistance sur la longueur de l'organe flexible allongé (23) et autour de ce dernier.

7. Dispositif d'arrêt suivant l'une quelconque des revendications précédentes, caractérisé en ce que la surface (14) du corps d'arrêt (10) et les surfaces (25, 27, 51) des parties de crochet (24, 26, 50) avec lesquelles elles entrent en prise de manière fonctionnelle lors de leur utilisation, sont rendues rugueuses.

8. Dispositif d'arrêt suivant la revendication 7,

caractérisé en ce que les surface rendues rugueuses (14, 25, 27, 50) présentent des dentures.

9. Dispositif d'arrêt suivant l'une quelconque des revendications précédentes, caractérisé en ce que le corps d'arrêt (10) et l'élément en forme de crochet (20) sont façonnés par moulage d'une matière plastique.

10. Dispositif d'arrêt suivant la revendication 8, caractérisé en ce que le corps d'arrêt (10) et l'élément en forme de crochet (20) sont en nylon.

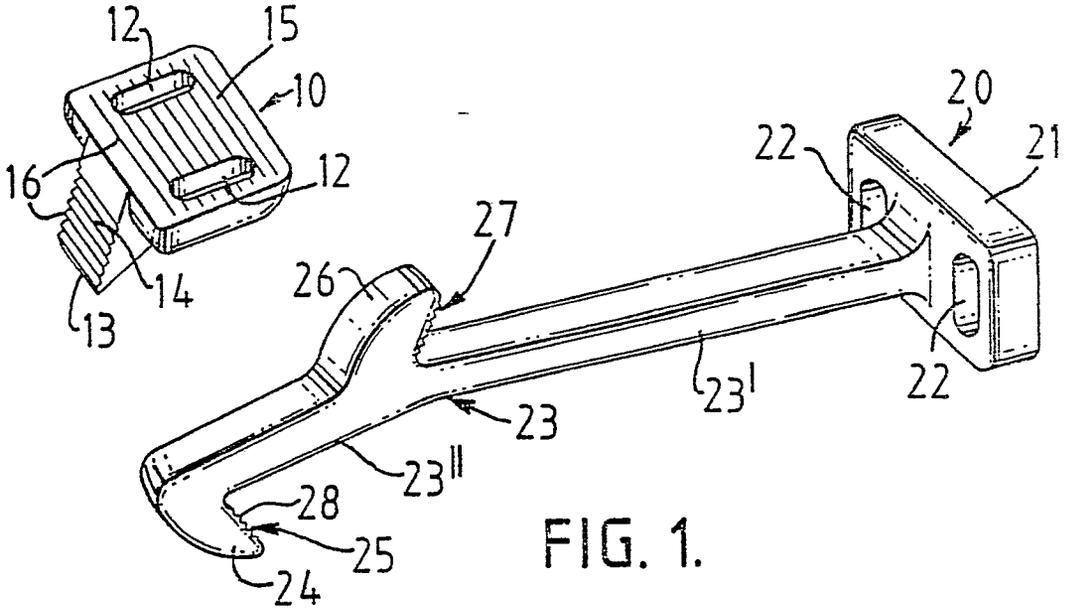
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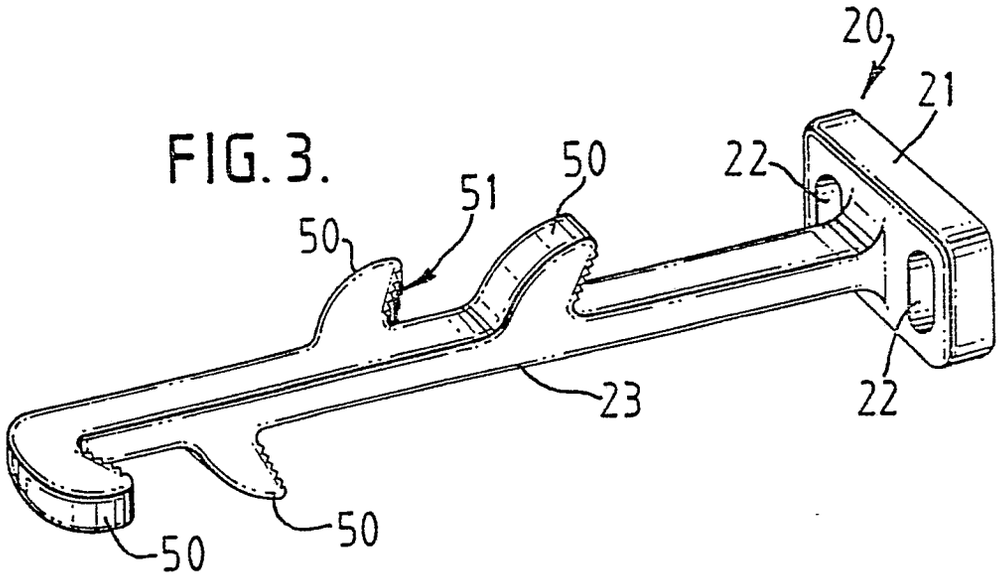
FIG. 1.

FIG. 3.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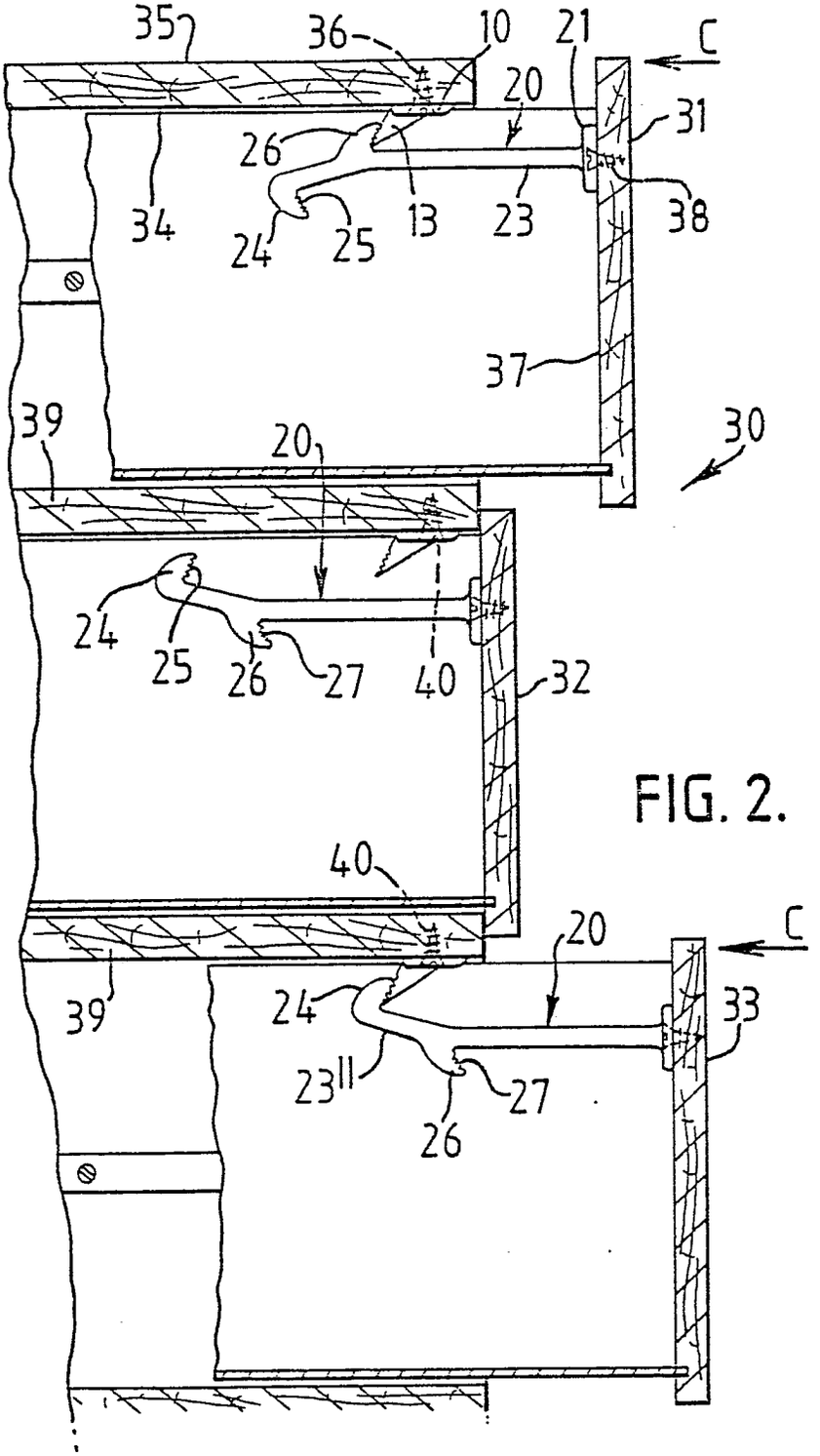
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FIG. 2.