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(54) **System for fixation of shelf accessories to a shelf**

(57) System for fixation of shelf accessories to a shelf. The system comprises a front fixation device (20) arranged to be fixed to a shelf (10), at or adjacent a front edge (11) of said shelf, and comprising an elongate profile element exhibiting an essentially constant cross section along its entire length, said cross section defining a channel (27). At least one shelf accessory (40) comprises an essentially flat first bottom surface (42) arranged to be supported on an upper surface of the shelf and a engagement member (50) arranged to be brought into engagement with said channel, for fixation of the shelf accessory to the front fixation device and the shelf. The channel exhibits a first interior width (a) in the cross sectional plane of the profile element and a rearward opening

having an opening width (b) which is smaller than the first interior width (a). The engagement member comprises a second bottom surface (51) which tapers upwardly in relation to the first bottom surface (42), in the forward direction and an engagement surface (53) which is arranged at a distance (c) from the second bottom surface (51), wherein said distance (c) is smaller than said opening width (b). The engagement member may be inserted into the channel through said opening and the engagement surface may be brought into engagement with an interior wall (26a, 126a) of said channel by pivoting the shelf accessory about a pivotal axis extending in parallel with the longitudinal direction of the profile element.

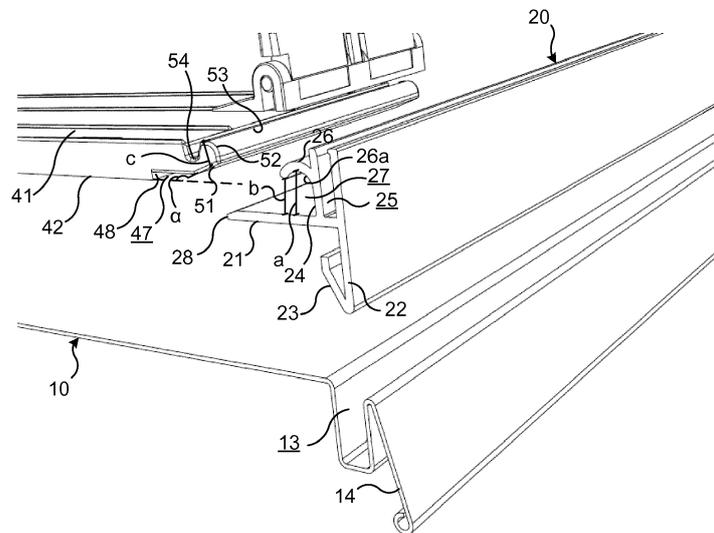


Fig. 3

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Description

Field of invention

[0001] The present invention relates to a system for fixation of shelf accessories to a shelf

[0002] The shelf accessories may be of different kinds, such as for instance shelf dividers, pushing devices, holders for information carriers, trays, etc.

Background of the invention

[0003] Stores that retail convenience goods or commodities on a daily basis often present their goods on shelves. In order to create an ordered display of these goods on the shelving and to enhance their presentation there is used a number of different accessories, such as shelf dividers, different types of devices for pushing the goods and different types of goods-carrying trays, etc. Such accessories are often mounted on the upper surface of the shelf.

[0004] Known technology allows these accessories to be fastened to the shelf in a number of different ways, for instance mechanically with the aid of screws or technically equivalent devices, by frictional engagement or by adhesion with the aid of double-sided adhesive tape or by corresponding means.

[0005] The devices used to fasten the accessories to the shelves will preferably have some fundamental properties. One important property is that it is possible to fasten the accessories at selected positions along the length of the shelving, so as to position the accessories in a chosen space relationship that is adapted to suit different packages and different quantities of goods. The accessories should further be securely held to the shelf in order to avoid that they are inadvertently loosened or displaced from their intended positions.

[0006] Shelf dividers constitute an example of accessories where the mutual distance there between can be particularly important. The shelf dividers often consist of partitioning walls which are fastened to the shelving such as to extend at right angles to the longitudinal direction of the shelving and to project outwardly perpendicularly therefrom. The primary purpose of the shelf dividers is to separate different groups of goods from one another and to create order on the shelving. Particularly when a goods advancing means is placed between two shelf dividers, it is essential that the shelf dividers are not displaced towards one another, since the friction between goods and shelf dividers may then become so great as to prevent advancement of the goods.

[0007] The accessories will preferably also be held firmly, such as to ensure that they will not topple. In conjunction with this, it is important that the accessory is held firmly and that the fixing device enables respective accessories to be readily fixed and removed.

[0008] After setting up a shelf and positioning all accessories along the shelf, it is sometimes necessary to

reorganize the shelf, requiring one or more of the shelf dividers to be removed or moved and fixed in a new position. For example, this is the case when the spacing between two adjacent shelf dividers must be adjusted in order to accommodate a new item of goods or package of goods of other dimensions. In addition, it may often be desirable to subsequently fasten other accessories, such as information carriers, for instance flag holders or coupon holders on a shelf that has earlier been placed in order. In order to facilitate such reorganization of parts of a shelf that has already been placed in order it is desirable that individual accessories can be removed and then secured in a new position and to affix new accessories without needing to release remaining shelf dividers.

[0009] An additional important aspect is that the fixation devices should be easy to use and especially that it should be easy for the personnel working with the devices to understand how to efficiently handle the devices when setting up and reorganizing shelves. In practice, personnel working with such organization of shelves rarely have the time to study mounting manuals and quite frequently they get little or no instructions or training concerning the handling of the various fixation arrangements that exist on the market. Quite often it happens that the mounting systems are used incorrectly or inefficiently, which may lead to additional work and thereby to reduced profitability for the shop owner. Therefore it is desirable that the construction of the fixation systems is simple such that it is self explanatory how to use the system just by the look of its constituent parts, even for personnel having no earlier experience of the system.

[0010] Depending on what products that are to be placed on the shelves, the shelves may have different depth dimensions in the horizontal direction, perpendicular to the front edge of the shelves. Accordingly, the shelf accessories need to exhibit corresponding lengths in order to reach over the shelves' entire depth. In practice, the shelf depths utilized in stores varies from 200 mm to 800 mm. In some occasions the shelf depth may be as large as 1000 mm, however at the majority of shelves for daily commodity stores the shelf depth varies between 400 and 700 mm. Especially at longer accessories, it might be difficult to prevent the rear end of the accessories from moving in in the directions parallel to the longitudinal direction of the shelf, thereby causing the accessories to bend. Such bending may in turn cause disorder of the products on the shelf, hinder the functioning of pushers and cause other related problems. In order to prevent or alleviate such problems it might be necessary to provide the fixation systems for longer accessories with additional fixation devices that are arranged at the rear edge of the shelf. The accessories may then be provided with corresponding rear fixation means which are brought into engagement with the rear fixation device for separately fixing also the rear ends of the accessories to the shelf. However, such additional fixation arrangements for the rear end of the accessories naturally makes

the systems more complex and thereby more expensive both to manufacture and to mount onto the shelves. Additionally, when setting up and reorganizing shelves provided with such rear fixation arrangements, it is necessary, for each accessory, to position and engage both ends of the accessory to a respective fixation device. This constitutes a cumbersome, time consuming and ergonomically disadvantageous operation, especially since it requires that at least one hand is stretched over the entire shelf depth to reach the rear edge of the shelf. It would thus be advantageous and desirable if also longer accessories could be satisfactorily fixed and maintained at the shelf while utilizing only a front fixation device arranged at the front edge of the shelf.

[0011] It is also desirable that the means for fixing the accessories will have an aesthetic appearance and will not be an unnecessary obstacle to placing or removing goods on and from a shelf or from adjacent shelving. It is also important that the accessory fixing means are of simple construction and can be produced and mounted at low cost.

[0012] Further, it is desirable that the means for securely holding accessories to a shelf can be applied to existing shelves without requiring the shelves to be replaced or modified in some way.

Prior art

[0013] The previously known systems for fixation of shelf accessories to a shelf may be divided into two basic categories. In a first category, the system comprises a main manoeuvrable fixation and release member by means of which a number of accessories may be simultaneously fixed to and released from the shelf. In a second category the system comprises individual fixation and release organs by means of which each accessory may be separately fixed to and released from the shelf.

[0014] WO 2004/112549 A, WO 2005/025386 A, WO 2007/073294 A and WO 2007/073295 A all describe systems generally belonging to the first category. These systems generally comprise an elongate profiled channel element which is attached to the front edge of a shelf and which is provided with a movable fixation organ that extends along the entire channel element. Each accessory is provided with a protruding foot, which may be inserted into the channel element. By moving the fixation organ between a release position and a fixation position all accessory feet inserted in the channel element may be simultaneously selectively engaged by and released from the fixation organ to thereby allow simultaneous fixation or release of all accessories.

[0015] A system according to the second category is described in EP 120 099 B2. This system comprises a catching device which extends along the front edge of the shelf and which has a U-shaped cross section. The free ends of the legs forming the U-shape are provided with inwardly directed edges forming there between a slot for interlocking insertion of a locking projection with

a broadened portion of a shelf divider.

Summary of the invention

5 **[0016]** It is an object of the present invention to provide an enhanced system for fixation of shelf accessories to a shelf.

[0017] Another object is to provide such a system by means of which any number of accessories may be individually fixed to and released from the shelf.

10 **[0018]** A further object is to provide such a system which is easy and ergonomically advantageous to use.

[0019] Still a further object is to provide such a system which requires no instructions or training also for untrained personnel in order to be able to efficiently use the system.

15 **[0020]** Yet another object is to provide such a system which achieves satisfactory fixation also of comparatively long accessories without the need of any fixation arrangements being used at the rear end of the accessories.

20 **[0021]** A further object is to provide such a system which is reliable and comprises a low number of moving parts.

25 **[0022]** Another object is to provide such a system which is simple in construction, and which may be manufactured at a low cost.

[0023] Another object of the invention is to provide such a fixing device that enables a mother profile or holder profile to be integrated in a front fixation device.

30 **[0024]** These and other objects of the invention are achieved with a system of the kind defined in the preamble of claim 1 and having the special technical features set out in the characterising portion of the claim. The inventive system is used for fixation of shelf accessories to a shelf. The system comprises a front fixation device arranged to be fixed to a shelf, at or adjacent a front edge of said shelf, and comprising an elongate profile element exhibiting an essentially constant cross section along its entire length, said cross section defining a channel. At least one shelf accessory comprises an essentially flat first bottom surface arranged to be supported on an upper surface of the shelf and an engagement member arranged to be brought into engagement with said channel, for fixation of the shelf accessory to the front fixation device and the shelf. The channel exhibits a largest interior width (a) in the cross sectional plane of the profile element and a rearward opening having an opening width (b) which is smaller than the largest interior width (a). The engagement member comprises a second bottom surface which tapers upwardly in relation to the first bottom surface, in the forward direction and an engagement surface which is arranged at a distance (c) from the second bottom surface. The distance (c) is smaller than said opening width (b), whereby the engagement member may be inserted into the channel through said opening and the engagement surface may be brought into engagement with an interior wall of said channel by pivoting

the self accessory about a pivotal axis extending in parallel with the longitudinal direction of the profile element.

[0025] The arrangement of the rearwardly open channel of the front fixation device and the shelf accessory's engagement member thus allows for that an accessory may very easily be fixed to and released from the shelf. Fixation is simply achieved by slightly lifting the rear end of the accessory from the shelf and introducing the accessory's front end engagement member from behind into the channel. Thereafter the accessory's rear end is lowered onto the shelf, whereby the engagement member is brought into a secure engagement with the front fixation device. The accessory is also easily release from the shelf by first lifting the rear end and thereafter pulling the accessory backwards such that the engagement member is withdrawn out of the channel of the front fixation device. For repositioning of an accessory which is fixed to the shelf, it is sufficient to slightly lift the rear end of the accessory and thereafter displace the accessory along the shelf, while maintaining the engagement member in the channel.

[0026] The inventive system is thus very easy to use and it may readily be understood how to fix and release accessories just by looking at the accessory's engagement member and the front fixation device.

[0027] While being very simple in construction comprising only the accessories per se as moving parts, the system still accomplishes a secure and reliable fixation of the accessories. By choosing the length of the engagement member, in the direction parallel to the longitudinal direction of the front fixation device, sufficiently long, the system further accomplishes a satisfactory fixation also of comparatively long accessories. It has proven that accessories with lengths up to 700 mm. may be satisfactory fixed without the need of any additional fixation devices being arranged at the rear end of the accessories or at the rear edge of the shelf.

[0028] The profile element may comprise a rearwardly facing first support surface and the shelf accessory may comprise a forwardly facing second support surface, which is arranged to be brought into contact with the first support surface when the engagement surface is brought into engagement with said interior wall of the profile element. Hereby the accessory is further supported by the front fixation device. The cooperating support surfaces especially stiffens the engagement between the accessory and the fixation device in the longitudinal direction of the accessory, perpendicular to the longitudinal direction of the fixation device and in parallel with the shelf plane. This further alleviates the need of rear fixation arrangements.

[0029] The length of the second support surface in parallel with the longitudinal direction of the profile element may preferably be larger than 1/8 of the length of the shelf accessory, in the direction parallel with the first bottom surface and perpendicular to the longitudinal direction of the profile element, when the shelf accessory is fixed to the front fixation device. This dimensional relation

has proven to be suitable for achieving a secure fixation of accessories of any length, without the need of any rear fixation arrangements.

[0030] The profile element may comprise a first bottom plate, a first arm which extends upwardly from the bottom plate and a second arm which extends rearwardly from the first arm and wherein said bottom plate, first arm and second arms define the channel and the second arm forms said interior wall of the channel. This allows for a simple and reliable design of the fixation device, which may readily be manufactured through extrusion.

[0031] The second arm may be curved. This enhances the engagement between the accessory's engagement member and the channel and also reduces the manufacturing accuracy needed.

[0032] The second arm may be flexible. Hereby it is possible to accomplish a pretensioned engagement such that the friction between the channel and the engagement member is increased. This in turn enhances the fixation and prevents the accessories from being displaced in the longitudinal direction of the fixation device, when the accessories are fixed.

[0033] The first support surface may be arranged at the rear edge of the bottom plate. This simplifies the geometry of the fixation device and reduces manufacturing costs.

[0034] The engagement member may have an essentially constant cross section over its entire length in parallel with the longitudinal direction of the profile element. Hereby it is achieved that engagement occurs along the entire width of the engagement member, as seen in the longitudinal direction of the accessory.

[0035] The shelf accessory may comprise a second bottom plate provided with said first bottom surface. Such a bottom plate rigidifies the accessory and prevents tipping. The bottom plate may also function as a support for products being placed thereon. E.g. when the accessory comprises a pusher this may decrease the friction thereby facilitating the forward pushing action of the products.

[0036] The engagement member may be connected to the second bottom plate by means of a waist portion. This facilitates insertion of the engagement member through the opening and into the channel. It also enhances the leverage when pivoting the engagement member into contact with the interior wall of channel such that the engagement is enhanced and/or the manufacturing tolerances may be increased.

[0037] The second bottom plate may exhibit a lower recess which is partly defined by said second support surface and which is arranged to receive the first bottom plate of the profile element. This allows for a simple and reliable design.

[0038] The tapering angle between the first bottom surface and the second bottom surface may lay between 130 and 160 °.

[0039] The profiled element preferably comprises means for being attached to a shelf.

[0040] The interior engagement wall and/or the engagement surface may be provided with a friction increasing means. This further increase the friction between the fixation device and the engagement member, whereby displacement of the accessories along the shelf is further alleviated. The front fixation device, the engagement member and when applicable the second support surface and the recess may constitute the only means for fixation of the shelf accessory to a shelf. Hereby all the problems associated with additional fixation means arranged at the rear edge of the shelf are removed.

[0041] Further objects and advantages of the invention appear from the following detailed description of embodiments and from the appended claims

Brief description of the drawings

[0042] The present invention will now be described with reference to various embodiments thereof and also with reference to the figures of the accompanying drawings, in which

Fig. 1 is a perspective view of a shelf provided with a system according to the invention and comprising one fixation device and one accessory, wherein the accessory has been fixed to the fixation device and the shelf.

Fig. 2 is a perspective view corresponding to fig. 1 and illustrates how the accessory is being fixed to the fixation device.

Fig. 3 is an exploded perspective view in enlarged scale illustrating portions of the shelf and the system shown in fig. 1.

Fig. 4 is a side view in enlarged scale illustrating portions of the shelf and the system shown in fig. 1, when the accessory is being fixed.

Fig. 5 is a side view corresponding to fig. 4 showing the accessory in the fixed position.

Detailed description of embodiments

[0043] There have been used in the following description directional and positional designations, such as up, down, forwards, rearwards, over, under, in front of, behind, upper, lower, front and rear. These designations relate to directions and positions of a horizontal shelf or of details when fixed to such a shelf. By the front edge of a shelf is meant that edge of the shelf that faces towards a person in normal use of the shelf. The designations are used to provide greater clarity to this description and shall not be considered to limit the protective scope of the claimed invention.

[0044] Fig. 1 shows a shelf 10 and a system according to the invention. The system comprises a front fixation

device 20 and a shelf accessory 40.

[0045] The shelf is made of steel and exhibits a front edge 11 and a rear edge 12. In use, the front edge 11 faces the shop alley from where customers may pick products (not shown) placed on the shelf. The shelf is made of steel and comprises at its front edge an upwardly open groove 13 and an inclined front panel 14.

[0046] The fixation device 20 is formed of a profiled element and exhibits an essentially constant cross section over its entire length. In the shown example only a comparatively short fixation device 20 is shown. The fixation device is manufactured by extrusion of a polymer material such as e.g. ABS, PET, PVC or PU. It may be manufactured at any suitable length and cut on site to the correct length suited for the shelf in question. Normally a single fixation device extends along the entire length of the shelf or a shelf section.

[0047] The fixation device comprises a first bottom plate 21 and a front panel 22 which extends vertically upwardly and downwardly from the front end of the first bottom plate 21. A resilient tongue 23 extends obliquely upward and backward from the lower end of the front panel 22. The distance between the free end of the tongue 23 and the front side of the front panel 22, exceeds somewhat, in the unstressed state the width of the groove 13. The fixation device is fixed to the shelf by inserting the lower portion of the front panel 22 and the tongue 23 into the groove 13, whereby the tongue 23 compressed towards the front panel 22. By this means a pretensioned frictional engagement occurs, such that the fixation device is securely but removably fixed to the shelf.

[0048] The accessory 40 shown in the illustrated example is a combined divider and pusher. It comprises a second bottom plate 41 which exhibits a first bottom surface 42. The first bottom surface 42 is flat and rests on top of the upper surface of the shelf under normal use, when mounted. The accessory further comprises a divider wall 43, which projects upwardly from the second bottom plate 41 and extends in the longitudinal direction of the accessory, i.e. perpendicular to the longitudinal direction of the fixation device, along the entire length of the bottom plate 41. A pusher device 44 is arranged displaceable along the divider wall 43 and is guided by a rail 45, which is attached to the divider wall 43. The pusher device 44 comprises a spring arrangement (not shown) which urges the pusher device towards the front edge 11 of the shelf for pushing products (not shown) placed on the bottom plate 41 forwardly. The second bottom plate 41 is provided with longitudinal ridges for reducing the friction during forward pushing of the products. The accessory further comprises a front gate 46 which is hingedly connected to the second bottom plate 41. The front gate 46 may be pivoted backwards, anti-clockwise as seen in the figures, in order to facilitate insertion of products onto the bottom plate. The gate is prevented from pivoting in the opposite direction such that it functions as a front stop for products being placed on the second bottom plate 41 and pushed forwardly. A spring arrangement

(not shown) urges the front gate 46 to the closed, upright position as illustrated in the figures.

[0049] As best seen in figs 3-5, the fixation device 20 further comprises a first arm 24, which projects upwardly from the first bottom plate 21 at a distance behind the front panel 22. A U-shaped groove 25 is thereby formed between the upper portion of the front panel 22 and the first arm 24. This groove 25 may be used for fixation of additional accessories such as electronic labels, signs, flag holders and the like. A second arm 26 projects backwardly from an upper portion, at the free end, of the first arm 24. The second arm 26 is curved, such that the distance between the second arm and the first bottom plate exhibits a minimum at both ends of the second arm 26, i.e. at its free end and at its connection with the first arm 24. The distance between the second arm 26 correspondingly exhibits a maximum in the middle between both ends of the second arm 26.

[0050] By this means, the first bottom plate 21, the first arm 24 and the second arm 26 define a rearwardly open channel 27. The lower side of the second arm 26 forms an interior wall 26a of the channel. Further, the channel exhibits a first width a, which is equal to the maximum distance between the first bottom plate 21 and the second arm 26. The distance between the free end of the second arm 26 and the first bottom plate 21 defines an opening width b of the channel 27. Due to the curvature of the second arm 26, the opening width b is smaller than the first interior width a.

[0051] The fixation device further comprises a first support surface 28, which is formed by a vertically oriented, rearwardly facing end surface of the bottom plate 21.

[0052] The accessory 40 comprises an engagement member 50. The engagement member 50 is connected with the second bottom plate 41 and extends over the entire width of the bottom plate 41 and the accessory 40, i.e. in the direction which is parallel with the longitudinal direction of the fixation device 20. The engagement member 50 exhibits a constant cross section over the entire width of the accessory 40. The engagement member exhibits a second bottom surface 51, which is arranged at an angle α in relation to the first bottom surface 42 of the accessory's 40 second bottom plate 41. The second bottom surface 51 tapers upwardly from the second bottom plate 41, in the forward direction. In the shown example the angle α between the first 42 and the second 51 bottom surfaces is approximately 160°. The engagement member 50 further comprises a convex bead 52, which projects upwardly from the second bottom surface 51. The upper surface of the bead 52 forms an engagement surface 53, which may be brought into engagement with the interior wall 26a of the channel 27. The distance between the engagement surface 53 and the second bottom surface varies and exhibits a maximum c, at the uppermost portion of the engagement surface 53. The maximum distance c is smaller than the opening width b of the channel 27.

[0053] The engagement member 50 is connected to

the second bottom plate 41 by means of a waist portion 54, with reduced thickness, which extends along the entire engagement member 50.

[0054] The accessory 40 further exhibits a recess 47 which is arranged along the front edge in the lower side of the second bottom plate 41. The recess 47 is rearwardly delimited by a forwardly facing second support surface 48. The second support surface is vertically oriented and extends along the entire width of the second bottom plate 41. In the shown example the length of the second support surface in the direction perpendicular to the longitudinal direction of the accessory 40 and the second bottom plate 41 is approx. 1/8 of the longitudinal length of the accessory and second bottom plate 41.

[0055] In fig. 4 it is shown how the accessory is brought into engagement with the fixation device 20. First the rear portion of the accessory is lifted above the shelf such that the accessory is pivoted clock wise as seen in the figures about a pivotal axis which extends in parallel with the longitudinal direction of the fixation device 20, through the waist portion 54. The accessory is pivoted approx. 20° such that the second support surface 51 is arranged in parallel with and lies flat on the upper surface of the first bottom plate 21 of the fixation device 20. Due to the dimensional relations described above, the engagement member 50 with its bead 52 may be inserted through the channel opening into the channel 27. The accessory then assumes the position illustrated in fig. 4. Then, by lowering the rear end of the accessory, the second bottom plate 41 and the engagement member will be pivoted anti-clockwise about said pivotal axis. During this pivotal movement the engagement surface 53 on the bead 52 approaches and comes into contact with the interior wall 26a of the channel. Continued pivoting until the second support surface 41 lies flat on the shelf 10 causes the second arm 26 to flex upwardly, whereby the engagement surface 53 of the engagement member 50 assumes a pretensioned frictional engagement with the interior wall 26a. The accessory 40 and the engagement member 50 then assumes the position illustrated in fig 5. It may be noted that the engagement surface 53 and the upper portion of the bead 52 in this position is placed above the free end of the second arm 26, limiting the channel opening, such that the engagement member 50 is also mechanically blocked from being displaced out of the channel by rearward pulling of the accessory 40. The so accomplished fixation thus provides both frictional and mechanical engagement.

[0056] Simultaneously with bringing the engagement member 50 into engagement with the interior wall 26a, the first bottom plate 21 is also received within the lower recess 47. Hereby the first 28 and second 48 support surfaces are brought into mutual contact. This contact provides an additional supporting guidance to the accessory and maintains the accessory in the position where the longitudinal direction of the accessory is essentially perpendicular to the longitudinal direction of the fixation device and the front edge of the shelf. Such maintaining

of the accessory's orientation in the plane parallel to the shelf's upper surface may otherwise be jeopardized due to the resilient flexibility of the second arm 26, which may allow certain relative movement between the fixation device and the engagement member 50. Especially at comparatively long accessories, where sidewise forces acting on the accessory are amplified by great leverage, the cooperating first 28 and second 48 support surfaces counteract the leverage and maintains the accessory in correct orientation. Hereby, the need of additional fixation arrangements for securing the rear end of the accessory may be alleviated also for comparatively long accessories.

[0057] When an already positioned and fixed accessory is to be repositioned on the shelf, this is also easily accomplished with the inventive system. Then the rear end of the accessory is lifted only a small distance above the shelf such that the engagement surface 53 loses its frictional contact with the interior wall 26, while still maintaining the upper portion of the bead 52 above the free end of the second arm 26. Hereby, the mechanical engagement is maintained and the accessory may easily be displaced along the fixation device 40, while being rectilinearly guided by the fixation device. Once the accessory has been displaced to its correct position, the accessory is again locked in place by simply letting the rear end of the accessory fall back onto the shelf.

[0058] Fig. 6 illustrates an alternative front fixation device. This fixation device comprises a bottom plate 121 and a first arm 124 which projects upwardly from the bottom plate 121. A second arm 126 projects rearwardly from an upper portion of the first arm 124. The second arm 126 has first portion arranged proximal to the first arm 124, which first portion is generally strait and which forms an interior wall 126a. At the distal end 126b, the second arm 126 is bent downwardly such as to delimit the opening of the channel 127. At this embodiment, the engagement surface (not shown) arranged at the engagement member of the accessory (not shown) may be flat in order to accomplish good frictional engagement with the interior wall 126a. A support flange 129 is arranged on top of the first bottom plate 121. The support flange is provided with a rearwardly facing 129a and a forwardly facing 129b support surface. These support surfaces 129a, 129b are arranged to be in cooperating contact with corresponding support surfaces (not shown) arranged on opposing walls (not shown) of a groove which is arranged in the lower recess of the accessory's bottom plate. When the accessory assumes its fixed position, the first bottom plate 121 is received in said recess and the support flange 129 is received in said groove such that cooperating contact between the support surfaces of the accessory and a respective one of the support surfaces 129a, 129b contributes to maintain the accessory in correct orientation in the horizontal plane. At this embodiment the first support surface 128 and the corresponding second support surface arranged on the accessory may be omitted or maintained.

[0059] Above an exemplifying embodiment of the system according to the invention has been described. The invention is however not limited to this embodiment. To the contrary, it may freely be varied within the scope of the appended claims. For example, instead of forming a combined divider and pusher, the accessory may be of any deferrable kind such as a tray, a non-combined divider, a non-combined pusher, a roller track and the like.

[0060] The interior wall and the engagement surface may assume many other geometries than curved, they may e.g. exhibit strait, triangular or polygonal cross sections. In the exemplifying embodiments shown and described above the system is applied to a horizontal shelf. The system may however also be used at inclined shelves, such as shelves arranged for so called gravity feed.

[0061] In case the frictional engagement between the engagement member and the channel is to be increased further either or both of the interior wall and the engagement surface may be provided with and friction increasing material. E.g. a string of rubber, silicon or the like may be applied to either or both of the interior wall and the engagement surface.

[0062] The fixation device may further comprise many other means, than the resilient tongue, for fixation to the shelf. Examples of such other fixation means are, differently formed resilient members for frictional engagement, snap-fit organs, adhesives, screws and the like.

Claims

1. System for fixation of shelf accessories to a shelf, the system comprising;

- a front fixation device (20) arranged to be fixed to a shelf (10), at or adjacent a front edge (11) of said shelf, and comprising an elongate profile element exhibiting an essentially constant cross section along its entire length, said cross section defining a channel (27),

- at least one shelf accessory (40) comprising an essentially flat first bottom surface (42) arranged to be supported on an upper surface of the shelf and an engagement member (50) arranged to be brought into engagement with said channel, for fixation of the shelf accessory to the front fixation device and the shelf, **characterized in that**

- the channel exhibits a first interior width (a) in the cross sectional plane of the profile element and a rearward opening having an opening width (b) which is smaller than the first interior width (a), and that

- the engagement member comprises a second bottom surface (51) which tapers upwardly in relation to the first bottom surface (42), in the forward direction and an engagement surface

- (53) which is arranged at a distance (c) from the second bottom surface (51), wherein said distance (c) is smaller than said opening width (b), whereby the engagement member may be inserted into the channel through said opening and the engagement surface may be brought into engagement with an interior wall (26a, 126a) of said channel by pivoting the shelf accessory about a pivotal axis extending in parallel with the longitudinal direction of the profile element.
2. System according to claim 1, wherein the profile element comprises a rearwardly facing first support surface (28, 129a) and the shelf accessory comprises a forwardly facing second support surface (48), which is arranged to be brought into contact with the first support surface when the engagement surface (53) is brought into engagement with said interior wall (26a, 126a) of the profile element.
 3. System according to claim 2, wherein the length of the second support surface (48) in parallel with the longitudinal direction of the profile element is larger than 1/8 of the length of the shelf accessory (40), in the direction parallel with the first bottom surface and perpendicular to the longitudinal direction of the profile element, when the shelf accessory is fixed to the front fixation device (20).
 4. System according to any of claim 1-3, wherein the profile element comprises a first bottom plate (21, 121), a first arm (24,124) which extends upwardly from the bottom plate and a second arm (26,126) which extends rearwardly from the first arm and wherein said bottom plate, first arm and second arms define the channel (27,127) and the second arm forms said interior wall (26a, 126a) of the channel.
 5. System according to claim 4, wherein the second (26) arm is curved.
 6. System according to claim 4 or 5, wherein said second arm (26,126) is flexible.
 7. System according to any of claims 4-6, wherein said first support surface (28) is arranged at the rear edge of the bottom plate (21).
 8. System according to any of claim 1-7, wherein the engagement member (50) has an essentially constant cross section over its entire length in parallel with the longitudinal direction of the profile element.
 9. System according to any of claim 1-8, wherein the shelf accessory (40) comprises a second bottom plate (41) provided with said first bottom surface (42).
 10. System according to claim 9, wherein the engagement member (50) is connected to the second bottom plate (41) by means of a waist portion (54).
 11. System according to claim 9-10, wherein the second bottom plate (41) exhibits a lower recess (47) which is partly defined by said second support surface (48) and which is arranged to receive the first bottom plate (21) of the profile element.
 12. System according to any of claims 1-11, wherein the tapering angle (α) between the first bottom surface (42) and the second bottom surface (51) lies between 130 and 160 °.
 13. System according to any of claim 1-13, wherein the profiled element comprises means (22, 23) for being attached to a shelf.
 14. System according to any of claims 1-13, wherein the interior engagement wall (26a, 126a) and/or the engagement surface (53) is provided with a friction increasing means.
 15. System according to any of claims 1-14, wherein the front fixation device (20), the engagement member (50) and when applicable the second support surface (48) and the recess constitutes the only means for fixation of the shelf accessory (40) to a shelf (10).

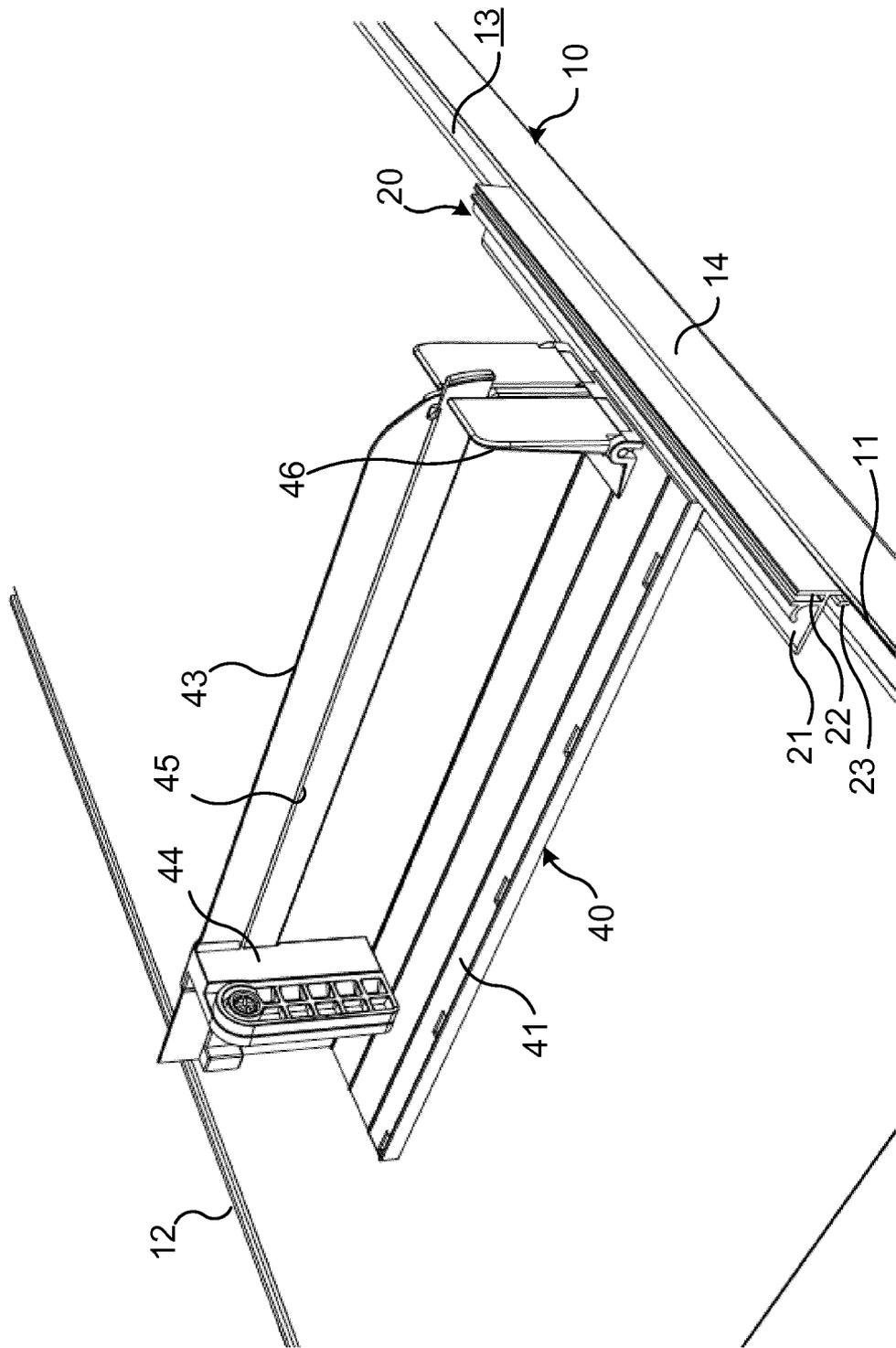


Fig. 1

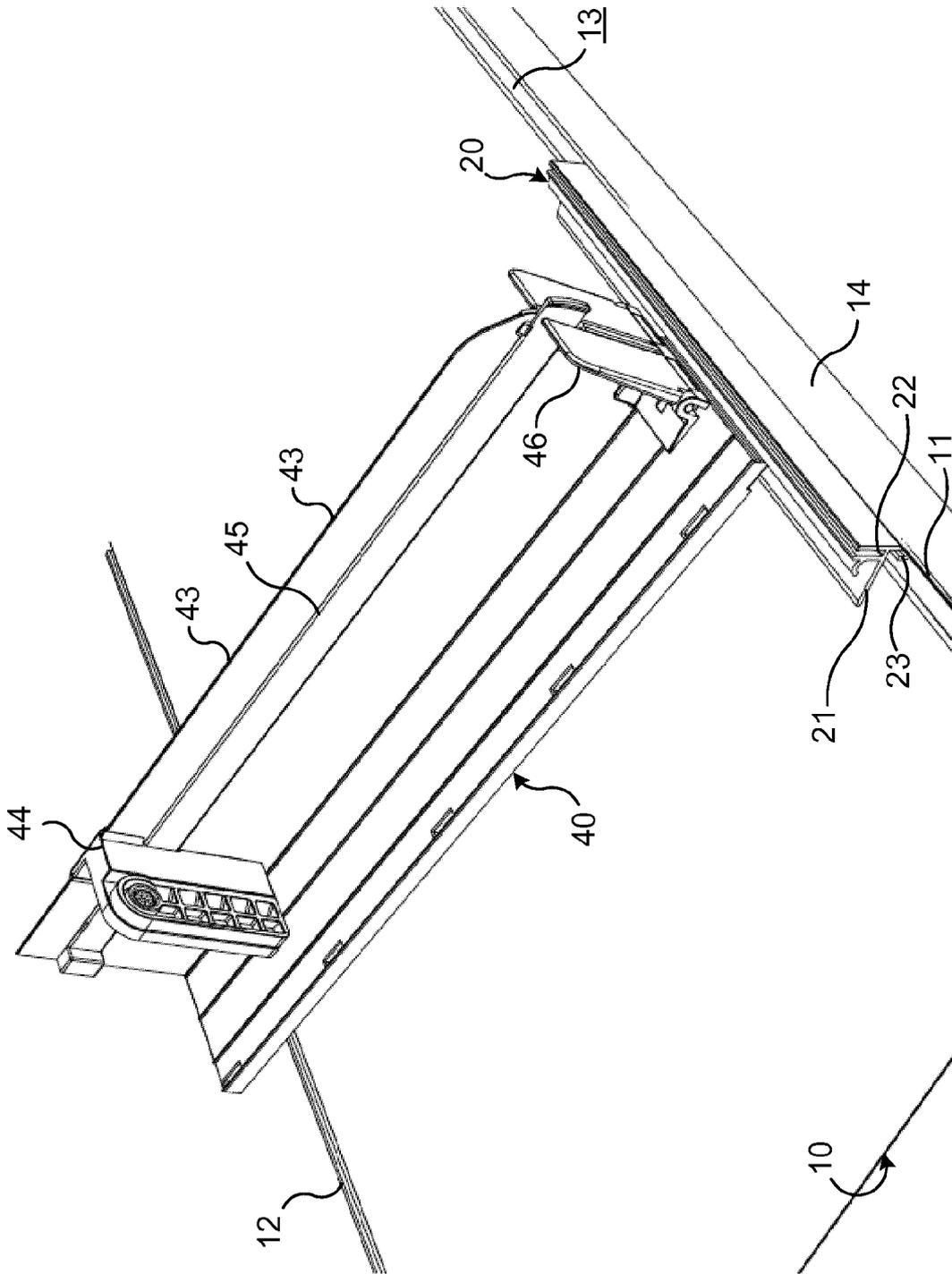


Fig. 2

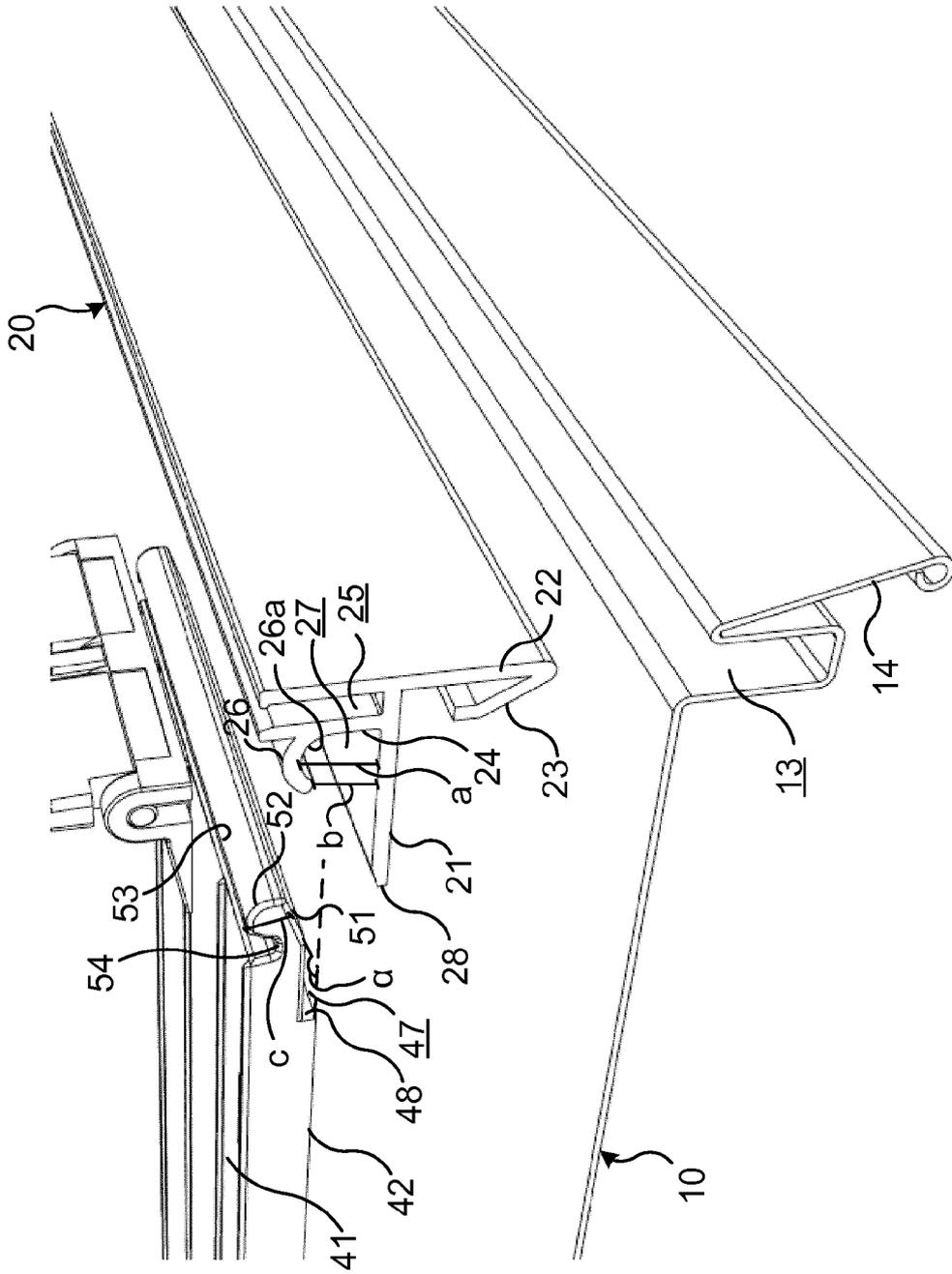


Fig. 3

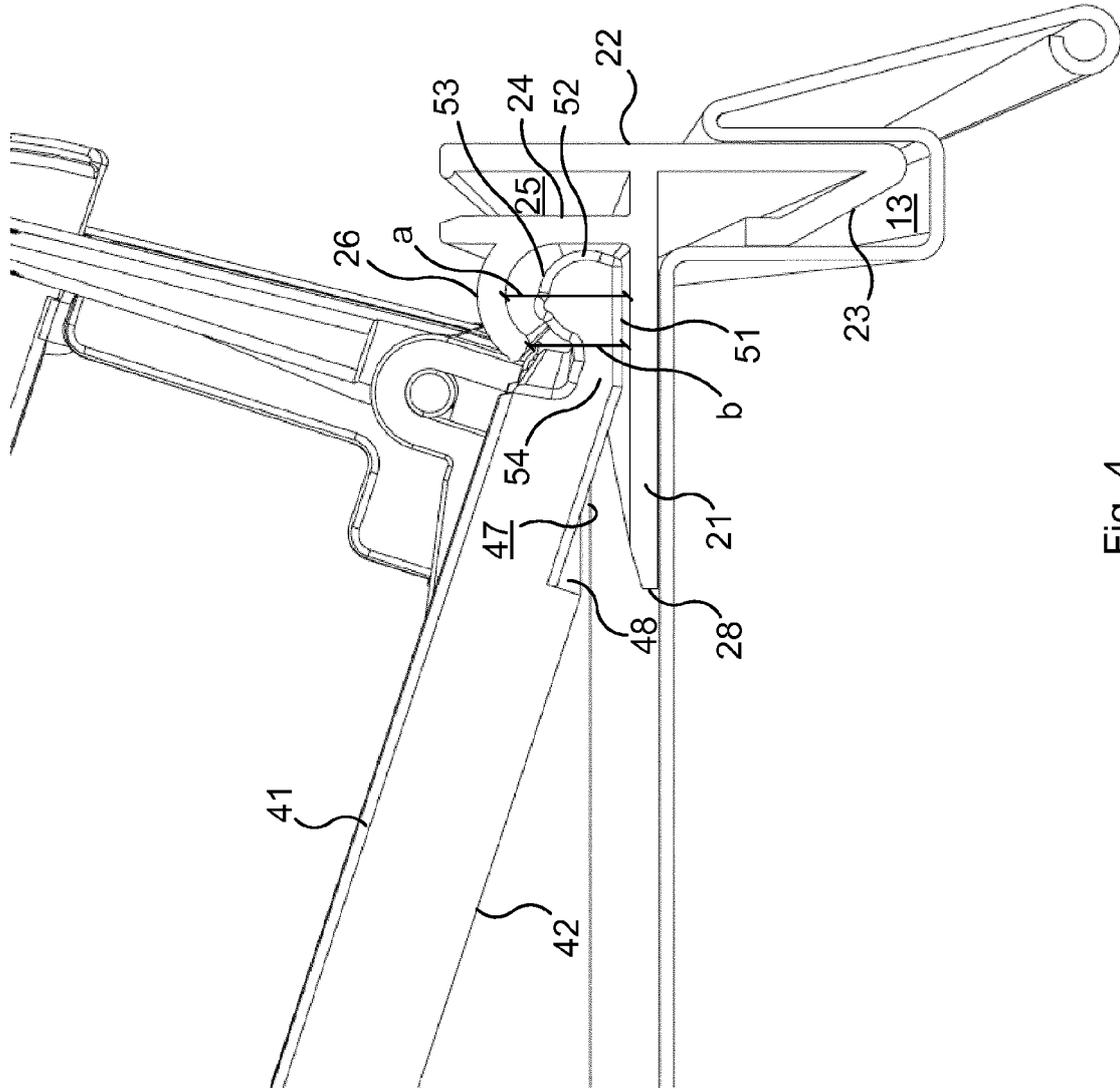


Fig. 4

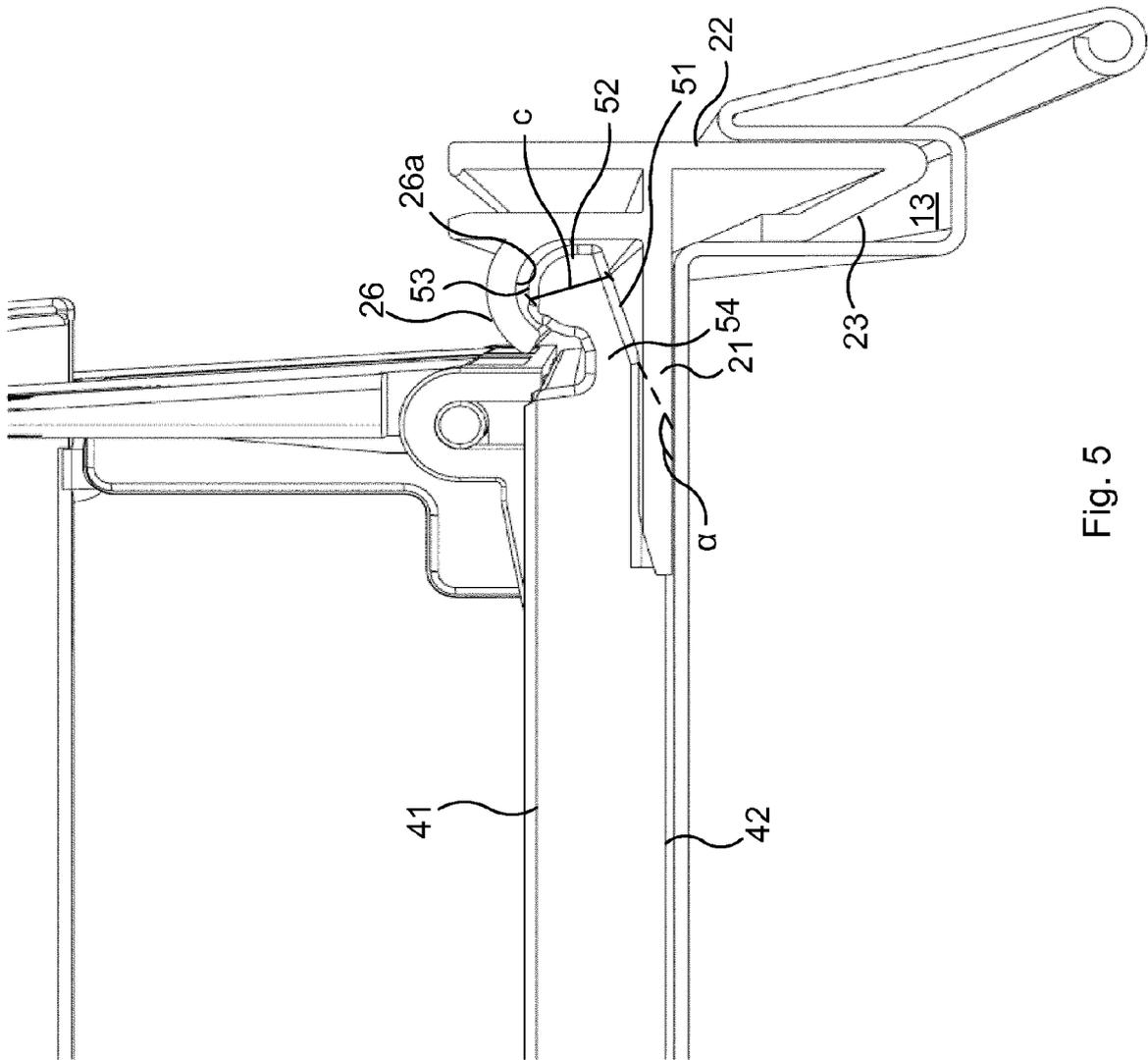


Fig. 5

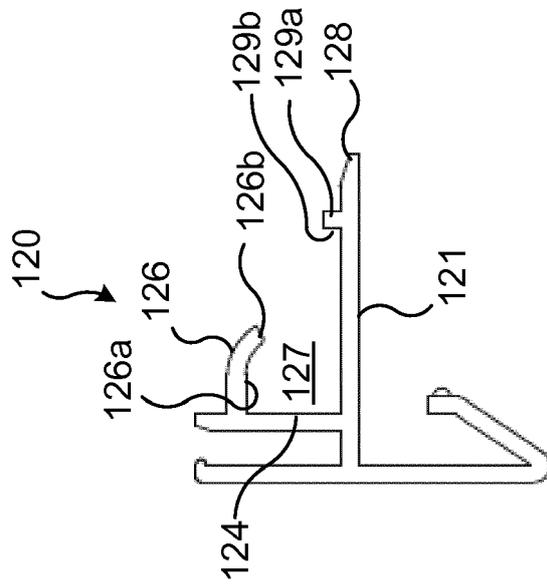


Fig. 6



EUROPEAN SEARCH REPORT

Application Number
EP 14 17 7402

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2009/117699 A2 (AMERICAN GASKET TECHNOLOGIES) 24 September 2009 (2009-09-24) * figure 14 * * paragraph [0059] * -----	1-15	INV. A47F5/00
X	US 4 615 276 A (GARABEDIAN) 7 October 1986 (1986-10-07) * figures 1-3 * -----	1-15	
X	WO 2013/033555 A1 (RADIOTECHNIQUE COMPELEC) 7 March 2013 (2013-03-07) * figures 35-37 * -----	1-9, 12-15	
X	GB 2 426 433 A (KLEEREX PATENTS LTD) 29 November 2006 (2006-11-29) * figures 8, 9 * -----	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 January 2015	Examiner Linden, Stefan
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 17 7402

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-01-2015

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009117699 A2	24-09-2009	CA 2734776 A1	24-09-2009
		US 2011174750 A1	21-07-2011
		WO 2009117699 A2	24-09-2009

US 4615276 A	07-10-1986	NONE	

WO 2013033555 A1	07-03-2013	AU 2012301707 A1	17-04-2014
		CA 2847521 A1	07-03-2013
		CN 104023595 A	03-09-2014
		EP 2750555 A1	09-07-2014
		JP 2014525329 A	29-09-2014
		KR 20140093210 A	25-07-2014
		WO 2013033555 A1	07-03-2013

GB 2426433 A	29-11-2006	NONE	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 2004112549 A [0014]
- WO 2005025386 A [0014]
- WO 2007073294 A [0014]
- WO 2007073295 A [0014]
- EP 120099 B2 [0015]